

docomomo

International working party for
documentation and conservation
of buildings, sites and neighbourhoods of the
modern movement

Conference Proceedings

Second International Conference
September 16th - 19th, 1992



DOCOMOMO INTERNATIONAL
DOCOMOMO GERMANY
BAUHAUS DESSAU
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The Second DOCOMOMO Conference enjoys patronage from

Dr. Frederico Mayor,
Director General of Unesco

Prof. Peter Canisius,
President of the German Unesco commission



The Second DOCOMOMO Conference is organized under the auspices of

Catherine Lalumière,
Secretary General of the Council of Europe



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Bauhaus Dessau



Bauhaus Dessau e.V.

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Preface by the Chairman of the German DOCOMOMO Group

The Conference Proceedings make public the conclusions of the Second International DOCOMOMO Conference. Participants from 27 countries attended the Conference at the Bauhaus in Dessau in September 1992, which was organised by the German DOCOMOMO group.

The two keynote speeches and 48 papers presented a broad range of findings and objectives. The Consultative Committee had endorsed 10 more papers from the proposals submitted and these were available in written form for information and publication.

Participants from each of the countries represented shared their experiences concerning the National Register.

The DOCOMOMO Council also held its own conference during the event. It elected members to the Executive Committee, set future objectives for the DOCOMOMO organisations and decided to hold a 3rd International Conference in Barcelona in 1994.

We hope that the publication of the proceedings of this conference and the findings of the General Council of DOCOMOMO

- will ensure widespread access to its findings,
- will support the activities of the national working groups
- and will provide an impetus for those who are just setting up sections in their own country and are beginning to register and preserve buildings from the Modern Movement.

May the Proceedings of the Dessau Conference be of benefit and act as an incentive to all members and friends of DOCOMOMO in their future activities.

Dr. Wolfgang Paul
Chairman
German DOCOMOMO group.

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Wessel de Jonge, DOCOMOMO International
Wolfgang Paul, DOCOMOMO Germany
Karl-Heinz Burmeister, DOCOMOMO Germany
Rolf Kuhn, Bauhaus Dessau

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Chairman German DOCOMOMO Group

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Chairman DOCOMOMO International

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Prof. Dan Bernfeld, consultant for Urban Affairs
to the Council of Europe
Leo van Nispen tot Sevenaer Esq., director ICOMOS
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Introduction

Modernity is one of the main roots of the architectural situation today. It is important therefore to document and to preserve representations of modernity of the recent past, to enjoy them and to enable us to study these roots and extract the elements that are still relevant. To this aim, the International Working party for the Documentation and Conservation of buildings, sites and neighbourhoods of the Modern Movement DOCOMOMO was established. The DOCOMOMO Constitution was accepted by the twenty members of the DOCOMOMO Council, representing the member countries present at the First International DOCOMOMO Conference in Eindhoven in September 1990. *

After two years of hard work in the various countries DOCOMOMO established itself as a solid organisation, which was confirmed at the Second International DOCOMOMO Conference, this time at the Bauhaus in Dessau from September 16th-18th, 1992, hosted by the German DOCOMOMO Working party. The conference programme had two main topics: neighbourhoods of the Modern Movement and the national registers of the most important buildings and neighbourhoods of the Modern Movement to be preserved for future generations. Besides, attention was paid to items concerning technology and education. Although several interesting papers on neighbourhoods were presented, no overall conclusions as yet emerged. More research and particularly more debate is necessary in the near future to arrive at badly needed information. As regards the registers, the main breakthrough of the conference was the definition of modernity we arrived at, which covers the 20th Century till today and also gives room for national and regional interpretation to suit one's own history. Fifteen national working parties presented their preliminary national Modern Movement registers.

Very stimulating and sometimes heated discussions regarding the DOCOMOMO organisation and registers produced many far-reaching decisions, which were taken by the 27 representatives that were present at the Council's meeting on the last day of the conference. It was a very positive experience that the involvement in the discussions and the influence on the decisions of the Latin as well as the non-European countries has increased enormously since the Eindhoven Conference.

The most important decisions are as follows:

1. Organisation

- A DOCOMOMO membership fee will be introduced within the next two years to help finance the International Secretariat. It has been proposed that members from countries with non-convertible currencies will be exempted from this fee. Proposals will be worked out in more detail by a small group, for Council approval in the near future.
- International Specialist Committees (ISC's) will be formed on specific items such as the registers, education and technology. An ISC is not allowed to take binding decisions but prepares proposals for approval by the Council. An ISC will consist of approx. five elected specialists of different countries as well as an elected chairperson. Its members are expected to take the various points of view in other member countries into account as well. All working parties not represented in such a committee are requested to appoint a corresponding member on the subject to keep up communication. The chairperson has full responsibility for a plan of action, time keeping, financing of an ISC's activities and communications with all other DOCOMOMO members.

2. Registers

An ISC on Registers is formed, consisting of Gérard Monnier (France) as chairman, Luc Verpoest (Belgium), Alan Powers (United Kingdom), Maristella Casciato (Italy), Dirk Baalman (the Netherlands) and Xavier Febre (Spain).

The following proposal was accepted unanimously:

- a. Every country or region is specific, so each will treat the matter as fits its culture. However, some mutual starting points are as follows:
 - b. We are talking about buildings, sites and neighbourhoods.
 - c. These should fit the following criteria: they should be historically innovative as regards the social and/or technical and/or æsthetical context.
 - d. Within the social context, typologies should be identified which are characteristic for the culture of the era.
 - e. Priorities have to be introduced on a national level (and after the next conference at an international level).
 - f. The register should have two sections:
 - 'monuments',
 - buildings, sites and neighbourhoods under threat.
- g. The period for Modern Movement architecture can not be clearly defined as it is related to national histories. It can stretch from the end of the 19th Century till today. The period is 'open ended' to allow national interpretations.
- h. A first part for the national register, covering a defined period, must be available by January 1st, 1994; these documents must be comprehensive for that period and should be approved by the working party concerned.
- i. The specialist committee on registers will inform all countries before June 1st, 1993, on the methodology of inventory to be used (type of files, fiches etc.).

* See page 13 of the DOCOMOMO Conference Proceedings 1990, ISBN 9038600615.

3. Cooperation with Icomos

DOCOMOMO has been invited to cooperate with Icomos on matters concerning the documentation and conservation of buildings, sites and neighbourhoods of the Modern Movement.

The Council Meeting agrees with a cooperation between DOCOMOMO and Icomos and asks the DOCOMOMO Executive Committee to establish a draft agreement provided:

- a. that the agreement is related to DOCOMOMO International and DOCOMOMO ISC's, but not to DOCOMOMO national working parties,
- b. DOCOMOMO retains its total freedom for content and strategy.

The draft agreement will be sent to the national working parties to be approved. If two-thirds of the working parties agree with the draft, it will be considered accepted by the Council.

The draft will be prepared by Hubert-Jan Henket (chairman DOCOMOMO International), Mabel Scarone (Argentina) and Gérard Monnier (France).

4. Education

A preliminary ISC on Education has been formed, based on the ideas as put forward in the paper of Catherine Cooke and Ivor Richards. Catherine Cooke will chair the preliminary ISC on Education, while Mabel Scarone (Argentina) and Anna Beatriz Galvão (Brazil) will participate. Members from Switzerland, the United Kingdom and the Netherlands announced their intention to join. A plan of action will be presented at the Third International DOCOMOMO Conference in 1994.

5. Technology

Another preliminary ISC has been formed on Technology, based on the concepts presented in the paper by Wessel de Jonge. Wessel de Jonge will chair this preliminary ISC and Jadwiga Urbanik (Poland) and Winfried Brenne (Germany) will participate. Members from Italy, France and the United Kingdom have announced their interest to join. A plan of action will be presented at the 1994 conference as well.

6. WUWA Estate

Possibilities will be surveyed for the restoration of the WUWA estate in Wrocław, Poland, as an international effort. Dan Bernfeld (France) will coordinate the initiative. Members from Poland, Italy, Hungary, Czechoslovakia and France have announced their interest to join.

7. Nations or regions

The current political mood of regionalism, not only apparent in Europe, does not miss its influence on DOCOMOMO matters. The debate concentrates both on the national working parties, as meant in the DOCOMOMO Constitution of 1990, and the national registers of Modern Movement architecture. Several regions have practical, and sometimes historical objections against the current arrangement. Since no proposals to meet these objections were prepared beforehand, no decisions could be taken by the Council. The chairman will formulate a proposal for approval by the Council as soon as possible.

The Council unanimously decided to send letters to the Director General of UNESCO and the Secretary General of the Council of Europe, expressing its gravest concern about the devastating effect of the raging civil war in the former Yugoslavia on its people and its cultural heritage.

8. Third International Conference

The Council accepted the invitation by Lluís Hortet i Previ (Spain) to organize the next conference in Barcelona in 1994, hosted by the Fundació Mies van der Rohe.

Apart from the MoMo registers, the main topics of that event will be the heritage of modernity and the architectural situation today.

At the end of the Council Meeting, we were all amazed by the large number of constructive decisions being taken. They could only be made in the striking mood of unanimity and trust between the Council members, because of our friendship and love for the Modern Movement spirit and its buildings, sites and neighbourhoods. That makes us surely different from the official institutions and will be our strength for the future.

Hubert-Jan Henket
Chairman DOCOMOMO International

Conference and acknowledgements

At the inaugural meeting of DOCOMOMO 1990 in Eindhoven, we proposed that the 'Second International Conference 1992' be held at the Bauhaus, Dessau, as a means of publicising our problems and questions relating to this important chapter in architectural history.

Difficulties arose during preparations for the conference due to German unification, resulting in new routine duties for the organisers in Dessau and the new Federal Land of Sachsen-Anhalt. Active intervention by the DOCOMOMO Executive Committee allowed these obstacles to be overcome and accelerated joint preparations were begun. From an international perspective two years seems a reasonable period for organising an international DOCOMOMO Conference, but arranging the 2nd International Conference became a very tight operation in the time available. The International Secretariat in Eindhoven used existing contacts to identify suitable lecture topics. The Consultative Committee was then responsible for the selection of speakers and reserve speakers from the topics submitted and for publication in the Proceedings. The tight deadline allowed little time for some experts overseas and in Eastern Europe, and existing proposals from authors were used to guarantee a wide variety of themes.

Preparations for the conference confirmed that the following areas would be concentrated on:

- Housing estates and complexes and plans for their conservation and use.
- Model buildings and their contribution to experimental building with regard to function, construction and physics building and experience in their preservation.
- Documentation and publication of buildings from the modern period and identification of their sources and the significance thereof for architectural development.
- Exchange of experience relating to criteria and work with national registers and the preservation of modern constructions which are under threat.

Not only did this meet with widespread agreement in the national sections of other countries, it also demonstrated to the conference the international urgency of this theme and these objectives.

Participants from around the world were again able to report some success in the guarantee and preservation of the heritage of the Modern Movement, but increasing concern over important international monuments in every country dominated the exchange of experiences among conference participants.

Despite the initial organisational problems, the success of the conference was overwhelming. All the participants found it an experience to visit the Bauhaus in Dessau, that internationally recognised symbol of the Modern Movement, and to be able to compare experiences of the preservation and care of just these material examples of "new building" and to advise on future objectives. The committed tone of the conference was equal to that of a working conference and made a vital contribution to identifying future areas of work. It is now important for the Dessau Bauhaus to offer advice on the basis of results and findings from the first two years of work and from demands for future activity and thus to identify focal points for the future care and preservation of 'new building'.

The effect of this incentive was that over three days, vital problems relating to future work were dealt with by the formation of four international expert committees with very firm ideas on tasks and people. At the same time this highlighted the intensity of work by all participants and the good preparation and eloquence of the national working groups.

While representatives from 18 countries took part in the inaugural conference in 1990, experts from 27 countries participated in the Second conference at the Dessau Bauhaus. Because of events in the countries of Eastern Europe, not all those who wished to attend were able to do so.

Representatives from 23 professional journals attended the conference, and the high participation at this conference by representatives from educational bodies, institutions for the preservation of historic monuments and museums from all over the world must also be acknowledged. They campaigned actively in the search for future solutions and made an important contribution to raising the profile of future activities.

The result of this was that in the closing Council Meeting of DOCOMOMO firm and ambitious commitments were made for future activities of and international cooperation in DOCOMOMO.

Karl-Heinz Burmeister
Conference director



OPENING



Dr. Wolfgang Paul,
Dr. Jürgen Neubert,
Leo van Nispen
tot Sevenaer,

Prof. Hubert-Jan Henket,
Nic Tummers,
Jan Piet Kloos.

Dr. Michael Pletsch,
Prof. Dan Bernfeld,
Prof. Hubert Hoffmann.



Ladies and Gentlemen,

Two years have passed since the 1st Docomomo Conference in Eindhoven. German unification was imminent and German participants from east and west decided there and then to form a joint national German group. At the same time they offered to stage the 2nd International Docomomo Conference here at the Bauhaus in Dessau, and this offer was accepted by the International Council of Docomomo. And so today I welcome you to this building which was erected by Walter Gropius in 1926.

I would like to extend a warm welcome to the president of our organisation, Professor Hubert-Jan Henket. We are particularly pleased to welcome to our conference the head of department at the Ministry for Federal and European Affairs, Dr. Pletsch, representing the regional government of Sachsen-Anhalt.

Mr. Laczny, head of the Department for Culture and Education, is here to represent the district authority whose seat is here in Dessau; our thanks go to them for their generous sponsorship of our conference.

I am also pleased to welcome the Lord-Mayor of Dessau, Dr. Neubert, who has a particular interest in town planning and architecture in this city. I would also like to welcome Senator Tummers, who is representing the Council of Europe on behalf of Mrs. Catherine Lalumière.

We are particularly pleased to welcome the adviser to the Council of Europe on town planning and architecture, professor Bernfeld. We also welcome Mr. Van Nispen, director of ICOMOS.

It is a particular pleasure to welcome contemporaries and representatives of the Modern Movement, Professor Hubert Hoffmann, a former pupil of the Bauhaus, who now lives in Austria, and the architect Jan Piet Kloos from the Netherlands. We will pay particular attention to their papers.

We should also like to thank our host, the present director of the Bauhaus Dr. Kuhn, for his help in staging this conference.

The German group is particularly keen to acknowledge and draw attention to the social commitment of architects in the 1920's. Their achievements in the areas of public-sector housing and estate planning are of especial interest for the new Federal Lands. One of our workshop groups will devote itself to this subject, and Sachsen-Anhalt has important examples of this type of estate planning in Magdeburg and Dessau, through the work of architects such as Walter Gropius, Hannes Meyer and Bruno Taut.

By drawing attention to this theme we in no way wish to diminish the importance of the other topic groups, and we hope that all the discussions are successful.

I should now like to hand over to our president, Professor Henket.

Prof. Hubert-Jan Henket

Chairman DOCOMOMO International

Lord Mayor of Dessau, Dr. Neubert,
the representative from the Regional Government of Sachsen Anhalt, Dr. Pletsch,
the representative from the Bezirksregierung Dessau, Mr. Laczny,
the representative from the Council of Europe, Mr. Nic Tummers,
the representative from Icomos, Mr. Leo van Nispen tot Sevenaer,
the representative from the J. Paul Getty Trust, Mrs. Karin Blanc,
the representative from Crittal Windows Ltd, the one and only sponsor of our Newsletters, Mr. David Cranmer,
and last but not least, dear DOCOMOMO friends,
you all I would like to welcome at the Second International DOCOMOMO Conference in this beautiful building, designed by Walter Gropius.

What amazing things happened in the world since we last saw each other two years ago. Empires disintegrated, old countries reemerged and DOCOMOMO is still alive and kicking.

My first words of a specially warm welcome are devoted to our guests of honour, Prof. Hubert Hoffmann and Mr. Jan Piet Kloos, both of a prewar vintage. The fact that you designed the fascinating buildings we now admire, your presence here and your vitality is a stimulus for us at this conference that we shouldn't just look backwards but also very much forward, in creating positive environments through architecture in the spirit of the Modern Movement.

A next word of special welcome in the DOCOMOMO family is for the new working parties of Brazil, Denmark and Sweden and for the new countries present for the first time at our conference being Canada, Croatia, Estonia, Israel, Latvia, Lithuania, Norway, Spain and the USA.

This means that we now have a DOCOMOMO network of 27 countries.

Then, I would like to thank Prof. Rolf Kuhn, the director of the Bauhaus Dessau. We are very grateful that we may use your premises, which to us is an important icon and a symbol of the attitude of the Modern Movement.

And finally I would like to thank the Bauhaus Verein for their financial aid and their great effort to get the conference off the ground in this institute. In particular, I would like to mention the work done by Wolfgang Paul and Karl-Heinz Burmeister. Without the endurance of Karl-Heinz there would have been no DOCOMOMO conference in this building at this moment in time.

I would therefore like to offer this bottle of champagne to Karl-Heinz Burmeister, as a continuation of the tradition started by our Irish representative Shane O'Toole at the end of the Eindhoven Conference.

Thank you very much Karl-Heinz, this is to your health.

Ladies and gentlemen, our conference has started. I hope we will have lots of stimulating papers and debates, and particularly with a lot of international friendship and warmth in the spirit of the Modern Movement.

Dr. jur. Michael Pletsch

Ministry of Federal German and European Affairs;
Sachsen-Anhalt

Welcoming address on behalf of Hans-Jürgen Kaesler (FDP), Minister for Federal and European Affairs of the Land of Sachsen-Anhalt at the 2nd International DOCOMOMO Conference in the Dessau Bauhaus on 16 September 1992 delivered by Dr. jur. Michael Pletsch, head of European Department in Ministry of Federal and European Affairs, Magdeburg.

Professor Henket, Professor Kuhn, Mr. Mayor, Ladies and Gentlemen,

I would like to bid you a warm welcome to Saxony-Anhalt on behalf of Hans-Jürgen Kaesler, the Minister of Federal and European Affairs.

I am pleased to see the 2nd International DOCOMOMO Conference being held at the Bauhaus in Dessau in support of UNESCO's activities and under the aegis of the Council of Europe.

Ladies and gentlemen, in the Dessau Bauhaus you have deliberately chosen a conference venue which carries on the magnificent tradition of the founders - namely not becoming ossified in form but taking up the requirements of the time again and again.

That is why we are particularly happy to have the Bauhaus in Saxony-Anhalt at this time of transformation, not only as a monument with the character of a museum, but first and foremost as a think tank and place of experiment for the world of tomorrow.

Ladies and gentlemen, it is following in this tradition established by renowned architects, designers and artists from all nations that you have taken as the main theme of your conference how settlements can be used and preserved in such a manner as to meet today's social needs while preserving historic and architectural heritage.

This is a task of special importance for towns and villages in eastern Germany.

Dessau shares the chequered architectural history of many other east German towns and cities. It is a history which witnessed the magnificent edifices built by enlightened princes of Anhalt and the buildings which testify to Germany's rapid industrial growth in the 19th Century as well as the Bauhaus itself. But it also includes massive destruction in World War II and the prefabricated slabs that typified the GDR.

When the people of our country took to the streets in the autumn of 1989 and carried through a peaceful revolution, one of the slogans which gave birth to the grassroots citizen's movement was: Save our towns and cities!

People were no longer prepared to stand by and watch the decay of their towns and cities and the deterioration of their quality of life.

We were all reminded again what great significance intact buildings, towns and villages have for people's feeling of life and their well-being.

Functioning and worthwhile forms of settlement are among the foundations on which our country is built. They are the central setting for economic processes and life in general, the pole around which civilization develops, the background for education and leisure.

Their preservation and maintenance - and also their advancement in a changing world - are a challenging task for the outstanding experts who have accepted the invitation to come to Dessau and for the community as a whole.

Given the profound upheavals occurring throughout Europe, we shall be compelled in the future even more than we have been in the past to react jointly to the processes of change taking place in urban development and architecture. We can better perceive the challenges which await us all if we look beyond national borders, comparing notes and prompting each other with ideas for solutions.

It is my hope and my wish that those taking part in this conference will take the dialogue between the various architectural and urban styles a step further.

In this way they could help in a Europe with a broad-based intellectual exchange and tolerance in all directions to create a major asset which opens up new sources for the continent's wealth of design ideas.

And that would help us too. By taking your inspiration from the Bauhaus tradition and pondering the future, you are helping us to build up this Land of ours amid the most fundamental changes. We hope that new ideas will emerge from your conference, ideas for decent and environmentally friendly ways of living in settlements which meet people's social needs and carry forward the historic and architectural heritage to provide a future worth living.

People want to identify with their towns. This is a major element in finding their own being, an identity which will allow them to master the future in their own way and with confidence.

I wish your conference success.

Thank you.

Dr. Jürgen Neubert

Lord-Mayor of Dessau

Mr. President, Ladies and Gentlemen.

The city of Dessau extends a very warm welcome to all of you and we are grateful to you for coming here. Occasions such as this make it necessary for functionaries to praise their towns and this I am happy to do by saying that in hosting an international conference as important as yours the town itself assumes importance. Thank you once again for taking the trouble to come to Dessau. I hope that in coming here you will also gain something for yourselves and that this will be shown during the course of your deliberations.

Now for a few brief remarks. A town does not live on the spur of the moment. A town has roots in history. Dessau has long standing traditions and a long history, a history that presents tasks for both the planner and the architect. The previous speaker referred to some, namely that of Dessau-Wörlitz and the famous gardens formed with classical and neoclassical buildings and a second tradition, that of the Bauhaus, one of the prototypes of modern architecture.

A second remark. The development of a town, town-planning, even design takes place under certain pre-conditions. These either promote or restrict development. The conditions that we have to face here means that we must accept the fact that the town, the city centre, was destroyed during the Second World War. That is to say 85% of the city centre was destroyed, resulting in the fact that the town lost its identity. We are now endeavouring to restore the heart of the city. Another condition we are faced with is that the development of the town in its new form must always take place with regard to the architectural heritage. And that heritage includes this building, the Bauhaus, it includes the Bauhaus estate and other buildings that play a major role in the architecture of this city.

Clearly this is no easy task. It is a challenge, a tremendous challenge, a challenge the architects and town planners are motivated to meet.

My third remark. Town planning and urban design is a process. It is a never ending process of completion and of change. This is to say that we shall never be able to declare 'This is it. Now we have finished!' We will always have to start anew. It is thus an on-going process and it is, in addition to ensuring that the town functions; our task to give the town a specific face, to allow the town to develop its own identity so that the people living here, the citizens of Dessau, can identify with their hometown. This is a very difficult task. And we will only achieve it if we commence from the fact that the town has to learn how to deal with the task, to make use of its recent independence. Only in this way can the desires of the inhabitants be met, to meet the wishes of the citizens and all those people committed to progress and competent to undertake it. Hence the city of Dessau and its town assembly have taken the decision to invite tenders and to organise a competition for the future planning of the city. Five competitions were held in 1990 and 1991. First we started with the city centre, following this individual competitions for various districts.

One last remark. Work in the field of town planning and activities in the architectural sphere forms a symbiosis out of creativity on the one hand, the creativity and creative work of an architect for instance, and the cooperation of others, those called upon to translate these ideas into reality on the other. I believe your conference will engage in a dialogue, that architects will come to the realisation of the need to provide many good ideas and that they should be taken up by others. Thank you for coming and I hope your conference will be very successful.

Nic Tummers

Representative from the Council of Europe

Ladies and Gentlemen, dear colleagues,

As representative of the Council of Europe, its two constituent parts - the secretariat of governmental cooperation and the Parliamentary Assembly - I am pleased to have the possibility to address DOCOMOMO.

Madame Cathérine Lalumière, Secretary-General of the Council of Europe, has asked me not only to send you her greetings and to wish you great success this week, but I must also state that the desires formulated in the recommendation adopted on September 9th 1991 are ready for implementation in all member states of the Council of Europe. A report prepared for a conference of experts like this conference of DOCOMOMO is very important to progress in the field of documentation and conservation of 20th Century architecture, particularly of the Modern Movement. The president of the Parliamentary Assembly, Miguel Martínez, also hopes that the Culture and Education Commission will be able to continue its work in the field where the Commission has already recommendations on contemporary architecture, the works of Le Corbusier, etc. A report must be made on this conference, and I have been sent here because I always try to turn politicians' heads from the past to the present, in other words to make our own contribution to history.

As you know - please permit me to say some personal words - the work that DOCOMOMO does is for me also part of my everyday life.

As an example of that, you will find here a reconstruction model of the Bauhaus built in 1920 in Hagen between Cologne and Aachen in the North Eifel. This house was bombed in 1944. And we found an occasion to make a reconstruction model that is exhibited in the Aachen region. The Aachen region (the German side) is part of a European transfrontier region where during the twenties and thirties a culture exchange of views existed between the Dutch coalmining district and Aachen: that means also an exchange of views on architecture between Deutz, Rosenberg and the builders of the whole industrial townscape on the Dutch side and the circles of Rudolf Schwarz, Adolf Meyer and others on the other side. The Bauhaus was an element of the architectural collection on a one-to-one scale. The examples of modern architecture in this Euroregion have been presented there in a exhibition entitled, 'Borders and border conflicts in a context without borders'. I quote from the presentation of this exhibition:

'Das zwanzigste Jahrhundert, Zeitalter par excellence des Modernismus, läuft ab. Die Bewegung des Modernismus hatte immer einen Kampf mit Grenzen zu führen. Durch nationale Grenzen wurden die Entwicklungen geographisch eingeschränkt, durch die großen Ideologien wurden harte Grenzen gezogen. Die kulturelle Relevanz dieser Grenzkonflikte ist nicht kartiert. Ihr gegenseitiger Zusammenhang ist ebenfalls nicht dargestellt worden.

Erfordert die Aufmerksamkeit, die verlangt wird durch das Erleben dieses Fin de Siècle nicht, daß diese geographischen und ideologischen Grenzkonflikte jetzt, von Zeitgenossen, dargestellt werden? Daß ebenfalls selektiert und registriert wird, welche regionalen Ausdrucksformen universelle Qualität haben?

Möglicherweise eröffnet dies die Zukunft für ein Wiederaufleben, ja eine Renaissance des Modernismus.'

Prof. Dan Bernfeld

Consultant for Urban Affairs to the Council of Europe

As a representative from France, mr. Bernfeld preferred to address the conference in his language. Since his text was not available in writing, the following is a summarizing transcription of a tape-recording.

Mr. Bernfeld referred to the preface to the 1990 DOCOMOMO Proceedings by Catherine Lalumière, Secretary-General of the Council of Europe. The Council's recommendation on the 20th Century architectural heritage to the European ministers of culture that she announced at that occasion, has meanwhile been publized and is handed out to the secretary of DOCOMOMO International, in order to distribute the text amongst its members.

The speaker identified some differences in the statements of DOCOMOMO and those of the Council, mainly with respect to the stretch of time concerned. In contrast with the French DOCOMOMO group, that seems to center on the 1920's and 30's, the Council has adopted a longer period of time: from 1900 up to the present. Most recommendations however overlap with DOCOMOMO's concerns.

Mr. Bernfeld continued by stressing the importance of the international exchange of experts, mentioning DOCOMOMO as a main achievement in this field. He especially expressed his appreciation for the contribution from the Netherlands in this respect. As an example, the speaker mentioned the lecture by two Italian experts on a building in France (Bardelli and De Caroli on the Unité d' Habitation in Marseille). A historian from St. Petersburg speaking about Leningrad architecture (Kirikov on Dmitriev) gave Bernfeld an emotional shock when realising that 'Leningrad' is already history.

Furthermore, mr. Bernfeld introduced the conference to the problems concerning the WUWA estate in Wroclaw, Poland. Formerly named Breslau, this city has an important architectural heritage as shown in the architectural museum there, that is headed by mr. Czerner. The Council would like to see many more estates concerned in a way comparable to the preservation of Neubühl estate in Zürich - and the WUWA certainly needs to be included. Bernfeld proposed an international exchange between various universities to achieve this.

Finally, the speaker pointed out that one should take care not to confuse notions in various languages. As an example he mentioned a French word that could be used either for the conservation or the reconstruction of a building. He pleaded for the use of the French terminology as used in the Council of Europe, which is *integrated conservation*, referring to a sustainable development.

Transcription by Wessel de Jonge.

Leo van Nispen tot Sevenaer

Director ICOMOS

I am grateful to you, Mr. chairman, for the invitation for this conference and for the opportunity for this contribution. I know you have a tight schedule so I come to the point:

I represent ICOMOS, the International Council on Monuments and Sites. On behalf of ICOMOS I wish you an excellent, stimulating and productive, collegial/friendly conference but, besides that, I offer you something else:

I invite you to a close, even the closest collaboration with ICOMOS; and I have several reasons for that.

What is it all about?

ICOMOS, founded in 1965 in Warsaw, is a non-governmental, non-political, worldwide organization that works to promote the application of theory, methodology and scientific technique for the conservation of the architectural heritage.

It takes too much time to quote the objectives, the programme and structure but you can believe me if I say that there is quite some similarity between these and those of DOCOMOMO; except of course that DOCOMOMO concentrates on a part of our social and cultural heritage, the very important part of Modern Movement buildings, sites and neighbourhoods, but nevertheless a part.

ICOMOS is recognised by the United Nations as a Non Governmental Organization category A and for that reason is an advisory body to Unesco and the World Heritage Committee. Together with IUCN, our twin organisation for nature conservation, and ICCROM, the International Conservation and Restoration Centre in Rome, we examine the applications, submitted by State parties to the Convention for the inclusion of their monuments and sites on the World Heritage List. For this purpose ICOMOS necessarily each time calls in several experts etc.

This work of assessing the merits of the applications received-which means prior documentary research followed by analysis includes also indexing and the archiving of the studies, documentation and files. For this purpose the UNESCO/ICOMOS Documentation Centre at ICOMOS Headquarters was opened in 1972

Apart from this, ICOMOS is frequently asked to arrange meetings of experts on such or such specific problem. One of the hot issues right now are the global studies amongst others on the Modern Movement and presenting, if possible, tentative lists for protection or other special treatment.

ICOMOS' International Scientific Committees participate in this process and collaboration is sought with other bodies, specialised in the field concerned. Forms of such collaboration exists in the field of photogrammetry, historic gardens and industrial heritage.

And it is in this context that ICOMOS invites DOCOMOMO to investigate the possibility of such collaboration with ICOMOS.

Besides these reasons, based on the content of our similar objectives and working programme, I have another, down to earth reason for pleading for this collaboration.

Our society is becoming more and more complex. Legal protection of the individual, growing democracy with growing demands on controlling the public funds etc. lead unavoidably to growing bureaucracy, in spite of decentralisation and privatisation.

Politicians and civil servants become more and more trapped in spider webs of regulations, norms etc.

This is also very threatening to the cultural heritage because not only the interest of the public but especially the 'proper authorities', as mentioned in the DOCOMOMO constitution, are of the utmost importance.

And in this respect it is important that the non-political forces close ranks and present the common interest as strongly and as coordinated as possible because, because... and I am not sarcastic or cynical, because it is a fiction to think that correctly put and scientifically founded arguments do the job. It is also a matter of 'power-play'; to impress as a lobby and, again, for that we need each other.

And, as you know, people who need each other are the luckiest people in the world; so, I am quite confident that my proposal on behalf of ICOMOS will benefit us both.

Even though the arguments used in the architectural movement are not the main topic of this DOCOMOMO conference, it might be a good thing to point out a few aspects of the Bauhaus.

The Bauhaus played an important role in the development of architecture. It created new approaches which later turned out to be the main paths into the future. It also followed a number of sidelines which did not lead into the future. These, too, were important, and all helped to develop a new consciousness.

The Bauhaus perception of society in general, and of architecture and sculpture in particular, was closely related to trends in other countries, such as 'De Stijl' in Holland in 1917. These demonstrated a new awareness of space and life, with plastic effects in design, a transparent cursoriness, a transcendence of interior rooms and outside spaces, a new arrangement of windows, balconies, etc.

Attempts were made to reduce building costs through industrialization. One can see the first examples of the search to match architectural design to technological and economic developments in construction.

Hannes Meyer, who was in charge of the department of architecture in Dessau, thus expressed his philosophy in 1928: 'All things in this world are a product of the formula 'function multiplied by economy' ... Building is a biological process. Building is not an aesthetic process ... Architecture has no right to exist when the design springs from emotion. Architecture as a 'continuation of tradition' means being a driving force in building history ... The new building which is assembled dry is an industrial product and, as such, the work of experts: economists, statisticians, hygienists, climatologists, business managers, standardization engineers, heating engineers ... The architect? ... used to be an artist and becomes an expert in organization ... Building is merely organization - social, technical, economic, psychological organization.'

These were important aspects for the future, even though many required second thought. There was a beginning, and there were positive developments. The philosophy also had a number of gaps which have created confusion to this day. I have in mind formalism.

It is basic to architecture to find a synthesis between an object and the means needed to achieve it. The means should be rational, and the structure of a building should be characteristic of the building itself. The aim is man's well being, rational and emotional.

If these architectural guidelines are not observed, there is a desire to add something to the design which leads to formalism.

Examples -the housing estate at Dessau-Törten by Walter Gropius (1927). Disc-like structures apparently functioning from bottom to top. -the German Pavilion in Barcelona by Mies van der Rohe (1929). The structure hardly influences the design.

The big confusion in the eyes of many is that 'New Building' is all about right angles, lots of glass and white colour.

I see all the artistic efforts of the Bauhaus, and especially the work of Hannes Meyer and his department of architecture, as something 'in the making'.

The success will depend on the cultural level of society.

The family council had gathered in Hanover and decided that 'if you want to study at this unknown and seemingly mad institute we won't pay a penny toward it.'

That was reason enough for me to go to Dessau at once, two months before the Bauhaus buildings opened. The bare shell of the building on an open field gave me a vague notion that it would organize space in unusual ways. But while I was trying to understand its interior, the building began to sound like a strange and wonderfully rhythmical work of music of a kind I had never heard before. Gradually, the entire concrete structure turned into a resonance box, leaving me fascinated by this harmony of space and sound.

The encounter with Gropius was equally surprising. He addressed people on the same footing and asked what their wishes and suggestions were. I immediately noticed that this was the very thing I had not found at other institutes - the possible effect of one's own individuality in a community.

Only later when I worked for one year as administrator of the project did I learn about the difficult conditions in which this structure had been built. They included a very tight budget, erection by three companies which had never before used reinforced concrete on such a large scale, and a supervising authority which, out of fear, imposed new requirements all the time. Despite a number of risky experiments and small mistakes it is amazing how this embodiment of a new period which radically broke with past architectural theory came into being at the time. It took half a century to overcome the stubbornness with which our society clung to conventional symbols before this convincing revolutionary building was erected. It represented a definite break with romantic eclecticism and revived traditions which had existed before the Renaissance period inspired architects. In the enthusiastic drive to implement 'contemporary' ideas the fact was, however, overlooked that the standard applied to 'international architecture' was purely that of the western world. The necessary regional differentiation was only achieved after a critical review had been conducted particularly by Hugo Häring in contrast to Le Corbusier.

Radical revolutionary action which assesses and identifies new necessities finds a response in questions such as these: Was the advent of the machine and industrial production, as opposed to a civilization based on crafts and farming, essential enough to justify a total rejection of the images of eclecticism (including their destruction)? Or do we need transitional zones (such as postmodernism)? What allowance must be made for 'pre-modernism', or for the 'quiet modernism' as Manfred Sack has called it that is now being demonstrated in Frankfurt? Social revolution plays an important role here which is often overlooked by pre and post-modernists.

This leads to the next question: Did the first phase which may be described as 'constructivism' and is reflected in the buildings in Dessau result from a domination of rationalism (as advocated in an extreme form by Otl Aicher), or did it stem from the systematic adoption of new symbols? Or do we see 'functionalism' in the full sense only in the second phase, 'organic building' as practiced by Scharoun, Aalto, Häring, Erskin and, partly, Hannes Meyer?

There can be no doubt that the eclecticism inherent in a movement has in many cases done it great damage and all but removed its positive effects on the general public. This happened when Art Nouveau was imitated as a fashion (an extension which my grandfather called 'entrails style').

Much greater damage has been wrought, and is still being done, by those eclectic elements of 'modernism' which have given investors the great idea to build without architecture because architects think of themselves as superfluous. The only yardstick will then be profitability as the investor defines it. On the other hand, people have replied to this with the thesis of a new formalism saying that 'everything is architecture'.

In order to avoid hazy formulations here we should, like Adolf Loos, strike the word 'architecture' from our vocabulary completely. Architecture was tied to an eclectic outlook and sounds 'outlandish' to the general public in our region. Loos uses 'space structure' as a neutral term. Let me extend this concept by saying that when the right dimensions are used it becomes 'space design' which in turn must be of a specific quality to make it 'space art'.

It is often a problem to implement a major requirement - that a structure should adapt to the built-up environment. But we need not give up building in our time as a compromise if we react to what is already there by adopting its proportions or, possibly, creating a contrast to it. In each case we would be continuing space formation.

I believe that only the first stage of the Berlin Law should apply to the preservation of monuments. Changes to details could be made as technology and the use of the monument advance. I have also clearly opposed the erection of a tall building once designed by Mies van der Rohe and have reservations against the possible reconstruction of historical buildings which date back to Schinkel, Schlüter and Knobelsdorf.

As regards the buildings in Dessau, the 'Meisterhaussiedlung' could do with deciduous trees to fill in the space, and something along these lines could also be done in Törten. I could even imagine a supplement in the form of the atrium buildings designed at the Bauhaus by Hilberseimer because these have qualities which are widely unknown to this day.

I have tried to be short.

In all our thinking we need to give priority to quality and the typical character of individuals or regions. 'Individuality' requires comprehensible proportions and is a question not only of outward appearance but also of clearly structuring and dimensioning buildings for cities and landscapes. It also has to do with economic and even political organization.

Let me add an important comment by Wolfgang Pehnt who said that 'at the time too much of an impatient desire for harmony prevailed at the Bauhaus.' Let us not abandon this desire but find the necessary patience required by complicated processes in planning and building today. Pehnt's appeal to make a 'start at modesty' is a condition for another phase of 'New Building' to begin. This will make the Bauhaus concept not a thing of the past but instead a hope for perfection and realization in future. Modesty for use means, among other things, finding the right measure to counteract the present trends toward fashion and excess.

Think big is the slogan of the day but we should finally make up our minds and find what Schumacher has found, namely that 'small is more'.

In this sense designing interior spaces is not only beautiful but a question of survival.

KEYNOTE LECTURES



Prof. Hubert-Jan Henket



Prof. Dr. Rolf Kuhn

Some proposals for the future of DOCOMOMO

Quite a few things have happened since we officially inaugurated DOCOMOMO two years ago in Eindhoven. I will mention but a few results.

- Over 70 articles were written in magazines and newspapers in a variety of countries about the birth of DOCOMOMO and its first conference in Eindhoven.

Even Louis Hellman devoted a cartoon to it.

- The international watchdog network of DOCOMOMO proved to be effective. Actions to save the Döcker Haus plot in the Weißenhofsiedlung, and the Narkomfin building by Ginsburg in Moscow were started, as well as actions for the Aalto Library in Viipuri, the Eileen Gray furniture, the Laurentzen Airterminal in Denmark, the Bergpolderflat in Rotterdam and the FENIX building in Poland.

- We welcomed 9 new countries in our organisation.

- Particularly Poland, Czechoslovakia, Britain, France, Italy and the Netherlands organised several interesting DOCOMOMO activities, such as conferences, exhibitions, etc.

- 15 countries have taken the task to form a national register of MoMo architecture.

- The Newsletter has become a substantial magazine under the editorship of Wessel de Jonge, with many unexpected and interesting contributions from all over the world.

- And in response to the call for papers for this conference at the Bauhaus over 80 papers were received, of which 48 will be presented to you in the next few days.

Altogether, DOCOMOMO has proved to be a viable and active organisation in the first two years of its existence. But at the start of this conference, as the chairman of DOCOMOMO, I would like to present to you some proposals for the future of DOCOMOMO in general and for the next two years in particular. I do this at this moment in the conference, to give every one of us and every country the opportunity to discuss these proposals in the course of the conference, so that we can come to some mutually agreeable decisions in the Council Meeting on Friday afternoon.

Let me begin with reminding you of the aims of DOCOMOMO. DOCOMOMO is a network of those interested in the architecture of the Modern Movement with the intention

-to stimulate public awareness of the importance of the Modern Movement;

-to stimulate official bodies in documenting and conserving important buildings, sites and neighbourhoods of the Modern Movement;

-to act as a watchdog regarding important MoMo buildings;

-to develop and exchange knowledge and expertise in documenting and conserving buildings and neighbourhoods.

Register

In order to fulfil these aims we decided at the first DOCOMOMO conference that the formation of national registers of the important MoMo buildings should be our first priority. Only with the help of a proper register do we know what we are actually talking about, can we come to priorities in watchdog and legal actions, and can we come to priorities as regards documentation and conservation activities, carried out by official research and conservation bodies.

In order to come to a proper blueprint for a register of MoMo buildings, we should be able to define what to our mind the Modern Movement is and we should agree on a proper structure for the register. In the Netherlands DOCOMOMO Working Party we came to the following preliminary definition: 'the Modern Movement might be described as a spiritual as well as an aesthetic attitude. Its principles were to seek individual development and social improvement through a rational and technological approach in architecture and design. Consideration for the function of spaces, economy in the use of materials, construction and production, and the meaning of form were approached as an integrated whole'.

One might rightly argue whether this is a definition of the Modern Movement as a movement or a definition of good architecture as an attitude in general. To my mind, they are almost synonymous. And for those of us who remember the last ten minutes of the council Meeting in Eindhoven, two years ago, that was exactly the reason why we witnessed a split in approach amongst the Council members. Some of us consider the Modern Movement as a cultural movement, others not only as a movement, but also an attitude which can be of importance today and in the future. Although, as your chairman, I will not take a position at this moment, I would like to recommend to you that we discuss this possible difference in approach during this conference, because it might have many influences, not in the least on the composition of our registers.

As regards the structure of a register, I would like to put to you the following ideas. To my mind a register consists of three principle dimensions.

The first dimension is formed by the factor time. In other words in which period did the Modern Movement play an important role in a country? There are two aspects to this question. One is that it differs from country to country. The second is that people, who tend to see the Modern Movement just as a movement, are rather exact in their description of the proper period, whereas those who consider the Modern Movement as an attitude tend to elongate the period on either end. Let me give you some examples. The period for MoMo in Germany is approx. from 1923 till 1933, in Holland from 1923 till 1940 and in Argentina from 1930 till 1950. But is it? What about Berlage for example in the Netherlands in his pre-1920 period, or Ernö Goldfinger in Britain after the second World War. I don't have the answer, I just establish a fact.

The second dimension is formed by the building concerned as a representation of the essence of the movement. For example the Schröder-house by Gerrit Rietveld is considered a true example of 'De Stijl', whereas the Narkomfin building by Ginzburg in Moscow, the Bauhaus by Gropius or the Van Nelle factory in Rotterdam by Van der Vlugt are seen as true representations of the Modern Movement.

The third dimension is formed by the function of a building as a representation of the social and cultural values of an era. For example social and collective housing, factories and sanatoria are in most countries more representative than churches, palaces or mansions.

As the examples show, the constraints within which these three dimensions operate will vary from country to country. However these differences are no problem at all as long as the choices for the national registers, as regards the three dimensions, are properly mentioned and clarified.

Besides clarifying the three dimensions it is essential to come to some priorities regarding the importance of a building. If you don't introduce some kind of priority you might spend too much time and effort on a relatively unimportant building as compared to one of your more important ones. Also, if you don't introduce priorities, you might find yourself responding to local action groups in the same way. And before you know you might rightly be considered a proper Don Quixote by the official institutions.

This implies that categories have to be introduced. For example a top category consisting of the top five or ten buildings in a country. These buildings should be restored to their original state with a minimum of concessions, besides they should be documented. Then a second category consisting of say 20, or 30 important MoMo buildings in a country which should be conserved. But the restorations might be carried out in a more pragmatic though architecturally outstanding and fitting way. Besides, these buildings should be documented as well. And finally a third category could be introduced for which conservation is not strictly necessary, but for which at least a good documentation is required.

On Friday, 15 countries will present their provisional national register. In the two years to come the remaining countries should make their register. I would like to propose that the countries who have made a register already should improve the description of the three dimensions I mentioned before i.e.: clarification of the period concerned, the choice of buildings and the types of function. Also priorities or categories should be introduced. Together with this work, I think it is necessary to come to an international register consisting of the most important MoMo buildings in the world. This could be of benefit to the countries concerned as well as to international bodies such as ICOMOS. I therefore propose to form an international DOCOMOMO specialist committee for the international Modern Movement register. Such a specialist committee could consist of say four leading specialists of registers from different DOCOMOMO countries.

Technology

The second priority for the next few years, to my mind, is to concentrate on the technology involved in restoring MoMo buildings. Since the use of non-traditional materials and the use of innovative constructions are characteristic for MoMo buildings and because current standards of comfort as well as energy conservation, often clash with the technological concept of these buildings, we should do more research and exchange more information about restoration technology of MoMo buildings. Therefore I also propose the formation of an international specialist committee for MoMo technology. Wessel de Jonge, in his paper, will present some proposals in more detail on technology.

Education

And then there is education. If we are serious about safeguarding the MoMo heritage for the future, this can only be done if

the next generations of architects and architectural historians are interested in the Modern Movement. Although some exchanges of students and some ad hoc initiatives to cooperate in research projects have taken place since the first conference, nothing structurally has happened in this field as yet. Therefore I also propose to you the formation of an international specialist committee on education. Whether we can occupy all these three committees I don't know as yet. It might be partly dependent on the next item that I would like to present to you, being the next conference.

Next conference

During the course of this conference we should make up our mind which will be the host country for the Third International DOCOMOMO Conference in 1994. As you might remember I have sent all DOCOMOMO countries a letter in March of this year to ask which country would be willing to organise the Third International DOCOMOMO Conference. I am pleased to announce that Italy as well as Great Britain have offered to organise the next conference. Italy is proposing to adopt technology as the main item for the next conference and Britain is proposing Education as the leading topic. At the Council Meeting we will have to come to a decision.

A more effective structure

I mentioned already that many positive things have happened since we saw each other at the first conference in 1990. However, at the DOCOMOMO International Secretariat, Wessel de Jonge and I are experiencing that most countries wait for our instructions and directives before they come to action. Although this might be very polite, it is not really how we envisage a modern and democratic organisation to operate. Besides, in many aspects we haven't got the expertise, whereas others in the DOCOMOMO network are extremely equipped to come to appropriate proposals. Therefore, as I mentioned earlier, we suggest a few additions to our operational structure. But before I do that, let me remind you first of the basic set up as we operate right now.

DOCOMOMO is an international network with national working parties in a range of countries. These national working parties operate as they think fit. Some countries have given their working party a judicial basis by forming a society or by forming a foundation. Other countries have not done that at all, they just remain an ad hoc group of interested people prepared to do some work. Besides there are countries which haven't a working party as yet, but only a representative. To us at DOCOMOMO International this is all perfect. You just do your things at home as you think fit. Where you get your money from to organise particular activities is up to you as well.

Every country is allowed to send one representative to the DOCOMOMO Council Meeting which is held biannually on the last day of the international conference. Who is sent to the council as national representative is up to the members of the country concerned. Every representative has one vote. Decisions are taken by majority vote i.e. 50% plus one vote. The Council Meeting decides the policy for the next two years and decides who will form the DOCOMOMO Executive Committee. The DOCOMOMO Executive Committee consists of a president, an international secretary and a member. The member represents the host country for the next international conference. The president and the secretary run the International secretariat of DOCOMOMO.

And finally there is the DOCOMOMO Foundation. This is a legal institution consisting of the president and secretary of DOCOMOMO International and an honorary treasurer who administers the finances of the International DOCOMOMO Secretariat. The treasurer at the moment, I am very pleased to announce, is Mr. Michael Drabbe, a member of the board of ABN AMRO, the largest Dutch banking firm.

So far so good. As I mentioned before, if we want to become more efficient at an international level, more work should be done internationally by the experts concerned. Therefore small international specialist committees should be formed.

I am proposing to you to form a specialist committee on registers, possibly one on technology and possibly one on education. In order to keep such a specialist committee operational, a committee shouldn't consist of more than three members from different countries as well as a chairman. The committee prepares proposals to be presented at the next international conference. The chairman of a committee carries full responsibility for time keeping, communication, content and strategy.

The DOCOMOMO Newsletter could be the platform to communicate the ideas of a specialist committee to others in the international DOCOMOMO network, via a special column devoted to the subject.

Regarding the specialist committee on registers, proposals should be worked out in the Documentation and Registration session

of tomorrow morning. Regarding the committee on technology this could be done in session 4 tomorrow afternoon. And for those of you who are interested in the education committee may I ask to get in touch with Catherine Cooke of Great Britain.

May I invite you to discuss whether you agree with these international specialist committees, and if you are prepared to contribute to one of these specialists committees in the next two years. May I also ask you to let the International Secretariat know if you like to join one of these committees at the latest on Thursday afternoon at 6 o'clock, so that we can prepare proper proposals for the Council Meeting.

Another item I would like your opinion on is the possible cooperation with ICOMOS, in order to come to a proper decision at the Council Meeting. The director of ICOMOS in Paris, Mr. L. van Nispen tot Sevenaer has approached me whether DOCOMOMO would be interested in cooperating with ICOMOS in matters concerning buildings and neighbourhoods of the Modern Movement. This could be done by making our international and national registers available to ICOMOS, by providing specialist advice on MoMo matters and vice versa by being able to use ICOMOS facilities for DOCOMOMO purposes. I agreed with Mr. Van Nispen that I will ask your opinion in the Council Meeting on this matter in general. In the course of this conference I will hand to you a formal proposal on our cooperation with ICOMOS, so that you might discuss it in your national working party before the Council Meeting.

And finally, the International Secretariat will confront you with some proposals about financing. Firstly there is the DOCOMOMO Newsletter. The response to our call for subscription to the Newsletter was very poor. To date the Newsletter was financed completely by the International Secretariat and with the help of our sponsor Crittall Windows. This luxurious position does not exist any longer as from Newsletter 7. This implies that if we don't get financial aid, Newsletter 8 will be reduced to a simple leaflet. I am sure that is neither what you want, nor we. May I invite your ideas on this matter.

We will also confront you with some suggestions regarding the financing of the International Secretariat, in future. I would like to ask all national representatives to meet me tonight at 20.³⁰ h to discuss some ideas.

DOCOMOMO friends, it is wonderful to be together again, it is great what many of you have done in the past two years at a national level. I sincerely hope we can come to a similar effort internationally in the next two years. For that we need your co-operation and your active help. Stimulated by our common love for MoMo buildings and their designers, and judging from what has happened so far I am sure that together we will be successful.

Don't forget three years ago the name DOCOMOMO wasn't even invented, and now we are enjoying our second international conference, in the MoMo cradle, the Bauhaus.

Thank you.

'Social-cultural development of the Gropius Estate at Dessau-Törten'

This paper was prepared with the assistance of Dr. Harald Kegler (concerning the regional and cultural historical aspects) and is in part based on sociological research by students of the Martin Luther University, Halle-Wittenberg.

retained its differences of character. Apart from the city-industry links that developed, large, contiguous areas of a clearly rural, natural character survived, the cultural historical highpoint of which was the Dessau-Wörlitz garden realm but which by far was not limited to this.

The ever expanding use of land for new lignite mines and for military purposes reduced and devalued the rural-natural characteristics of the area. Fortunately, as a result of recent developments, both trends are being reversed and this offers a wonderful and most interesting opportunity to upgrade the rural-natural development of the region as a whole.

In connection with such developments and which are embodied in our "Industrial Garden Realm" project - an exemplary model of an attempt at the necessary symbiosis of industry and nature - we see Dessau-Törten as being of special interest and as having development potential.

For us Törten is not only of singular importance and an example of the work of the Bauhaus, it is more a part of, and a special feature of, an estate landscape. This latter is characterized by: 1. the housing estate being an island (industry-housing-layouts) between coal mines and real nature (as compensating factor for industry) and 2. an attempt at new forms of the estate. a) in the sense of industrial urbanisation (to which Törten belongs) as a solution to the housing problem and b) in the sense of a life style drawn from nature (to which belong the self-contained estates which appeared at the same time as Törten).

Up to the present day one third of the inhabitants of our example, the region Dessau-Wittenberg-Bitterfeld, live on estates and it is a positive advantage of the region and its cultural historical characteristics that, almost 'museum-like', the whole spectrum of inter-war architectural city planning concepts are to be found here, these being characterized by concepts of the protection of the home land, whether customary city planning formulated through expressionist or classical means, or through a practical modern form, as is the case with 'new building'.

As a result of the establishment of the Bauhaus in Dessau, the region was also of interest for experiment-minded architects, from Salvisberg through Migge, Leopold Fischer of the Loos School, to the Bauhaus architects themselves.

The same was true of the spectrum of the forms of property and of ownership, these too being greatly diversified from industrial property: Piesteritz (housing societies) Bitterfeld/Wolfen (co-operatives) terraced houses linked by balcony, -self-help groups: in part Dessau-Hohe Lache, -estate associations: Dessau-Ziebigk, -through private property: Dessau-Törten

II. In order to make clear the special features of Dessau-Törten, and for reasons of comparison, representative documentation is here provided.

a) the works estates at Piesteritz (1916-19) and Zschornowitz (1915-20) which appeared between 1915 and 1920 and which with their text-book-like realization of the principles of the art of modern city planning (following Sitte and Brinkmann) as well as through estates laid-out through the borrowing of the garden city (following Howard and Kampffmeyer), could be regarded as a model for the cultural composition of urban living.

b) the self-contained estate. Between 1924 and 1930 Leopold Fischer and Lebrecht Migge (architect and garden architect respectively) designed several estates in the Dessau-Bernburg area, in Dessau-Ziebigk, Kühnau, Köthen and Zerbst as well as in Bernburg. This was an attempt at the realization of an overall concept embracing estate architecture and garden architecture in the sense of ecologically compact circles. As a result (also with regard to materials) a locally related building form and design was aspired to. The craftsman-like rather than the industrial way of building complemented a functional form lacking ornamentation.

III. Now to the Törten Estate itself, which in essentials, appeared between 1926 and 1928, following an overall plan by

I. Dessau-Törten in the south of Dessau belongs to a region, of which in the first quarter of our Century, industry was the characteristic feature. With the settling of industry, a concentration of population followed. In conjunction with this, a diversified estate landscape was to emerge in the industrial area of Middle Germany.

In the area on which we are concentrating, Dessau-Wittenberg-Bitterfeld, particularly dynamic development occurred in the 1920s (first large lignite (soft coal) power station at Zschornowitz, Junkers airplane plant in Dessau, in the chemical industry the first synthetic fiber in Wolfen-Bitterfeld and fertilizer at Wittenberg-Piesteritz).

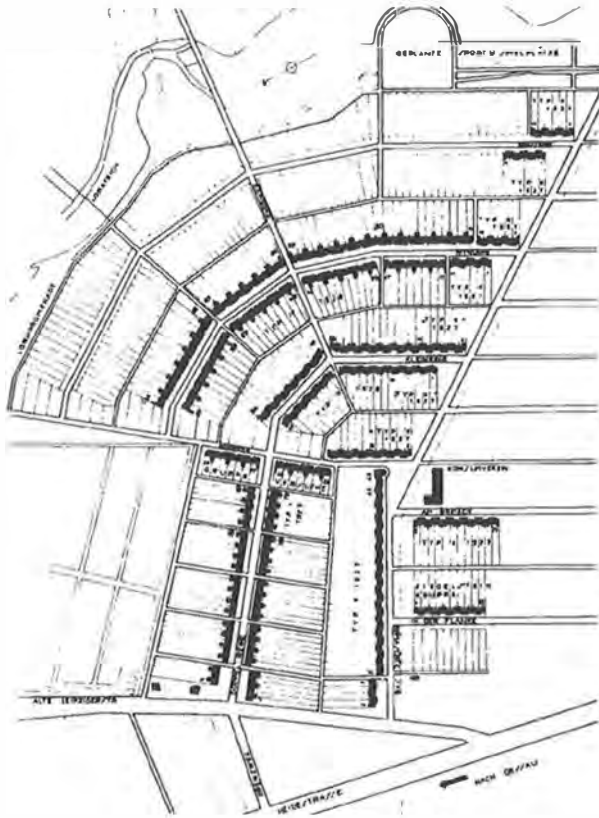
It was at this time that the Bauhaus moved from Weimar to this region, to Dessau. In the meantime, and in contrast to the other area of industrial concentration in Germany, the Ruhr, the region

Gropius as well as in part being characteristic of Gropius and L. Fischer. The last buildings, on the Großring, appeared in the 1930's.

In addition a few pictorial comparisons of what was planned and what actually built as well as the original and present condition are provided.

Törten was a symbol of a modern style of living for which industrialized, standardized and electrified were key words.

Nevertheless, Törten corresponded to a regionally typical model of a semi-rural estate, including the planned keeping of small livestock, as well as the garden, which in addition to providing fruits and vegetables would in summer most meet the family's special requirements.



Lageplan der Siedlung Dessau-Törten.

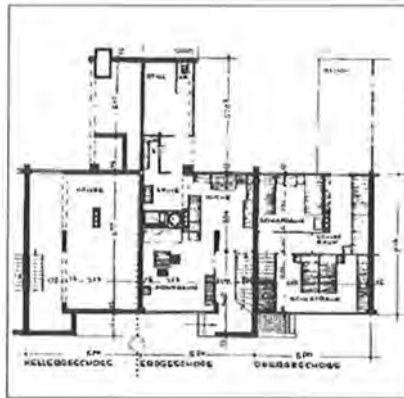
The social situation at back of the Törten estate was the poor provision of housing property in the form of terraced houses for workers, clerks and others that did not belong to the upper strata of Dessau citizenry, this being due to the prospering Junkers plant.

As a result, the estimated minimum cost stood at the center of all decisions. Even so Gropius wanted to try out new building forms, methods and techniques, whereby certain shortcomings and mistakes were unavoidable. On top of this, came the problem of increasing building and material costs, which resulted from the general wave of price increases at the time. Therefore, in the type IV house from the third building phase, the living area was reduced from the original ca. 70 sq. m. to 57 sq. m.

As it became clear, with the completion of the Type II houses,



Reihenhaus Typ I.1.



Grundriss Typ I.2.



Spülküche.



Wohnzimmer.

that cost calculations had been falsely assessed, the selling price was raised from 9,500 RM to 10,600 RM, the result being massive protests on behalf of the purchasers. On the whole, many of the minutes of the city council and newspaper articles indicate that both the Bauhaus as an institution and the experimental site in Dessau-Törten were very controversial, as a result of which slanderous and polemical attacks were the order of the day. Two examples from the then dispute. First, a most relevant, unbiased report from the 'Anhaltischen Nachrichten' of 1926, with the heading 'An Estate of Concrete Houses'.

'Yesterday afternoon the municipal authorities invited the building committee, the city councillors and the press to inspect the estate houses between the old Leipziger Straße and Törten. It is planned to build sixty estate houses; as yet about eight have been completed in carcass form. The head of the Dessau Bauhaus, Herr Gropius, explained the building plans to those attending and led them around the extensive building site.

He explained that the building materials would be produced at the building site; eight building stone machines were in use, the ceiling beams of ferro-concrete were so manufactured that they could be guided on tracks direct to the building crane. The workers are now so familiar with the material, their manipulation running so smoothly that at present it is always possible to erect two houses to the carcass stage within three days.

A final judgement regarding the estate houses can first be made when they are completed, something which, according to Herr Gropius' term of 'fabrication' time will not be long delayed. However, so much one can say already: despite the usage of the newest methods and well organized assembly-line work, the buildings will not be cheaper, their appearance not more attractive than buildings in older styles. The eye must first adapt itself to the strongly emphasized realism...'

And now a polemical account of things from the 'Anhalter Woche' of 1929 with the headline 'The Dog Kennels in the Neighborhood of Dessau-Törten'.

'The Dog Kennels in the neighbourhood of Dessau-Törten provide the testing ground for so-called new 'building research results', as propagated by the now departed Herr Gropius.

As laymen, we are all convinced that such buildings lack justification even as emergency constructions and the expert condemns the whole building site as playing games, carried out with the money of the hard-pressed tax-payer. That a city such as Dessau treats itself to a Bauhaus is surely abominable, that this same city must in addition tolerate the blemish of the Törten estate, really is the limit...

That the Herr Gropius dwelling houses are a fiasco artistically is clearly to be seen from the illustrations which speak out with expressive language. Especially if one considers the wide-ranging repair work being carried out today. A really nice example for a research institution, to which we in Dessau have committed ourselves for another five years.

As far as attempts at rationalizing are concerned, we are presented with a picture providing the best of object lessons, where fourteen workers erect a small stable wall, a 'Pumice stone concrete large unit', when a brick wall would have required a fraction of the number.'

'Every further continuation of such attempts makes mockery of science and business' was the conclusion of the writer of the article.

I should like to add here the opinions of one of the residents who has lived in a Type II house on the Kleinring in Törten since 1928. This discussion was taken down during a sociological analysis that we carried out with students from the University of Halle last year and which after evaluating the results appears to be typical.

Question: What were your reasons for moving onto the Gropius estate?

Answer: To own our own house was not the decisive factor inasmuch as the family already had one. Naturally, they didn't want to worsen their situation. Here the houses came into being under favorable circumstances. The family moved from outside to Dessau because father had got a job in the Junkers hot-water heater works. In general many young people moved to Dessau because there was work here: Junkers, RAW (railroad repair works). All our family worked at Junkers.

Question: What sort of people lived on the estate?

Answer: The people who moved here were perhaps not so conservative in their values. At least they accepted the houses, which were not built in the accepted way. Most were skilled workers, no small factory workers. People who earned a bit more. For them the estate was right.

Question: How did you manage to finance the purchase of the house?

Answer: This was possible through the payment of the mortgage in installments. The house was very cheap. For Junkers workers the company had advanced them 2.000 RM, which was then deducted from their wages at a monthly rate of 15 RM. After 1945 many older people were relieved of having to pay back the mortgage. The value of the houses rose sharply once more as did requests for them.

Question: What changes were made to the houses?

Answer: At first most altered the windows. In connection with this the front facade was often newly done as a raised brick wall. Reconstruction of the heating system was also one of the first changes. This was in the center of the room, installed to the

chimney and heated insufficiently. The house was so constructed that upstairs only 18° C could be reached because these rooms had been planned as bedrooms. But we had the living rooms upstairs and needed another sort of heating. In the 30s we had the outside toilet altered. The balcony, which was over the toilet and the stall we had turned into a room. As a result the space upstairs was expanded a bit. The balcony was not good to use anyway. The sun shone in without protection and in summer it was very hot. Sometimes four people lived under the roof. We never had subtenants. Recently the house was isolated from the outside. At the same time the building was newly strengthened. The corners slipped downwards. There were cracks.

Question: How did you use the stall and garden?

Answer: The yard played an important role. Basically I spent the whole summer playing in the yard. It was shaded and cool. The disposition of the house was totally sensible. We used the garden to supply ourselves, harvesting vegetables and fruit. The chickens were first dispensed with in the 50's. We used the compost from the lavatory in the garden. Even that was not enough for the total area of 380 sq.m.

Question: What were provision facilities like on the estate?

Answer: The Co-operative was important for us. Until just before the war there was a small café there too. Foodstuffs and industrial wares were sold. The Co-op wasn't purely a source of provisions, it had an idealistic meaning too. You were a member, it was a form of self-determination, a bit of workers awareness, workers consciousness. The Co-op was the expression of a view of the world. We regret very much that it will close. On the Kleinring was the Umlauf family grocery. A few have made themselves independent. The shoemaker and the hairdresser are the result of private enterprise.

Question: What were transport facilities like?

Answer: Originally the tram went only as far as the cemetery. It was extended during the Nazi period as far as the Innsbrucker Straße and then to where the terminus is today. The main means of transport was the bicycle.

Question: Was there any sort of estate association?

Answer: There was an estate association which was concerned with things like the supplying of turf for the lavatories. All residents were certainly members, because it could only bring advantages.

Question: Was there a distinct form of community life on the estate?

Answer: There was the model orchard by the Fieger house. Often a few of those from the Gropius estate met there for a social get together. The parish didn't play such a big role. There was a Kindergarten in the church. Its still there. With the present neighbours you have to try to understand each other because you live so directly wall to wall. You have to agree to give and take a bit.

Question: Did the residents know they were living in a Bauhaus building?

Answer: Few bothered as far as the Bauhaus was concerned. Most were more bothered with their own problems. Here they had their own house, this was the decisive factor. The Bauhaus, for its part, had done nothing to get nearer to the people of Dessau. As far as I'm concerned I'm happy to live in a house, the origins of which I know. The Bauhaus was already very interesting for me.

What follows is a summary of this sociological analysis, which also included the results of a part analysis carried out under the leadership of Michael Siebenbrodt in 1980. The students investigated the experiences and problems of the residents with their houses. A differentiation was made between problems resulting from the experimental nature of the building as well as the minimal financial means and those stemming from the form and function as conceived. The latter were on the one hand the warm air heating which did not come up to the residents expectations in the second phase of construction, the inadequate slope of the roof, the roofing itself which in part leaked, cracking in the house facades and so on. On the other hand there were those constructional alterations by the residents which were caused by lack of acceptance and the truly problematical functionality respectively.

It was clear that the window arrangement did not meet with the approval of the residents. Only a short time after completion hardly any of the houses retained the original windows. The simple facade design of the houses was also in part not accepted. Above all the design of the areas around the entrance was modified in various ways. The setting-up of the upper rooms as bedroom or living room presented difficulties in particular with regard to the maximum heating of 18° C as well as the proximity of the kitchen and toilet. Generally, the interiors of the houses were most modified, something their construction made easy. The use of the stall and garden on the whole corresponded to that conceived for them. The lay-out of the access ways was looked at as being positive, the interesting contemporary after-effect of which is that the building of a garage at the end of the garden is possible, an opportunity taken by many. The garden also offered the opportunity of making contact with the neighbours and of swapping information with them. From the interviews it became clear that the garden played a central role not only in the life of the individual but of the estate as a whole. The estate was conceived as being semirural. At the beginning it stood, so to speak, in an open field. The tram went only as far as the cemetery. The nearest place of refreshment was probably the 'Bierkrug' in the Heidestraße, about thirty minutes on foot, later came the 'Obstmustergarten' by the Fieger house. On the estate itself there was a baker and a small grocery store. Otherwise it was purely a housing estate.

The Co-operative, built in autumn 1928, not only stood in a central position geographically, it was also a center of communication, where residents met and talked and not least of membership of the Co-operative Society itself.

Of the 387 residents on the Törten estate listed in the 1930 address book, 297, that is 76%, were workers and clerks. In 1945 the number was still at 70%. The tendency in this period was a rise in the number of residents from 'higher professions' (mainly engineers).

The clearly discernable difference in the structure of the residents between 1930 and 1980 is the increase in the number of widows, pensioners and invalids, these rising from 6% in 1930 to 28% in 1980.

As result, today many houses are confronted with a new resident or a generation change. This process goes hand in hand with the great pressure for office and business premises in Dessau. Whereas the small grocery stores have declined in number in the last few years and months, the claim on estate houses by dealers in technical articles and especially by newly formed offices has grown enormously.

This information indicates how great is the pressure for modernization that is currently facing the Dessau-Törten estate. There is a danger that not only will the estate have a completely new profile but will no longer be purely a housing estate for workers and clerks but a 'representative estate' with a high proportion of business premises. Whilst it is positive that the city of Dessau has already enacted a 'Schedule for the Statute for the Preservation of the area of the Dessau-Törten Bauhaus Estate and the Balconied terraces', we would, however, gladly supplement the Preservation Statute with one for the total environment. Within the framework of its renewal project, the 'Industrial Garden Realm', the Dessau Bauhaus is active with advice and research and accompanying development for locations in this unique estate landscape, for model estates whether at Piesteritz, Zschornowitz or Ziebigk. Naturally, it feels itself to be co-responsible for the development of the Dessau-Törten estate. A visible indication of this is that we have acquired the 'Stahlhaus' designed by Paulick and Muche and a few weeks ago secured the means whereby the building can be restored by early 1993 and an information center for Dessau-Törten opened there. Further, the Dessau Bauhaus hosts a regional working party for estate restoration, in which representatives of the authorities, the curator of monuments, the housing associations, residents and others involved such as from the Ruhr as well as of our own institution participate. To restore the complete Törten estate to its original condition in a fashion similar to the 'Weißenhof Estate' is surely not possible (if only because of its size and the circumstances of ownership). Nor is it perhaps meaningful. My meaning is that the value of this monument lies directly in the visible worth of the joy of experimenting that was the Bauhaus of the twenties, in attempts to use new technical and design methods in order to react to social problems. As a result the unusual, sometimes the impossible, was aimed at or achieved. These attempts should give us the courage to react to the problems of our own day in similar fashion, unconventional, consequent and visionary, and - perhaps too through the historical Bauhaus - to depart from apparently signposted ways. Important would be:

1. The securing and preservation of the few still relatively original houses on the Kleinring as well as to endeavor to transfer a whole section of street into its original condition not only in order to quickly grasp and understand the development processes, especially the constructional and design, but also to make the residents sensible to the history and special nature of their houses and their estate.
2. Independent of our information center for residents and tourists, the Co-operative building shall eventually house an advice center for matters of building and design as well as for the social problems of the residents and the neighboring areas.
3. As already mentioned, the Preservation Statute should be expanded into one for the environment as a whole so as to cushion the social change and influence more effectively the design-functional consequences of this change, which originate from the form of social structure.
4. We would gladly consider the Törten estate within the context of the estate landscape of our region, especially in the south of Dessau, and so achieve an assemblage of experiences and a greater openness required for a necessary process of cultural renewal. So much for Dessau-Törten. I hope you will have understanding for me not having put the abundance of familiar ground plans and facade details, including the design concepts and the constructional methods that they were based on, in the center of my analysis and recommendations, choosing rather to use recent research undertakings relating to a cultural historical, sociological and regional process.

PLENARY SESSION



Jadwiga Urbanik,
Ben Rebel,
Ivor Richards,
Catherine Cooke.



Winfried Brenne,
Laura Tuominen,



Erhard Schütz,
Eva Rudberg,

Toward functional dwelling; success and failures

1. Background

Before the First World War little attention was given to the building of dwellings for the masses. Subsequently however quality in addition to quantity became a conscious architectural goal. Life, which after the War underwent a lot of changes, called for some parallel changes in the housing industry. An opinion concerning shaping of architecture which is determined by the laws of social development, especially by the laws of economics, social needs and changes in technology, became innovative and crucial.

After the First World War the patronage of architecture and the demands made on some architects changed. Not representative buildings but first of all houses, housing estates and whole cities for wide social masses were the most important in almost the whole interWar period.

So, after 1914 the leading architects of the younger generation broke with the past, accepting the age of machines and all it involved; that is, new materials, new forms, new problems. An architect started to design and build mainly for anonymous customers.

The German organization Werkbund faced a difficult challenge in building inexpensive and small flats as housing estates for a large population. Such programmes were essential for satisfying as quickly as possible housing needs in all countries affected by the First World War.

The Werkbund Exhibition Estates which

presented ideas and tendencies in architecture and technology, played an exceptional role in the history of contemporary housing. I only discuss the exhibition organized in the forms of experimental model housing estates because it seems that only those built and existing buildings could have an influence on the future generations of architects who quite soon, after World War II, had to face the same problem as their predecessors. The estates had been built in order to check the functional assumptions of the exhibition architecture. It was possible to visit them for some time, later on they were inhabited. Their aim was to introduce new possibilities in the housing industry and to present new types of popular, functional, small and inexpensive houses and flats.

Which new tendencies in housing presented during the exhibitions were and are still accepted in full? Which failed? It seems that the ideas introduced during the exhibitions were not commonly applied in the interWar period. The influence of the model housing estates on building activities, because of the economic crisis and World War II was shifted to the postWar period, after 1945.

All the housing estates were characterized by regional and national district features. Each time they were influenced by the situation in the Werkbund and its current leading tendencies. All of them were built during the 6 year period from 1927 to 1932, the time from the economic rise to the economic fall.

These were:

1. 1927 - 'Die Wohnung', Stuttgart - Weissenhof. 17 architects from 5 countries - The general plan was given by Mies van der Rohe. This

estate was the most important not because of being the first one but because of the variety of proposals presented there (detached, terraced and multi-family houses).

2. 1928 - 'Nový Dům', Brno. 8 architects from Brno and 1 from Prague - The general plan was given by Bohuslav Fuchs and Jaroslav Grunt (detached and terraced houses).

3. 1929 - 'Wohnung und Werkraum Ausstellung' (WUWA), Breslau. 11 Silesian architects - The general plan was given by Adolf Rading and Heinrich Lauterbach (detached, terraced and multi-family houses).

4. 1929 - 'Dammerstock', Karlsruhe. 10 German architects - The general plan was given by Walter Gropius and Otto Haesler (terraced and multi-family houses).

5. 1930 - 'Eglise' Estate, Basel. 13 Swiss architects or designing groups - The general plan was given by August Kunzel (terraced and multi-family houses).

6. 1931 - 'Neubühl', Zürich-Wollishofen. 7 Swiss architects - The general plan was given by Werner Moser (terraced and multi-family houses).

7. 1932 - 'Baba', Prague. 17 architects from Czechoslovakia and 1 Dutch architect - The general plan was given Pavel Janak (detached houses).

8. 1932 - Vienna - Lainz. 32 architects from 5 countries - The general plan was given by Josef Frank (detached and terraced houses).

The designers were not always given total creative freedom, as was the case in Stuttgart (where a flat roof was the only compulsory element) or in Breslau. In Brno and Prague the presented buildings were the result of compromise between an architect, investor and the future owner of the house. In Vienna the situation was different. Creation of a building suppressing the discrepancy between the architects and future inhabitants ideas was essential. In Karls-

ruhe, Basel and Zürich the architects were limited by the strict rules of the housing estate town planning. In Brno and Karlsruhe the architects had to take into account a lot of directions (Brno - a ground floor with necessary amenities, two residential floors, a flat roof with a terrace, built-in furniture, standardized windows and doors and a rational plan; Karlsruhe - standardized windows, flat roof, the same moulds, white plastered elevation, grey ground courses, uniform gardens, even doors in iron embrasures). Quite often the architects, not wanting to go bankrupt, abandoned many of the experiments applying only checked building methods and constructions. Such attitudes were influenced by the system of financing the building of housing estates.

That is why, all the examples cannot be treated as an independent, unlimited utterance of architects about a modern flat.

II. Aims of the exhibitions

New solutions for the dwelling plan (completely different from the hitherto model), looking for the most rational and economic materials and building techniques raised the problems which had to be investigated. Designers tried to achieve maximum results with minimal area and minimal resources. Also the problem of furnishing was the subject of special studies on the rational forms and accurate arrangement in a flat.

III. Review of tendencies in interWar dwellings

Let us try to look closer at the heritage of the twenties and thirties. The features of modern architecture of those times can be divided into three categories:

1. not accepted today,
2. implicitly accepted, that is, ideas, created in the twenties and commonly applied as the only possible, seem to be so obvious that we do not realize they have their origin in the interWar period, and the last category
3. totally accepted, being a part of the modern dwelling architecture canon, those which proved correct, consciously chosen from the other offers.

III. 1. New tendencies in housing estate planning

The radical break with the old heritage already appears in the town planning ideas. Because as Le Corbusier claimed there is no architecture without town planning, the model housing estates should be first looked at from this side. Credo of the up-to-date architects was as follows: 'Every man has got his right to the sun, space and verdure, which are essential for his life. A man should constantly be accompanied by these three elements. Town planning deprived of them is wicked'. This requirement was realized in almost all housing estates. They are much different from the old, gloomy tenement buildings characteristic for those times. However, their arrangement shows sometimes a completely accidental mixture of mass (Brno, Vienna, Breslau). Some tendencies towards fitting the sculpture of the earth's surface were visible. In Prague, the buildings are arranged chequer-wise and parallel to the slope which gives a good town view, in Zürich terraced houses are square with the slope which gives a wonderful lake and forest view.

In the Weissenhof estate Mies van der Rohe arranged the planned buildings cross-wise the slope in the form which now can be called 'surface sculpture'. This is a sequence of cuboidal blocks with terraces joining them. This very original idea, the first truly new arrangement, which was the first step to three dimensional town planning, partially had to be given up because of the local preferences and financial cuts (terraces were substituted by the conventional roads of access which disturbed the continuity of the surface sculpture).

The estates in Zürich and Basel were planned more strictly. But the most characteristic arrangement of housing estates of the interWar period is Gropius's arrangement in Karlsruhe which is called linear. Gropius paid a lot of attention to placing the estate in relation to the sides of the world and to the functionality of a flat arrangement.

An interWar critic wrote that 'Dividing

an area like a tailor and calling it town planning cannot be correct'¹. However, a lot of housing estates were built in that way, very often they were designed mechanically. They realized technical conditions and fulfilled financial needs - that is giving people a place to live.

The heritage of the twenties and thirties gave us the implicitly accepted barracks-like pattern of mass housing estates which however perfectly fitted the industrialized building methods. A change of scale which is visible between the estate in Karlsruhe and new housing estates of the postWar period is also very characteristic. Gropius's housing estate with few parallel houses can be accepted but a housing estate consisting of a dozen or so or several dozen blocks of flats becomes a labyrinth.

III 2. Imposition of a new model of social life

Imposition of a new model of social life became the next feature of interWar dwellings. A total change of the architect's profession was a characteristic of the Werkbund period. In that time an architect stopped depending on the customers and building firms. It was accepted that an architect takes a big part in shaping his own epoch. New technologies made it possible to duplicate this or that type of a flat or building that provided the beginning to housing of a social character and new architectonic ideas.

Architects trying to fit architecture to man, also tried to fit man to architecture. A method of analyzing human functions did not take into account the individual features of a man. A sober, well organized man fitted a rational interior of the functionalists. Everything that did not fit simple, hygienic interiors and was not up to date was eliminated from the range of his interests. Architects created an abstract idealized model of an ideal user of new architecture.

Some of the exhibition participants also tried to introduce a certain conception of social life in a multi-family dwelling, which can be composed in the motto:

social housing - community of tenants. Among them was Adolf Rading who in the WUMA estate introduced a multi-family tenement house. Tenants were not only dwellers but were also included in the entire organization of the community life. The principle area was to strengthen ties and loyalty among people. That was possible thanks to the space for common use: shops, laundries, storage for bicycles, carriages on the ground floor, workshops, reading rooms, social rooms, play rooms on every floor - two on each side of the corridor, ateliers, terraces-gardens on the roof-top. In the Soviet Union such housing-communities were called New Life Factories.

The concept of multi-level dwellings was considered untenable from the social point of view. Does anyone really believe in the goal of such intensive and forced community living?

'The greatest enemy of man especially when he seeks rest and peace' - a critic maintained before World War II².

The fact that the first three years saw much moving in and out attested to the dwellers' assessment. The Pessac housing estate in Bordeaux is an example of a complete failure of an architect who very authoritatively imposed his own ideas. Although this estate doesn't belong to the Werkbund estates, it illustrates in a perfect way the danger which is connected with introducing new ideas in life. No one was able to teach people how to organize their life in houses which were much different from the ones they had already got used to. The inauguration of the estate was in 1925; in 1929 it was settled and after some years it was already degraded. Some windows which allowed the exterior and interior space to penetrate were walled up to make place for the old, huge furniture, different sheds were built, wall-painting (polychromy) faded away or was simply painted. It was said that it was the ill-will of ordinary people not understanding great ideas, but maybe those great ideas didn't fit to the will of ordinary people. In the Pessac design the limit of perception and the changes of average man's behaviour were trans-

gressed. An architect put himself in the role of an arbiter. Isn't it a definite abuse to transgress his competence? Does an architect have a right to impose new architectonic ideas, imposing at the same time a new way of living in a flat? Isn't it a distortion of an architect's role. The evolution of architecture led to the dehumanization and, in a way, to the deviation of the architects profession. The designers too often tend to impose their subjective ideas and don't want to know the needs of their customers.

As recent years have proved, the imposing of some social life conceptions has chances. In some countries of Eastern Europe promoting today such building would be associated with the times when solutions of that kind were a reality but not created under the influence of modern movement ideas but a totalitarian way of thinking.

III. 3. New constructions

Exhibitions became sorts of laboratories where new constructions and materials were investigated. Technical progress, which caused the appearance of new steel-frame and ferro-concrete constructions in Stuttgart and Breslau and the attempts to use prefabrication in other estates, wasn't strongly marked.



Steel framed's construction of terraced house in 'WUMA' Werkbund Estate, architect E. Lange.

In Mies van der Rohe's block of flats in Stuttgart steel framework adapted to the new needs of house building was applied for the first time. Because the walls ceased being load-bearing walls, every floor could have a different projection arrangement. An inhabitant could change the arrangement of his dwelling area thanks to inner walls made from plywood which could be twisted to the ceiling. The outer curtain wall was as thick as half a brick. Wide and continuous rows of windows which made the inside of the building light were the only limiting factor. In 1927 building a block of flats was still more difficult than building a one family house. The steel framework of Mies van der Rohe gave the possibility of solving this problem. A similar solution was applied by A. Rading in Breslau. A steel framework allowed him to design 8 different flats on each floor.

When the Weissenhof housing estate was built, Le Corbusier formulated 5 rules of modern architecture, according to which a building should be designed and built (1. *house on columns*, 2. *free plan*, 3. *free elevation*, 4. *oblong windows*, 5. *terraces-gardens on the roof*). The five rules of Le Corbusier sum up all the research carried out by architects in different countries in the field of new construction and at the same time show the ways new materials like steel and ferro-concrete, being elementary for modern architecture, can be applied.

III. 4. New materials

Contrary to the new constructions, using new materials wasn't always successful. After a few years the first technical defects appeared. The new materials were not always properly used. The houses' experimental technology has not always stood the test of time. The design of flat roof tops with terraces and gardens in Rading's house in Breslau was considered particularly innovative. Unfortunately, after a short time cracks and water leakage appeared in the ceiling and walls because of poor roof insulation.

The first attempts at looking for new materials, failures apart, gave an

impulse for further research which resulted in new, now accepted and used, technologies and materials.

New constructions and materials and the trend towards classification and normalization (standardization) of building elements in order to prefabricate them and produce them, were to lower the costs of mass, serial building. Unfortunately that requirement wasn't realized anywhere.

New technologies in the process of experiment couldn't be cheap. The cost of buildings being the prototype for mass industrialized production, while the great building industry and house factories didn't exist, very often exceeded the average cost of building by means of traditional methods.

III. 5. New arrangement of a flat

The new arrangement of a flat shown in the Werkbund's estates was a new

step toward a contemporary, functional flat. An architect was forced to get to know the basic rules governing human life at home and to translate them into the language of architecture. How radical was the revaluation of the traditional conceptions can be proved by Le Corbusier's saying: 'A House is a machine for living'. The problem of designing a plan of a building became the most important one.

Mies van der Rohe created a type of dwelling with a large single spatial interior. By means of light dividing walls and room-dividers he was able to separate parts for different functions. Rooms are connected without doors. Mies van der Rohe created here the most suggestive and convincing demonstration of a conception of a free plan which had so far been seen.

This model was also presented by other architects. Le Corbusier erected two

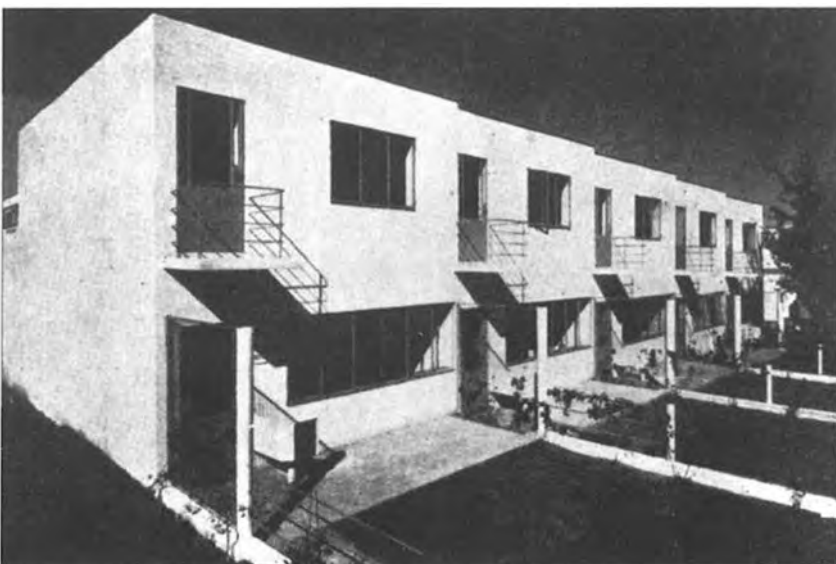
buildings which were the development of his five rules of his theory concerning modern architecture. The first building - Citrohan - was the result of ten years of studies carried out by Le Corbusier. This type of building gave fixed definite functions to separate spaces for ever, leaving a resident the rest of his flat space to arrange by himself. The second building, more elastic in its plan arrangement, enabled a resident to exploit the dwelling space in different ways. In both solutions half of the ground space is completely free and has got an arcade character, the roofs were treated as gardens and additional usable surface.

Although Le Corbusier's and Mies van der Rohe's houses caught a lot of interest J.J.P. Oud's complex of terraced houses for workers with extremely simple and vermic plan was the best development for a given problem.

According to the Dutch tradition of housing and rules of functionalism, he



One- and two family houses
in the 'Weissenhof' Werkbund Estate,
architect Le Corbusier and P. Jeanneret.



Terraced house
in the 'Weissenhof' Estate
architect J.J.P. Oud.

assigned the ground floor to one spatial interior and a kitchen and three bedrooms were on the first floor.

Terraced buildings of this type appeared also in other model housing estates, in Brno (B. Fuchs, J. Grunt, J. Visek), in Breslau (E. Lange, L. Moshamer, H. Lauterbach, M. Hadda, P. Häusler, T. Effenberger). In Karlsruhe, Basel, Zürich and Vienna all terraced houses were built according to the same rule. In Basel a 'back-to-back' type was presented (Artaria and Schmidt). In 1929 in Frankfurt the Second International Congress of Modern Architecture took place under the banner of 'The Mini-

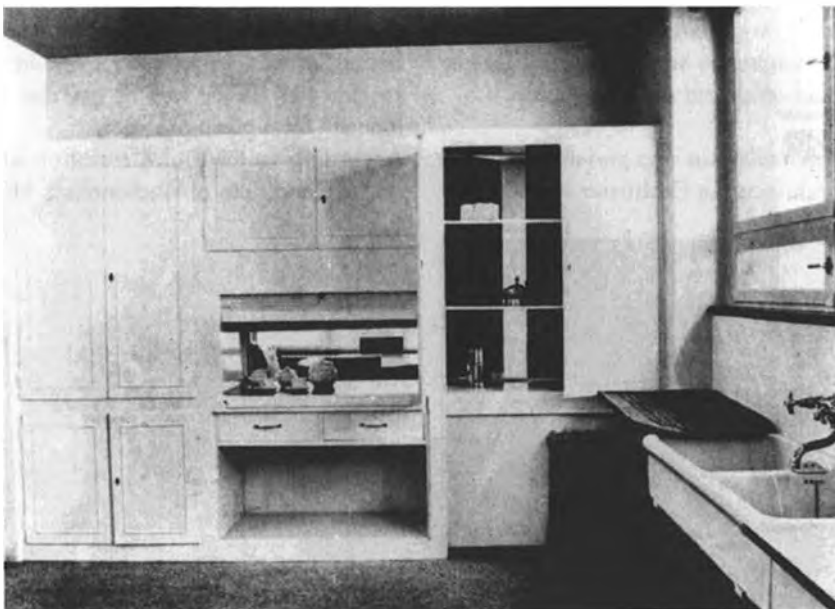
mal Dwelling'. The exhibitions were a kind of voice in the discussion on a problem which was ranking an international circle of architects.

III. 6. New arrangement of functional rooms

The revolution which took place in housing was mostly reflected in the change of a traditional kitchen. Kitchens were equipped with everything a contemporary kitchen should be equipped with. Thanks to the functional analysis a kitchen-laboratory was designed. In the thirties a new kitchen was accepted all over Europe. There was also a trend to get rid of the

isolated kitchen and merge it in the flat's organism.

So during several dozens of years, a big kitchen with a great number of cupboards, tables, servants changed into a small, cosy 'laboratory' which finally disappeared as a separate functional room. Nowadays a come back to a big kitchen with an eating-place can be noticed. A similar revolution was undergone by living rooms, bathrooms and furnishing.



Kitchen in the 'WUWA' Werkbund Estate.



New arrangement of dwelling room in the 'WUWA' Werkbund Estate

III. 7. New form, new international style

The new style characterized by simple form and minimal decoration was suitable for a large population of anonymous renters and for the large scale production of architectural parts.

The form wasn't the aim in itself but only the result of architects work, it was to be the result of the user's needs and material and technical possibilities. The houses being a part of the model housing estates, designed by architects from different countries, were very alike. That's why they were treated as examples of one 'international' style. As the new style was announced, there had to be mutual features distinguishing this architecture. These are:

- simplicity and sincerity of materials and constructions,
- application of human scale,
- application of simple blocks (cuboid, cube),
- break of mass into smaller parts,
- dynamics of cubic forms of changeable size,
- multitude of axis,
- windows put horizontally along the even elevation,
- terraces-gardens on the roof tops,
- buildings on columns,
- getting rid of decorations,
- common application of white colour (Functional architecture is called 'white architecture').

Getting rid of blind walls and bordering buildings made looking at the masterpieces of new architecture, standing freely surrounded by the trees, from all sides possible.

Functionalism, besides the outstanding buildings created clichés to copy which in the hands of mediocre architects took the place of the former academism. Poor solutions by such architects, trying to satisfy our everyday needs, became quite dangerous. Schematic thinking, classification and industrialization

led to uniformization of dwelling building, although the Weissenhof housing estate was a counter-argument for a well known opinion that industrialization of building had to lead to its uniformization. The architects of those times had to prove that industrialization did not mean lack of individuality. The industrialized production of whole flats or houses shouldn't be aimed at in contrast to mass production of classified building elements and normalized details.

By means of those elements every variant preserving individuality could be realized. The houses which presented this kind of architectural concept were the only ones which survived the time.

IV. Conclusion

Model housing estates with their big influence and controversy hastened the development of modern architecture in Europe. They were to be the beginning of a completely new concept, not burdened with building tradition, which was to change a man and his life for ever. Searching for favourable space and fighting for it for a lot of inhabitant of big cities is still a current problem. Architects, while designing, should bear in mind the man they design for.

Walter Gropius wrote: 'If we aren't able to find in our industrialized society a form speaking to society and socially oriented (and at the same time make our environment more beautiful and homogeneous) it will also be very difficult to raise appreciation for the achievements of the 20th Century'³.

New architecture oriented to social changes met repulsion caused by reactionary trends in architecture, sharing at the same time the destiny of social movements which gave it a start. Even in its most splendid times (in the twenties and beginning of the thirties) it was in the minority and the preWar years were the period of its complete failure.

However, after the war the interWar vanguard architecture inspired almost the whole world of architecture.

'Our activities will try to give every man his proper living space in the best way. Finalizing the ways of solving housing problems which would give every man living conditions of an acceptable minimum, as the result of international cooperation of civilized countries, will take a long time' - said Ernst May in 1929 in Frankfurt am Main during the Second International Congress of Modern Architecture⁴.

Did this idea have any chance of being realized? The members of the exhibitions tried to join three aims of the new architecture: large scale character and cheapness of building, individualization of needs and plastic values. Were they successful? Was the realization of such contradictory aims possible? Certainly, quite unconsciously they contributed to the beginning of a trend in architecture which is criticized today for the standardization and flimsiness of mass buildings. They did not suspect that their ideas would be degenerated later on, giving us the uniform, no-style architecture of today. The ideas which were the guiding principles of the exhibitions become a parody of themselves. But perhaps they were utopian from the very beginning?

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Concepts and conflicts relating to the renewal of the Reform settlement in Magdeburg

In 1913, the German Gartenstadt-Gesellschaft (Garden City Society, the translator) engaged Taut as the architect for the expansion of the Reform settlement, which had been started in 1908. This was the second settlement in which Taut was able to fully demonstrate his architectural ideas, the first being the garden settlement Falkenberg in Berlin-Grünau. The colours of the houses in particular caused something of a stir in Magdeburg.

After World War I, in the light of his successful work for the Reform settlement in 1913/14, Taut was appointed to the post of town councillor for building in Magdeburg in 1921. He held this post until the end of 1923. He was able to implement his 'call for colourful building' while in office. Together with his most dedicated co-worker Carl Krayl, the grandfather of my partner Thomas Krayl, he completely redesigned several facades in the town centre. He also resumed work on the expansion of the Reform settlement, a project with which he was involved until 1930.

In addition to his many years of activity for the Reform settlement, Taut's work with the town council made him a central figure in the town's cooperative housing projects during the twenties. The foundation for future town planning activities was laid during his term of office. His plans took into account the urgent need for a housing construction programme which gave full consi-

deration to current economic, socio-political, organizational and technological conditions. The elaboration of a general housing development plan for the town in 1923 and the subsequent establishment of a special town expansion office inaugurated a period of intensive activity for the creation of high quality public housing. When Taut left Magdeburg, his work as town councillor for building was continued by his successors Göderitz and Rühl. Magdeburg presently dedicated itself to building high quality housing settlements. By 1930, the number of cooperative settlements in the town was exceeded only in Berlin and Frankfurt on Main.

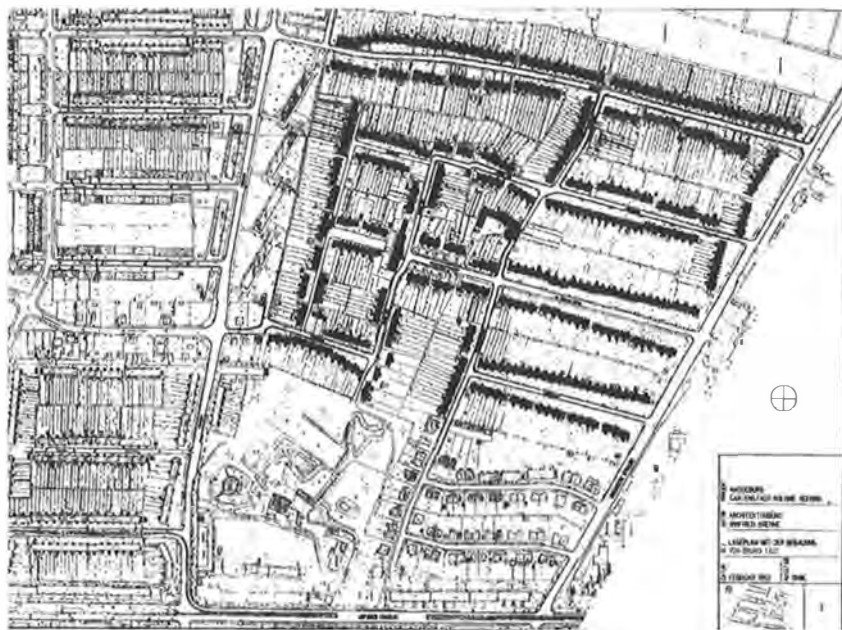
Apart from its architectural and functional significance as one of Taut's outstanding achievements, the Reform settlement is an example of the new style of urban building at the beginning of the century. The twenty years it took to build the settlement reflects the whole history of public housing development from its beginnings in the garden city-movement to the construction of modern

cooperative housing schemes during the twenties and early thirties.

The Reform garden city settlement was set up by employees of the nearby Krupp-Gruson works in 1908. The site for the settlement was purchased by the cooperative in 1910 and covered about 12 hectares. Small additional plots were purchased in 1922 and 1925.

The site was bordered by Brennecke-straße to the north, Leipziger Chaussee to the east, Lilienweg to the west and Kirschweg to the south. It had been completely built up by 1930, when it contained about 800 dwellings in small buildings. The settlement was extended southwards towards Quittenweg in 1930, and by 1938 the whole settlement contained about 1,400 dwellings.

The foundation stone for the first building was laid on September 9th, 1911. These first houses on the Verlorene Grundstein (= Lost Foundation Stone, the translator) were based on a development plan drafted by Hans Kampfmeyer and worked out by the architect



Lageplan des Kernbereiches (Bebauung Bruno Taut) der Gartenstadt-Kolonie "Reform"

Bernoulli. Bruno Taut revised the plan in 1913 after being engaged to continue the construction of the Reform settlement. Although an area of about two hundred square metres was available for each of the small terraced houses proposed by Taut, only 35 square metres were occupied by the house itself. Each house had two floors as well as a cellar and an attic. The houses were built with pitched roofs until 1926 and with flat roofs thereafter. Three different plans are known to have been used for the main floors. The ground floor consisted of the kitchen and one or two other rooms. The first floor had two or three rooms, and the toilet, bathroom and scullery were in the cellar. The houses were heated by stoves. His small house types were characterized by the utmost economy of space, but their lay-out nevertheless offered the tenant flexibility in the use of the rooms. The quality of life on the settlement was improved by the close link to the external environment. The architectural quality of Taut's houses followed from the functionality of the ground plan. His main aesthetic tool was the formation of architectural elements to suit the available materials while simultaneously paying careful great attention to the immediate surroundings. Monotony was avoided and some degree of lightness was achieved by the architectural design, the staggering of the buildings and the colourfulness of the buildings.

In his opening address to the Conference of the National Committee for the Preservation of Monuments in 1984, Herr Kiesow described the fundamental problem involved in the preservation and restoration of buildings of this epoch.

'The greatest difficulty in preserving a historical monument is encountered when its historical value is appreciated by neither the owner, nor the politicians concerned, not to mention the general public. In these cases, the struggle for the preservation of the monument is usually in vain. This is due to the narrow understanding of historical monuments, which overemphasize the artistic, aesthetic and architectural aspects



Blick vom Bunten Weg zur Geschäftsstelle, ca. 1915.



Straße 'Zur Siedlung Reform', ca. 1923.

and under-emphasizes historical arguments.'

It might be expected that this problem would also be evident in the Federal Republic's new states, but so far experience has shown that the owners and tenants are fully aware of the historical value of their settlements and have started on preliminary work with commitment.

In Germany's old federal states, some success has already been achieved in both the preservation and the restoration of buildings and in the registration of historical buildings for scientific study since the 1984 campaign. Examples include the Weissenhof settlement in Stuttgart, the Kiefhoek in Rotterdam, Neubühl in Zürich, Onkel-Toms-Hütte, Weisse Stadt and the Siemensstadt Hufeisensiedlung settlement colonies in Berlin. These concrete examples prove that the buildings are worthy of listing as historical monuments. The responsible officials are also becoming increasingly aware of the significance of the settlements, especially those from the twenties. Despite these facts, it is still not possible to say that a major change has occurred. This is possibly because the architecture lacks the cosiness suggested by buildings with numerous corners, dormer windows, roofs, ledges and ornamental details.

Owing to the lack of tension in the facades due to the use of ubiquitous graffito, these buildings have lost their character. The surfaces formed in this way are no longer broken down by details serving to establish proportions. This style of architecture thrives on its ability to make do with a minimum of shape, and the consequences become all the more severe if the existing fine balance is shifted. It leads to loss of identity and reduction to an easy-care exterior.

This opens the way for the individual taste of each of the inhabitants. Since the settlement appears to have lost its aesthetic value, personal expression becomes more important. This tendency is exacerbated by structural and other defects that have accumulated in the buildings during the past 50 years.

What was done to transform conflicts and contradictions among those concerned into common action during the restoration of the historical settlements in Berlin? A joint action plan was drawn up by professional architects to involve owners, tenants and historical preservationists into the process at the earliest possible stage.

The work consisted of the following phases: 1. Baseline studies and a comprehensive inventory of existing buildings. 2. Elaboration of a conservation and maintenance concept. 3. Supervision and documentation of the work performed. Each of these phases is based on the preceding phase and permits systematic planning and preparatory work which can subsequently be transformed into work activities as work proceeds.

Regulations of this kind, based on experience acquired during the preservation of housing settlements in Berlin, could not be imitated exactly in Magdeburg. The situation in Magdeburg involved a huge number of specific problems which necessitated immediate action.

The pressure for change in the settlement is so strong that the danger of the settlement completely losing its identity

in the very near future is great, although the buildings were already on the protected lists before the political changes. During GDR times, the understandable desire of the tenants to modernize the buildings was stifled by the shortage of suitable building materials, and this is reflected in the inhomogeneous appearance of the settlement. This pressure increased after the political changes owing to the unrestricted access to building materials, which are now frequently being used by tenants without consultation with owners of the property. In addition, the relatively spartan amenities of the houses and the small sizes of the rooms give rise to further justified tenant complaints which are hard to ignore; telling the people that they live in a historical monument will not be sufficient.

Complete modernization of the buildings, especially the interiors, has not yet been undertaken for various reasons. Those who have not taken the initiative themselves still live under the minimum necessary sanitary conditions, i.e. with the toilet in the cellar, no bath, stove-heated rooms, defective water mains, drains and electrical systems. The lists of structural and physical shortcomings and defects, such as single glazing, lack of a vertical damp course in the outside walls of cellars, inadequate heat insulation, etc., could easily be continued indefinitely.

This summation of internal and external defects shows clearly that more than a historical preservation plan is needed in this case; what is needed is rather a comprehensive planning approach. The usual approach to meeting historical preservation requirements must be put aside in favour of a holistic approach that takes all factors into account. The factors to consider include not only monument preservation, but also energy conservation, home modernization and the rectification of mistakes made in urban development as well as the restoration of the landscaping. In view of the number of measures called for, one naturally tends to regard listing the area as a rehabilitation region as the best approach. However, experience with comparable situations

in the old states of the Federal Republic shows that the corresponding increase in bureaucracy obstructs rather than accelerates the process, and this would lead to the loss of more of the original buildings.

The measures necessary for a holistic approach are enumerated to ensure that the former architectural quality is established, preserved and restored together with the original urban planning concept. The settlement does not merely provide homes, but also shows that, even today, the people living there accept to a large degree that these buildings are exemplary for housing construction. The aim must be to create an exemplary model that takes all problems into account, including such essential needs as affordable rents, modern conveniences, parking areas, structural integrity of the buildings and room for DIY activities into consideration. To avoid driving inhabitants out of the settlement, the renewal process must be restricted to what can be afforded on the basis of reasonable rents. The objective must be to achieve improvements with respect to both housing quality and historical preservation for a limited outlay.

Owing to the number of separate problems requiring attention now that rehabilitation of the settlement is beginning, some building work must be carried out while expert evaluation is still in progress. Some of the work done may therefore not be compatible with the final solution. This is because the overriding principle is to prevent further deterioration of the housing stock.

The urgent need for rehabilitation necessitates immediate action instead of a programme of separate measures to be carried out consecutively. A pilot project for modernizing and preserving one terrace of houses (Fliederweg 6 has been selected for this) has therefore been launched. Its aim is to develop methods and plans to ensure that the requirements of historical preservation, building methods and the needs of the inhabitants are taken into account at the planning and implementation stages while safeguarding the right of the

tenants to use their own creativity.

The first stage in the catalogue consists of a comprehensive fact-finding operation involving the inventorization of all buildings and dwellings. This will include ascertaining the state of buildings and identifying all existing original structures. The second phase involves drawing up a catalogue of necessary building work and the concept for the preservation of the settlement as a historical monument. The following questions relating to the restoration of the original quality of the area as an urban development must be settled during this stage:

- Which areas must be preserved or restored and where is reconstruction to establish the original state justified?
- How can those guidelines for the preservation of the monument be implemented?
- What are the requirements of the tenants and owners regarding ground plans and conveniences, and what can be done to ensure that no new needs arise within a short time?
- How can the overall concept for installation work and structural and physical improvement be implemented without violating monument preservation principles? This applies especially in the case of thermal insulation, moisture in components and walls, but also to the problem of the future maintenance of the buildings.
- Which amenities should the settlement have in terms of technical infrastructure, roads, car parks, spaces for loading and unloading vehicles, playgrounds, street lighting, etc., to ensure that it remains a desirable urban area?

In view of the multitude of problems to be solved in restoring the houses and their surroundings, I believe that the approach should not be restricted to monument preservation and building construction aspects, but rather adapted to suit present-day needs, especially if the purpose is to obtain or save high quality dwellings. The conflicts that have arisen during the repair of housing settlements dating back to the twenties show that the decisive element for the implementation and approval of such a comprehensive rehabilitation

plan is the personal identification of the inhabitants with the objectives of rehabilitation. In other words, the question put by the tenant is: 'What benefit do I receive?' Most tenants will want to live in an intact house with more living space and reasonable modern conveniences. And outside, the wish will be for convenient parking space.

However, complete acquiescence to the tenant's wishes involves the risk of diametrically opposing current approaches to the preservation of monuments.

It is worth considering the history of modern housing construction in connection with this planning conflict. The conventional concept idea of a living environment that is 'totally' designed by the architect repeatedly collides with a completely contrary concept. This does not regard the built-up environment as a static product that is completed when the tenant takes possession. This is a concept that was reflected in a different style of building during the twenties and manifested itself even in a vocabulary that is unusual and atypical of the architectural design world.

For instance, in the twenties the concept of the "growing house" broke away from the link to the natural "house construction plant" as portrayed by Paul Scherbart in 1910 and became the contemporary term for an architectural concept.

The idea of a direct architectonically relevant capacity for development also appeared in 1920 in Bruno Taut's utopian correspondence: 'In the pages dealing with the dissolution of the towns, a settlement pattern inspired by Kropotkin is combined with the concept of a transformability of the house enabled by technical means ... lightness and transformability. Not monumentality everywhere, not for every hovel ...' The polygonal ground plans proposed by Taut, who Wolfgang Pent considered a key figure in architecture after World War I on account of his ability to communicate the broad range of ideas of his time, incorporate both Paul Scherbart's technological utopia and the latent dimension of an actual architecture with an inherent capacity for development in contemporary draft designs.

I would like to concentrate once more on the idea of what a development concept for a settlement could look like. I will use Fliederweg 8 as an example. The plans of the original building show a three-room two-storey dwelling with a kitchen. One room is shown as captive on each floor. The sanitary facilities are restricted to a toilet in the cellar and tap in the kitchen. These plans were used as the basis for an attempt to show how a plan suitable for the present day can be developed without major alteration to the building and with little effort. It is based on the assumption that the bath and toilet can be placed in the cellar without major technical problems.

The ground floor plan is modified by a corridor connecting the rooms to the garden. The former terrace is roofed over to provide an additional living room, thus separating the kitchen area from the living area. The kitchen is now situated between a small room on the street side and the living room on the garden side.

On the first floor, a small landing providing access to the bedrooms and the bathroom results in a plan that satisfies

present-day requirements without affecting the original partitions. The small

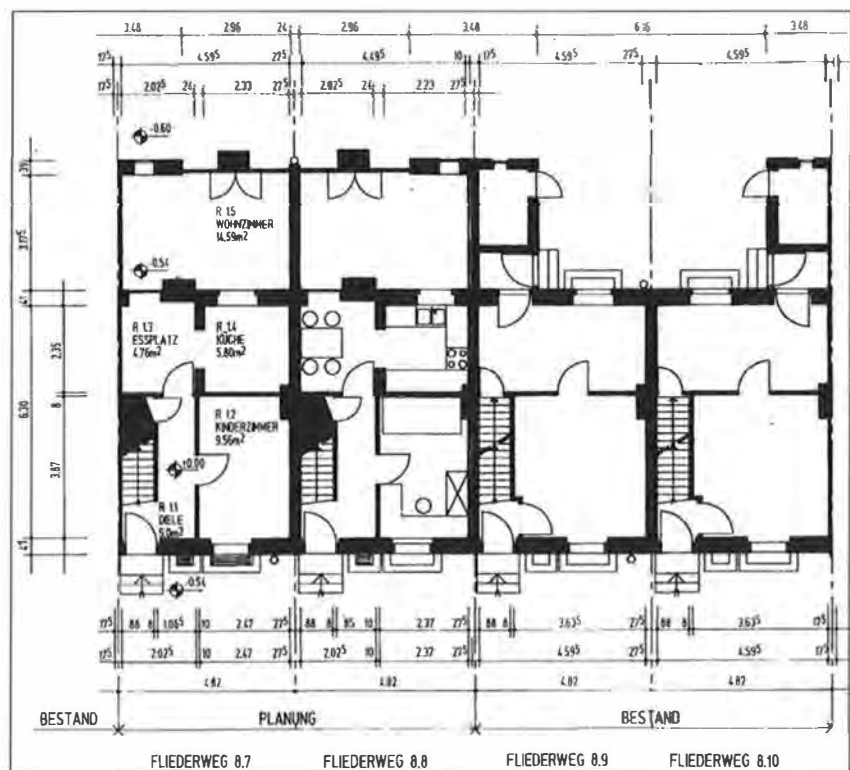


Lilienweg, ca. 1925.



Bunter Weg, ca. 1915.

room facing the garden on this floor is given a terrace on the former outhouse. The new ground plan affects the facade only on the garden side, where the new living room is placed between the outhouses. The facade will be fully glazed on this side. This plan was selected



Grundriss, Umbau Fliederweg 8.7 und 8.8.

from among a large number of other proposals. It has been discussed with the Reform Housing Cooperative and monument preservation authorities and is due to be implemented as a pilot project to gain experience for further rehabilitation work.

One question must be added in connection with this planning approach: to what extent can existing annexes and extended living space be taken into consideration in a future overall plan. Many of these outhouses have been modified in the past and therefore, as in the above example, exceed the general framework.

During the forthcoming inventory of the housing stock, attention will naturally be given to all mistakes which have such a grave influence on the architecture. But it is exactly these variations in the facades and houses that have to be rediscovered. Once again, the objective is to restore what Taut described as '... the house of the ordinary citizen, a plain, very simply shaped outline showing the clear, clean house shape without any tomfoolery. They are those simple houses with the simplest of roofs which stand there so innocently in their clear squareness as if they had just been taken out of a hat box.'

The interior layout of the buildings is repeated in the arrangement of the single-family houses. These show that there is plenty of opportunity for variation and prove that restricting the number of house types does not necessarily mean monotonous repetition. A finely balanced medley of terracing, group-

ing into pairs by mirror reflection and stylistic variations never becomes systematic, but are used with fantasy. Every street is given its specific character by groups of houses that are set further back or closer to the street, or by end houses that narrow or broaden the space. The impression is emphasized by the colours of the facades. Today, we can only imagine the highly imaginative development that took place.

It will not be possible to draw up a schedule for the procedure we have described. To do that we would already have to know all aspects of the settlement and also the wishes of its inhabitants.

Moreover, the measures that are foreseen will be implemented to varying degrees because repairs and restoration or modernization work will only be carried out where necessary. It will therefore certainly be years before a complete picture emerges. After all, it will scarcely be possible to replace newly installed plastic windows with windows made to the original design just for reasons of monument preservation.

I am convinced that the inhabitants will also rediscover the delights of the high quality architecture as a result of their role in the programme, and that they will also develop a new awareness of architecture. The problem of alteration and individual 'creativity' is by no means a new phenomenon. As Bruno Taut himself said during the 1930 Fischtafest festival at the forest settlement Onkel-Toms-Hütte in Berlin, 'Never give up - one looks back upon

one's own development at every festival. Take the Zehlendorf settlement, for example. It is facing an imminent danger that can break the aesthetic backbone of even the best-built settlement. The danger expresses itself in the fact that inhabitants shamelessly put all manner of things in the verandas and loggias of their houses, in the fact that they decorate the exteriors of their homes with strange pictures and other trifles such as antlers - and I do not want to ask if the husbands who display those antlers in the open air actually shot the animal concerned. Fences are built where they are anything but necessary. Most of the front gardens, which were conceived only as lawns in the development plan, are enclosed by hedges and in some cases even by incomprehensibly ugly fences. Hideous curtains behind the very clear windows together with the 'fences' found in odd places and other such things threaten even to diminish the architectonic integrity of the houses. This is not merely an architectural and urban development problem: they encroach because they are an expression of the spirit prevailing in a settlement. If these reactionary trends are yielded to, it will lead to the gradual retreat of community spirit, which will be replaced increasingly by egoism and eccentricity. The danger is great at the moment. But we can be sure that the wave will quickly pass, because basically it is nothing but a fashion and perhaps has more to do with shaggy frocks and long hair than with questions of social development and architecture.'

The phenomenon of 'modernity' in domestic architecture

At the turn of the 18th Century a most important phase in the development of the modern culture in Europe took place. The mental condition for the search for rationality and simplicity is the asceticism as later expressed in the work of Paul Valéry: *'Un homme qui renonce au monde se met dans la condition de le comprendre'* ¹

To renounce as a prerequisite for the understanding of the individual's position in relation to society and culture became an ideal. Renouncement is the underlaying thematic principle of a novel Goethe worked on for almost his entire life as a poet.

In *Wilhelm Meister's Wanderjahre* Goethe offers a resume of his life-long struggle for an improved, idealistic society. In a sequence of interrelated stories he develops the ideal principles of education, the arts, architecture, political and economic system all based on the renouncement of personal benefit and the dedication of the individual towards the public well - being.²

In the ideal society described by Goethe the education system is supposed to train a specialist in every discipline according to the needs of the society. Architecture and town planning are executed according to rational principles, the political system is based on the recognition of the equality of individuals, the economy satisfies the needs of the citizens through the application of science and rationality. Thus, Goethe recommended emigration to America to realize his utopia. By loca-

ting the story in America, Goethe was responding to travel reports of visitors to North America like Prince Bernhard, the son of the Duke of Sachsen-Weimar. As a minister and close advisor to the duke, Goethe was more than familiar with these travels that brought the prince to the region around Albany, New York, the Erie Canal, and the communities of the Rappists and those founded by Robert Owen, whose ideas Goethe had studied in connection with Fellenberger's reform school at Hofwyl.

The positive reception of the reports from America -only the treatment of Negroes and Indians provoked dismay- contributed to the the perception of America as the predetermined setting for the pursuit of an ideal way of life impossible to achieve in a Europe burdened by conventions and suppression.

Notes:

1. Henkel, p.X;
2. *ibid.*, pp. 62-75.

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American principles and ideas in modern architecture as seen by the moderns in Europe

The elements of Americanism (e.g. simultaneity, rationalization, mass-production, efficiency) appeared somewhat sporadically in postWar Europe as tools for the task of reconstruction during shortages. A major contributor to the discussion about type and standardization in industry and the crafts has been Bruno Taut.¹

This phase, however, contributed large-

ly to simplicity and rational design, and initiated positivistically oriented research organizations.²

The 'Reichsforschungsgesellschaft für Wirtschaftlichkeit im Bau- und Wohnungswesen' was designated as the coordinating institution to establish standards for an economical use of resources and means of production. Its effectiveness as a clearing house for modern principles in architecture and planning is illustrated by the rapid application of principles developed by its prime contributors. Walter Gropius' design for the community in Törten which followed the lay-out of crane tracks used for the assemblage of pre-fabricated wall and floor components in its overall urban design can serve as an example for this effect.³

The same principle applies to housing projects in Frankfurt, Kassel and Celle. The projects mentioned above followed the example of housing projects in the United States that were constructed with pre-fabricated concrete panels hoisted in place by means of a crane, however, superseding the precedents in scale. Among the earliest of those examples of standardized unit construction are a series of group houses built by Grosvenor Atterbury in New Jersey and Long Island beginning in 1907.⁴

The first projects executed in Germany are published as early as 1926 by A. Lion, Berlin, and, similar to their predecessor in the United States, feature a rather conventional appearance with pitched roofs.⁵

The author, however, stresses the effect of the building method on the aesthetics: 'Naturally, every unnecessary... ornamentation, which the modern style rejects, is absent thereby recognizing that here, too, the pure utilitarian results in beauty' (translation by E.S.). In anticipation of future developments

in Germany the author mentions that flat roofed buildings erected in the Netherlands using the same methods seem to be more suitable and also allow for one additional level thereby improving the feasibility.⁶

The use of cranes to assemble residential units contributed significantly to the increasingly rigid urban lay-out of communities like Rothenberg in Kassel and Georgsgarten in Celle by Otto Haesler, Westhausen and Goldstein in Frankfurt by Ernst May and associated architects as illustrated in the diagrams published in 'Das Neue Frankfurt'.

The relation between the means and ways of building production in Frankfurt and those practiced in the United States is explicitly mentioned by Dr. Walter Schürmeyer in an article *Die neue Wohnung und ihr Innenausbau* (The New Dwelling and its Equipment and Appliances) published in 1927. Schürmeyer discusses a new process of prefabrication developed by the Phillip Holzmann Company utilizing the principle of American frame construction as used in steel high rise buildings. The walls are used as cladding only. The units consists of a single structural cell of about 80 m² (850 sq ft) which are subdivided by non-load-bearing partitions or closets.⁷

The new political system in Germany after WWI not only allowed an unprecedented freedom of artistic expression, but mandated the formulation and implementation of social programs to address the disastrous economic situation which could not have been solved by the mechanism of a free market.

The reconstruction necessitated simplicity of expression, objectivity towards the needs and the application of advanced techniques and technologies to achieve the ends. The new political situation of a widely centralized state without a conservative superstructure allowed the systematic application of underlying principles of the 19th century's progressive architecture and planning without restrictions of form and style.⁸

As Wiss remarked: 'Architecture will have to develop the building's beauty in a constructivist way from the shape

of the functionally predetermined plan. Simple, pleasing relationships and lines...will be of more help than unrelated ornament glued onto plain walls. Such constructivist building art will find its own aesthetic laws even for small dwellings once the interior design is no longer subject to the academic caprice of architects" (translation by H.R. Tolzmann).⁹

The typology of the dwelling unit is the focus of an article in 1926 by Dr. Brandt, Oberbaurat in Hamburg, about 'Amerikanische Wohnsitten' or 'American way of living'. In this article the author points out the socio-economic situation, i.e. large groups of the American population are faced with high rents for their accommodation, which has led to the development of devices to minimize the size of dwelling units and to rationalize daily life, and forms of overall organization like the 'family hotel' that differ drastically from traditional German housing. The use of closets for the storage of folding beds and clothing is of particular interest for Brandt. The author provides a detailed description of a space saving kitchen with built-in ironing boards, pull-out trays, storage cabinets with rounded corners to avoid the collection of dust, and a small range, sink and refrigerator made out of enameled metal. The wide spread use of electrical tools is also noted. The author is pessimistic about the prospect of using similar devices in Germany due to financial reasons.¹⁰

In a later article, however, published in 1927, Schürmeyer reports from the exhibition 'Die Neue Wohnung und ihr Innenausbau' (see above) showing a wide range of features described by Brandt and their application in dwelling units that represent the state of the art of housing without making any reference to American precedents.

According to Schürmeyer, those features represent the desire to enhance the economy and foster the reorganization of construction complying with principles of technology and industrial production.¹¹

Among the appliances developed for

the housing program in Frankfurt the 'Frankfurter Küche' (Frankfurt Kitchen) became a prototype for European built-in kitchens. The lay-out followed very closely the description of American kitchens from 1926. The publications provided by the communal authorities made no secrecy of this relation and depicted examples from the United States. The domestic realm has been a target for a concerted effort of designers and ergonomic engineers. The American efforts in this direction originated with Catherine Beecher's publication *The American Women's Home* and the subsequent development of 'domestic engineering' as a discipline originally pursued exclusively in the United States.

It should not be surprising to find an abundance of the features that, in the perception of the European avantgarde, made an American household rationally organized in the designs of those promoters of Americanism'.

The early residential designs of Walter Gropius and his collaborators after WWI provide many examples of the applications of lessons learned from the study of American architecture. The source of inspiration for the Kallenbach residence in Berlin from 1922 in collaboration with Adolf Meyer may very well be linked to an American precedent, the 'Rustic Mansion', Chatwold, Mount Desert, Maine as published in the *Deutsche Bauzeitung* in 1887.

Tolzmann, in *Objective Architecture*, used this example to demonstrate that subsequent designs like Tscharnn's 'Rustic Villa' in Leipzig 1896 were influenced by America, and that contrary to Pevsner's opinion Muthesius' 'Villa in Charlottenburg' from 1924 is not an example of the use of English but American precedent.¹³

The significant oblique economy wing in either of those designs is containing kitchen, utility and service rooms. The origin of the project in Charlottenburg might be debated, since Muthesius designed the villa upon returning from a trip to England. The project by Gropius and Meyer, however, does not only coincide with the lay-out of the first floor of the American precedent to a larger degree, but is also anticipates

Muthesius's design by two years.

The use of built-in closets is typical for the 'Typenhäuser' or dwelling types designed by Gropius starting with the community 'Am Horn' in 1922. The units designed in 1928 for Dessau-Törten feature sinks built into closets separating the bedrooms on the upper level with access from either side. At Dammerstock, Gropius uses a variation of this theme by placing an additional sink in the hallway of the second floor in addition to the sink in the bathroom. In his own house in Dessau (1925-1926) and in the Villa Lewin (1927-1928) the use of built-in closets, some with double access from neighboring bedrooms, is evident. The similarity to a description of American housing published in the *Deutsche Bauzeitung* in 1899 by Wolbrandt provides an argument for the adaptation of an American feature by Gropius.

According to Tolzmann, 'Wolbrandt also drew attention to the unconventional separation of space into two rooms through built-in closets accessible from both sides and furnished with a sink'.¹⁴

The 1-bedroom apartments at Siemensstadt (1929-1930) provide another solution which is remarkable. The double-access bathroom can be reached from the vestibule for visitors as well as from the master bedroom via a walk-through closet.

This solution in particular is of great similarity to American housing as we can observe even today. There are, however, no sources available that directly link this design to American precedents and the assumption that Gropius could have observed the arrangement while traveling in America for several months in 1928 remains speculative in nature.

The preceding examples, however, demonstrate that 'Americanism' as Tolzmann observes, 'was no longer manifested in a particular style or stylistic feature, but in techniques and attitudes, products and appliances methodologically extended and applied by German designers'.¹⁵

Notes:

1. Despite Taut's involvement in the expressionistic style some reference is made to

American standardization and industrialization.

2. Tolzmann, p.205;
3. Probst and Schaedlich, p.100;
4. *Architectural Record*, January 1934, p.11 and *Deutsche Bauzeitung*, November 1925, p. 189;
5. *Deutsche Bauzeitung*, August 1926, pp. 112 ff;
6. *ibid.*, p 114;
7. *Deutsche Bauzeitung*, June 1927, pp. 395;
8. Tolzmann, p.13;
9. Wiss, p.39;
10. *Deutsche Bauzeitung*, January 1926, pp. 62-64;
11. *Deutsche Bauzeitung*, June 1927, p.396;
12. Probst and Schaedlich, pp. 175-177;
13. Tolzmann, p.267;
14. *ibid.*, p.166;
15. *ibid.*, P.7.

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Taut, Bruno, *Die Neue Baukunst in Europa und Amerika*, Stuttgart 1929;

Tolzmann, Reiner Hanns, *Objective Architecture: American Influences In The Development of Modern German Architecture*, Ann Arbor 1975;

Wiss, Eduard, *Ueber die Wohnungsfrage in Deutschland*, Berlin 1872.

American reform movements in urban design

In 1898 Ebenezer Howard published a book 'Tomorrow: A Peaceful Path to Real Reform' which promoted an ideal community. It became the standard literature for urban designers outlining a scheme to limit suburban sprawl and unhealthy living conditions in the metropolitan agglomerations of the industrialized society. Howard's scheme proposed the foundation of new towns independent from the existing centers in all aspects but state government. The diagrams demonstrating the planning principles have not been intended to be regarded as blueprints for the lay-out of new towns, and carry

the label 'diagram only'. No precise description of the physical characteristics was provided by Howard, but a few years later a more detailed description was released by the Garden City and Town Planning Association in consultation with the author: "A Garden City is a town designed for healthy living and industry; of a size that makes possible a full measure of social life, but not larger: surrounded by a rural belt: the whole of the land being in public ownership or held in trust for the community."¹

The rural belt for agricultural production and natural landscape for recreation has since become a standard feature for the design of new settlements and furthermore given the name for the housing initiative of the Roosevelt administration in the United States.

Howard, not an architect or designer by education, is not the first to suggest a decentralized pattern of settlement limited in growth, but was its most successful advocate and propagandist.²

It was not the intent of the author to promote a particular aesthetic concept, but to 'demonstrate a better and more commonsense view of how towns should be built' and 'to lead the nation into a juster and better system of land tenure'.³

The image of the first English Garden Cities is determined by a traditional appearance in typology and materials. Arranged in groups of neighbourhoods they evoke the impression of hamlets or small villages thus emphasizing the neighbourhood as the principal unit of the residential settlement.

The first community following Howard's principles was Ealing in 1901, followed by Letchworth, commonly considered the first complete Garden City, designed by Unwin and Parker in 1903. Howard took up residence in Letchworth till he moved to Welwyn, the second Garden City. Howard's idea spread rapidly to continental Europe, the *Deutsche Gartenstadtgesellschaft* was founded in 1902, and to the United States. In Germany the principles Howard formulated have never been executed in their totality.

The influence of the Garden City, however, is significant in the development of garden suburbs and Siedlungen, among them Ernst May's Neues Frankfurt. The link to the English concept as represented by the work of Parker and Unwin is legitimized by May's employment in the firm as an apprentice prior to his practice in Silesia and ultimately Frankfurt. Despite their conventional or romantic appearance, the overall planning concept allowed for the use of an innovative circulation system. Under the condition of inexpensive land the residential units were arranged around a common green park in the center. The motorized traffic was kept on the periphery serving the houses by cul-de-sacs, thereby increasing the safety and economic use of public utilities and services. This 'super block' concept provided the inspiration for designs by Clarence Stein and Henry Wright in the United States.

The housing situation in the United States was significantly different from Europe. After the government's war, worker's housing program that produced an initial attempt to implement public standards in housing was abandoned, the betterment of the housing situation was left to paternal individuals or private organizations like the Regional Planning Association of America. Among its members were individuals who's contributions have shaped American housing: the critic Lewis Mumford; the architects and planners Henry Wright and Clarence Stein; the housing expert Catherine Bauer; the real estate entrepreneur and developer Alexander Bing; members of the Roosevelt administration like Frederick Ackerman and Tracy Augur, who served as consultants for the Greenbelt program.

The group first initiated a demonstration project in New York, 'Sunnyside Gardens', a housing development considered a trial run before addressing the 'ultimate purpose of building an American Garden City'.⁴

A main objective of Sunnyside has been to provide access to adequate housing for families, typically excluded

from ownership by high mortgage. As the building official from Dresden, Dr. Paul Wolf observed in 1928, the financial burden for the typical American Family has been higher than for their German counterpart.

In his travel report the notion of the cooperative ownership and whilst the existence of communal amenities at 'Sunnyside' is worth describing, however, the community is hardly considered innovative.⁵

This judgement seems reasonable at the time but the author certainly did not consider the merits as achieved in 1924, the date of the completion of the first segment of the community, at a time, when the city of Frankfurt introduced the 'Hauszinssteuer' to provide the funds for their future housing program. The existence of a common park and recreation facilities, accessible from the individual gardens, the austere, but 'objective' aesthetics and the efficient urban lay-out anticipating most of the European counterparts is remarkable.

The attempt to build the first American Garden City at Radburn, New Jersey, 16 miles from New York City, resulted in an example of high standards of urban design. Without the restraints of a predetermined urban grid system as encountered at Sunnyside, Stein and Wright adopted a superblock concept similar to Parker and Unwin's designs in England. The separation of traffic systems for cars and pedestrians was enhanced by underpasses connecting the system of paths in different neighbourhoods without crossing streets for motorized traffic on the same level. This feature, derived from Olmstead's design for Central Park, reoccurs like the other planning characteristics in the Greenbelt, Maryland, designed in 1935. The 'Radburn Idea' had five interrelated components: the superblock; specialized roads like peripheral arteries and cul-de-sacs; separation of pedestrian and automotive traffic; houses turned to front the park; a communal park as the backbone of the neighbourhood. The orientation of the houses to the interior of the superblock, thereby assigning the duty of a service road to the cul-de-sacs, contributes to a certain ambiguity and lack of identity

in the character of public space. However, the resulting specialized circulation system lead to Radburn's description as a 'town for the motor age'.⁶

As a Garden City in the full sense Radburn was a failure, since most middle class residents commuted to New York City for work. Construction at Radburn came to a stop when the economic crisis hit in 1929.

Notes:

1. Osborn, J. F., in: Howard, p.51;
2. Christensen, p.32;
3. Christensen, *ibid*, p.46;
4. Stein, p.21;
5. Wolf, P., *Städtebauliche Reise-eindrücke in den Vereinigten Staaten von Amerika*, in: DBZ no 4, December 1928, p 875; also, Stuebben, Joseph, *Sonderberichte von der Internationalen Städtebautagung April-May 1925*, in DBZ, Stadt und Siedlung, no 24, pp. 185 ff;
6. Smith, G., in: Stein, p.44:

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- Christensen, Carol A, *The American Garden City and The New Town Movement*, Ann Arbor 1978;
- Howard, Ebenezer, *Tomorrow: A Peaceful Path To Real Reform*, London 1989
- Risse, Hilke, Stein, Clarence s., *Towards New Towns For America*, Cambridge 1966.

Carl Mackley houses Philadelphia Kastner and Stonorov, architects

After the collapse of the economy in 1929, most private development of housing came to a halt as observed in Radburn. The aggravated emergency evolving in the following years demanded a radically different approach than the paternalistic idealism of the circle around Mumford, Bing, Stein and Wright.

The housing project commissioned by the Hosiery Workers Union in Philadelphia in 1931 is the first substantial project to be undertaken after the crash at 'Wall Street'. Designed by the architects Albert Kastner and Oskar Stonorov, who immigrated into the United States after having worked with Le Corbusier, in collaboration with W. Pope Barney, the design is unique in its

pursuit of modern principles in site plan, organization of units, functional and aesthetic program. Based on the cooperative concept of the union, the Mackley Houses were initially financed by funds of the union, but received public funds as the first PWA project of the Roosevelt administration.

The site encompasses three typical city blocks in the north-east of Philadelphia. The architects investigated initial site strategies ranging from buildings at the periphery of the site creating a traditional block to German Zeilenbau under consideration of insolation and density as typical for modern planning since the second and third CIAM conference in Frankfurt and Bruxelles. The final proposal consists of two blocks open at their narrow ends with the center pieces forming indentations thereby articulating the surrounding open space in compliance with the proposed recreational use and the sequence of circulation.

The overall symmetry does not respond to the initial diagrams and their discussion of orientation. An explanation for the abandonment of this planning criteria could not be found and deserves closer attention through research of the notes in the archives of the American Heritage Foundation and the Athenaeum in Philadelphia.

The buildings are three and four story walk-ups with communal laundry facilities on the top forming penthouses between two stairwells. The internal circulation system and the integration of a variety of different units makes the proposal special. The ground floor is occupied by small apartments directly accessible from the surrounding park. On the opposite side of the building, the entrance to the stairwell is located, thereby distributing the approaching pedestrian traffic to both sides.

Each stairwell serves two units per floor referred to as the 'German' scheme in the notes of Kastner.

The scheme, however, is altered to include a porch from which the individual units are accessed. While Haesler provided a sizable porch for each unit next to the entrance, Stonorov and Kastner introduced a shared open space.

The plans of the apartment in the upper stories vary from two to five bedrooms. The entrance leads without foyer into the living room, a condition that the Europeans avoided. From there a small hallway or vestibule is reached leading to the bedrooms and bath as well as to the kitchen. The isolated position of the kitchen in vicinity to the sleeping quarter is unique for modern housing and seems workable only with the provision of a dining table as demonstrated in the axonometry. The rationale for this decision, too, is not documented in publications. Preliminary sketches of maisonette units, however, show evidence that the architects did not neglect the desirable proximity of kitchen, dining and living as demanded by modern standards.

In the larger units, one bedroom is accessible only from the living room resulting in increased areas for circulation and compromised privacy.

The buildings are constructed in steel, reinforced concrete using piers and floor slabs as load bearing devices with masonry infill. Initial concepts in steel are documented in the notes by Kastner. The exterior is clad with ceramic tile.

The project provides a community hall for gatherings of the residents. The recreation facilities, a pool and a wading pool are placed adjacent to the community hall. In the same blocks the kindergarten is located in the ground floor of a residential building. The lower level along Bristol Street contains shops, today used by businesses like a hairdresser.

The garage under the eastern part of the complex is an amenity unknown to European housing for workers.

The community is in overall satisfactory condition, only the replacement of the steel casement windows with double-hung windows in the residential units compromises the appearance.

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Greenbelt, Maryland Hale Walker, planner Douglas D. Ellington, R. J. Wadsworths, architects

The administration of President Roosevelt initiated a federal housing program in 1934 as a reaction to the shortage of dwellings after the depression in 1929-1933. The first projects were organized and planned by the Suburban Division of the Resettlement Administration, organized in 1935, to construct rural communities beyond the limits of metropolitan areas with the intention to demonstrate a new method of land-use including collective ownership as promoted by Ebenezer Howard. The inhabitants were intended to be either the rural poor or inhabitants from urban slums, but this should change rather quickly. The Federal Housing Administration, operating under the National Housing Act of 1934 and its amendments of 1935 and 1936, was installed as the principal administrative instrument to ensure private investment in the construction or rehabilitation of housing projects. The Housing Division of the Public Works Administration, created in 1933, served as the main executive authority to purchase sites, demolish unfit dwellings in slum areas, erect low-rent housing projects for families of low income, provide for direct local management and renting of dwellings and supervise the operation of projects financed with PWA loans.

The Greenbelt program represents an intervention in the mechanism of the privately organized housing market on an unprecedented scale. When previous federal housing programs only existed for a limited time and only in cases of national emergency caused by War, the Greenbelt Program treated the housing shortage caused by the failure of the private market mechanisms as a similar emergency situation justifying its interference.

The Resettlement Administration planned four towns that follow the principles of Ebenezer Howard's Garden

City with the exception of places for employment. For each of the towns the RA installed planning teams that worked independently from each other, thereby causing significant differences in the lay-out. All towns were located close to metropolitan centers: Greenbelt - Washington, D.C.; Greenhill - Cincinnati; Greendale - Milwaukee; Greenbrook - Newark. The locations of the towns were chosen for various reasons. One aspect was the required use of unskilled and unemployed workers found in the depressed economy of major centers for the construction. This condition influenced also the method of conventional building construction used with the exception of few prefabricated steel structures. Furthermore, the necessity to ensure the continuous income from rent payments mandated a tenant selection from stably employed groups of the population also found only in the vicinity of major cities. Ultimately, the schedule to begin construction in 1935 eliminated those initially considered places in which land could not be purchased in time.

With the exception of Greenbrook, where construction was stopped in 1936 when the District of Columbia's Court of Appeals challenged the constitutionality of the Greenbelt Program in its entirety, the towns were completed by 1938.

The community of Greenbelt in Maryland was the first to be constructed, in 1935. The site, 3000 acres of wooded land, was already in the possession of the Resettlement Administration and its vicinity to the capital Washington, D.C., made the locality predestinated for a physical demonstration of the anticipated housing policies of the New Deal. From the beginning, Greenbelt was supposed to incorporate multiple political and planning concepts, occasionally conflicting, that extended the notion of just another Garden City like Radburn. The original intention to provide for the rural poor and the urban slum dwellers was waived instantly. The administration decided to build quality houses for the typical American family with moderate income instead, in the hope to achieve an identification of the electorate with the model project.

Prospective tenants were subject to a rigorous selection process that eliminated not only all black families and those with undesirable social habits, but even all families with working wives. As a result of the tenant selection process, the community reflected an image of the New Deal as perceived by the propagandists of the administration: the harmonic, idealistic "White City" devoid of social conflicts of any kind.

According to Clarence Stein 'Greenbelt, for various reasons, carried out and developed the Radburn Idea more fully and completely than either of the other towns'.¹

The overall lay-out of the community follows the crescent shaped ridge. In the center an artificial lake has been created with adjacent community buildings, a cooperatively organized commercial center and recreational facilities. The residential areas consist of five superblocks served by main peripheral roads forming the shape of semi-circles. As in Radburn, cul-de-sacs provide access for automobiles. Groups of 2-story row houses with double entrances from either the service court or the communal park provide homes for 574 families. The 3-story apartment buildings with 306 units are located closest to the central institutions along the inner main street. A system of paths connects the parks in the center of the superblocks with the community center. As in Radburn, underpasses are used to provide safety for pedestrians.

The lay-out of the residential plans express no desire to experiment with conventional notions and attitudes, but the intent is to provide simple and well considered arrangements. The site plan informs the placement of the principal functional areas: kitchens are located closest to the entrance from the service court, living rooms and formal entrances face the park. The lay-out of the upper story responds primarily to the lot size with the master bedroom facing either park or service court depending on the width of the unit. The efficiency apartments are arranged as four-plexes, pairs of 1-bedroom units are located on each floor of the larger apartment buildings. The smaller units

feature kitchen alcoves open to the living room, while the townhouses provide for a conventional kitchen and a storage space substituting for a basement.

The desire to communicate a progressive image has found manifestation in the stylistic features of the town. With the exception of the experimental steel houses, the buildings are erected in conventional cinder block or brick masonry with either flat or, in a lesser number, pitched gable roofs. The mandated use of unskilled labor and the desire to achieve a high quality of construction has influenced this decision to depart from methods typically associated with progressive American construction. The planners and architects provide an additional reason in considerations of the long-term savings due to reduced needs for maintenance.

Greenbelt has been conceived as a comprehensively planned project like some of its European precedents. The provision of furniture designed for Greenbelt and made affordable through subsidized installment buying plans allows a comparison to the furniture design in Frankfurt. Produced by local firms, the furniture somehow lacks the rigor of its counterparts, but never the less shows a modern attitude in the unconcealed use of plywood.

The exterior is painted white, the apartment buildings show the use of glass block. This and the horizontal banding between windows similar to facade treatments observed in Hamburg's public housing, constitute an appearance closer to the American Art Deco than classic modern or international style. The use of shallow relief sculptures at the public school in the center of the community reinforces the stylistic classification. In 1940-'41 the administration added 1000 wood frame houses surrounding courtyards open to the exterior peripheral street. Although considered a temporary provision for employees of the War production and military personnel the structures are still in use. The lack of integration into the sophisticated planning concept of the original town has evoked criticism and led to the label 'War-houses' as a description for inferior quality.

At Greenbelt the idea of collective ownership has survived the disinvestment of the federal administration from its towns. Today most of the original residential buildings are owned by a home owners association. The supermarket and the gas station are still organized as cooperatives indicating a continuous strength of the initial collective spirit among the first generation of inhabitants. The aesthetic quality of Greenbelt has suffered from unfortunate additions like the library and some structures in the commercial center. Seemingly uncontrolled additions to private residences starts to compromise the clarity of the original pattern within the superblocks. Though the town has received some attention from preservationist groups sponsoring the restoration of 'The White City', Greenbelt has been subject to uncontrolled development infringing on the surrounding greenbelt.

The pressure from commercial development is expected to increase with the construction of a subway connecting Greenbelt with Washington, D.C.

Notes:

1. Stein, p.127.

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San Felipe Courts, Houston Macke & Kamrath, Hooton and Werlin, design committee C.A. Johnson, planner

The San Felipe Courts project represents the most consistent designs of the New Deal period in Texas. Originally started with funding from the PWA the housing complex was completed as a War-housing project in 1942.

The urban scheme employs parallel row houses with projecting end units. The public space between the units is thus differentiated into front yards with wide openings to the central axis or into service yards with narrow passages. The complex is structured in three parallel bands placing the three story buildings in the center to either side of the access street that divides the plot in half.

The seemingly uniform buildings contain differently sized apartments from 1-bedroom to 4-bedroom units. Even the apartment occupying the upper

levels of the three story structures have an entrance door on the ground level. All units are designed to allow cross-ventilation.

The construction uses reinforced concrete with piers and slab similar to the Mackley Houses in Philadelphia. The walls are masonry with exterior face brick in contrasting brown and buff creating horizontal bands between windows. The projecting canopies over the entrances are made of concrete as well.

The community center is located at the entrance facing the public park stretching along Buffalo Bayou and the Drive. The common facilities housed in the structure bridging across the street include kindergarten and nursery, rental office, gymnasium and maintenance facilities with several work shops.

The current state (1989) is characterized by intentional neglect. Many units are boarded up, only few apartments are occupied. The high density has been cited as a reason for preparing a partial demolition of the community. The political controversy, however, blames the high real estate value and the history of the site as a segregated housing project as the motives responsible for its present decay.

Literature:

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The essence of the Modern Movement

Why do we accept these days all kind of historical changes in gothic cathedrals and why not in Palladian villa's? The answer is that a Palladian villa is determined by an explicit intellectual concept without which one cannot understand and appreciate it. One has to know the underlying rules. Even small alterations in these kind of buildings obscure these rules and destroy the essential concept behind it.

Gothic cathedrals most probably did not have such explicit intellectual concepts or at least we don't know them. A complicating factor is that - almost without exception - many alterations indeed did occur in the course of history and that - in contrast with Palladian villas - the building-process of every cathedral took place over a very long period. So even if theoretical concepts did exist in the Middle Ages these are obscured by different building periods. In many cases we can recognize roman, gothic and renaissance forms in one and the same cathedral. In other words: We don't know anything of an intellectual and coherent system of rules, notwithstanding the fact that theorists like Viollet-le-Duc saw the gothic cathedrals as a construction based on rationalist considerations. In fact the building-scheme was developed during the building process over a very long period by different architects and craftsmen on an ad hoc basis. That's why the gothic cathedrals - in contrast with the Palladian villa - easily, and by nature, accept alterations.

How about the buildings of the Modern Movement? Did they in general have

an unambiguous theoretical concept as a basis for their designs? And if that is the case the question arises what kind of alterations do the monuments of the Modern Movement accept without losing the essence of their concept and design? What is in this connection the meaning of material, construction, function, form, space, structure, transparency etc.? And can one speak of a uniform picture in the first place?

Remembering the presentation of a very heterogeneous range of architecture under the banner of the Modern Movement during the last DOCOMOMO-conference in Eindhoven, it will be difficult to formulate a simple answer. Anyway we have to give it a try to avoid indistinctness to the outside world and to gain power where convincing in questions of alterations, renovation, preservation and restoration are concerned.

A complication is that there exist at least two different kind of concepts about what is the essence of the Modern Movement. In the first place there is the concept of the so called 'International Style' of Hitchcock and Johnson of the late 1920's which above all was based on clearcut artistic principles resulting in the well known geometric, smooth, white boxes. Later on the broader concept based on cultural, ideological and political considerations was developed as was the case with Jenck's 'Modern Movements in Architecture' and Frampton's 'Modern Architecture, a critical History'. Not always - to use an understatement - did both concepts fit together. I will give an example. In the case of the Netherlands architect Jan Duiker there was always a tight univalent connection between the consistent theoretical concept of - in accordance with the laws of the Cosmos - an economical use of material and the formal design. This was not always the case with Le Corbusier as

Charles Jencks showed us in his book 'The tragic view' in which he described Le Corbusier's continuing struggle between the Ratio and the Sentiment with as a dramatic, culminating point the chapel at Ronchamp. However one has to consider the fact that the architectural career of Le Corbusier covered a much longer period than Duiker's.

In order to formulate significant statements about the essence of the Modern Movement it is necessary to trace the common sources of thought and the differences.

To find the common sources we have to go back to the 18th Century, the time of the Enlightenment, characterized by an almost absolute faith in progress and in the power of the *ratio* resulting in the defeat of the visible Vitruvian rules and values in architecture that had prevailed since Alberti - and especially since Palladio. In this sense architects like Boullée and Ledoux, the 19th Century eclecticism, romanticism and the Art Nouveau belong just as much to the modern era as Le Corbusier or Walter Gropius. Collins demonstrated this very clearly in his book 'Changing Ideals in Modern Architecture'. Taking only this for a starting point however the modern architectural scene shows an unworkable heterogeneous character.

One has to consider another common source to come closer to the real Modern Movement. Here I would like to put forward Peter Bürger's concept of avantgardism. Later architectural historians like Michael Müller corrected this concept concerning architecture. The historical Avantgarde was defined as a broad range of idealistic, artistic movements opposing the 19th Century institutions and the *l'Art pour l'Art* attitude. Architects however - in contrast with painters - took the rationalism of the industrialized society as a crowbar to

realize the desired new 20th Century culture in which the gap between Art and life would eventually be bridged.

The 18th Century rationalism together with the architectural avantgardistic attitude still produces a broad range of more or less different architectural movements like the Werkbund, the Bauhaus, constructivism, expressionism, futurism, the Stijl and functionalism. So perhaps we should add another source in order to obtain a more univalent architecture of the Modern Movement. In this connection I'm referring to the outspoken social and political aims of the *Congrès Internationaux d'Architecture Moderne*. Doing this we risk of course to make a similar fault as Nicolaus Pevsner did a long time ago in his 'Pioneers of the Modern Movement' in which he, like a modern Procrustes, adjusted the architecture to his own concept. Futurism, Gaudí and in his later editions the postWar Le Corbusier were cut off the main stream. Later on he was defeated by his own Heracles personified by Charles Jencks and his 'Modern Movements in Architecture'. By introducing the CIAM-ideals we have to ignore the Futurists, Oud, Mendelsohn, Terragni, Van de Velde, Dudok and the Stijl including Gerrit Rietveld etc. A complicating factor is the fact that CIAM had a long history and conflicting parties. Is it possible to see important CIAM-architects like Le Corbusier, Van Eesteren and Gropius as a non conflicting unity? And what about the younger architects of the thirties who had a boundless admiration for Le Corbusier and who started to oppose the manifestoes of the former generation not to speak of the critical postWar generation of Team X, amongst which are the Smithsons, Bakema and Aldo van Eyck? Do we have to describe this as a break within the Modern Movement or as continuous evolutionary development? I am inclined to defend the last proposition.

And how to deal with the postWar large scale developments stripped of the ideology of the historical avantgarde? Do we have to see these targets of postmodern criticism, the *Grandes Ensembles* around Paris, the modern

Siedlungen in Berlin and the Bijlmermeer at the south-east of Amsterdam still as a real CIAM-inheritance or are they just unforeseen mutants?

Defining the Modern Movement I am inclined to take especially the faith in progress and the rational way of thinking of the era of the Enlightenment together with the idealistic attitude of the historical avantgarde, opposing traditional institutions, as a starting point. The CIAM way of thinking was only relevant incidentally for a not unimportant part of the Modern Movement. Doing this we still have to accept a Modern Movement which is characterized by a broad scale of sometimes conflicting sub-movements. We shall have to map them out and to group them to be able to make statements with regards to preservation and restoration of threatened monuments. I will give it a cautious try.

In the first place there is a category of



Schröderhouse in Utrecht,
G. Rietveld, 1924.

buildings and designs which may be considered as architectural avantgardistic manifestoes, both built and unbuilt. Many times they are connected with experiments in the field of the plastic arts. Examples are the futurist designs of Sant' Elia, the architectural models of Van Eesteren and Van Doesburg in the early 20th Century, Rietveld's Schröderhouse in Utrecht, the designs of Vladimir Tatlin, Mendelsohn's Einsteinurm in Potsdam, Le Corbusier's *Pavillon de l'Esprit Nouveau* and the Bauhaus in Dessau. Despite the fact that they are often distinguished by a fixation with form and space and not by the balance of functional, psychological and formal design-decisions which is so characteristic for the best

examples of the Modern Movement, they were of crucial importance as pioneers and propagandists. They show the typical faith in progress and experiments together with an avantgardistic attitude. In this sense they are without doubt integral parts of the Modern Movement.

In the second place there is a category that is to a high degree determined by typological considerations and in a somewhat lesser degree by artistic ones. I am referring to hospitals, schools, factories, sanatoriums, office-buildings etc. In contrast with the building manifestoes they demonstrate in most cases a perfect balance between functional, technical, psychological and formal design-decisions. On the one hand these kind of buildings asked naturally for careful functional analyses of the building-program but on the other hand they provided the opportunity to make the desired modern society

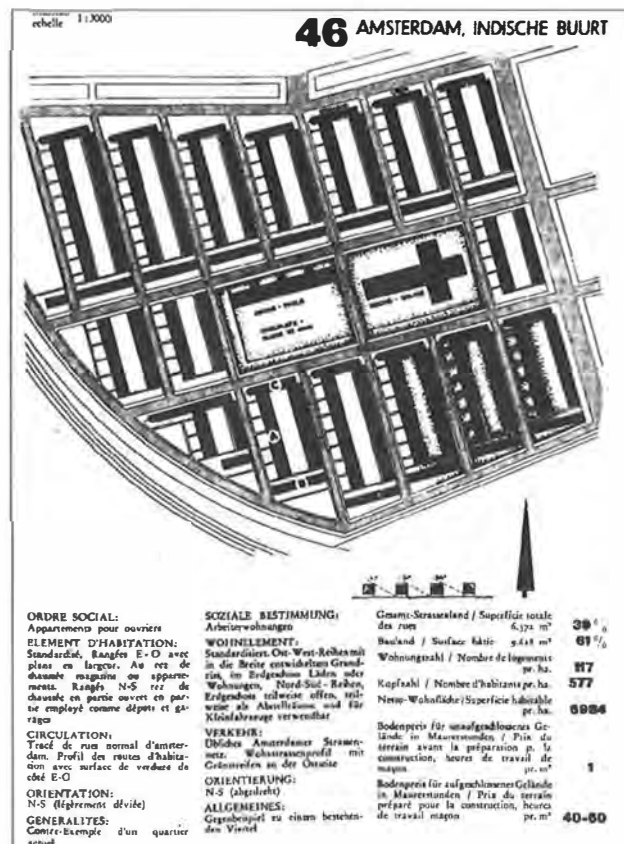


Open-air school in Amsterdam
J. Duiker, 1929-30.

and culture visible in every day life. The building program itself gave occasion to the accentuation of the hygienic, efficiency and technological aspects that should be at the base of the new and modern culture. After the Second WorldWar the accent shifted into the direction of psychological aspects. In this whole category we find buildings like Aalto's sanatorium in Paimio, Duiker's Open-air school in Amsterdam together with his sanatorium in Hilversum, Van Eyck's orphanage in Amsterdam, Le Corbusier's buildings for the Salvation Army in Paris etc. One can add the fact that also a great number of builders were attracted by the new, modern culture. In architecture they saw a medium to demonstrate this.



Van Nelle-factory in Rotterdam,
J.A. Brinkman and L.C. van der Vlugt, 1926-30.



Plan for a neighbourhood-unit in Amsterdam.
Published in "Rationelle Bebauungsweisen", 1931.
Not executed; B. Merkelbach, Dh.J.F. Karsten and W. van Tijen, 1930.

Therefore they deliberately selected architects of the Modern Movement. An instructive example is the factory-owner Van der Leeuw who invited the Modern Movement-architect Van der Vlugt to design the new Van Nelle factory in Rotterdam. Obviously the building on the one hand reflects in a pragmatical and in a symbolic way the architectural and cultural aims of the architects of the Netherlands Modern Movement but on the other hand also the aspirations in the field of business and culture of the builder. These kind of buildings fill the space between the architectural utopian manifestoes and the residential quarters which are above all determined by pragmatical and social demands. They are of great value because they are in general well functioning creations with a great symbolic expressiveness. They form the core of the Modern Movement.

In the third place there is the broad category of housing and town-planning within the sphere of CIAM-theory with

a rather modest role for aesthetics. Here the avantgardistic attitude did not manifest itself in artistic experiments but in a number of innovations in the field of mass-housing and town-planning with the ultimate goal to contribute to a better society.

The founding-manifesto of CIAM in La Sarraz in 1928 demonstrates this clearly. Later this belief in the social and political potency of architecture was called naïve but nevertheless we have to admit that a lot of concrete improvements have been realized in the field of housing and town-planning. I am referring to the traffic system, greenbelts, ground-plans, parcelling, hygiene, public facilities and the organization of the main urban functions. Within this category the emphasis was on the functional aspects of the design with as a result architecture of a less outspoken artistic character than in the first and the second categories. In this connection Michael Müller speaks, with reference to the Hellerhof Siedlung of Mart Stam

in Frankfurt, about the aesthetic form as inhabitable architecture or in German: "ästhetische Formen als lebenspraktische Architektur". Of course this category is also of great importance for the Modern Movement. It was within this category that architects tested the avantgardistic ideals in practice with a great number of financial limitations. I am referring to the Siedlungen of Ernst May in Frankfurt, to those of Bruno Taut and others in Berlin and to the townplanning of Van Eesteren in Amsterdam.

I think it is useful to add to this category the villa. Although this type of building did not have a great priority at the CIAM-congresses it often demonstrates what Siegfried Giedeon meant when he was speaking about the so called 'befreites Wohnen'. In most cases this befreites Wohnen was found only in a very limitative way in mass-housing because of the financial restrictions.

Finally there are many architectural

creations, which borrow a number of formal characteristics from the Modern Movement, but which don't share the idealism stemming from the historical avantgarde. I am referring to the architecture between the wars of artistically talented architects like Dudok and Mallet Stevens who showed us a virtuous play with intersecting geometric forms, to the modernist architecture in Italy during the time of fascism and especially to the postWar large scale housing developments.

In order to overcome the housing-shortage only the efficiency aspects of the CIAM-planning were adopted everywhere in Europe but without the ideological background. To this category also belong the large-scale, box-like office-buildings of the 1960's. In this connection I am referring to the *Grandes Ensembles* and la Défense in the outskirts of Paris, to das *Märkische Viertel*, Gropiusstadt and *Marzahn* in Berlin, to the *Bijlmermeer* in Amsterdam etc. It is especially at this category of the Modern Movement that post-modern critics like Charles Jencks were aiming their attacks. Jencks dated the death of the Modern Movement to a precise moment, namely July 15, 1972 at 3.32 p.m. when because of vandalism a number of large CIAM-like housing-blocks were blown up in St. Louis in the United States of America. In contrast to this I refuse to accept these and other mutants as an integral part of the Modern Movement, although I have to admit that they are the unintentional but under the circumstances inevitable results of it.

What are the consequences of this for the decisions about alteration, renovation, preservation and restoration? It will be clear that it is impossible to give an unambiguous answer. I only can give here some suggestions.

Of the built manifestoes one can say that there is a tight connection between the ideological concept and the form. That means that just as is the case with the Palladian villas and very different from the gothic cathedral these kind of buildings are very vulnerable. Almost every alteration destroys the essence.

That means that one should alter these buildings as little as possible. Rietveld's Schröderhouse for instance is a manifesto, rooted in the theories of the Stijl. By removing the sliding walls or by altering the windows, the colours or the relation between vertical and horizontal elements the manifesto is destroyed. Remarkable however is the fact that the plastered brick walls could be replaced by concrete ones without doing much damage. (By the way: I don't suggest doing this). It means that, when it's clear to which category a building belongs, one can take a general stand but at the same time that one has to notice individual differences. Every time one has to answer the question: What is the essence of this specific building and which elements are essential?

This is also true for the second category, because there is also to a somewhat lesser degree a tight connection between ideological background and Form. The design-decisions are however more complicated because the demands of the functional building-program played a greater role in comparison with the artistic considerations. Both aspects have to be respected. What for instance is essential in Duiker's Open-air-school in Amsterdam? Without pretending to be ex-

haustive I would like to point out some indications. Essential is the organization of the class-rooms - both open and closed - around the very compact internal traffic-system. In contrast with the post-war Forum-architects like Herman Hertzberger, stairs are strictly means for vertical transport and no meeting-places. Also essential is the fixation on the positive qualities of sunlight which result in a completely sun-orientated and transparent school. Further I would like to mention the diminishing of the mass of the vertical concrete columns up to the top of the building and of the horizontal beams there where they have their smallest bending-load. The reason therefore was that Duiker was convinced of the cultural importance of the application in architecture of the so called cosmic principle of economy which was at the base of nature itself and of the cosmos. He borrowed this notion from science. This for instance means that a replacement of columns and beams by equal thick ones would kill the essence of this building. Within the third category in most cases it is the qualities of use, of town-planning and of parcelling that are essential. Van Eesteren's General Extension-plan for Amsterdam from 1935 indeed clearly demonstrates the CIAM way of thinking. In contrast with for instance



The neighbourhood-unit Slotervaart in Amsterdam, executed in the fifties.
Part of the General Extension-plan of Amsterdam, urban design C. van Eesteren, 1935



Villa Henny in Huis ter Heide,
R. van 't Hoff, 1915-16.

Taut's Siedlungen of the 1920's in Berlin the architectural quality of the housing-projects which were realized only after the Second World War stayed far behind the qualities of urban space. This leads to the conclusion that it should be acceptable to replace in the future - if necessary - some housing-blocks by new ones under the condition that the essential townplanning-qualities such as the carefully planned green walking-routes, the subtle relations between open spaces and buildings and between low and high-rise buildings etc. are respected. The recent tendency to plug new blocks into the space between the old ones, which was caused by a shortage of building-grounds around Amsterdam, is very threatening for the town-planning-qualities because one has failed to analyse them carefully before this operation.

This all leads to the conclusion that a general strategy of alteration, renovation, preservation and conservation of the architecture of the Modern Movement is an illusion. At least one should develop three kinds of approach with regard to the three mentioned categories.

Because especially in the twenties both the first and the second category are dominated by buildings of an almost abstract perfection and transparency and because this was directly connected with avantgardistic ideological concepts even slight alterations are often disastrous. In this sense these monuments are much more related to Palladian villas than with gothic cathedrals. They are part of the tradition of the design as an intellectual and ideological concept. This has less to do with the use of certain materials, asymmetrical or symmetrical ground-plans etc. Even the completely symmetrical architecture of Robert van't Hoff or Adolf Loos belongs to the conceptional architecture of the Modern Movement just as the a-symmetrical Bauhaus of Walter Gropius or the Schröderhouse of Rietveld. The fact that Oud's Kiefthoek settlement, Mendelsohn's Einsteinturm, again Rietveld's Schröderhouse or many housing-projects are entirely or at least partly made of brick is not essential. Essential - especially for the build manifestoes - is the question to what extent one has succeeded in visualising the ideological points of departure. Essential for the second and

partly for the third category is the question how far one has succeeded in reconciling ideology with the practical building-program and to what extent the choice of form, material and construction, producing the so well known Modern Movement images, was justified by this program. In the third category the question, how far one has succeeded in realising the '*aesthetische Gebrauchswert*' (aesthetical value of use) as mentioned by Michael Müller, is essential.

However in all cases one has to analyse further the specific individual qualities of the design. By ignoring this, essential values will get lost and there will be an irreparable gap between the conceptual starting-points and the architectural form. In addition to technical analyses we also need historical investigation in the field of architectural theory in order to come to the right decisions in cases of alteration, renovation, preservation or restoration. A villa of the Modern Movement asks for exactly the same approach as a Palladian one.

Conserving the 20th Century architectural heritage

Approaches to a common problem

Introduction

The accelerated transformation of the built environment, the increasing demands of big business and the need to repair ever more recent buildings has forced us to realize that most buildings are getting physically and functionally outdated long before they reach the age of a potential historical monument. In many countries, specialists have started to formulate strategies for the protection of more recent architectural heritage. The Group of Specialists on 20th Century Architecture of the Council of Europe and DOCOMOMO have afforded opportunities for international cooperation in this field.

However, at the moment it seems that the European Conference of Ministers responsible for the architectural heritage will take up the questions of the 20th Century in 1993 at the earliest.

My presentation is a report of a survey conducted and recently published by the Finnish Ministry of the Environment. In Finland a program for inventories and research on recent architectural heritage was announced in 1990 as a major priority by the Research Division of the Advisory Board for Building Conservation. The primary aim of our project was to acquire comparative material for preparing inventories and a strategy for the protection of 20th Century architecture in Finland. A questionnaire was sent to national authorities in several countries and information was requested about the inven-

tory practices, the criteria for evaluation and the means of protection of 20th Century architecture and the built environment. Responses, received from 15 countries, gave us some idea of how the problem has been dealt with in various countries so far. The countries from which we got responses were Austria, England, Denmark, France, Germany, Holland, Ireland, Norway, Spain, Soviet Union (it is hard for a survey to keep up with the world nowadays), Sweden, Switzerland, Australia, Canada and United States. The results of the survey and suggestions on how to improve the situation in Finland were recently discussed in the context of a domestic seminar.

Not taking into account various articles and seminar proceedings, the only previous research of a similar kind seems to be 'Assessment of 20th Century architecture - notes for conservationists' published 1980 by Donald Leslie Johnson in Flinders University, Australia. One could say that it is no coincidence that this kind of research has been done in countries with a young architectural heritage and a peripheral position. Johnson's research also included an overview on the situation in other countries and the comparison indicates that during the past ten years there has not been so much an improvement in the field of legislation or actual protection but in attitudes - the issue has evidently been taken into consideration in every country. The problem can thus with good reason be described as common.

In this context it is also of interest that in many of the letters we got, DOCOMOMO's activities were mentioned as an important step forward.

Despite the fact that the national registers vary in relation to their purpose, scope, coverage, legal implications, users, products and of course resour-

ces, and also despite that from every country we did not get responses from all authorities involved, I shall try to outline the most interesting themes and main polarities that can be discerned from the material.

Research traditions

At first I shall give in to the temptation to start between the lines and give an idea of the mutual background of the conservationists in various countries.

Compared to the history of fine arts, the history of architecture seems to move on at a slower pace. This can be explained by its relatively short life as an academic discipline, by its strong relationship to social conditions and even by the nature of its big effort-demanding objects.

Once there were only architects and some historians interested in the subject, but now the field has become crowded, not only with academically trained art historians but also with antiquarians, restorers, conservationists, museologists, psychologists, sociologists, urbanists, cultural geographers and even the royalty, to mention some. That the traditional orientation towards style gave way to social and economical history during the 1960's and 1970's was clearly seen in the field of conservation ideas.

The 20th Century has witnessed an immense growth of architectural literature, research, guidebooks, articles and so forth, specializing in architects, styles and periods, single buildings, building types, urbanism and architectural theory and criticism. The amount of primary as well as secondary sources concerning 20th Century architecture is exhaustive. The architects and builders may still be alive and the documents are certainly more accessible and complete. So the influence on the work of conservationists is two-faced, in one

way the research is made easier, but as there is so much material it is more labour-intensive. Only the French seem to be making systematic indexes for conservational purposes.

The questions of priority and source critics get new meanings. For example a great deal of what was written on the Modern Movement was by theoretical evangelists of the new era, more committed to promote the movement than to an objective understanding of the architectural world.

Doubts may also be expressed that architectural history may perhaps not cover well enough the whole range of the modern process of building, for example the role of the engineers. It is not only architects whose works might be worth protecting.

The heritage of 'The Modern Times'

Though 20th century architectural heritage contains a spectrum of styles and ways of building, in many of the responses a special concern was expressed for the buildings designed according to the principles of modernism.

Technology and modernist principles have in some areas made structures, buildings and townscapes into metric measurable goods. It has been said that architecture has shared the fate of the corn; the crops have become bigger but the nutritional value and the taste have worsened. Where multiplying in the name of equality has produced the angst of repetition, a new approach may be needed to focus on conserving an idea rather than an art object. Even when a building or a group of buildings cannot be respected for artistic and aesthetic solutions, it must be taken into account that for some people the buildings may be important keys for understanding how their built environment developed into what it is.

Technological innovation is commonly understood to have gained new significance in the context of the 20th Century built heritage.

Who would then deny that the birth of

standardization and serial/mass production is worth proper physical documentation? These phenomena can be criticized for their violent effect on peoples lives but certainly not for being meaningless. All in all they are as human as any of the products of the previous centuries.

One problem is that nobody gets upset about the demolition of something that's pretty common. But in our accelerated time frame a few years of demolition can make a big difference.

Our common problem can thus be quite relevantly reduced to the problem of the common.

Not only the scale and amount of building but also the amount of different building types has increased side by side with the growth of the whole material world. A feature that cannot be stressed too much is that in responses to our inquiry as well as in the available publications strong support was given to the idea of approaching the subject from the point of building types and 'the modern projects', such as English schools, Irish hospitals, French airports and so forth.

How reasonable it is to make these kind of thematic inventories or conservation programs, either instead of or beside geographical inventories, depends a lot on the current system of registration. But certainly it is a useful approach in dealing with the recent heritage. If someone present has experience in making thematic inventories, it would be most interesting to hear more details.

I have briefly gone over some approaches to the nature of that part of recent architectural heritage that could be labelled as modernism. I shall now take up questions that seem to be generally relevant in making registers of this heritage.

Values and criteria

Protection policy usually implies some kind of an assessment method. Thus the inquiry gave an interesting view over different value concepts used by conservation authorities. The explicit criteria vary from few aspects, e.g. from the

aesthetical and historical value mentioned in the relevant law to the detailed lists related to a complex scoring system.

The scoring system developed by Canadian Harold Kalman, and used in Canada and North America, seems to be the most detailed and exact, though not necessarily restricting, frame for inventory work. It can be used with verbal grades or numerical scores. For us a particularly interesting feature is that each city or region gets its own scale of age criteria. This is made by determining the date of construction of the oldest extant building in the area and calculating the years that mark one-eighth, one-quarter and one-half of the interval between that date and the present. This might help recently established municipalities to appreciate their recent architectural heritage.

Historical value (associated with a person or an event for instance) seems to be the most common among the terms used. Artistic, architectural or aesthetic values are also regularly mentioned. From this polarity general categories can be formed according to the way these values are perceived. In Finland suggestions have been made to reduce the structure of criteria in this direction, and the Norwegians have already clarified the division of the values, based on either knowledge or experience, for the purposes of their SEFRAK-inventory. The third of the most common value concepts, namely environmental value, can naturally also be observed through both intellectual and sensory perception.

The list of other, more detailed criteria applied to evaluation in various countries is exhaustive. It starts from the author, the age, the style and the cultural, scientific or symbolic value and continues with features like usability, integrity, continuity, intensity, authenticity, soundness, representativeness, typicality, rarity, versatility and historical diversity. The meaning a building has to peoples' identity and its value as a means and source for education or research have also been referred to. Comparing the criteria of various coun-

tries one has to keep in mind both the language features and the differences between scientific inventories and those containing different grades of protection.

The influence that a building's status in architectural literature or competitions should have in decision-making seem to inspire divided opinions. It might be rewarding to devote ourselves for a moment to the problem of canonization, which has been skillfully treated by the American researcher Anita Silvers. Most of us share the belief in the test of time, in history as a proving ground for value. Can it be said then, that to be canonical is to have history?

Silvers demonstrates that the fact that the historically accumulated reputation of a work cannot be referred to as a reason for holding it in high repute today is a vicious circle and this is also true in the case of declining estimation. The same is valid for the length of the duration of a good reputation. Historical scholarship is capable of resulting in stability as well as alteration, tradition as well as revision.

In the process of esteeming the meaning of an art work we should focus on both the history preceding and succeeding the work's creation. An object's further history can be essential to what it is. Subsequently, it is at least as important to follow the further history of an art work as it is to reconstruct its origins.

Canonical status does not depend on properties of the work itself or its relation to other works of art, but on the relation to the story of art, to the narratives. The question is then, whether an art work fits into the role of the subject of a heroic narrative, whether it has the power of inspiring stories. A historical narrative especially suitable for a piece of modern architecture is the history of ideas. In the light of the preceding approach a suggestion can be made to look for help from the philosophy of history as well as history of criticism.

When making a new choice of evaluative premises, we must be careful not to impose alien paradigms onto 20th

Century architecture. In many answers national authorities underlined that the practical listing process of these recent buildings is far from consensus and that the people in charge still have very different opinions, especially of the highlights of modernism. As there is a general trend towards national-level inventories it can be expected that the international exchange of knowledge of the theoretical as well as the practical methods of inventorying would be worth promoting.

The value arguments may not necessarily remain isolated tools of conservation authorities; they may change and develop together with the values of the whole society. In Finland the last renewal of the laws (Town and Country Planning and Building Act, The Protection of Buildings Act) concerning building protection in 1985 included a quite revolutionary vision in the spirit of sustainable development: the aim of the renewal was to change the necessity of giving reasons for saving a building to the necessity of giving reasons for demolishing one. As could be expected, this shift of stress still stays well hid

growth and ecology as possible arguments for preservation. They seem to hesitate to draw attention to the fact that it is wasteful to destroy re-usable resources. Assessment of environmental impacts is a developing and promising method that may, if transferred to building conservation, open up new dimensions in determining the values of our heritage.

Age requirements

The title of this presentation reflects the international discussions where the different national features of architectural history have been accommodated by taking this century in its entirety. But that of course does not mean that age considerations would have disappeared.

It looks as though the questions of time margins defining our idea of architectural heritage cannot be avoided. The solutions are in fact surprisingly diverse. In some countries the authorities still have to cope with a statutory 100 or 50 years rule, in others the rule has been gradually loosened or the whole issue left to the academic tradition.



The Ministry of Defence, Military Academy, architect Olavi Sortta, 1941.

den in the reality of the process of town planning.

It can be considered surprising that in general the conservationists do not yet seem to be interested in the issues of

It has been said, and with good reasons, that the technological capacity for the destruction of the built environment is so accelerated that we cannot as a rule wait 50 years. The idea of a rolling time frame of 30 years has been

adopted in Scotland and England, and discussed in France. The British discussion on this theme seem to have been enviably lively, not least because of the 10-years listing rule for buildings of exceptional quality. The main reason given by the opponents of this rule seem to be the potential influence on contemporary architecture, in the form of fears either on the side of architects or their customers. It is hard to believe that these kind of marginal issues could have such powerful consequences.

At the national level many countries have recently put the architectural heritage of a certain decade under the spotlight, for example Germany and Sweden have focused on the 1950's. Thus the definition of the problematic area is most often temporal. The national authorities seem to avoid other formulations, such as modernism.

A survey of domestic inventories revealed that in Finland most inventories made by regional planning offices and municipal authorities are still dominated by the cut-off date 1940, despite the fact that the relevant legislation in Finland does not recognize age limits. This is a questionable situation in a country whose architectural identity is so strongly related to the modern heritage. The Finnish building stock is namely one of the youngest in Europe, about 90% of the buildings having been built after 1920. In the light of the Finnish material a conclusion was reached that at least a clear definition of the inventory task and the borders placed should be presupposed.

An admirable attempt to broaden the international concept of a historical

monument was made by the Swedish, who suggested Asplunds Skogskyrkogården, Stockholm South Cemetery with its noteworthy chapels from the 1920's, as being eligible for the World Heritage List of Unesco. It will be interesting to see what effect the psychologically meaningful turn of the millennium will have on the discussion of the test of time in regard to the 20th Century heritage.

Continuity

One thing the responses made very clear was that the majority prefer to treat recent heritage as an integral part of older heritage and include it in general inventories. This is often due to the administration and bureaucracy, which usually do not favour separate projects, but at least in some cases this is based on the principle that stresses that continuity makes it easier to understand that recent buildings belong to the entirety of the national heritage. Accordingly scale - for selecting buildings of this century.

the general criteria are most often applied - but on a considerably stricter. In only a few cases special programs have been made for the needs of the recent heritage. When a specific inventory is chosen the selection criteria seem to be much more detailed and set up on the conditions of the time period, as has been made in the Netherlands inventory of buildings from the 1850-1940, MIP.

In Finland the National Board of Antiquities earlier had the bad habit of leaning on the shoulder of the Museum of Finnish Architecture on matters relating to 20th Century architecture. The museum on the other hand has continuously and logically underlined the importance of the concept of the continuity of heritage as well as the necessary division of antiquarian and information duties. The help of architectural museums in the form of exhibitions and publications is naturally irreplaceable and has been mentioned in some of the responses.



The Resurrection Chapel
by Erik Bryggman, 1941.

Statistics of the amount of 20th Century buildings in the registers are regularly very hard to provide. Despite this some ventured to give estimations, and if all the divergences in the material and in the ways of calculation are disregarded, the rough numbers tell that the variation in the total of registered 20th Century buildings is remarkable; there are countries with just a couple of listings, relatively many (four) countries with a couple of thousand of listings and then the top numbers, an estimation of 26 00 from the United States and MIP-expectation number of 100. 000 from Holland. The percentages available are clearer; they vary somewhere between 5 and 38 %.

After all there seems to be at least one field where the recent heritage has generally been isolated from the continuum without problem; special courses have been arranged for the inventory of architecture of this century and especially of the Modern Movement.

Publicity

There were no special questions about publicity in our questionnaire, but the importance of it was clear from the responses. As a logical consequence of the increased amount of the potential objects many answers emphasized that it will be ever more important to attract the attention and sympathy of the public, the potential owners and users. Another reason for the authorities to pay special attention to publicity is the common knowledge that the heritage of modernism awakens very contradictory associations. As we all know it is here and there suffering from the reputation of the evident neglect visible in the neighbourhoods and due to the vulgar interpretations introduced by the building industry.

In Finland the increased responsibility of local authorities according to the present legislation obviously makes it important to promote a wider awareness of the recent heritage.

If the public could be educated to identify the qualities and the values of the more recently built environment, this awareness could be used to influence politicians. The means mentioned were



Toronto City Hall,
architect Viljo Revell, 1965

both good old methods like guided tours and of less common methods such as radio and tv-programs. A particularly interesting example was the 'Pressefahrt 1988 in Hessen', where journalists were taken on a guided tour where the theme was the architecture of the 1950's. The Danish Ministry of Environment has approached the matter with a fine publication, which highlights the different aspects of the recent heritage through eleven cases.

The importance of old photographs for giving an image of a building in its original state was also stressed. There has also been some interest in the possibilities of the old movies as an exciting illustrating source. All in all it is a reasonable idea to use 20th Century media to inform people of the 20th Century architectural heritage.

An interesting feature was the existence and importance of the various national and local interest groups or associations referred in some of the responses.

Conclusions

The concept of heritage has expanded with time, and especially during the last decades to include the idea of integrated conservation and new categories such as vernacular and industrial. 20th Century architectural heritage can be taken as a similar 'new heritage'; an extension in the frame of time towards the present.

When dealing with buildings from pre-

vious centuries the task left for conservationists has been to confirm the value of the buildings still in existence.

Confronting this new extension, we cannot afford to take the evaluation criteria as a painful bureaucratic necessity (nor a mystique). Do we have the guts or the readiness to shift from a patching emergency preservation to a really preventive one?

Dealing with the heritage of the 20th Century does not only compel one to be more active and more in touch with both the media and the general public, it also provides an opportunity for revising the whole structure of criteria and arguments.

This situation could at its best lead to wider self-knowledge among us working for architectural conservation.

The problematics of the test of time and the concepts of value adapted to the heritage of our recent past must be confronted if consistent and effective arguments for the protection policy are to be achieved and a more sustainable intellectual foundation for conservation work in general is to be laid.

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Swedish Modern Movement architecture from the 1930's; its characteristics and how to protect and take care of it.

We of the Swedish DOCOMOMO Group are delighted to have this opportunity of telling you about our architectural heritage from the early Modern Movement because, in terms of both scope and content, that heritage is both abundant and significant. The movement made a powerful impression in our country and retained its firm standing there, whereas in many other countries it vanished or was suppressed. The strength of the movement in Sweden lay in its not just applying to single, exclusive buildings but being extensively applied, not least to everyday building developments. Its working methods were swiftly adopted and have undergone an interesting process of development in Sweden throughout the postWar era.

The Swedish DOCOMOMO Group consists of people whose daily work involves them with questions concerning, among other things, Modern Movement architecture. For my own part, I am a researcher at the Swedish Museum of Architecture and specialise in the building and planning of the thirties, forties and fifties. Our group also includes people from the Central Board of National Antiquities, the Stockholm City Museum, the Swedish Architectural Heritage Society and museums, institutes of technology and so on in the country at large. Consequently we can take a broad view of matters affecting this part of the architectural heritage

and, hopefully, can help to decide what happens to it.

Since, on the other hand, there are not all that many of us and our resources are limited, we have decided for the time being to concentrate on the early Modern Movement architecture which, in Sweden, came to be known as functionalism. This period runs from the late 1920's (when the movement caught on in Sweden) to about 1940. Between those points in time, the buildings concerned are of relatively uniform appearance and are quite easily distinguishable from building development of other periods. And it is very much the buildings of that period which are threatened today, partly because in certain circles they are considered architecturally uninteresting, and because, to a great extent, they have already begun to be rebuilt and have been heavily transformed. These changes are partly due to inadequacies in the thermal insulation of many multi-family dwellings of the period. As we in Sweden have quite cold winters this is a problem.

The Swedish DOCOMOMO Group is now compiling a concentrated manual which will run to about 50 pages and will describe, in words and pictures, the character and qualities of Swedish Functionalist architecture from the 1930's, as well as offering advice and examples on the subject of appropriate conservation strategies.

We are discussing characteristic layouts, selection of materials, entire buildings and detailing, as well as the urban planning ideals of the period. In addition, we are preparing a conference on the same theme and have invited architects, antiquarians, property managers and others responsible for and interested in the building development of the period. The conference will be held in Stockholm on 15th-16th

October this year. The evolution and content of the publication and the conference itself will be partly reflected by what I have to say now.

Background

The Modern Movement in architecture came to Sweden during the second half of the 1920's. Sweden had scored a major success at the great Paris Exhibition of 1925 with the cool, elegant and lightly worn classicism dubbed 'Swedish Grace'. In Sweden itself the style was known as 1920's classicism and it was the paramount style of the period. The great name among architects was Gunnar Asplund. The Swedish Society for Industrial Design, inspired by the new trends in Europe, made him the principal architect for a big exhibition in Stockholm in 1930. Together with a number of eminent colleagues, he produced an exhibition setting of light, exquisite pavilion buildings in the spirit of the new architecture. The exhibition itself included everything from designer products to studies of housing supply for the great mass of the people. The latter was partly inspired by Ernst May's exhibition in Frankfurt, a few years earlier, on the subject of subsistence-level housing. The Stockholm Exhibition attracted enormous crowds of people all through the summer of 1930 and was enthusiastically received. But at the same time, the new architecture came in for criticism among architects and cultural figures representing a more traditional view of architecture. The exponents of the new movement joined forces on an effective apologia - *acceptera* - which was published the year after the exhibition.

The 1930 Stockholm Exhibition was demolished, buildings and fittings were sold off and scattered to the four winds. All that remains there today are a few lamp posts and the reminiscence of a small garden.

The Swedish DOCOMOMO Group has recommended putting up a commemorative sign which, using a model, illustration and words, will recall the important exhibition which once took place here.

But the Modern Movement had definitely arrived in Sweden. All through the 1930's it remained the paramount style in our country, though still with a certain amount of protest from certain architects and others. During the latter part of the 1930's one finds in Swedish architecture a certain relaxation of the strictly geometrical forms and a bid for more tactile materials like brick and wood. The 1940's harked back to earlier Swedish architecture, and during that decade there is a slight touch of 'Heimatarkitektur' in Sweden. Layouts, though, still employ the approach and methods of Functionalism. The second half of the 1950's brought a new rapprochement with international trends and an architecture in the spirit of the Modern Movement.

One reason why Functionalism or the Modern Movement achieved such a powerful impact in Sweden (as in the other Nordic countries), survived and was further developed there, was, as I said earlier, that it came to be applied to buildings of virtually all kinds, and, not least, to ordinary housing develop-

and together with several of the politically committed architects they introduced a social housing policy. Politicians like Gunnar and Alva Myrdal, who had already acquired an international reputation, collaborated closely and sympathised strongly with several of the Functionalist architects. The popular movements grew powerful in Sweden during the interWar years, and both the Swedish Cooperative Union and Wholesale Society and the HSB co-operative tenants owner System housing organization had their own architects' practices, firmly rooted in the new architecture and setting the tone in more than just housing production. Just as in the Weimar Republic in Germany, the new architecture became the manifestation of a new, socially committed policy, but in Sweden, unlike Germany, it was not swept away by the Nazis.

Inventory and selection

The difficulty lies in finding out which buildings from the period are still extant and in what condition. Our group is working through journals and books from the period and compiling lists of the projects presented there. We are also reviewing the output of individual architects through the monographs and the surveys of various types of building which have been published in recent years (some of them by mem-

and time-consuming procedure. A few of the buildings of the period are included in the list of national heritage conservation areas compiled in 1990 by the Central Board of National Antiquities, and have in this way acquired special status. To arrive at a broader selection, though, one has to use other methods. We are concentrating on finding buildings and areas which are in good pristine condition or which are threatened but still in good enough condition to be worth preserving. But we also want to call attention to important buildings from the period which have been destroyed. We want to include buildings and structures of all kinds which are of architectural and historic interest. If the building still houses its original function, this enhances its value. Buildings forming a homogeneous group enhance one another's value. If only occasional buildings of a particular category survive, this enhances their value. We are interested, not only in unique buildings but also in the ordinary, average building development which was typical of its period.

The municipal cultural environment programmes are one of the principal available sources for an inventory of Sweden's buildings. These inventories have been compiled for the purpose of preserving building development of architectural or historic interest. Many



The Helsingborg concert hall, 1932, architect Sven Markelius.



Terrace housing in Stockholm, 1932, architect Paul Hedquist.

ment. The Social Democrats came to power in Sweden in 1932 and stayed there almost without interruption for fifty years. During the 1930's the housing problem was one of their top priorities,

and together with several of the politically committed architects they introduced a social housing policy. We are canvassing the country museums for particulars of buildings of outstanding importance which survive from the period, but this is a difficult

such programmes have come into being in recent years as a result of the new planning legislation passed in 1986, which had the effect of transferring more responsibility than ever for

building and planning from central, national government level to local, municipal level. (Most decisions relating to building and planning nowadays are made at local municipal level).

The municipal programmes for the cultural environment, then, are most readily available source for identifying, nationwide, buildings of different ages which merit conservation. The individual programmes, though, range from

comprehensive inventories, with detailed commentaries on both buildings and complete environments, to short, uninformative enumerations of individual buildings. This, of course, is connected with the size of the municipality concerned, but a lot also depends on the human or personal factor. Resources and knowledge in this field vary considerably from one municipality to another, and it is not uncommon for the inventory of what is considered architecture to stop short of buildings post-

dating the 1920's. One comes across remarks like: 'The buildings, dating as they do from the 1930's, are of no historico-cultural or architectural interest'. By studying these programmes, then, we can verify the necessity of disseminating a knowledge of the qualities and distinctive nature of Modern Movement building. Many of these inventories and commentaries, though, supply us with valuable information, and above all they tell us what state the buildings are in. The problem lies in



The collective house in Stockholm, architect Sven Markelius, 1935



One of the balconies at the Collective House.

finding out things which, for various reasons, are excluded from these inventories: buildings which the author has judged uninteresting, and buildings which have undergone too many changes to be included. (The above will be accompanied by illustrations of buildings from the period, including some which are now threatened.)

Example: collective service block from 1935

In our manual, and in our articles and lectures, we aim to bring out characteristics and qualities of Modern Movement architecture. We would like to see the qualities of those buildings inspiring latter-day building activity and being perpetuated by it, but our main concern is to draw attention to surviving buildings from the period and to give good, instructive examples of their conservation. I would like to describe one such example now: the recently (1991) refurbished collective service block in Stockholm, dating from 1935 and designed by Sven Markelius. In addition to being a fine example of the architecture of the period, this collective service block is an interesting piece of cultural and social history. It was the first out-and-out collective service block in Sweden, the product of painstaking efforts and self-sacrifice on

the part of Sven Markelius, Alva Myrdal and others. They wanted to solve the working woman's problems of home management and child supervision by providing, within the building, a nursery and restaurant and staff to do the laundry and cleaning. Not everyone could afford a full-time maid, and cost sharing made domestic services more affordable. A large complex was originally planned for, but the end-result of the experiment was a building of 57 apartments (most of them small, with tiny kitchens) and communal spaces like a roof terrace, a nursery and restaurant and kitchen lifts communicating with every apartment, for those who preferred not to take their meals in the restaurant. Many of the radical cultural personalities of the time lived here, Markelius and his family among them. There was also an anti-nazi cultural movement active here, involving many of the inmates.

Right from the start, this building was administered by a tenant-owner association which, a few years ago, took steps to refurbish the entrance and façades. This was a big project for such a small organization, but they made a happy choice of architect and, eventually, received a financial grant from the heritage conservation authorities on the grounds that the building was of architectural and historico-cultural importance and still retained its original functions.

The entrance was saved from conversion into a refuse collective facility and,

instead of fabric wall hangings, regained its original pale-ochre, shiny, stuccolustre-like surface finishing and its original radiators. A previous refurbishing had given the façade a coarse, hard mica plaster which was now coming unstuck. This was now replaced with a smooth, thin lime plaster, painted with lime paint of the original yellow ochre hue. The wooden window frames and steel balcony guardings were retouched with the original oil paint instead of the 'maintenance-free' products normally used for refurbishments nowadays.

The balconies on the courtyard side were in such bad condition that their floor slabs had to be recast. A more complicated procedure was adopted than is common nowadays, so as to retain the distinctive, smooth underside and the drainage detailing. Indoors, the nursery was reinstated in its original premises and the kitchen lift was modernised. (In the individual flats, the residents themselves organized the refurbishment, which was not quite such a resounding success.)

Thanks to the architects co-ordinating the project being skilled specialists in building conservation and able to visit the site at important stages (which is not all that common in Sweden otherwise), and thanks to their success in finding skilled craftsmen for the plastering and concrete-casting, the refurbishment has turned out very well indeed.

Another secret of success was the committed client - the tenant-owner asso-

ciation - and the heritage conservation authorities - that is, the Stockholm City Museum and the Central Board of National Antiquities, which actively took part in and supported the project. The architect in charge of the project, however, found that great talents of persuasion were needed in order to restore a 1930's building, using the building methods and materials of the actual period. By contrast, in the case of an 18th century building it goes without saying that one adapts oneself to the style and materials of the period. The project leader's previous assignments had mainly involved earlier historic buildings of that kind, but he found it both interesting and instructive to work with a building from the 1930's. We attach tremendous value to the recruitment of skilled architects for this period of architectural history and for our activities, but if we insist that they also commit themselves to Modern Movement architecture in the production of new buildings, the only effect will be to scare them off. For them as for us, the prime concern is to observe and safeguard the building of the Modern Movement period as an architectural and cultural heritage, to be cherished just like the architectural heritage of any other period.

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Modern Movement documentation as a central resource for architectural education

Underlying the whole DOCOMOMO effort is the question of what is its long-term purpose. As debate at the Eindhoven conference showed two years ago, there are differing views on this within the various national memberships. Our view, shared by the majority of the UK working party, is that ultimately the venture must be motivated by a determination that the Modern Movement's ideas and accumulated experience should continue to influence architectural development. The primary medium for transmitting that influence must inevitably and logically be the education of future professionals. Standing here in the Bauhaus, one is more than ever aware of the rightness of what the Finnish architect Kristian Gullichsen has said: that the Modern Movement legacy is 'a gold mine we would be foolish not to explore.' But as the genetic material out of which the present state of architecture has been born, it is even more important than that remark suggests, as all questions of 'where are we now?' rest ineluctably on perceptions of 'where we have come from'.

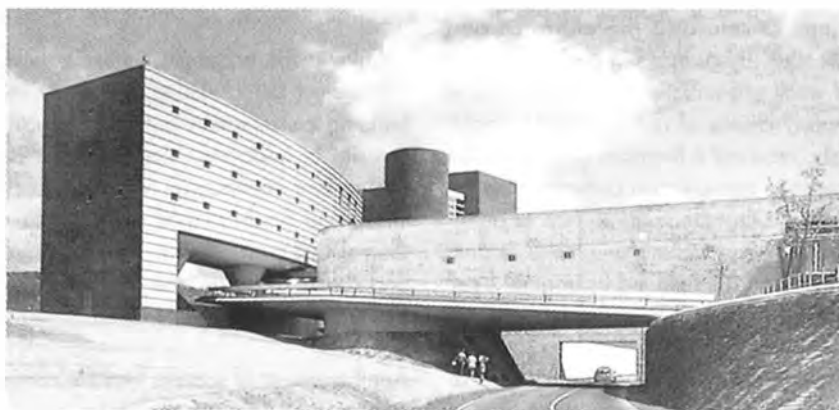
And 'where we have come from' is not a vacuum, a tabula rasa. There cannot be any doubt by now that we are already standing within a tradition. The complexity and responsiveness of the best architecture today already speaks of a tradition of some maturity. Already work that is unquestionably 'modern', that unquestionably traces its roots into the Modern Movement of

DOCOMOMO's concern, is subtly self-referential and self-critical. Modernism is after all the foundation, the raw material, out of which such complex works as those by designers as varied as Coop Himmelblau and Morphosis built, Meier and Maki are being.

In today's global village, this is already a tradition which increasingly declares our semantic and cultural diversity. Such works are identified by their relaxed confidence in placing this new, highly international tradition of our own century within the local traditions that may be encountered in any specific design task, that is within traditions which are older, and local to a particular physical place or the culture of a client.

design of these buildings was influenced by nothing - and certainly not influenced by historic buildings. But nothing is conceived in a void. So if I'm looking for precedents, it might be those of the 'functional' tradition, which makes a connection back to the beginnings of the modern movement in architecture - and its rejection of history, which for some was like throwing out the baby with the bath-water. The fluctuation between modernity and tradition which has been so characteristic of this century is echoed in microcosm in the oscillation between functional abstraction and historic association in our current work.'

And he went on to discuss the elements of local history, both manmade and



Factory complex for Braun Pharmaceutical Company, Melsungen, Germany
James Stirling, 1992

Stirling's Braun factory is another example, and one with a special resonance for us from England. It was the last design completed by perhaps the greatest Modernist pioneer of the generation preceding ours, and which taught us, before his tragic accidental death this summer. The work also happens to be located here in Germany. In his speech at the building's opening on the 27th of May this year, Stirling spoke of his building in precisely the terms of our current discussion. He said: 'I might like to think that the

natural, which had been synthesised with the 'functional abstractions' of modernity in a group of buildings which at every turn stands on the shoulders of modernist work from an enormous number of sources.

In the hands of a master the elements of that rich common heritage of design precedent is under good control. But for lesser mortals - and in particular for students setting out into today's global village of practice - the greatest impediment to the creating of any meaningful statements is the formal and seman-

tic chaos which threatens us, as images and words circulate indiscriminately, crossing every historical cultural boundary, through the whole explosion of architectural tourism and publishing made possible by today's technologies.

We face the danger today of repeating what is now well recognised to have happened widely in the postWar decades of modernism. For all their rejection of the rhetoric and purposes of traditional architectures, the pioneers of modernism, as is now well understood, were without exception products and beneficiaries of certain aesthetic disciplines that were central to the historical architectures in which they had all been trained. Being in firm possession of the eye and techniques for handling proportion, of firm grounding in the geometrical systems possible in three-dimensional space, of logics for ordering everything from spatial structure down to details, they could afford to cry out 'away with history'. The next generation took them literally, however, and *did* throw out the history, virtually eliminating from the schools not just the art-historical connoisseurial froth of decorative pattern and so on, but also the fundamentals which are the absolutely universal building blocks of coherent architectural systems. The oversimplified, formulaic visions that resulted, and were compounded in many countries by crude social and economic pressures, produced the mindless building programmes that have brought 'Modernism' a bad name all over the world. As architecture surges back to a rediscovery of those lost complexities, we risk moving from banality to a meaningless semantic Babel. This Babel will only be averted if we learn the lesson of our own recent history here, and set out consciously to transmit to the next generation with ruthless clarity those disciplines and grammars of the new tradition which are as much ABC to today's masters as Greek orders or the typologies of Durand *actually* were to those trailblazers of preWar modernism who so loudly decried 'all history'. It would seem very easy: any visit to an architectural bookshop shows that we are swimming through a torrent of new research into precisely this Modern

Movement work we are discussing. But open the covers as a student designer and you can only retreat in the face of total confusion. Biographies, building studies, histories of this or that hermetic little concept or debate...What does it teach you that is useful in producing the buildings that must follow now? More or less nothing. And why? Because it is totally unfocussed. Most of the particular studies have not been concerned to sift their material for the *design* principles, the *design experience* it contains. There is no clear distinction between the fundamental and the trivial: in a cut-throat academic and publishing marketplace, every architectural novelty, like every soap powder, must offer some unique advance in the life-style discourse. Least of all does the profession itself have any overall map, any shared model of what its collective experience contains, that it can hand on as tools of thought and principles of form-making to the next generation. To put it in simple and practical terms: how can a student approaching the bookshop, or walking round a city, distill the cacophony down to those quite simple systems of scales, techniques, or harmonies out of which to start writing his or her own first tunes? They can't. And they can't because we in the generation of their mentors and teachers have not broached the task of ordering this heritage ourselves.

Where does DOCOMOMO come into this? Very centrally, in our view.

DOCOMOMO seeks of course to CONSERVE. But as was discussed by the international gathering at our first London Symposium last spring, it is not by chance that we are *DOCOMomo* rather than *CODOMomo*. Conservation is a vexed issue philosophically as well as practically - as Hilde Heine so eloquently rehearsed to us on the equivalent day to this, two years ago in Eindhoven. But *Documentation*, the recording and ordering of the collective built experiment and experience: this comes before physical conservation of artefacts in our programme. Why? Partly for pragmatic reasons, since conservation depends on luck, chance opportunities, other people's resources

and external politics, whereas documentation demands only our own intellectual effort. But even if we could save every building we love, those objects would not teach us anything without the act of explanation and interpretation which is the essence of Documentation. Of what are these buildings actually *Documents*?

Thus in both aspects of DOCOMOMO work, we too face the problem of making selections, both for practical reasons of resource allocation, and in the end also to maximise the impact of what we do through giving it the cutting edge of intellectual clarity. Our registers are recording the buildings that exist, but what is it about each that we should fight to save? Which buildings are we to document and what kinds of description or abstraction will actually transmit what is significant in them, either to populations at large or to our profession?

We are starting to have checklists for these discussions; 'charters' like the Australians' Burra Charter which lead those concerned systematically through the philosophical and practical questions that must be asked. But no charter can make the value judgements which are necessary for producing intelligent answers. In the United States, there are enviable grant programmes from the National Building Record Office for creating measured drawings.

In DOCOMOMO-UK there have been welcome proposals from some schools to undertake such documentary work. But where are the intellectual models which enable us to direct these energies onto the significant? What is a student learning, or teaching the rest of us, by measuring a particular building? What use can a conserved building have for architecture (as opposed to its owner), that a documented one has not - and indeed vice versa? These questions are the basis of an absolute identity of interest and common cause here, between DOCOMOMO and the needs of those now entering our complex and polyglot architecture.

Before looking in more detail at a structure that can help us perform this ordering, there is one dimension of our cur-

rent educational problem for which this Modern Movement history offers uniquely appropriate raw material.

The education process everywhere, in architecture as all other subjects, is undergoing a modular fragmentation. This is a new phenomenon forced upon us, in the specific case of architecture, by economics and power-shifts in the larger industrial processes of which building is part, and on the other hand, by the flexibility of curricula and qualifications that multi-disciplinary practice and the internationalism of today's professional and educational market places demand. These are not trivial or local policymaking, but deep structural changes, epochal in scale, resulting, at root, from the revolutions produced by information technology.

In the new modular type of education, every student composes his or her own selection of courses to fit their personal mix of talents and aspirations to a distinctive niche somewhere within a broad professional or industrial area. There are other professional areas where competence is basically measured by 'how much people know', by aggregation of increasingly specialised learning or skills: like surgery, for example, or law, which are already structurally suited to this modularity. But in a design profession like architecture, competence is not measured by any simple 'adding up' of specialist courses in its component elements. The real subject matter is something quite else. It is literally 'greater than' but is also qualitatively different from, that sum of what are seen externally as its 'parts'. Its subject matter is the subtle techniques of bringing those specialisms together synthetically, of making a holism of what elsewhere are seen as totally non-commensurable fields, like, say, engineering physics and visionary social agendas or subtle philosophical propositions. Once mastered to some degree, the holism becomes second nature to the designer: like riding a bicycle, we have forgotten what it was like before we learned to do it. And that amnesia is fine, maybe necessary, for the advanced practitioner, but such lack of conscious cognitive understanding of the task is a weak foundation

for pedagogy. In the old linear educational curricula, we taught people design by the osmotic method of trial and error. Indeed, any attempt at an objective, teachable formulation of 'what it was about' was seen as treachery: we still took the medieval view that masonic secrets would evaporate if exposed to the fresh air of simplification. But once we fragment that single linear route through architectural education into a modular, pick-and-mix sweet-shop, and the understanding of the whole must cease to be a state of grace which many never attain. It must become the first and most explicit topic through which all enter. In short, we need another kind of 'foundation course', concerned not with developing hyperconsciousness of individual parameters in the design task, but with developing an understanding of the holistic process and a basic confidence in navigating through it.

Thus the question we face is this: how can the holistic be made into a modular training programme? It can only be done by starting each student off with a framework and a method through which they can bring together their unpredictable personal mix of modules as they proceed.

The problem here is the complexity of today's real world design tasks. The novice architect's first steps must be conducted through a model which is simplified, but in its main respects identical to the factorial mix which pertains today. Modern Movement work of the interWar and postWar years uniquely provides us with precisely that. The determinism of say Hannes Meyer or the Russian constructivists may now appear rooted in certain fallacies, but they are fallacies to which the world is still prey, and to which students must be alerted. The teaching programmes of Mies or the notions of a prior training in 'rational' thinking' to be thrown directly at 'real building' which Aalto preached, may seem overly Cartesian, even 2-dimensional in their descriptions. But more than anything which went before, these were efforts to create an architectural process which can consciously grapple with politics, respond to social change, maximise the

utility of new technologies, make some coherent aesthetic expression of these deep shifts, and respond in some way to the mass, democratic power structure and moralities of this century. There are very few themes of today's architectural situation and debate not already engaged by this pioneer generation and their successors. What they uniquely provide therefore, are case-studies of a world that is simpler than our own but in its main respects cognate with it, through which students may make an intelligent but manageable entry into the discourses of architecture today, and not just as separate strands of knowledge, but as demonstrations of how such strands may be resolved in the synthetic act of design.

Returning to Gullichsen: this is the goldmine. To explore it we need some sense of its significant dimensions, some analytical concepts, some units of measurement, and some empty model or map into which to locate what we find.

In the time available here, we can only be brief, and rely substantially on slides to augment the words. Remember, please, that we are looking here for sound foundations to a professional education, for a structure of ideas that are design-related. It is a systematic training for designers we are seeking, not the kind of synoptic views of careers and projects which generally pass for accounts of 'what the Modern Movement was about'. And I should stress in this connection that we have no fear of appearing to oversimplify. The essential design concepts are simple. As all serious designers know, it is from the subtle working together of simple concepts that meaningful complexities may eventually emerge. There is a place in the student's later career for the thoughts of the Framptons, Rykwerts and Tafuris, but they do not help much to order DOCOMOMO's priorities, and they help foundation students not at all.

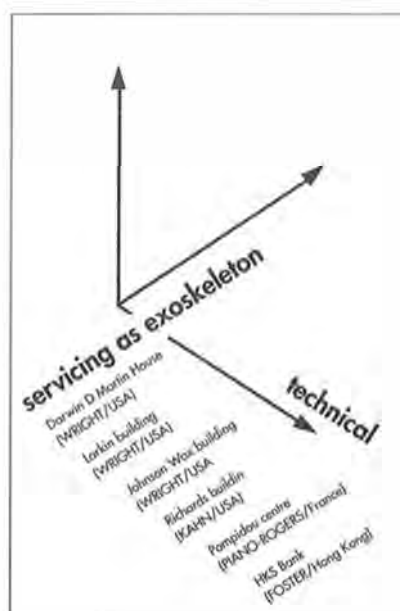
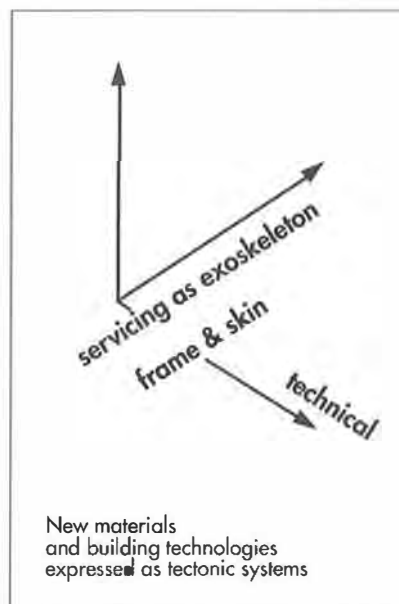
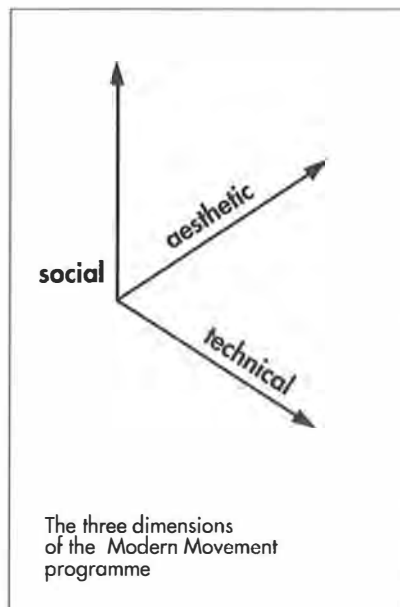
The first question is, what was *new* in the Modern Movement. What are the features of it that can not be found in study of other, or previous, architectural traditions?

This is no place for quotations from the masters who defined this new territory though one could find many of them. There is no question, surely, that there are three main dimensions of the architectural task to which it brought quite new priorities and ways of thinking: a social dimension, a technical one and an aesthetic one. All architecture is of course compounded of these factors, but not all seeks to formulate new programmes in all three dimensions simultaneously - or indeed operates in a period of such rapid change as makes radical new formulations appropriate.

In each of these three dimensions, new thought produced new concepts and paradigms. Each of them has been, and always is, a separately developing discourse, with its own links outward into society's other concerns. The act of separation reestablishes those discourses, which are the building blocks of designs. Our task for teaching and for DOCOMOMO's purposes is to identify the designs which moved those discourses forward in significant ways. Around those key designs, the significant buildings, is of course the 'noise' of infinite other buildings, and a judgement of quality, a hard horizontal line, needs to be confidently drawn for both these purposes. Ruthless sifting is necessary to both our tasks: resources for saving and documenting buildings are scarce, and student learning time is particularly expensive in design (as our government in Britain loses no opportunity to stress).

So we take the *social* programmes with which modernism identified itself, and for which it set out to generate the new organisational types. Healthcare facilities; social housing; mass schools: these had no precedent politically, and therefore offered the most powerful opportunities for demonstrating a role for architecture in democratic, mass societies that is still the foundation of much of our practice.

Thus we can take four seminal designs for healthcare buildings: Zonnstraal, Paimio, Finsbury and Corb's Venice Hospital. Here, we already have such a range of different conditions of pre-



servation and actuality, that this group of 4 alone could be the raw material of a whole conference on the issues of selection and judgement facing us in DOCOMOMO. Quite apart from studying the typologies, a student could not better be taught about the aspirations which his profession inherits, than through studying the concepts and genesis of these examples.

From the *social* dimension we move on to the *technical*. Here we might suppose that a volume such as Ford's new 'Details of Modern Architecture', has done our work for us. Here we seem at last to be getting through to some genuinely design-oriented ordering of this history. But our design student would be highly disappointed when he opens this one, for inside it is organised on such traditional, art-historical lines that it is hardly more use to the designer than a set of picture postcards. Key buildings they may be, but in order to learn from them the classification, and hence the content of the drawings and the words, needs to be related to the technical discourses which the architects themselves were conducting - and often of course, these being master-architects, at a level that was in no way only technical. Some of the most poetic architectural discourses of our century have been explorations of the potential for liberating human activities, and therefore also the human spirit, by subtle tectonic narratives on the nature of the frame-and-skin, or drawing services outwards to coalesce with, and become, the enclosure.

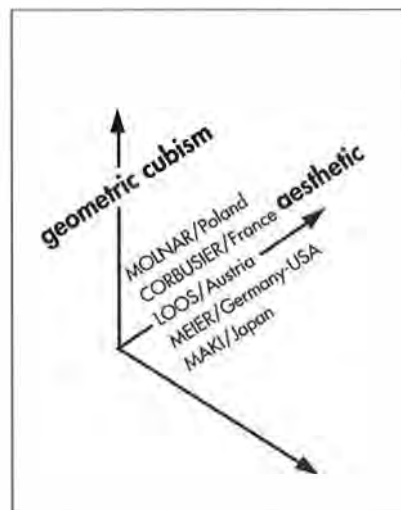
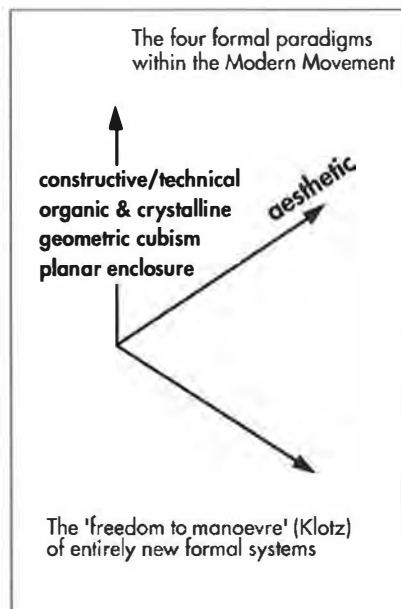
A sequence of four such essays one the frame-and-skin theme might run from Wagner's U-bahns through Neutra to Foster: all candidates for DOCOMOMO in future, if not now, and vital study material on the development of these tectonic themes for a student.

From a structural example to one of servicing: how the tartan grid became a whole new approach to inter-relating the essential systems of a building for human needs. And here we see the power of this approach beginning to emerge: the key building for the development of this whole paradigm is

gone: the Larkin building. For all the noise and case-studies, it has not been documented in any significant degree. So, as we said before, let the next group of students in search of a project not fritter their time on trivia. A whole school could use the researching and design-oriented *documentation* of that building as learning material.

Finally to the category we have called *aesthetic*: to the formal discourses. What modernism brought to form, in Heinrich Klotz's splendid phrase, was 'a freedom to manoeuvre.' Form ceased to depend for its legitimacy on sanctification by some external canon. In an explosion of formal invention and speculation that is probably unprecedented in architectural history, the freedoms afforded by material and structure became the basis of whole new grammars of assembly. Fluid concrete, planar glass, man-made materials with entirely artificial chemistries made it possible to match a new philosophical pragmatism with a completely new pragmatism of form. Klotz has identified three new formal paradigms or systems within what we now recognise to be the highly plural experiments of the early Modern Movement. A whole fascinating story of cultural transfer has now documented the arrival from America of a fourth - the planar paradigm - and its absorption into European work. And likewise the transfer the other way of the European experiments, through the medium of emigres and publications. We have thus a global conversation around the paradigms of *planar enclosure*, *geometrical cubic form*, *organic and crystalline form*, and the *constructive assembly* of technically or engineering-generated elements.

In such sequences we can summarise the chronological developments of those formal discourses, as leading architects have explored the new architectural possibilities they opened up. Here we can only run these sequences, almost filmicly, past your eyes. But as architects the lines of thought they describe will be apparent to you. Here again we seek the sort of simplification that makes it possible to *teach principles*, as well as to clarify priorities for



documentary and conservation effort.

Thus, in one sequence we see the development of the organic and crystalline paradigm; in another development the formal type Klotz calls 'geometric cubism'.

In a third sequence with influences transmitted around the whole globe and through some 8 decades, we have the constructive, technically inspired assemblies of parts.

Finally the one that came from across the sea: the planar paradigm contributed to the debate by Wright was bounced back and forth across the Atlantic, undergoing subtle shifts in the way it was used and interpreted at each sta-

ge. This is perhaps the paradigm that most of all characterises, and pertains to, modernity - in the materials on which it depends and in the transparency with which it replaces both the boundaries of place, and the boundaries of thought.

We have looked here analytically, at particular dimensions of the new architectural means and intentions in modernism. But there are of course works of such maturity and sophistication that they shift the paradigms in all three dimensions in one synthetic act.

Returning to Stirling's Braun building, who can say if this will be considered of such stature, though at present it looks a likely candidate. What it serves for now, is to prove the maturity of the Modern Movement tradition as a whole, to prove that it has come of age enough to embark on a discourse with its own earlier life-history and experience.

Perhaps the very perceptibility of the discourse in this building will reduce its magic over time. What that comprehensibility does do, though, is make the building a very good teacher of what synthesis is, and of how traditions work on each other to spawn the new.

In a situation where the body of work concerned spread across national and continental boundaries, who *better* is in a position to look at this totality of modernist experience and bring some order to it, indeed who *else*, if not us in DOCOMOMO? These analyses are vital for directing our documentation and conservation effectively. But we hope we have shown their power as a tool in professional education. Formally; technically; in its readings of architecture's psychological and practical functions in democratic industrialised societies, the origins of our present condition and strategies are here. With this as raw material we can also fulfill the teacher's first duty to the novice, which is to provide a reasoned and documented account of 'how we got here'.

NEIGHBOURHOODS



Rob Docter,
Jay Carroll,
Elena Szolgayova.

Viola Beil,
Rob Dettingmeijer,

Wanda Kononowicz,
Peter van Dun,

Rotterdam 1920-1940 case studies on urban conservation

My contribution will not be on architectural history, nor on architecture, not even exclusively on the Modern Movement. I will talk to you about a subject that sometimes is somewhat neglected by architectural historians and architects: the trivial but nevertheless essential matters of organization and finance.

In his keynote lecture, Jan Piet Kloos defined the building process as the integration of emotional, social and technical aspects; there is an emotional and a rational side to building. My contribution will be on the rational side, in fact about planning and policy making.

At the First International DOCOMOMO Conference in Eindhoven, two years ago, I presented a paper on the importance of a government policy regarding the urban areas and housing stock of the interbellum period. As all political and financial attention seems to be concentrated on the inner city or the - mostly late 19th Century - urban renewal areas, it is necessary to draw public attention to the neighbourhoods from 1920-1940 that represent most important architectural historical and socio-cultural values.

For the last ten years these neighbourhoods have run into a process of technical and social decline. Indications are a high rate of movement, growth of social tensions, crime rates and vandalism, unemployment figures and overdue maintenance. Two years ago we had just conducted a study about what

should be done to stop this declining process before radical intervention became necessary and who should take action. Conditional were the historical and - even more important - socio-cultural values. One of the main conclusions was that local authorities (the municipalities) should play the key role in activating improvement and renewal programmes. The central government should provide the means, by historic inventory and analysis, the issuing of rules and financing. It is obvious that financing is the most problematic part.

Therefore we conducted a second study, looking for ways of financing that would make it possible to optimize the output of the scarce financial means available. How to do more with less money, so to speak. Less public money, that is. Private investment should be stimulated with a minimum of grant aid.

This study was conducted by a private research and consultancy bureau, Aussems and partners, by order of the Netherlands Department for Conservation and the Physical Planning Department. The study resulted in what could be described as a 'policy-toolbox'. Legal, managerial and financial instruments for a local, custom made approach [I have some copies of the report for those who can read Dutch or want to learn it].

In order to get generally applicable instruments, the study was conducted not only in Rotterdam, but in six different neighbourhoods, spread over the country. They all had to have different urban and architectural characteristics and a variety of technical problems and different ownership situations: private, corporate, municipal; occupied by the owner or rented.

The policy-analysis therefore is not restricted to MoMo-neighbourhoods, but is applicable in all 1920-1940

(and postWar) residential areas. The neighbourhoods that have been surveyed are: the Rotterdam neighbourhoods of Blijdorp and Bergpolder, the Korrewegwijk in Groningen, the Mussenberg in Arnhem, the Papaverhof in The Hague and the 'White Village' in Eindhoven.

Blijdorp and Bergpolder were built in the 1930's. Though being part of the same urban design, they show an entirely different character. Blijdorp has been built for the upper middle-class and is still one of the most wanted and therefore expensive districts of Rotterdam. The most common building type is the 'doorway apartment building'.

The slides I am going to show you are just meant to give you an impression of the situations we examined. For a more detailed insight into the architecture of the Rotterdam neighbourhoods, I recommend the contribution of Rob Dettingmeijer later today.

The houses are relatively large and more or less equally divided in three, four and five room apartments. The ownership is rather split up over many different private owners, with about 65% tenants and about 30% owner-residents. The persons in this district are middle-aged and elderly with a more than average income.

Bergpolder was built for the lower-middle-class and has three or four storey houses and flats. The houses are relatively small, with for the most one or two-room apartments. The ownership is split up over many private owners, with about 66% tenants and about 18% owner-residents. This neighbourhood has many one-person households and relatively many foreigners. You will notice that often the collective premises are neglected the most, which has a negative impact on the quality of the whole block. Nobody feels directly responsible however, or is willing to make improvements to the profit of others. While the economic potential of

the Blijdorp district is sound and self-supporting, the economic potential of the Bergpolder residents is declining, while the need for repair increases. Many architectural details are expensive to maintain, causing delay or cheap and easy solutions that do not correspond to the original architectural quality.

The Korrewegwijk in Groningen was built in the 1930's. About two-third of the houses are three-storey apartments and rather large (four or five rooms and more). Half of the housing stock is owned by the residents; the other half is also in private hands but rented. Many residents (both owners and tenants) let one or two rooms to students. Notice the architectural influence of cables and other public utilities; and the carelessness with which they are installed.

The Mussenberg in Arnhem was built by a social housing corporation. It is a neat and stable neighbourhood with many elderly and 50+ aged residents.

The Papaverhof in The Hague will probably be known to most of you. Jaap Franso presented a paper on the restoration of this complex at the first international conference two years ago. The complex was built in 1920-1922 by a public housing corporation and consists of 68 semi-detached middle-class houses, clustered around a public green.

The Witte Dorp (White Village) in Eindhoven finally, built in 1938-1939. This neighbourhood also of semi-detached single-family dwellings with five or more rooms, split equally over tenants and owner-residents. The neighbourhood is very popular with families with children.

Although there is an unmistakable decline in the technical state with regard to both the buildings and the public open space in most neighbourhoods, the residents in general are rather satisfied with their homes and daily living environment. Depending on the ownership situation they make small repairs or renovations, however with-

out respect for the original architecture or even each others activities in that respect. Notice the patchwork that is the result of all individual owners going their own way, and making their own autonomous improvements, ignorant of the architectural qualities at stake.

The authorities first of all should inform owners and tenants about the architectural values and the need to respect characteristic details and other features. This however is an educational problem, that needs an entirely different approach. I will not be getting into that any further on this occasion.

The sum of uncoordinated individual housing-improvements and renovations is not enough to keep (conserve) the characteristic urban and architectural elements in the neighbourhood. Besides, owners in general do not have sufficient financial (but also managerial, organizational) means to maintain the quality of their houses and living environment.

In all the examples I have shown you, it has been necessary to add more or less public money to get the job done. It is remarkable however, that when you look into that, there seems to be no regularity, no logical pattern in the amount needed or in the division of costs between the parties involved.

For instance, the restoration of the Papaverhof cost about 98,000 guilders per house, and got grants out of different funds of in total 65,000 a house, leaving about 33,000 guilders for the private sector. But in other situations, the principal was able to manage with less or no subsidy.

What has been done in the study I am presenting today is to try to find a systematic approach, relating to the nature of the renovation task and the necessary means, providing a systematic basis for public and private parties to collaborate.

The main perspective is to get to a situation, in which making up the arrears in repairs, makes place for a '*strategic building-stock management*'. Because only in a stable and steerable

situation will public and private means be put in with optimal effectiveness.

A strategic building-stock management means that for every type of situation depending on the structure of the neighbourhood, the technical state of repair, the ownership situation and the scarcity of money in the public and private sector, a specific approach can be followed.

Looking at the neighbourhoods that have been examined, in some of them (Blijdorp) it would be sufficient to follow a policy of *preventive maintenance*. We call these '*maintenance areas*'. In other neighbourhoods a more active attitude is needed to eliminate arrears. We call these '*arrears-areas*'. The third category are the so-called '*management-areas*', like Mussenberg and Papaverhof, that have been renovated and now need regular maintenance in order to prevent new arrears-situations.

For each type of area, various scenarios have been developed, each with specific policy-tools. They can be classified under '*passive urban management*' aimed at the prevention of negative developments, and '*active urban management*' aimed at stimulating private parties to take action (This stimulation mostly means additional action to be taken by the authorities themselves!).

The legislation in the Netherlands in the field of physical planning, public housing and urban renewal offers various instruments that can be useful to support (or execute) a passive or active urban management policy. Most of them will be present - in one form or another - in other countries as well.

For instance:

- land-use plan (what I consider the most important, because it is binding for both the public and the private sector; it gives a certain level of legal security to owners and users of land property).

- local acts and by-laws on many subjects, giving the authorities the possibility to prevent unwanted development of many kinds. These include the split-

ting of property into separate apartments or participation-rights, giving other use to houses, speculations, types of commercial or other activities that are unwanted etc. Plus besides public-law the innumerable possibilities of private-law.

-aesthetic control, allowing the municipality to refuse a building-permit if certain (preferably in advance formulated) aesthetic standards are not met (This is important to control private renovation initiatives that often can be done better for the same money; the municipality has an educational/informational task in this respect).

-urban renewal schemes (A variety of measures, ranging from expropriation and total reconstruction to housing improvement premiums and scale of apartment-buildings to tenants).

-Monuments Act (listing buildings and neighbourhoods to prevent unnecessary damage or interventions).

I will not tire you too much with technical details, the main point is that the variety of possible tools and instruments (and combinations of them) is so great that putting them together in a checklist (or matrix) was an eye-opener in itself for many of the people involved in the study. The last parameter in the matrix was dividing the policy-tools into their application with regard to house/buildings, structures without a housing function (gates, bridges, walls, public lighting, electricity transformers etc.) and public open spaces.

Especially in urban areas like the Rotterdam neighbourhoods I have shown with a wide range of architectural, technical and functional problems, with many different house-owners, some owner-residents, other commercial renters, a fine-tuned set of measures should be composed to create a suitable arrangement for a specific case. To give you an impression of the complexity of the organizational infrastructure, I will show you a scheme of an Amster-

dam renovation project. What you see are the different actors, being the owners, the tenants, the consultants, the local authorities, the banks, the different intermediaries, their interrelations and the cash-flows between them. On the basis of a set of collaboration agreements between the major parties, a coherent orchestration of contracts has been composed, in a way that not too much money flows to the contractor, and the tenant is not the victim of high interest rates or excessive increase of rents.

The use of private capital, bank loans and mortgages, the number of years for writing down the investment and property value, the interest rates and the legal person that is responsible for loan and execution are all factors that determine the feasibility and final result. In the six cases that we studied, by different ways of financing alone we found a difference of final costs for the owner of almost 50% (1400 guilders versus 2500 guilders, on an investment of 40,000 guilders). For example, a foundation (if it can supply enough security about future maintenance) can claim better interest rates and is exempted from taxes.

To find the optimal financing arrangement (that is the arrangement with the maximum outcome, taking the public and the private potential into account), it sometimes is necessary to create complex organisational and managerial constructions. For instance, the spread of private owners in a housing complex, united in an association of owners, could establish a 'renovation foundation' that attracts and administers the money and on its turn establishes a renovation-corporation to do the actual job. Moreover this makes it possible to balance the VAT. Taxes play a very important role in deciding which approach/construction is the most profitable! There are different ways of saving maintenance funds or capitalizing maintenance, depending on the fiscal situation.

By calculation with some exemplary

cases, we found out that a low investment can turn out to be an expensive one, while a high investment can be cheap in the long run. And that a high investment is not *a priori* more difficult to finance than a relatively low investment. Using a different organizational and financing construction, it appeared to be possible to achieve a four times higher output (return) out of the same government (municipal) budget. The results of this study will be presented to the local authorities by the Ministry of Culture and the Ministry of Housing and Planning.

As I said before, I have some copies of the study with me. They are in Dutch, but the calculating schemes will give you some insight into the effect of small variations in the financial organization.

The main lesson that we have drawn out of this study is that the available budget, both on the public and on the private side, can be used much more effectively and give a much higher return, if the parties involved are willing to explore precisely the optimal use of (a combination of) all legal possibilities that exist. Many times we go the familiar traditional way in our approach to a renovation project, ignorant of the fact that we miss important opportunities to do more with the scarce resources at our disposal.

Our mission is not in the first place to convince parties about the necessity of preserving our built cultural heritage, but to make it feasible. For the sake of conservation we must avoid the dangerous notion that restoration is - as Rolf Kuhn has put it - a frivolity on the taxpayers expense. A critical and well directed application of the available resources means a greater chance for preserving our urban environment, including the modern movement heritage.

The Carl-Legien Estate by Bruno Taut in Berlin-Prenzlauer Berg: the relevance of a large scale city planning concept in the inner area of Berlin

It is a pleasure for me to be able to present to you the Wohnstadt Carl-Legien, an urban housing development in Berlin-Prenzlauer Berg. I would like to introduce you to the methodology used in planning the measures appropriate for its restoration as a historical monument and the first results of the realization. It is quite fitting that I follow the previous speaker, as parallels have always been drawn between the works of Taut and those of the Dutch architect Oud, based on their close collaboration in Fischer's architecture office in their early years and their life-long creative friendship.

The industrial growth at the turn of the century brought to Berlin an enormous development spurt. The city expanded demographically, as well as culturally and territorially. In the 1920's, Berlin was on its way to becoming a metropolis. It became one of the centers of modern urban planning. With cooperative efforts, architects such as Martin Wagner, Otto Rudolf Salvisberg, Bruno Taut, Walter Gropius, Scharoun - many others could be mentioned in this context - created new urban planning structures that aimed at establishing architectural prerequisites which would allow the poorer classes of the population access to an equal right to life in

the human community; at the same time, the attempt was made to bring the architectural environment into harmony with Nature. The financial prerequisites were made available by the young Weimar Republic, through the allocation of low-interest loans to cooperative building societies and house building associations. To name a few examples of the larger of these projects:

- the Hufeisensiedlung in Britz,
- the Waldsiedlung in Zehlendorf,
- the Weiße Stadt in Reinickendorf
- and the Siemensstadt.

These are housing developments in the western part of the city that have already been restored. The preparation and supervision of their restoration as historical buildings was carried out by the architecture office of Pitz/Brenne.

Additional larger housing developments in the eastern part of the city are, for example:

- the Wohnstadt Carl-Legien in Berlin-Prenzlauer Berg,
- the Buschallee development in Weißensee
- and the Afa-Wohnhof in Treptow.

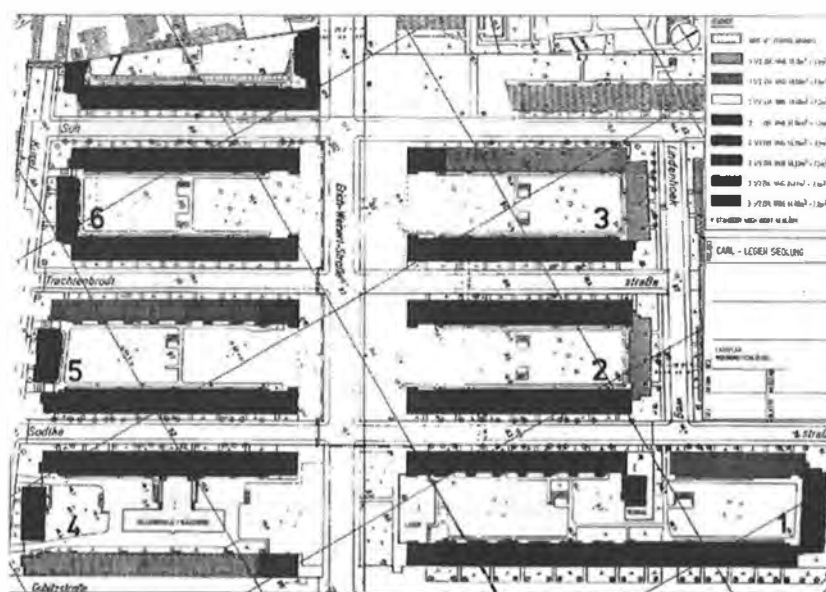
At present, the Brenne architecture offi-

ce is working on the Wohnstadt Carl-Legien and the Buschallee development. The Wohnstadt Carl-Legien was erected in 1929-30 by the GEHAG (a cooperative home savings and building corporation), based on plans designed by Bruno Taut. It stands out particularly for its homogeneity as an urban architectural organism; architecturally speaking, it is the most urban of the housing developments created by Taut.

I would like to premise my speech with a few historical comments on the planning of this housing development. The GEHAG purchased the site - called the Bötzwow grounds - on Sept. 20, 1929.

According to Prof. Junghans, the first designs for construction were drawn up in 1925; the oldest plans we were able to find show this planning from 1929. The site was to be built in 3 stages of construction, the first two stages with a total of 1,145 apartments were realized. A plan from 1929 shows the planning as it was actualized.

The Wohnstadt Carl-Legien evolves along a central axis in three groups of



Wohnstadt Carl-Legien, Lageplan mit Angabe des Wohnungsschlüssels.

housing with courtyards. The courtyards open onto the central axis; the area formed by the two courtyards of the buildings lying opposite each other seem to enclose one quite vast courtyard and green area, of which the central axis is an enlivening element. In contrast, the narrow street spaces with their bright facades in alignment screen the courtyards and recreational grounds off from the disturbances of the street, of the functional space.

If one wanders through the narrow streets of the Wohnstadt Carl-Legien, one is confronted again and again with the interesting sight of the front buildings at the beginning of each row of housing with their elegantly wide sweeping balconies which direct one's eye towards the courtyards. These front buildings are set back relatively far from the central axis; nonetheless, the density of residents required by government building norms was achieved by erecting 5 storeys in them.

The front buildings rise above the uniformly 4-storeyed rows of housing and compositionally define the dominance and significance of the central axis. The view along the central axis itself is determined by the lively pattern of variation between the narrow spaces of the streets and the wide open courtyards.

Taut had definitely orientated this housing development on the city as an organism. Where once small allotment gardens had existed, the City Department of Urban Planning intended to create the Franz-Liszt Square.



Blick in Straßen- (Südkestraße) und Hofraum (Block 2).

Taut erected the housing development facing this space, and opposite it he set the alignment back, forming by means of a 5-storey row of housing (the only

5-storey row in the whole development), a front to the square which is distinguished by a lively architecture of perforated facades with deep front gardens and broad walkways. From here one is directed into the central axis with its wide street space and large lawns, ultimately to be directed out at the back of the development through a street space which narrows down like a gate. If one leaves the development, it displays its back facade; Taut conceived the building of Block VII as a torso. Here the gables tower in the commercial area which still exists today. Herewith, Taut offered succeeding generations the possibility of discovering new planning concepts.



Bebauung südlich der Magistrale.



Bebauung nördlich der Magistrale.

Taut's plans were later taken into consideration when discussing building on the Sülzstraße. The above mentioned narrowing of the street space was conceived by Taut in 1928, at a time when the GEHAG had not yet purchased the land, which it would also never be able to do. It was not until 1976, that urban planning called for a counterpart to the front building on the Sülzstraße, creating a gate situation. This block of buildings takes up Taut's cubature, yet in its architectonic structure, it is still clearly identifiable as not part of the original inventory.

The quality of living in the Wohnstadt

Carl-Legien is substantiated by the care which Taut took in optimizing the layout of each apartment. The housing distribution code of 83.5% for 11/2 or 2 room apartments, 7% for 21/2 or 3 room apartments and 9% for 31/2 or 32/2 room apartments was set by the GEHAG. Since Taut was convinced that too many small apartments already existed, he endeavoured to organize their layout as flexibly as possible. Consequently, the criteria of modern hygiene for light, air and sun were fulfilled in his apartments. Each apartment is accessible via a corridor and has both bathroom and kitchen with windows. No room must be reached through another and each apartment has a balcony.

Yet this is not all: an instance greatly improving the quality of living in Taut's concept is the closeness of living space to courtyard and lawn, which he defined as the exterior living space. With this quality, he not only achieved, emotionally speaking, wider acceptance of the new architectural forms and a greater feeling of well-being, he also, objectively speaking, enlarged the living area accessible to the resident.

And even though there has been a loss in architectonic quality, it is still this quality of living which the residents of the housing development today say is decisive for their contentment there.

The floor plans, standard arrangements as well as special solutions in the corner apartments, including the technical interior installations and their intense colors are all individually worthy of attention, but shall not be a further subject of this lecture today.

No comprehensive analysis has yet been made of the original plans for green areas. According to Junghans, the planning of these areas was by Leberecht Migge. It is imperative, based on knowledge from the old building records and the present inventory, to make a concept for these open spaces. On the one hand, the former recreation areas in the courtyard have for the most part been rented out as gardens and are therefore no longer accessible to the community as a whole; and on the other hand, trees have been planted at random along the

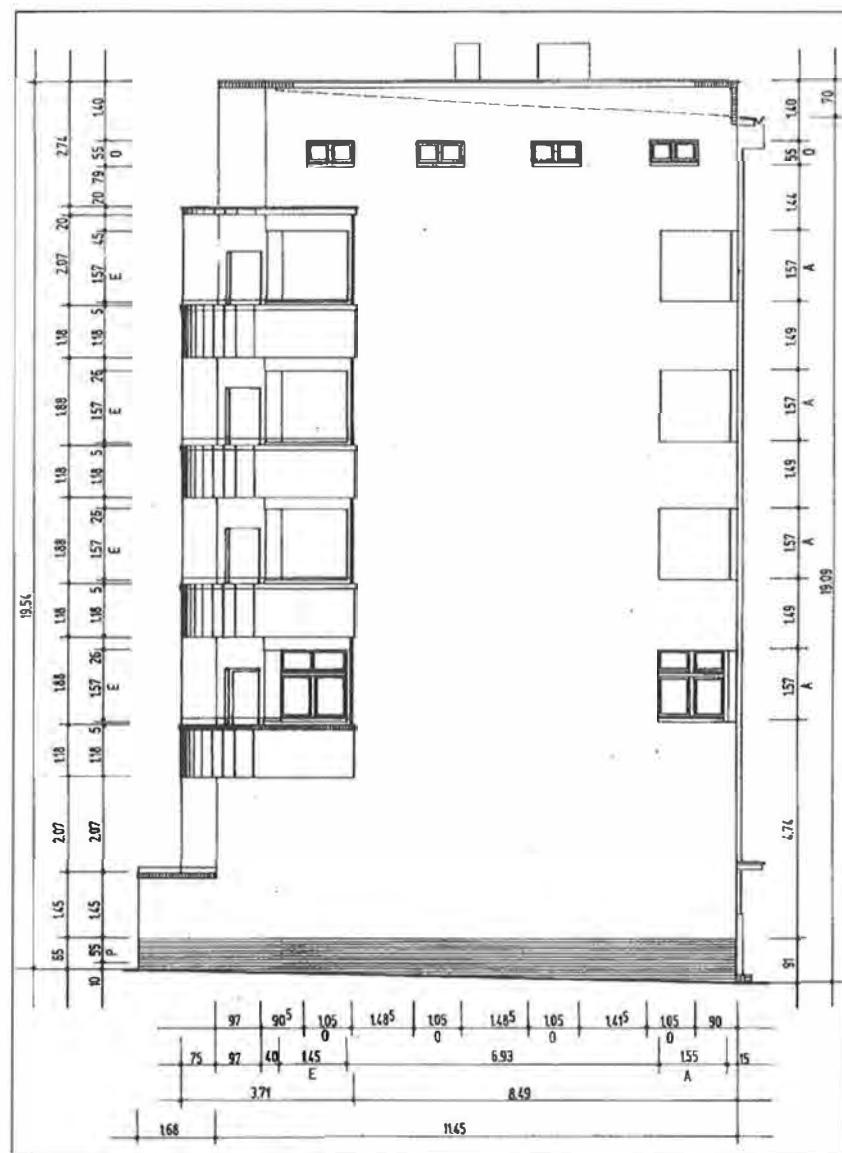
street space on the central axis, which in the foreseeable future will greatly reduce the possibility of experiencing the architecture.

And now on to another aspect: Taut took great care to take into account the many tasks of housewives and mothers entailed in the household and family with the traditional distribution of roles. In text after text, he attempted to convince women of the need to make house keeping less complicated. It is this fact which makes him so endearing to us women - and the laundry houses in Block I and Block IV were gratefully received by the women. Inside-shots exist of other Taut housing developments, showing light-flooded washing machine rooms; these could very well be from the Wohnstadt Carl-Legien. Technology is made to serve humans, and the joy to be felt finds expression in the light architecture.

One of the comforts of this housing development is that the front buildings and row of housing on Franz-Liszt Square are centrally heated. The boiler house was conceived in combination with the laundry house in Block IV.

And now a comment on shops: Contrary to the plans of 1928, neither the shopping strip which was to be set in front of the front buildings, nor the roof constructed of concrete shells over the street was realized. The coming economic crisis was already casting its shadow and so the financial prerequisites were lacking for the realization of this concept. At the same time, it is also evident that Taut had in spirit also taken leave of this solution: in an article he praises 'how the streets bring life to the quiet courtyards'. Consequently, it was only in Block I to the north of the central axis that a strip of shops was erected between the front buildings; to the south of it, shops as functional spaces were installed on the ground floors of the front buildings.

As to be expected, Tautian colorfulness is also an essential component in the total concept of the Wohnstadt Carl-Legien. As is to be read in the *Vossischen Zeitung* on the occasion of the presentation of the Wohnstadt: 'A zest



Ansicht der Giebelseite
Kopfbau, M 1:100

ful yellow which, so to speak, weds the sunlight flows brightly out of a darker background in shades of green, red and blue. The modern character of the housing development corresponds to the interior design, everywhere are cheery colors and innovations, much to the housewife's delight.'

Color photographs of two of the seven courtyards are to be found in a publicity leaflet for Keim's Mineral Paints. Nevertheless, the full color scheme cannot be clarified until research has been completed.

Let me now make a few remarks on the approach used to plan the appropriate restoration of this housing development as a historical monument by the Brenne

architecture office, and to the first results of this work on the pilot object, Trachtenbrodtstraße 18 - the front building at the beginning of Block V.

We are working on the object in three stages: I would like to describe Stage 1 as the compilation of a report: in it the original state of the building substance is documented. The collection of material for this report results from detailed knowledge acquired from secondary sources.

This process includes:

- looking through the available building records on file at the district authorities,
- thematically classifying texts and drawings,

- compiling historical photos.

For the Wohnstadt Carl-Legien, there exists a relatively large estate from the photographer Arthur Köster, who was commissioned to document the housing development for the GEHAG.

With the knowledge thus acquired, an inventory of the present building substance is made on the premises. The following procedure proved to be successful:

- After systematically listing the building types, facade and architectural elements based on the historical data, measurement is begun.
- Starting with the measurement of each row of housing, the facades and their variations are recorded.
- Measurement is continued on those elements of the facade, including the foundation zone, staircases, house entrances, basement exits, windows, balconies, loggias and roof zone.
- All elements are represented graphically in detail to a scale of 1:25.
- Elements of subordinate significance are photographed.
- When all elements have been recorded in detail, the facades and floor plans - cross checking constantly the initial measurements noted and the data in the building records - are recorded graphically to a scale of 1:100.
- The report is structured so that each building section, or rather each structural component, is dealt with in a separate chapter. Each chapter of the report is accompanied by a tabular registration of still existent original materials, or findings on the original colors.

As a result of this first stage, the house-building association has at its disposal a report in which all the floor plans and facades are documented, as well as the data on material and color. Graphic representations are drawn on A4-format paper exclusively. These documents must be presented in a form which allows them to be copied; the report should not only have an illustrative value, but also serve as working material.

The house-building association can then provide construction plans for rea-

lization at all times, has data for inviting bids for the restoration measures and is able to supply excerpts in quantity quickly. This guarantees that a restoration which does justice to the original is possible without making constant consultations necessary.

Stage 2 comprises the restoration concept itself, including a catalogue of the historical preservation measures to be taken and it is here that the position of the architect in the process crystallizes most visibly.

The architect must negotiate between the interests of the owner, of the tenants and the concerns of the historical monument preservation authorities. It has to be decided which parts need to be defined as historical monument in order to be able to recover the former qualities, and which concessions the historical preservation can tolerate with respect to the changed interests of the tenants.

And what priorities does the owner set? For him it is primarily a matter of carrying out constructionally necessary improvements and of estimating the magnitude of the need for modernization and restoration.

In the Wohnstadt Carl-Legien, the prerequisites are inconceivably unfavourable for tackling this problem on a long-term basis. Although property ownership has not as yet been completely clarified, the GEHAG has taken over the financing of the pilot project.

The WIP, legal successor from the GDR era, supports these measures as far as possible. We can be quite thankful for this constellation. Which measures were given priority to comply with the wishes of the owner in the Trachtenbrodtstraße 18?

- Improvements in the thermal insulation of basement and top story ceilings,
- Repairs on the roof to make it tight, which meant installing a common roof antenna and doing away with the forest of individual antennae.
- The attractive restoration of the facades, whereby the GEHAG is a very receptive partner in problems of historical preservation.
- There was no question that a modern

heating system has to be installed for the centrally heated buildings of Trachtenbrodtstraße 18; for the further stages of construction, this is a task which must be given priority - ecologically speaking, it is urgent, and essential as well for the removal of the gas heating system covers on the outside walls, a constructional weak point on the facade.

Similarly, there are tenant problems.

These often coincide with the interests of the owner, but not with those of the historical preservation authorities:

- Top priority is given to a modern heating system, improved thermal insulation measures and tight roofing.
- Constructional improvements are desired on all wooden structural parts (windows and doors). - What will be the impression given by the facade after restoration?
- Can the GEHAG see to it that measures are taken for traffic abatement and for improved safety on the streets, especially for the elderly and children?
- But as a particular burden, the tenants find the far-reaching alterations in store for them from the point of view of historical preservation.
- The restoration of the original colors is only possible if the glazing on the balconies is removed. The tenants, however, do not want to do without these glazed-in balconies which serve as heat buffers and can be used much more of the year than unglazed balconies
- The intense colors of the buildings, which were done away with in 1936 at the time of the Olympics, do not correspond to their visual habits and are hence rejected.

This rejection can only be overcome by establishing close contact with the tenants. Consequently, a working group has been established in this residential district that deals in detail with the traditions of the development and has an educational function.

Furthermore, we used the opportunity to put the knowledge and information from our office into an exhibition, which Dr. Simone Hain organized in the Prenzlauer-Berg Heimatmuseum

(museum of local history and culture). The interests of the historical monument preservation office are quite clear. It is a matter of making the housing development a copy of the original, based on the findings, in order to recover its architectonic quality and to demonstrate what qualities of life exist in connection with these changes. In this process, as many original elements are to be included as possible; original materials, colors and techniques are to be employed or copied.

The fact that the housing authorities in the GDR era had little money to maintain the building substance as needed or to modernize was to the advantage of the historical preservation of the Wohnstadt Carl-Legien. In 1978, it was declared a monument and since then the authorities have taken care that the substance is treated appropriately.

As a consequence, we have discovered that instances of all constructional elements, materials, colors, techniques of workmanship are to be still found on the premises, whereby often painstaking detailwork is necessary to substantiate the findings. To illustrate this problem, I would like to take up the question of the facade plaster.

On the one hand, it was known from the building records that in the housing development colored high-quality plas-

ter was used; on the other hand, from the press and historical photos, there was a knowledge of the intense colors in the courtyards, painted with Keim's paints.

On the front buildings, it was only the colored high-quality plaster which was of interest; after taking several samples, the colors and their composition were identified, but could not be 100% reduplicated as the quarries for the supplementary ingredients no longer exist. Well, one must take life as it comes.

A much more difficult problem was the plastering technique. It can be seen on Köster's photos, that the gable and a part of the back facade of the front buildings were plastered with fine scratchwork, whereas the rest of the back facade and the street facade were done in a simple spread plaster. And this is where we ran into trouble. The schedule for construction demanded quick action and the first facade in spread plaster turned out a complete failure. This was of course a great debacle and as a result it was decided to use the 'safer' scratchwork technique for the whole front building. The preservation authorities were willing to compromise, since the GEHAG ordered another gable of the development to be scaffolded and a new spread plaster attempt with a different grain and other tools could be made.

This plastering attempt has, I believe, a

quite attractive quality, its lively structure breaks up the monotony of the facade of the long row of housing.

This plaster in no way looks cheap and I do not think that the GEHAG will have any objections. The decision has not been finalized yet. This example illustrates how much trouble and careful consideration each and every material or constructional detail can involve.

A few words on stage 3

This we see as the supervision of the realization and the documentation of the construction procedure. I have already mentioned the supervision involved in realizing the plastering; may it suffice. To be mentioned here is another aspect: when the naked architectural body is revealed, interesting information about the history of the planning and construction is sometimes brought to light. For example, although in the Trachtenbrodtstraße 18 no shop was ever installed, it turned out that the facade had been, constructively speaking, prepared as for the other shops of the development, so that it would be no problem to install a shop at a later date. This stage, forming the basis for a final comprehensive history of construction, should hence be properly acknowledged.

I thank you for your attention and hope that I have been successful in conveying an impression of the joy involved in the Wohnstadt Carl-Legien project.

The urban activities of Ernst May in Breslau after the First World War

The name of the outstanding German architect and town planner Ernst May is generally connected with Frankfurt on the Main, where he, being a 'Stadt-baurat' and the author of the master plan for the town, realized a project for the industrialized large-scaled building of housing estates during the years 1925-1930. Socially he was quite involved, being a versatile architect, boiling over with energy and having the gift to stimulate others and draw them into the 'orbit' of his activities. The results of his professional work, his projects and accomplishments during his Frankfurt period as well as later on are well known and have been published in a book by Buekschmitt.¹ From the chronologically earlier stage of his activities in Wrocław during the years 1919-1925 May is above all known as the author of a project in a competition in a field of decentralization by means of 'satellite towns'. Apart from that, he has also been mentioned as the designer of many rural and suburban housing estates in Lower Silesia. As an inhabitant of Wrocław and research worker interested in the town planning history of my city during the 20 year interWar period, I feel personally obliged to introduce the reader to hardly known projects and realizations by May during his so-called 'Wrocław period'. May started his activities in 1919 at first as a leader of the 'Schlesische Landgesellschaft' and shortly afterwards in 1921 as technical director of the 'Gemeinnütziger

Siedlungsgesellschaft 'Schlesisches Heim' ¹. Public opinion was informed about the progress in the field of the constructions in the professional magazine 'Schlesisches Heim'², which was edited by May. This magazine became a forum for specialists' debates and discussions on the problems of architecture and town planning, also in an international context. Already in the very first issue May touched the problem of dwelling types and their furnishings. And so the standardization, which has been so characteristic of functional architecture did not only result from his experience in Frankfurt. One could also see the prototype of the famous Frankfurt kitchen in a cooking niche, which was separated from the habitable kitchen in the typical houses of Schlesisches Heim. In the next issues the housing types were improved and new variants presented. Initially four basic types were introduced. Each of them had several or even over a dozen forms (e.g. in the housing estate Olaszyn a type indicated by "Group II Form 14b^{hb}" had been constructed). Finally the number of housing types had been established at eleven. In some housing estates - as e.g. Stablowice - after parcelling the future tenants were allowed to choose the housing type according to their preferences. In other housing estates either one type was used for the whole area - as at Olaszyn - or a few types were used for different parts of the estate - as in Złotniki (Goldschmieden).

As a town planner May was influenced by his mentor Sir Raymond Unwin, in whose atelier he had been working during the time of the realization of London's Hampstead Garden Suburb (1910-1911). From Unwin, May adopted the principle that work concerning town planning had first of all to be based on social conditions. The design of the picturesque plan should be done afterwards. May, an adherent and

good friend of Unwin, translated his book 'Town Planning in Practice' (1921) into German. The designing experiences from Hampstead and Unwin's book, based on Howard's idea of 'garden cities' as a method of solving the problems of big cities by means of decentralization were applied in May's conceptions in Wrocław.

Unwin's principles appeared in the Hampstead project, namely:

1. a global structure with a distinctly marked, compact centre;
2. a hierarchy of urban space- as morphologically differentiated quarters;
3. the notion of borders- as barriers of expansion (walls, parks, entrances and gates were clearly marked);
4. the axis, a strong exceptional point;
5. a picturesque local structure, which made use of closes, curved streets and the retraction of the house line in relation to the one of the streets³.

These principles had also been applied to some extent in May's projects in Wrocław. The largest and perhaps the most picturesque undertaking of 'Landgesellschaft' was projected in 1919,



The first, partly executed plan of the Złotniki housing estate.



Houses at the Kaliski-square - semicircular greenery - in the N-W part of the estate.

the housing estate of Złotniki (Gold-schmieden) on the western outskirts of the city including about 750 home-steads and covering an area of about 350 hectares⁴. Due to the high level of underground water, a big part of the area had been reserved for meadows and grassland. That is why the housing density here was not high. According to Unwin's principles the centre had been clearly marked. It included a square market place with a town hall and a water tower in the middle. The tower was the visual end of three streets converging into the market place. Here the department stores, a school and in the near vicinity a 'Genossenschaftshaus' were to be situated. The two storey houses, surrounding the market place, were meant to be used by teachers, the chemist and the doctor. The remaining houses - which included several types - were cottage houses. The program for this housing estate also foresaw another school, a cemetery and a new railway station. The project was picturesque because of its curved streets, the emphasized 'entrances' to the estate and a 'close' in the form of the English crescents. Only a small fragment along Rajská Street was realized according to May's plan. It ended in the south with a picturesque semicircular greenery (Kaliski-square), surrounded with a wreath of houses, and in the east with a greenery in the form of triangle (Ciesielski-square). Especially these greeneries -village greens- in the surroundings of apartment houses were the theme of the compositions of May's plans. Apart from the previously mentioned shapes -triangle and semicircular- greens also occurred in the shape of a rectangle (as in Oltaszyn and Stabłowice) or pentagon (as in Olawa) . These fields - the so-called village greens - had to serve simultaneously as a playground for children, a meeting place and as a small pasturage. Using these shapes of 'recreational greens', which accentuated the community feeling, May introduced the conception of English squares, circuses and crescents to Lower Silesia.

An interesting example of a small housing estate in the greens designed with

refined taste, is Oltaszyn. This estate, meant for farm-hands, was situated in an area of 20 'morgs', donated in 1921 by Baron von Richthofen Bogusławitz. The houses were situated along Strackowa Street and around a rectangular greenery, which formed the climax of the composition. In this housing estate a standardized and very economical semi-detached housing type with high roofs, covering the second living-floor (a so-called Bohlenbinderdach), had been used.



Semi-detached housing type with so-called Bohlenbinderdach.

According to Unwin's principles the 'gates' - leading into the estate in the shape of individually placed 'half-houses' were emphasized; one had been situated crosswise to the main axis. Among the typical houses in this estate one house of a different type formed an exception; it had also been situated crosswise at the end of the street vista near the garden.

On archive photo-graphs one can admire the artistic skill of the subtle, authentic 'English' connection of the two elements of the composition, that differed from the other ones: the first and the last house, initiating and crowning the composition, inviting and being the optical objective. This housing estate as a whole has survived until now. During the War three houses had been damaged. The two along the street have been rebuilt in another style. From the third house only half of it remained. This was the house on the axis of the green.

In successive projects for housing estates the axis became the predominant element of the composition. This has clearly been shown in the project in Brochów well as in the one in Wojszyce, which had been prepared

by May in participation with Herbert Boehm in 1921.

The new development in Brochów embodied a triangularly shaped area, adjoining on one side the old housing estate and pointing with its top in the direction of the city. This shape had been imposed because of the existing railway embarkment, which enclosed the estate from the town side. The main axis of the composition ran from the top to the middle of the base of the triangle along a distinctly marked local street (in the past Pulsstrasse, today the Leonardo da Vinci street). The vista of this street, from the Brochów side was directed towards the body of the -at present non existent- evangelical church; on the other hand, from the town side, it was directed to the round shaped coffee bar, standing in the middle of a greenery against the background of a half-circle of adjoining houses, in the focal spot of radiantly parcelled out gardens. Crosswise to the housing estate, along a stream, a green belt (about 150 metres wide) had been planned. The designers foresaw houses with a height of 1 to 3 storeys, based on the understanding that the highest houses should be situated at the border of the estate in the form of a compact facade.



The urban plan Of the Oltaszyn Estate.



Houses along Leonardo da Vinci street - the main axis of the estates urban composition.

Compared with the quite picturesque and dispersed project of Złotniki, the

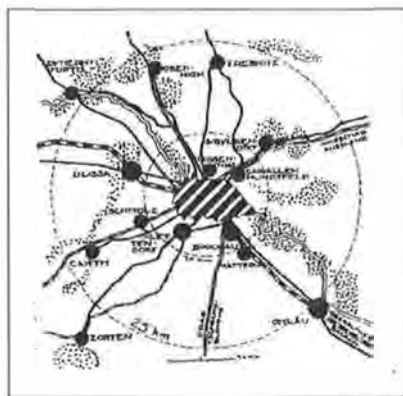
Brochów project was more compact and orderly. Almost all houses, with the exception of the previously mentioned half-circle, were oriented in a north-south direction in order to ensure a good incidence of light from the east and west for each and every apartment. This solution formed the next step in the evolution towards May's experience of housing estates in Frankfurt.

Unwin's programmatic, social, functional and compositional principles found their full reflection in May's competition project for the enlargement of Wrocław⁵. Also here he collaborated with Boehm, with whom he later collaborated in Frankfurt, too. The project by May and Boehm, indicated by the motto "TRABANTEN" and including a proposition for the decentralization of



The project of decentralization of Wrocław according to the conditions of the 1921 competition.

the conference: 'How to solve the problem of unplanned expansion of large cities, which instead of serving the people lead to their dissatisfaction'. In his conception May aimed at the decentralization of large cities with a proposition to group new urban units around the town, like planets circling around the sun. They depended on the central unit in many, mainly primary, functions. May opted for restraining a town's growth by having the town council buy the ground around it, for use as recreational green or for agriculture. These satellite towns with a population of between 50,000 and 100,000 should be located about 20 to 30 km from their 'mothertown'. The connections between them should be realized by a fast railway system or by motorways. However, May's part in the



The ideal decentralization conception of Wrocław published by May in 'Denkschrift des Landkreises'.

Wrocław by means of satellite towns, was not rewarded. From the 40 projects taking part in the competition - judged amongst others by Paul Bonatz, Hermann Jansen and Fritz Schumacher - 12 were rewarded. Although May's work had not been rewarded - his name and fame outlived his fellow-competitors. The time of the competition coincided with May's translation of Unwin's book. His project was given extensive publicity by Unwin himself in his lecture in Berlin's Crafts Museum in 1923. May's project also gained a lot of appreciation during the International Urban Exhibition in Göteborg. In 1924, during the International Town Planning Conference in Amsterdam, May's conception was accepted as an answer to one of the main questions of

competition itself was a compromise between his ideal conception and the conditions of the competition, in which the maximum 10 km distance from the area concerned to the city was taken into account. And so this project acted as a first try for his final conception, which May published in the 'Denkschrift des Landkreises Breslau...' in 1925. According to May the intended satellite towns were: Oborniki, Trzebnica, Brzeg (Dyhenfurth), Lesnica (D.Lissa), Katy, Sobótka, Olawa etc. (However considering the conception of Breslau's decentralization, Max Berg should get full credit. Already 15 years earlier he presented amongst other things the garden town project for Sobótka.) In the competition by necessity the satellite towns were imposed

closer to the city centre, as e.g. Zerniki (Neukirch), Muchobór Wielki, Oporów, Różanka, Karłowice, Brochów, Wojszyce and others.

May presented an exemplary detailed solution for one of the satellite towns named Wojszyce on a scale of 1:2500. This housing estate included every characteristic of a satellite town according to Unwin's conceptions; the following elements emphasized this:

1. separation from the city with an open strip of land;
2. good means of communication to Wrocław, by train or car, using the existing railway line for goods, as well as the south-bounding streets: Bohrauerstr. and Strehlenstr.;
3. self-sufficiency concerning the employment of the inhabitants (the use of the existing 'Silesia' factory, as well as building new workshops for small industry and handicrafts);
4. self-sufficiency concerning essential services like: administration, trade, culture, education and sports (in the estate a town hall, a market hall, a railway station, churches, schools, a community centre, a stadium and a cemetery had been planned);
5. an emphasized centre of the composition (the axis, the market place and the clearly distinguished important buildings);
6. a hierarchy of town planning space;
7. the emphasized entrances - 'gates' - to the estate with characteristically shaped houses or rows of trees;
8. a defined size of the town, a clear separation from the surroundings with specifically placed buildings emphasizing the impression of its limits. From the south side in particular we can see groups of closes ending in residential streets and turned with their rears to the suburban landscape, like bastions defending the town against an unwanted intruder. This kind of handling the estate's flanges clearly appeared in May's later realization - Römerstadt Estate in Frankfurt.

The plan of Wojszyce is the most complete and richest among the detailed projects of May's housing estates. In the field of urban composition it also shows the greatest kind of maturity

and consistency. The basis of this composition was formed by a rectangular market square with a town hall. The



The urban project of the Wojszyce satellite city.

market square was crossed by an avenue which was visually directed towards the church from the north side to the cultural centre.

Despite a certain amount of picturesque-ness, the Wojszyce plan showed protofunctional signs, like the economical way of using the area, the classification according to the type of buildings and the orientation of the buildings (which were still placed along the streets) in the north-south direction or close to it. However, this plan had never been realized.

I would like to recall on this point a few of May's realizations in Wrocław, which could hardly be called 'housing estates', for they were rather groups of houses. They are nevertheless worth noticing. In the municipality of Klecina 4- and 6- family tenant houses of the



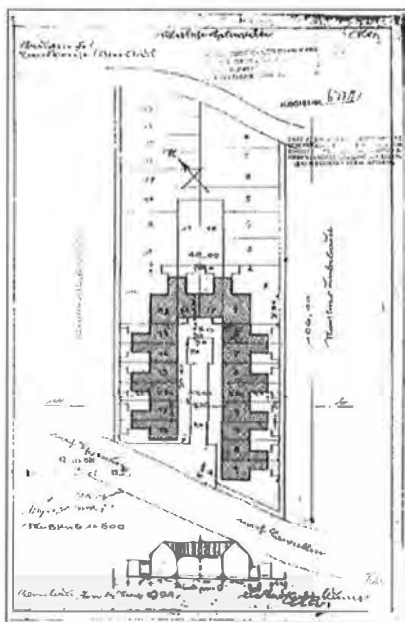
The urban project of the Wojszyce satellite city

Gustav Freitag and Jacob Boehme types were realized in 1922. The houses were arranged along Karmelkowa Street leading to Oporów. The types, both of which had two storeys and were covered with a high roof, were indeed built economically. The apartments of the Freitag type were deprived of entrance-halls, while on the other hand the toilets were situated in an

adjoining building. In the house of the Boehme type the collective toilets were situated on the landings of the stairways. These houses have been preserved in quite a good condition and the majority of the tenants modernised their domestic parts.

A very interesting group of houses of the 'Borsig' type was realized by May in Kowale and Krzyki in 1924. 'Borsig' was the smallest single family house with 2 storeys, situated in series in a U-form. These complexes vividly remind us of the arrangements of the English 'close'. Not taking into account the sparingness of building, one should point at its value of tightening the community feeling, when the tenants daily meet each other on the common court, or at least near the water pump.

The 'close' in Kowale has been preser-



The complex of the 'Borsig' houses formed in an English 'close' in Kowale. The urban plan.



The complex of 'Borsig' houses.

ved as a whole. During renovation it underwent a certain modernisation, but

the general atmosphere remained the same.

The 'close' in Krzyki was destroyed to a high extent at the end of the War. Only its northern flank remained.

In the Krzyki-district there also still exist two out of the three houses projected by May for civil servants. However, the tenants are making efforts to modernise them by extending the roof storey and adding balconies or garages.

Also a single family house of the 'Menzel' type, meant for the middle class, still exists in the exclusive quarter of Zalesie (Leerbeutel).

May, with all his energy, his determination in realizing his aims and with his conception of satellite towns, was not popular in the Wrocław circle of architects. Well known were his polemics in the press with Professor Rading, who accused him of proclaiming empty slogans. Finally May's conception was rejected and the direction for the enlargement of the city returned to its former rut of territorial growth. May, isolated in his fight, left Wrocław and went to Frankfurt on the Main. Being a 'Stadtbaurat', he there got an enormous chance to realize his plans on the scale of a complete town organism.

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The Canadian experiment in the modern neighbourhood; Don Mills, Ontario 1925-1955

Don Mills was the first of the Canadian experiments in modern neighbourhoods. Planned and built during the 1950's, Don Mills is differentiated from other earlier and contemporary developments in Canada in its scale, in its bold implementation of modern planning concepts, and in its promotion of modern architecture and aesthetics.

Don Mills is now a community within the City of North York, one of the municipalities making up Toronto, a metropolis of approximately 3 million people on the north shore of Lake Ontario. Forty years ago, Don Mills was developed on 2200 acres (833 hectares) of farm land, part of an 'island' of land made accessible from the rest of the city by ravines to the east, west and south.

Using planning concepts borrowed from the English Garden City and the American New Town, Don Mills was planned with all the components of a self-sufficient community: industry, commerce, housing and recreation. The different use types are carefully sited hierarchically and are differentiated in plan by the road and street pattern.

Two busy arterial roads divide the site into four residential neighbourhoods. Within each neighbourhood there are no thoroughfares: all roads are 'crescent' and cul-de-sacs. A ring road, the Donway, encircles the main intersec-

tion. Within the ring road, the master plan shows apartment buildings in the two Northern quadrants, a shopping centre and offices in the South West quadrant, and high school and athletic fields in the South East quadrant. The land to the north and the south of the neighbourhoods accommodates light manufacturing industries, serviced by existing railway lines. Each quarter is an independent neighbourhood, made up of superblocks of primarily children, and containing a church and a park.

History

Don Mills was developed by the Canadian industrialist and horse breeder E.P. Taylor. In 1946, Taylor began assembling land not far from his thoroughbred farm. By 1952, he had purchased over 2000 acres; the Canadian Equity and Development Corporation was created, and the development plan was established: the creation of a new town.¹

The aims of Taylor's development company were:

a) to service and subdivide undeveloped land which can be sold for industrial, residential and other purposes and b) to build shopping and commercial centres.²

In Don Mills both stated goals were met and superseded. The planners of Don Mills, Macklin Hancock and Douglas Lee, write: It is the aim of the [Don Mills] Development Company to create under the free enterprise system, an integrated new town which will satisfy the requirements of private investment, and which will also be in accordance with the best principles of town planning.³

Macklin Hancock, a landscape architect, had completed two years of graduate study at Harvard. Hancock hired Douglas Lee, an architect and engineer, to assist him in developing the planning concepts for the new com-

munity. Hancock and Lee, both in their twenties, were proponents of the New Town movement, as characterized by the work of Clarence Stein.

Stein had studied architecture but soon focused on the emergent discipline of regional planning, seeking to solve the problem of urban crowding. In the 1920's, he formed the Regional Planning Association of America with architects and writers like Henry Wright and Lewis Mumford and adapted the principles of the English Garden City to several experimental American housing developments. Stein publicized the group's works and ideas in his widely-read book *Toward New Towns for America*.⁴

Don Mills: Modern planning principles

Stein's influential book was first published in 1950 and made a strong impact on the planning concepts of Don Mills. One of the New Town communities Stein documented is Radburn, New Jersey, begun in 1928. Although only partially realized, Radburn brought the New Town ideas to fruition⁵: a mix of industry, commerce, housing, recreation, and services; the devices of neighbourhood and superblock; the hierarchical systems of vehicular traffic and the separation of vehicular and pedestrian traffic; and the extensive park and greenbelt systems.

'Don Mills New Town' was the title of the article heralding the Master Plan of Don Mills, written by Hancock and Lee. The Don Mills Master Plan contained all the components of a New Town community. Unlike its precedent in the United States, Radburn, which was left unfinished as a result of the Great Depression, the Master Plan of Don Mills was realized nearly in its entirety. However, like Radburn, Don Mills never became an independent political entity, an important ingredient of the

New Town formula, because it was development within the existing township of North York.

The success of Don Mills as a place to live contributed to its failure as a self-contained community. With the extension and linking of road systems across the ravine lands and the construction of the Don Valley Parkway linking it with downtown Toronto, Don Mills became a dormitory suburb for the middle class.⁶

Don Mills was self-sufficient however in terms of infrastructure: the development company provided roads and drainage systems, installed rear lot-line electrical services, and built a sewage treatment facility.

Despite the efforts of the planners to provide housing for a mix of incomes, the average factory worker working in Don Mills could not afford to buy a home in the community.⁷ Even rental accommodation in multiple family dwellings was more expensive in Don Mills, because government sponsored financing had been denied.⁸

Due to the market demand for Don Mills, the costs of financing increasingly sophisticated services, and the development company's interest in increasing profits, Don Mills changed from the Planner's Plan to the Corporate Plan⁹ through each successive stage of development. The analysis of planning concepts will focus on the North-West quadrant of Don Mills, which was the first quadrant to be completed and matches most closely the original intent of the planners working for the development company.

The 'neighbourhoods' made up of 'superblocks' is one of several New Town planning concepts used at Don Mills. The superblock is made up of a number of houses addressing a cul-de-sac or crescent type road. The limits of the neighbourhood are described by Clarence Stein as the suitable walking distance from the child's home to her school, 'the size of the neighbourhood was determined by the number of children cared for by a single

school'.¹⁰

The New Town is essentially the work of Howard modified by the North American ideological focus on the nuclear family and on the automobile. The postWar New Towns were primarily intended to accommodate families with young children. Indeed, concern for children is one of the form makers in the American New Town plan and at Don Mills.

Worries about children being run down by automobiles on their way to school or play lead to an almost obsessive mandate to limit vehicular traffic and separate it from pedestrian traffic. In *Toward New Towns for America*, Stein writes 'The Radburn Idea,' to answer the enigma 'How to live with the auto', or if you will, 'How to live in spite of it,' met these difficulties with a radical revision of relation of houses, roads, paths, gardens, parks, blocks and local neighbourhoods...¹¹

A primary intent of the New Town type of master plan is to maximize the differentiation of vehicular and pedestrian use of roadways. This is achieved through planning devices such as the dead-end cul de sacs and crescent roads of the superblocks, specialized types of roads for vehicles, pedestrian-only pathways, and pedestrian underpasses.¹²

At Don Mills, people living within the superblock and those vehicles that service them produce the only vehicular traffic. Within each of the superblocks all roads are 'crescents' and 'places' meeting at T-shaped intersections. In the Master Plan, in anticipation of low-traffic streets, the neighbourhood roads are only 18 feet wide with 3 foot gravel shoulders and drainage ditches instead of storm sewers. There are no back lanes and the driveways are grouped in twos to minimize the effects of crossings. There are no sidewalks.

The ring road, the Donway, encircles the main intersection and provides a vehicular link between the superblocks, as well as access to the higher-density apartment housing and to the other

neighbourhoods. The development company chose to bring two busy arterials through the community, perhaps in order to serve the needs of the regional shopping centre. The two arterial roads become a device for dividing Don Mills into its four residential neighbourhoods.

Parks envelope each superblock, providing pedestrian links within the neighbourhood and mediating between the neighbourhoods and the park-like low-density industrial areas.

The implementation of a system of parks around each superblock and a greenbelt around the entire community is an important feature of the Master Plan of Don Mills. This was only fully achieved in the North West Quadrant: the allocation of parkland became increasingly sparse as development proceeded. In the Master Plan, the greenbelts mediate between Don Mills as a whole and other nearby development. Because much of the greenbelt land was privately owned, it succumbed to pressure for further development. Only the publicly-owned ravine lands still function as greenbelts.

Don Mills: modern architecture

Not only did Don Mills boldly implement modern planning concepts, but it successfully promoted modern architecture. Don Mills succeeded in achieving some of the finest examples of Canadian modern architecture of the postWar period, due to the use of talented architects and due to the implementation of regulations for design, colour and material to meet a modern aesthetic.

The catalogue accompanying the 1987 exhibition *Toronto Modern Architecture 1945-1965* states:

...Don Mills' strong design commitment to Modernism was one of its most valuable contributions to Canadian architecture. In the October 1959 *Canadian Architect* [magazine], a group of 20 leading Canadian architects... were asked to name the Canadian buildings that had had the most significant effect on architects, on clients and on the public since World

War II.

...Three of these were in Don Mills: the Plant and Offices [of] Ortho Pharmaceutical (Canada) Ltd., the Don Mills Convenience Centre, and the South Hills Village.

...Honoured in their own time [with Massey Medals for distinction in architectural design], these buildings now show us the development of three building types: the suburban headquarters, the shopping centre, and the split-level row house.¹³

The houses of Don Mills have received much less critical attention and acclaim than other building types. The single family residential architecture represents the boldest application of modernism in the development.

Given that the houses were built speculatively, given that the purchaser was potentially less sympathetic to Modernism than the industrialist or the merchant, and given that the financing for the buildings was difficult to obtain, the commitment of the architects, builders and development corporation to modern architecture and the modern aesthetic was intrepid.

The lots within each superblock were sold in small groups to independent builders by the development company. The builders hired company-approved architects and house type was subject to the same rigorous regulation of design and of finish, colours and materials as the industrial and commercial buildings.

The architects that met company approval were, as a rule, young men in their thirties. Some, like Irving Grossman, were trained in Canada; some, like Henry Fliess, had emigrated from Europe; and some were teaching at the University of Toronto, like the Swedish architect Michael Bach.

Four types of houses were developed in the North West quadrant, the first neighbourhood: the two-storey duplex; one-and-a-half storey single family house; and the one storey single family house. The houses of Don Mills, are a conflation of the Ranch and

Contemporary house types, as characterized by Peter Rowes classifications in *Making a Middle Landscape*.¹⁴

The Don Mills single family house is typically long and low, set lengthwise on the site, and varying from one to one-and-a-half storeys. In overall massing and plan, the most prevalent single family Don Mills house is the one-storey Ranch type. In the Don Mills house, the basic Ranch type is pushed further and saturated with the modern. This combining of types at Don Mills is due to the relationships between the various players that built the 'new town'. To over-simplify, the developer and the builders, with concerns for sales and marketing, represent a pull in the direction of the tried and true, the popular, the stable, and the traditional: the Ranch. The planners and architects can be seen to represent a push in the direction of the new, the progressive, the modern.

There are three programmatic zones in the Don Mills one-storey type. The bedroom zone is essentially Ranch: a group of bedrooms and one bathroom around a private hallway. In the split-level sub-type, the bedroom zone is stacked, with two rooms and a bath per floor. In Ranch-type serial arrangement, the bedroom zone is followed by the living and entertainment zone, containing a relatively closed kitchen, and free-flowing dining and living spaces opening onto the back yard. Mitigating devices in the living zone include shelving units, closet, and chimneys. Where the bedroom zone is stacked, the living zone is found at the interstitial level, at the landing of the stair. The third zone is made up of a carport or enclosed garage. There is no direct connection between the carport zone and the other interior spaces of the house, but the living zone and carport zone usually share a roof plane, as is typical in the Ranch type.¹⁵

Surprisingly, much of what identifies each house as modern is in the architectural expression: essentially about its functional use and the placement of that program and about the materials and methods of its construction.¹⁶ All

of the Don Mills house types are asymmetrical and every elevation is different. The fenestration expresses both function and technology: for example, the program of the space behind the window and the panel construction of the wall the window is located in. The roof is generally simple with minimal eaves and the roof planes are often dramatic. In one two storey duplex-house type, a brise-soleil is employed above the ground floor windows. The required brick on exterior walls is interspersed with other materials, expressing its role as cladding. In one house type, the brick cladding slides away beyond the exterior wall. In many of the Don Mills houses, the brick chimney receives a very modern plastic treatment. Brick is typically used to clad the bedroom zones, while large areas of glazing and wood cladding are used for the living zones.

Not only did the residential architects at Don Mills push the Ranch house forward into the modern in terms of expression, but they often experimented with the plan configuration of the Ranch type. This is evidenced in the Don Mills one-storey house type that locates the carport in the centre of the house.

Conservation

The current physical condition of the community and an analysis of current planning and architectural regulations for Don Mills offer both an implicit critique of this ground-breaking Canadian experiment in modern neighbourhood planning and architecture and some important clues toward achieving its preservation.

In 1988, the Planning Department of the City of North York produced a report entitled *The Central Don Mills Study: Analysis and Policy Options and Background Reports*. Fortunately, the report found that 'the original concept has worked well, and central Don Mills remains a pleasant and viable community'. Unfortunately, it only identifies one building, a 19th Century farmhouse, as a potential heritage building which is deserving of preservation and conservation.¹⁷ The Central Don Mills

Study states that the neighbourhoods are probably safe from large scale development because there is little potential for increasing the number of single family units through intensification or redevelopment of the single family neighbourhoods, primarily due to the lot configurations.¹⁸

This reliance on the market economy, however, has produced some small scale developments that dramatically alter the character of the residential neighbourhoods: the three-storey 'monster' house built from lot line to lot line. When the current economic crisis is past, more will undoubtedly follow. Piecemeal changes by owners have also slightly altered the character of the neighbourhoods, but most are surprisingly sympathetic to the scale and language of the extant architecture.

The largest problem of all facing the Don Mills community is due to the continued maturing of its population: essentially, few of its original inhabitants have moved elsewhere.

The neighbourhoods, designed on a child-centred model, are now replete with retirees. Some schools have closed, leaving emptiness at the neighbourhood's heart.

Most redevelopment in Don Mills took place in the late 1980's. Due to the current economic recession in Canada, little redevelopment has taken place over the past two years and little is anticipated for the next two years.

This lapse in redevelopment provides an opportunity to advocate the conservation of the buildings and neighbourhoods making up Don Mills and to advocate the heritage designation of extant significant examples of modern architecture in the community.

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3. Don Mills New Town, p. 9.
4. American Architects.
5. Clarence Stein, *Toward New Towns for America* (New York, 1950), pp. 37-75.
6. Don Mills, the Planned Industrial Community' in *Architectural Forum*, January 1961, p. 66.
7. *Architectural Forum*, p. 64.
8. *Architectural Forum*, p. 63.
9. Sewell, p. 26.
10. Stein, pp. 48-50.
11. Stein, pp. 41.
12. Stein, pp. 41-44.
13. Brigitte Shim, 'Don Mills, New Town' in *Toronto Modern Architecture 1945-1965* (Toronto, 1987), p. 34.
14. Peter G. Rowe, *Making a Middle Landscape* (Cambridge, Massachusetts, 1991).
15. Rowe, pp. 73-77.
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The city of the future, the future of the city and functional building in Rotterdam between the Wars

Studies about the 'idea of the neighbourhood' ['wijkgedachte'] have been describing the popularity of the concept as a direct influence of sociological ideas from the United States, especially the publication of Perry.¹

Although this may be partly true the famous study of the 'Group Bos', 'The City of the Future, the Future of the City' tries to develop a concept of districts, neighbourhoods and the central city for the rebuilding and extension of Rotterdam a city that is typically Dutch by making use of studies from Anglo-Saxon, French and Soviet-Russian experiences and surveys² and not in the least by the experiences of modern town planning in preWar Holland. In Rotterdam the whole idea of building a new society by dividing the town in units was the most successful for more than a decade. It had a direct appeal for 'Nieuwe Bouwen' -architects such as Van den Broek and Bakema, Van Tijen (member of the initial study-group Bos) and Maaskant, Hovens Greve, Wissing and Stam-Beese who presented proudly their studies of Zuidwijk, Pendrecht and Alexanderstad at the postWar CIAM-meetings. This can only be understood if we get rid of the generally accepted view that before the Second World War Amsterdam was the center of modern city planning and Rotterdam could only boast some instances leading to famous but isolated examples of modern architecture in an otherwise chaotic city.

Spangen

Spangen and Vreewijk are two relatively young neighbourhoods that are mentioned in the study of Bos c.s. to prove that some but mostly older parts of the city have a character of their own that is favorable for community-building. Not intending to start a discussion on the modernity of Vreewijk I must mention the fact that this garden city/village was one of the most favoured living areas in Rotterdam.

Founding garden cities on the old shore of the river Meuse however was impossible because the prized and relatively scarce building sites made buildings of four or at least three storeys necessary. In fact it was impossible to build extensions directly connected with the old city, because a lot of organisations speculated with this land and decisions about the infrastructure were not taken due to discussions about annexations of neighbouring cities and villages and national questions such as waterways, motorways and the inter-section of these.

Hardly anybody, though, doubted Rotterdam would extend its city limits in the western direction far beyond Schiedam. In secret, Rotterdam made plans for a belt of parks and industry between the two cities running from the new western harbours to the new Schiecanal.³

It was well drained ground so it was not necessary to pump sand upon the soil before building as was the habit elsewhere on the city side of the river. Already in the early 1920's the Van Nelle factory was buying the best lots as near to the canal as they could get. They acted on the advice of Michiel Brinkman, architect and real estate agent.⁴ Oud's Oud Mathenesse temporary village of low-income houses was built on terrain for the new park to earn some money before that part of the plan could be realised.⁵

The railroad between the new harbours, Schiedam and the city defined

the eastern border of this plan. East of it since 1901 there had been a general extension plan.

The part of the Spangensche Polder was realised earlier and at a far lower level without changing the main lines of the general plan.

The Spangenquarter was far from the inner-city but provided the badly-needed workers housing for the nearby factories, wharves and harbour.

The first building lot was sold to private builders but directly afterwards in 1918 ir. A. Plate the newly appointed head of public housing took over and got permission to experiment with the standardisation and normalisation of housing.

Within the limits of variation of the normplan of C.N. van Goor the young J.J.P. Oud was allowed to experiment with standardisation, 'Versachlichung' and 'das Einheitliche Baublock', themes that Berlage put on the agenda of the architects in Holland. As I stated earlier the importance of the building blocks of Oud in the revolutionising of living is over-estimated. The designs are more important for the personal development and reputation of Oud and to a certain extent of Van Doesburg, who did part of the colour schemes and detailing such as the leaded windows.⁶ Far more important and shocking was the experiment from 1918-1920 of Michiel Brinkman. The reception of his plan for the 'super-block' shows a perfect watershed between progressive and conservative attitudes to the housing question. It was only possible to build the project as a one off experiment. An evaluation afterwards never took place and the whole project vanished from memory until Bakema brought it to attention again in the 1960'.⁷

Sherwood gives a good analytic drawing which reveals the main aspects of the plan but he fails to recover the main aim of the project.⁸ Plate wanted to present an alternative of modern and communal life as a contrast to Vreewijk

which if adopted as a model would be unpayable for the workers or lead to excessive demands for higher wages.⁹ Brinkman designed a four storey block twice as big as foreseen in the lay-out of the general plan in a mixed technique of concrete, wooden beams and walls of brick. The living quarters were of an 'Existenzminimum' but compensation was found in high standard common facilities such as central heating, bath- and washhouse etc. Most amazing feature is the proclamation of the 'street in the air' ['Lucht-straat'], where even carts for selling goods could be driven, long before Ginzburg did it in Moscow. It shows long before he himself did it Le Corbusier's idea of 'the vertical garden city'. As such it had an immense influence on Bakema and the Smithson's. What they did not grasp was the fact that the Spangenberg block is a vertical garden city by choice. The first level has a private garden, the second one a dry balcony with privacy, the third level a street bordered with flowers or plants and without the neighbours looking at your dinner plates, and the fourth one provides (bed) rooms with a view.

Spangen as a neighbourhood bears the signs of compromise and the start of failure already before the experiment was in full flow. Not only the Brinkman and Oud blocks but almost all are bleak and anonymous on the streetside and open with affluent use of balconies to the inner garden spaces. Space is perhaps too promising a word. Schools and other community services are hidden inside these blocks and are accessible by hardly even articulated and often not at all decorated gates. Shops and bars were placed at the corners of the blocks near the main streets. There is no articulated center other than 'the Castle', the main building of F.C. Sparta's sporting grounds. It brought (too much) life in the center only once a fortnight and was a pragmatic replacement for the foreseen public park with skating rink.

In 1923 after Spangen and the failure of the experiments with the use of concrete in a sort of hybrid low-rise high density quarter at Rotterdam-South and the dismantling of the possibilities of the office of Public Housing by the poli-

tical parties, nationally and locally, Plate left the public service. The municipality was not only forced to leave housing again to private enterprise but town planning was also frustrated. Amsterdam got its bigger territory from the government. Rotterdam could not even get the possibility to plead its case. Within a few years Van Eesteren and Van Loosdrecht left for Amsterdam to design the General Extension plan [AUP] and Mart Stam and Van Loghem tried their luck in Soviet Russia.

Town planning and alternative architecture for neighbourhoods.

But Rotterdam had in W.G. Witteveen an able and shrewd city planner who had already made a draft for the Amsterdam Extension plan. He showed in a series of interlocked local city plans how Rotterdam could modernise and extend on a scale that was impossible in Amsterdam.

This is not a conference on the history of city planning but I must show you a few slides. This series of Dijkzigt, Rotterdam-South, Blijdorp-Bergpolder and the Old Zoo - Center plan shows how every 'incident' in decision-making was used by Witteveen to realise part of his scheme of the modernisation of 'Greater Rotterdam' in spite of the economical crisis.

Plate was less successful but he operated only in his spare-time as chairman of a private company for low-income housing. Although only a fraction of his plans was realised he provided funds for architects such as Van Tijen and Van der Vlugt and inspiration for Oud and Van den Broek to go on experimenting.¹⁰

So Van der Vlugt and Van Tijen made a study for a neighbourhood in the Rotterdam-South plan with a lot of communal facilities. Working space, church, schools, shops are situated near the surrounding mainstreets and ribbons of living quarters lie in recreational greenery. The 8 & Opbouw presented this plan (1930-1932) at the third CIAM in Brussels¹¹ and to the Dutch Institute for Public Housing and Town-planning in 1932.¹²

Around the same time Oud made his famous studies for Blijdorp-Bergpolder and Van den Broek, Van Tijen and Van

der Vlugt lesser known but equally interesting studies. These studies together give a good insight into the possibilities of the Opbouw architects to insert modern housing in an already given and accepted infrastructure.

Blijdorp and Bergpolder are fragments of a vision about the modern neighbourhood (the part about the general history of Blijdorp Bergpolder may be changed after discussing this paper together with the paper of R. Docter). When the terrains of Blijdorp Bergpolder were offered to the market fierce battles between different interest groups occurred and Witteveen was caught in the middle. Witteveen prescribed strict rules for each block to be built. Within these rules it was impossible to realise some of the designs of the modern architects as well as the most favoured building type of the private building- and housing associations. Opbouw rallied round the old plan of Kromhout which at first glance seems strange. A rediscovered watercolour birdseye view makes their point clear enough: the plan is not only a study with super-blocks as in the Spangen-case but also highrise 'corebuildings' and an open and green central space.¹³

After intervention by the government a compromise was found.¹⁴ The municipality wanted to show how the translation of the townplanning concept into architecture was intended. The central part of the plan was trusted to Wattjes, Ten Bosch and Van den Broek, architects respected by modernists and conservatives alike. But when the buildings were finished more than half of Blijdorp was already built. Most of the resulting buildings showed a sort of 'shake-hands architecture' before the term was invented.¹⁵

But two buildings stand out and were immediately recognized as very special and very modern: Van den Broeks, Eendrachtflats and Van der Vlugt and Van Tyens Bergpolder highrise flats. The Bergpolder-flat is only the realisation of one of many studies Van Tijen made for Platen N.V. Volkswoningbouw to demonstrate the possibilities of standardisation and prefabrication. Many government officials were present at the turning of the first key and it was *the* modern house in Rotterdam

and much sought after by young intellectuals instead of the workers it was intended for.

Likewise the 'Eendrachtapartments' by Van den Broek did more to provide a fragment of an image of the future and was not so much a success in providing new living conditions. The site gave the opportunity to open the bloc to the new park. This gave the plan a very specific palace-like character. The idea of different day and night use of the same rooms was almost a complete failure. The aspects the users appreciated most were very specific for this particular project like the 'Kindergarten' they were able to integrate during the planning process. Van den Broek on the contrary saw the project as only a fragment and a phase in the total rationalisation of building.

Both projects showed the new possibilities but the middleclass preferred the buildings that showed a less modern appearance and especially the private garden was much in demand.

Furthermore the prices of rent for the Eendrachtproject and most of the buildings in Blijdorp Bergpolder were too high for workers. To put it more bluntly: it proved that new living conditions could be realized but the question stayed if they should.

The real historical important image is not so much a, in the future, more or less restored and reconstructed building envelope, although I won't deny the immanent beauty of these buildings and their locations, but the prototype character they have for the city of the future. In fact the two prototypes are firmly interrelated as is clearly shown by the entry of Van den Broek for the competition of cheap workers dwellings for the AUP, which shows a combination of both his and Van Tijen and Van der Vlugt's designs for Blijdorp.

The end of the Interbellum story is the beginning of the postWar one.

Normally this story would continue with the Jaffa quarter near the Kralingse Plas with another highrise apartment building, this time by Van Tijen and Maaskant and the lowrise buildings by Van Tijen and Ten Bosch. Here the prototype has evolved in the first production type with a greater choice of dwell-

ling types. Sometimes the story is even continued with the living possibilities in the New Rotterdam which was a protest again against Witteveen. This time Plate and Opbouw directed it against his plans for rebuilding the city after the bombardment by the Germans.

Such a continuation of the story shows Witteveen purely as a conservative person and sees the beginning of the triumph of modern city planning in Rotterdam in the replacement of Witteveen by Van Traa.

This picture needs correction. First of all Witteveen stimulated Opbouw to work out a Recreation plan [Groenplan] for CIAM 5 in Paris which preludes the hierarchical division of the city as proposed by the Group Bos more than a decade later. Secondly if we look at the model for the center of Rotterdam-South it is clear that Witteveen was convinced that highrise modern buildings would dominate the new centers of cities. Irritation between Witteveen was aroused again during the presentations of the Private Public Enterprise of the new Central Station Area (Spring 1940). Not Brinkman and Van den Broek as heirs to the study of Van der Vlugt were allowed to design the bold flats and office towers but Jan Wils.

After the innercity was destroyed by German bombers Witteveen tried to rationalise the infrastructure but hesitated to outline the different quarters as boldly as he did in the 'Zoo-plan', perhaps due to the shock of the totally destroyed image of Rotterdam as a Dutch city. In the introduction the same caution is traceable in the 'Woonmogelijkheden' study. After an evaluation which again presents Vreewijk and Spangen as alternatives and also presents proudly the other examples that have been discussed above a catalogue of types is presented. Clearly the outside appearance especially for the dwellings for worker families and for pensioners is more conservative but this is not the case for the dwelling types and the grouping of the types.

This study was only the first a series of studies during the War that were financed by the N.V. Volkswoningbouw. The result, Plan Zuidwijk, was ready to be presented in the study *The City of the Future the Future of the City*, as a com-

promise between the 19th Century neighbourhood, the Old-North, and the early 20th Century model of Tuindorp Vreewijk.

It is ironic that during the War, Sert, the later chairman of CIAM presents in his 'Future of the City' the Van Tijen and Maaskant highrise flat as the image of modern living in his collage about the Charter of Athens. Opbouw architects and not in the least Van Tijen himself who lived in his own flat were convinced that highrise building was only fit for certain kind of households and should and could never be a solution for cheap housing for worker families.

So when rebuilding and the extension of cities in Europe after the War started, Holland had a lead because it had experience with living in modern architecture which was only comparable with the German experience. The latter had had no continuation after the 1930's. Because nazi-Germany hated the CIAM-approach to housing and town planning the Charter of Athens could at least present the hope of a new start for a new Europe. It is not so amazing that only the Opbouw architects which provided very concrete plans for discussion, first Zuidwijk, later Pendrecht and finally Alexandertown, when CIAM started to doubt the validity of the Charter of Athens.

Notes:

1. See, C. Perry, the Neighbourhood-Unit, Regional Survey of New York and its environs, Volume 7, pp. 22-. For an adequate overview of the conception in the Netherlands: J. Bijhouwer, *De wijk-gedachte*, Wageningen 1947.
2. Explicitly mentioned A. Bos et al, *de Stad der Toekomst de Toekomst der Stad, een stedenbouwkundige en sociaal-culturele studie over de groeiende stadsgemeenschap*, Rotterdam 1946, are the studies of: Gaston Bardet, *Problèmes d'Urbanisme*, 1941; W. Russell Taylor, the Neighbourhood Unit in Town Planning, *The Townplanning Review*, 18, 3-7-1939; K.S. Dodd, Planning in the U.S.S.R., *Journal of the Townplanning Institute*, vol. 20, december 1933.

3. A survey of the troubles about the annexations and the (national) discussions about city limits and fear of the metropolis in J. Nieuwenhuis, *Van poort tot poort, ontwikkelingsgeschiedenis van het Rotterdamse stadsgebied, van dNieuwpoort in de XIV-de tot de Euro poort in de XX-ste eeuw*, Historische Werken Roterodamum 2, Rotterdam, Den Haag s.a.[1961], ch.8-13.
4. Bantjer, ..., early sketches of the Van Nelle factory in the archives Van den Broek & Bakema, sections Brinkman and Van der Vlugt.
5. M.J.I. de Jonge van Ellemeet, *Woningbouw in Oud Mathenesse*, Tijdschrift voor Volkshuisvesting en Stedebouw 1925, p.64: 'in this way a loss of interest was avoided and with it a serious hindrance to the laying-out of the park in the near future.'
6. Rob Dettingmeijer, *Open Stad, planontwikkeling, stedebouw en architectuur in Rotterdam tussen de twee Wereldoorlogen*, Diss. Utrecht 1988, pp.269-271.
7. J.B. Bakema, *de Brinkmannen zijn er nog wel, maar waar zijn de Plate's gebleven?*, Forum (1960-61) 8, pp.
8. Roger Sherwood, *Modern Housing Prototypes*, Cambridge, Mass., London 1978, pp.100-103.
9. If not otherwise stated proof of the ideas of Plate is found in the Plate Archive at the Gemeentelijke Archiefdienst Rotterdam {GAR} in the correspondence and in the cases of the N.V. Volkswoningbouw.
10. List of experiments of N.V. Volkswoningbouw....
11. Kongresse für Neues Bauen, Rationelle Bauweisen, Stuttgart 1931. The congress was dominated by the discussion between the system-like approach of Gropius and the utopian vision of Le Corbusier and his 'Ville radieuse'. See Martin Steinmann, CIAM, Internationale Kongresse für Neues Bauen, Dokumente etc., Inst. für Geschichte und Theorie der Architektur an der Eidgenössischen Technischen Hochschule Zürich, Schriftenreihe: 11, Stuttgart, Basel 1979, pp.74-109.
12. Steinmann, CIAM ...; Rationelle Bauweisen ...; Nederlandsch Instituut voor Volkshuisvesting en stedebouw nr. 35, Praeadvies uitgebracht door de Ver. arch. kern 'de 8' te Amsterdam en de Ver. 'Opbouw' te Rotterdam, Organische woonwijk in open bebouwing, Amsterdam 1932, see also Archive NIROV, The Hague, meeting Amsterdam, 25-6-1932.
13. This sketch was inherited from or lifted out of the Brinkman archive by J.B. Bakema and is now the first entry in his personal archive. See for an explanation of the different plans for Blijdorp-Bergpolder: W. Kromhout CznI, *het plan Blijdorp, te Rotterdam*, Tijdschrift voor Volkshuisvesting en Stedebouw, 8 (1927)5, pp.106-115; W.G. Witteveen, *Uitbreidingsplan voor het Noordelijk en Noord-westelijk stads-gedeelte (Blijdorp) te Rotterdam*, Tijdschrift voor Volkshuisvesting en stedebouw, 10 (1929)9, pp. 169-179, pp.170-171.
14. See for summary of the discussions: W[atjes], *Kwestie Blijdorp, et Bouwbedrijf 1931*, pp.589-593. *Protest Opbouw*: J.B. van Loghem, P. Schuitema, *Adres ten Plan Blijdorp van den heer Witteveen*, Rotterdam 1931, pp. 589-593.
15. For example L.C. van der Vlugt's design for the Klok en Van Diggele complexes.

Hilversum a new town in a historic setting

Summary

From a conservation point of view, Hilversum can be considered as a 'new town'. Not until the end of the 19th Century, after the railway connection with Amsterdam was completed, had it started to develop as an industrial- and due to the green surroundings also as a dormitory- town. Economic expansion caused an explosive growth of population, especially labourers, which urged the Hilversum municipality, on behalf of the Housing Act of 1902, to develop extension- and urban renewal plans. In 1915 the first planning scheme was completed and put into practice.

A decade afterwards (1925) this scheme was extended by a social-cultural paragraph. It is from this time on that Hilversum regained international recognition for its new architecture.

The high quality development went on until the Second World War. After 1945 social-cultural impetuosity seems to have left the Hilversum administration. The fine architecture of the twenties and thirties was even considered an obstacle for further (economic) development. The traditional conservation policy in the Netherlands is not able to cope with this problem, so the Netherlands Department for Conservation started in 1992 an investigation into today's administrative and financial possibilities for a combined economic and cultural development scheme.

The issue

Hilversum really is a new town. In the second half of the 19th Century industrialisation led the former agrarian village to urban development, stimulated around 1870 by a connection to the

railway network infrastructure (by which the mobility options for both people and commodities increased considerably). This urbanization process was accelerated by the ready availability of cheap building land, low land taxes and a plentiful supply of cheap labour. The spatial consequences became visible as early as the last quarter of the century: villa housing estates in ample greenery, a large city-style railway station, several new-Gothic churches, large-scale industrial estates and housing for the workers.

The steady economic growth and the resulting population increase demanded further urban expansion, for which a planned approach was required after 1901 (Housing Act). The first general expansion plan for the Municipality of Hilversum appeared in 1915. Ten years later, it was supplemented by a social-cultural section at the insistence of the towns' architect Dudok. This stated specifically that from 1925 natural preserve, aesthetic control, welfare supervision, social provisions and social housing were to be structural components of the urban development policy for Hilversum. Thanks to inspired implementation, the city acquired an international reputation in the fields of urban development and architecture in a relatively short time.

This resulted in the pre (Second World War) urban Hilversum with a highly valued architectural and social cultural appearance, a new town that is now threatened with extinction under pressure from today's mentality, which focuses mainly on economic development.

The municipality can hardly be reproached, since social cultural management (or integration into today's development) of the Hilversum urban and architectural heritage is no simple matter. The existing range of tools in the

field of the conservation of monuments and historic buildings cannot provide a structural solution in either the material or the regulatory sense: if Hilversum wants to safeguard its cultural identity, as appreciated under the Monuments and Historic Buildings Act and the just completed Monument Inventory Project (MIP), more will need to be done than a formal protection of buildings and/or the injection of investment subsidies (insofar as the money is available anyway). Structural opportunities for retention (and development) can only be created on the basis of integrated planning, in which spatial planning, economic development, cultural and historical dimensions of the existing built area as a whole receive comparable attention. In practice, this should lead to stimulating investments by fully respecting or integrating all social cultural and historical aspects.

The study, which is now going on, is intended to develop options for encouraging such integrated planning.

The underlying principles are the Monuments and Historic Buildings Act and amendments, the already mentioned Housing Act and amendments, the Physical Planning Act (on behalf of the national spatial development scheme Hilversum is a central city in an urban district) and the Urban Renewal Act.

In addition the study will focus on optimising market participation and minimising government financing.

The development of Hilversum in brief

There was an (agricultural) settlement near the site of the present Hilversum as early as the 13th Century, which featured a structure of an 'open' village, common land and heathland. The load-bearing capacity of the local soil made an erratic and apparently random development of roads and pathways possible. The buildings were mainly farmhouses and economic life was

based on agriculture and raising sheep.

Raising sheep in particular made spinning and weaving possible (as cottage industries in the first instance), laying the foundation for centralised industrialisation later on. This early form of industry provided a stronger economy than agriculture, thereby contributing to population growth. In addition to the farmhouses, workers' housing appeared in the Hilversum urban structure from the 18th Century on. In addition, the nearby village of 's-Graveland offered supplementary employment in the shape of sand excavation and the construction of country houses at the sites of the excavated sand. In the first instance, the 19th Century saw an improvement in the existing infrastructure (i.e., a few sand roads - particularly those leading to 's-Graveland - were metalled) and centralisation of the spinning and weaving industries.

It was only the modernisation of the infrastructure (in particular, the construction of the Amsterdam-Hilversum-Amersfoort railway line in 1874 may be regarded as such) that wrought a radical change in Hilversum as a town. The option to commute created considerable demand for villas; the heathlands and agricultural land which had become unproductive were wooded over (originally for commercial timber production), so that Hilversum later became highly suitable as a health resort (tuberculosis) and a recreational area. The extension of the modern infrastructure (tramlines at the end of the 19th Century and motorways in the 20th Century) encouraged both the growth of existing industries and the establishment of new ones. The conditions for economic growth so created caused a further increase in the number of inhabitants. There was no space within the confines of the old 'open' village area to accommodate the new population and hence new industrial areas and workers' housing appeared beside the established villa districts. In view of the positive economic development the (former) village of Hilversum continued to be expanded in the 20th Century, particularly after the First

World War. The difference from the previous periods is that from 1915 the expansion was planned and supervision of construction was vested in the municipal authorities under the 1901 Housing Act. The first expansion plan (1915) provided space for various economic activities and for (municipal) social housing. Slowly but surely Hilversum acquired the glamour of a city on the 20th Century model, i.e. a garden city with buildings of high architectural quality. Environmental protection and aesthetic control became real principles of municipal development policy, certainly from 1925 onwards.

A new Town Hall, schools, hotels (Gooiland), public baths, libraries, broadcasting buildings, a slaughterhouse, housing (including social housing), cultural buildings and a modern sanatorium (Zonnestraal), of high architectural and urban developmental merit, appeared in a short space of time. It is the social and cultural verve behind this implementational policy that has given Hilversum its own urban identity and its (world-wide) renown. It is this development (temporarily interrupted by the Second World War) that will ultimately have to transform Hilversum the town into modern Hilversum the city.

Moreover, a city with an eminently cultural character.

Development versus preservation

Today, the former 'open' village structure can still be traced in the course taken by streets and roads, the presence of many open spaces, large squares and non closed building lines that do not run parallel to the streets. The impetus towards urbanisation came at the beginning of this century; the process is by no means completed. In addition to the Housing Act, which originally focused (and still does) on the development of social and visual quality, the municipality is now affected by the Monuments and Historic Buildings Act, which contrasts in its traditional orientation on preservation. Development and preservation would appear to be at odds, certainly in the dynamism inherent in a settlement. And hence

also in Hilversum, which has used the phenomenon of cultural development as a (policy) principle from a very early stage.

Moreover, this developmental outline also demonstrates that the cultural development was related to economic development from the beginning of the 20th Century and was therefore able to encourage a specific Hilversum identity. Even more, this relationship created high valued urban surroundings during the economic crises of the twenties. At the present time, it seems less simple to create a comparable relationship between the retention of identity and economic development, whereas at national level the discussion emphasises 'Space for Quality' (national vision on spatial planning) and 'Space for Architecture' (national memorandum on architecture).

Apparently the problem is that the Memoranda mention development, whereas the concept of preservation is still identified with (static) conservation. In view of the current philosophy of the conservation of monuments and historic buildings (it would be better to regard it as the management of cultural and historical quality), creating a policy and economic link between quality management and quality development is of the utmost importance.

Designating out the appropriate instruments, means and encouraging creativeness in these respects is the subject of the Hilversum study.

Integrating development and preservation

A preservation policy that supports development (furthermore mentioned as conservation) will mostly make use of the physical planning instruments. Introducing the historical dimension into the physical planning is mainly intended to utilise the analysed cultural identity (of a settlement) in the potential sense for new (quality) developments. It is important that the body responsible for physical planning policy (in the Netherlands: the municipality), should have a professional analysis of the identity mentioned designed. A list of protected buildings nor the former explanations to protected areas are sufficient. These merely provide a static

description of the current phenomena. For the Hilversum case (which is still an experimental case), the Netherlands Department for Conservation is therefore implementing a historical and a development analyses. A historical analysis of Hilversum, by which the social economic process of the municipality is described and analysed and the way this leads to today's social cultural structure and appearance. The description must also include the (economic and political) elements of disruption of the development process. In the Hilversum case it is now clear that the overthrowing of the Dudok plans (with their social cultural vision, but also with their paternalistic culture of the preWar period) started in 1953, when the town's council accepted a more political and economical aimed vision on townplanning. By doing so they sentenced a main part of the urban cultural

achievement to a functional and economical death. From that time on Dudok and the Modern Movement became, although an amount of objects were listed as monuments, an obstacle to modern development. The conservation of historic buildings, such as the town hall, Zonnestraal, Gooiland and so on, stagnated due to lack of government subsidies. The main objective of this study is to re-introduce the relationship between economic and cultural development (as it was before 1953), therefore the historical analyses has to be succeeded by an understanding into (cultural) development potentials of the town as a whole and the architecture in particular. In this case conservationists have to accept functional and economical conservation having priority over urban and architectural preservation. Re-use of buildings (whether they are monuments or not), should in most

cases be the first step to conservation. Following the above mentioned steps appropriate implementational instruments must be developed. In the case of Hilversum it means the development of economically justified management plans for the existing built-up area, development plans designed by the municipality in close collaboration with private developers and investors. Only these plans are able to give insight into realistic possibilities of re-use of the urban structure, existing (historic) buildings and financial consequences. Only then will it be apparent whether a (private) financing system will be adequate, or whether subsidy will have to be applied. The final result should be a usable quality schedule, focusing on the integration of cultural (historical) values in a development scenario required by Hilversum.

Friedrich Weinwurm; the search for an answer

*'Form follows function' is mere dogma
until you realize the higher truth that
form and function are one.*

F.L.Wright

Architecture as a human activity is as old as mankind itself and the history of architecture in fact is the history of the search for a balanced dependence of form and function. Tasks of the architects throughout history are the same, only technical conditions and public taste are changing. But how far can we implement experience from the past?

If we accept the fact, that what we produce today is bound to be specifically modern, no matter how we incorporate the past into our work, we should look at the tradition of modernism to see which of its elements inevitably persist in our attitude toward works of architecture - a discipline which includes into itself a set of aesthetic norms that is the result of historical and cultural accumulation. We have to decide how far we refer to the style and how far to the attitude towards concept when speaking about modern architecture.

Every culture contains a mixture of truth and falsehood when measured against the ideal. And again each culture can adhere only to its own notion of the false, through values that are immanent in particular social and institutional forms. But the value of our life cannot be defined in a way that excludes our human individuality. The uniqueness of our culture, which is the product of historical

development, must be understood within a historical context. Architecture is a form of knowledge by experience, it is a discipline which incorporates into itself a set of aesthetic norms. But these values cannot be seen as constituting a closed system of rules, they are subject to change in time. To repeat them without deeper understanding of their sources is senseless. But on the other hand there are several fundamental rules in architecture that are independent of styles. Styles have relative value, they depend on taste of the period; the value of architecture, on the contrary, is permanent. For our purpose we can consider a style as 'a complex of formal relationships in which certain moods and meanings are most at home.'¹

Besides the question of style there is also the question of purpose. And again we see parallels in problems to be solved. One of the most serious is the problem of housing, which was the most pressing one after the both first and second World Wars. In the face of this problem, it became the aim of the architects to reconcile a rationalistic minimizing of costs for construction with natural human need for harmony and stability.

This task was similar in the postWar period, in the socialist era. And the reason for failure and all the mistakes done in the period of socialism seems to be in ignoring this need, forgetting that 'whichever technique he chooses, the architect's function is to propose a way of life...'²

Functionalist architecture growing up from the avant-garde movements of the 1920's and their moral and ethical credo 'Back to simplicity' significantly influenced the view on living. In connection with the important political, economical, social and cultural changes that took place on the territory of the first Czechoslovak Republic function-

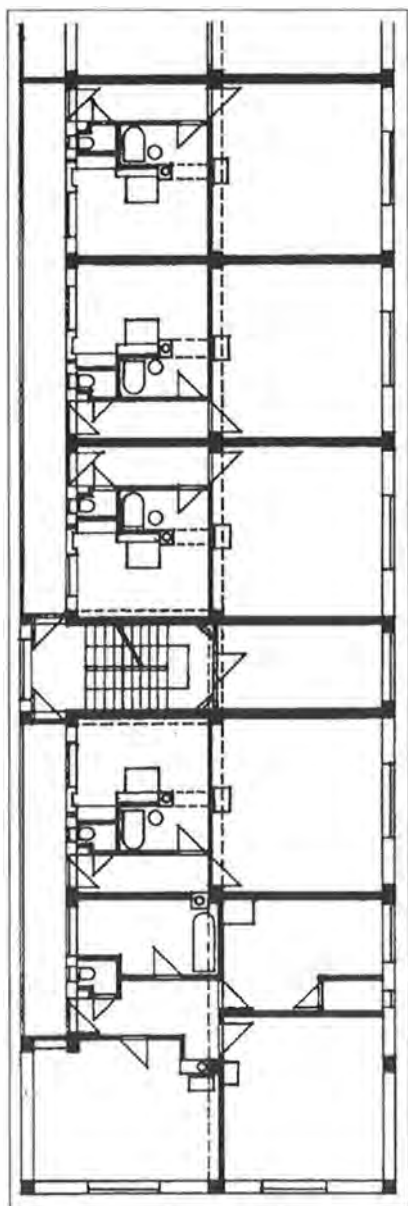
alism - in its best and most comprehensive sense - has found one of its most complete and representative expressions.

One of those devoting an essential part of creative activity to the questions of housing and the culture of living in Slovakia was Friedrich Weinwurm³, a strong individuality in Modern Movement history in Czechoslovakia. His professional activity is closely tied with social oriented research on housing. The situation in housing, and mainly in social housing in the beginning of the 1920's was poor.

Insufficiency of existing housing stock in unspeakable conditions of overcrowding and minimum hygiene made it urgent to initiate new housing construction. It was not easy to find methods that could help to improve the character of the emergency housing of the socially weak. Economical restrictions influenced not only the size of flats, but also their equipment standard. Due to Weinwurm 'these questions (of suitable dwelling) have to be solved as soon as possible, using simple means of reason, will and optimism. Until these questions are resolved to details we can be accused that we are using words like Humanity, Love for children and neighbours, but we do not feel and understand their sense.'⁴

In his theoretical work Weinwurm also proclaimed: 'The most important thing is not the faith of the individual alone, however imposing it can be, but the destiny of the society.'⁵ This attitude was the basis for his preparing concepts and choosing adequate technical means. We can follow this concept in his best known neighbourhood projects in Bratislava, Unitas and Nová doba.

Unitas are gallery-type blocks of minimum-size flats for the Peoples Housing Association (construction cooperative), built in 1930/1931 in Bratislava, Sancová street. This complex is one of



F. Weinwurm, I. Vécsei.
Neighbourhood Unitas, Bratislava.
Plan of a part of a typical floor

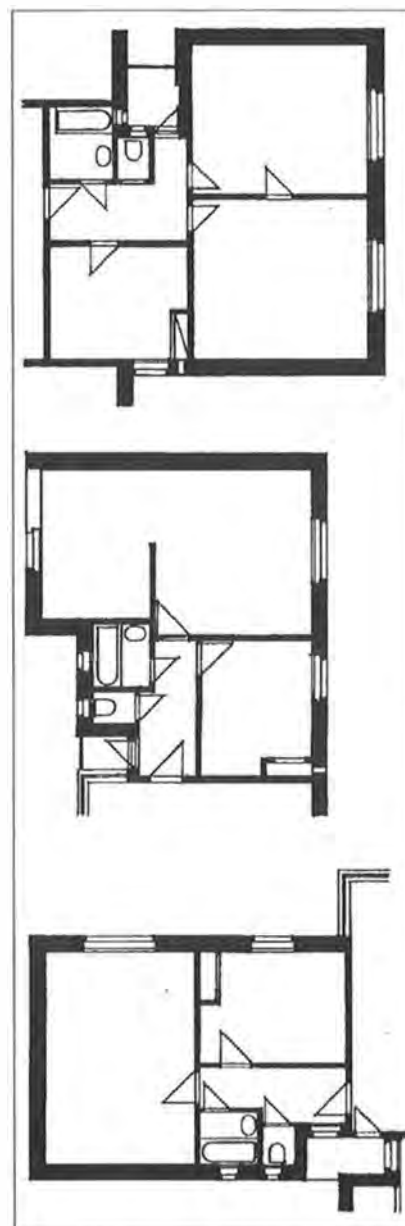
the few in Bratislava, in which new ideas have been implemented and is one of the best examples among them. In the proposal of the gallery-type (Laubenganghaus) solution and the site plan Weinwurm has taken into consideration the results of a similar competition in Prague which already proved the effectiveness of such a solution. Five identical residential blocks are situated perpendicularly to the communication axis, distanced from one another in ratio 1:1. There are 240 one-room flats and 50 two-room flats, always on the ends of the buildings. In the initial pro-

ject the living room had been divided in to a living space and a 'bedroom' corner. This arrangement supposed built-in furniture (first steps of typification in Slovakia) but that had been unaffordable for the socially weak inhabitants of the target group. Due to Teige⁶, the project was in the conceptual phase of design originally proposed as collective housing, but in the final design only the spared common washing rooms accessible from the staircase remind one of it. The framework of the buildings is in reinforced concrete. Weinwurm has tried by simple means to cultivate the architectural image, using symmetry of the complex, horizontal stressing of the building, emphasized tectonics of the construction system and genuine details.

Neighbourhood New Age (Nová doba) in Bratislava, Vajnorsá Street, was built as a housing project for private employees and workers in three periods, from 1932 to 1939 and from numerous construction undertakings aimed at reducing the insufficiency of flats is one of the most interesting. In this project Weinwurm tried to combine the advantages and intimacy of the free standing one-family house with the effectiveness of the residential rental house. The orientation of the flats to the inner courtyard removes inhabitants from noise from the lively streets. As in a complex of social housing, the dwellings were rather small - one, one-and-a-half and two rooms flats with minimized access space, but technical standard was high, all dwellings have central heating and are supplied with hot water, all spaces are directly lighted and living rooms are in disposition isolated from the staircase by corridors. Plans are logical, providing inhabitants with optimized private, semi-private and public living space.

The neighbourhood consists of three repetitive complexes. The first block was completed in only 8 months in the year 1932, the framework was erected in 3 months. For the first time in Bratislava steel was used for the framework. Later for the next blocks reinforced concrete was used. The architectural expression of the Nová doba quarter reflects in a very articulated way the

new point of view on architectural image. The simplicity of forms, based on the contrast of full and uneven walls, corresponding fully to the abilities and functional content of the building are the answer of a responsible architect. The origin of Weinwurm's simplification of forms and shapes in the mentioned neighbourhoods is on the one hand in his belief in the necessity to solve the housing problem as effectively as possible and on the other hand in his aesthetics preferring clear, quiet non-dramatic forms growing from inside. His strong feeling for sincerity exploited the anti-ornament ideals of Loos.



F. Weinwurm, I. Vécsei
Neighbourhood Nová doba, Bratislava
Plans of typical flats

This attitude was made clear already in his early works, where attention is paid to the logic of everyday life, site plans and floor plans, which are adapted to the environment, needs of inhabitants, and last but not least to the quality of detail. All this is inspiring even now. Hardly any epoch had paid such attention to the precise realization, longlasting materials, perfect details and the economy of construction.

In recent years, there has been a great deal written about modernism. From the international point of view much criticism has accompanied interest on this period, initiated by such polemicists as Jencks or Venturi. In Slovakia the interWar period, which can be considered as the most successful in the history of architecture, is in public almost unknown and often rejected. Refusal has its roots in lack of knowledge and subconscious and misleading association with the depriving recent picture of endless and boring neighbourhoods from 1960's, 70's and 80's.

If we think today about functionality in architecture, we should interpret it as the holistic answer for the problems of living environment, concerning technical, technological, environmental, psychological and social aspects.

In this sense the above mentioned neighbourhoods are the ancestors of such an attitude. Neighbourhoods like *Unitas* and *Nová doba* prove that when the principle becomes reality, not as a prescription, but as a materialization of individual thinking, the resulting work has style. Not canonized, abstract, but real, internal, of its own. It remains true that the function, on its own, does not generate form. Even the most tightly defined set of requirements may be answered in a variety of ways, and images concerning the possible appearance of the building are entering the design process from the very beginning.

So functions are translated into the forms and shapes of architectural language through the elements of style. In this sense also the answer is found to the basic question about the relation

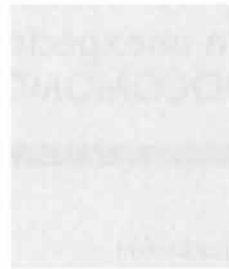
between function and form in their unity.

But the main message is that whatever style is 'in' there is the responsibility of the architects for understanding human needs and for creating living space and it should not be misvalued.

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2. Smithson, Alison (ed), *Team 10 Primer* Cambridge, Mass., 1968, p.42
3. Friedrich Weinwurm, born 1885 in West Slovakia, studied in Dresden at the Technical University from 1898 to 1906, spent eight years in Germany as an architect and since the end of the World War I active in Bratislava, since 1924 together with architect Vécsei, died 1942.
4. Weinwurm, Friedrich, *Človek, jeho byt a jeho kulturné potreby* (Man, his dwelling and his cultural needs) In: *Nová doba*, Bratislava, 1936, p.6.
5. Weinwurm, Friedrich, op. cit.
6. Teige, Karel, *Kleinstwohnung*, Praha, p. 103.

COMPLEX OF BUILDINGS



Marieke Kuipers,
Paul Meurs,

Quintus Miller,
Cor Passchier,

Klaus Jürgen Winkler,
Eitan Karol.

Functionalistic sports buildings: an unexpected DOCOMOMO theme

Introduction

In this Olympic year I would ask special attention for a theme which is symbolic for the rise of recreation in our daily life: the functionalistic sports buildings of the 1920's and 30's. In these decades sport became more and more popular, so that physical exercise in open-air or in indoor sporting halls was no longer restricted to the 'happy few'. Although the general condition of these about sixty to seventy year old buildings is not too bad, several of them are threatened with destruction at this very moment, because of financial problems and negative political decisions. Many of the financial problems are caused by recently issued technical, hygienic and safety requirements. For instance, a new Hygienics and Safety Swimming Pools Act came into force with rigid purification rules, urging adaption or replacement of the old sandfilter systems of many open-air swimming pools before 1994. Another example: football stadiums must come up to still higher safety standards because of the violence of hooligans. These and all other types of (preWar) sports buildings have to comply with the actual demands of sanitary supplies, ventilation, isolation and so on, based on the technical possibilities of today without regard to the former solutions. All these regulations require high investment, but they also demand a lot of adaptations affecting the original architectural shape or some characteristic details (like steel windows or railings, wooden doors and benches). How far can we go along with these

adaptations? Or do we have to accept them without any protest because the alternative is the total loss of the non-adapted sports buildings? Sometimes we do not have a choice at all.

There are several cases where demolition is foreseen by the local authorities because they want to create new building locations for social housing. This concerns among others three buildings on the attention list of our Dutch DOCOMOMO-working party: the open-air swimming pool at Zwolle, the Sport-fondsen-bad at Haarlem, and the Olympic Stadium at Amsterdam. When writing this paper (May 1992), the struggle for their preservation is still going on, but I hope that I can give you more actual information during the congress. In advance, I would like to sketch roughly their meaning from a cultural and architectural history point of view, and mention some technical aspects.

Swimming pools and recreation areas

Although swimming is an age-old sport, it took until the previous century before the first swimming pools in the proper sense had been laid out. On the one hand this had to do with the stronger appeal of social motives (an increasing need of swimming instruction, safe swimming and hygiene, and the rise of club sports). In this context very simple outdoor swimming pools with only wooden scaffoldings (against the flow) and changing cubicles, seemed to be sufficient, especially because these early and rather primitive baths had been planned for men only (until about 1880) (e.g. Amsterdam, swimming pool at the Westerdoksdijk with a 10 m diving tower made of an iron framework, ± 1845).

On the other hand (at a later stage) new technical developments made it possible to create indoor swimming pools with more comfort and hygienic supplies, where people could take a

bath or could undertake their swimming or waterpolo competitions during the whole year. Thanks to the introduction of iron frame constructions large spans could be made in undivided halls (e.g. Amsterdam, indoor swimming pool at the Heiligeweg, 1898, and Zuiderbad). The basins could be constructed of the newly invented reinforced concrete, while the heating and water replacement could be provided by steam (or later by oil-fired) engines, and gas- (or electric) lamps could illuminate all inner spaces in addition to the lanterns or high placed windows.

How advanced these indoor swimming pools might have been in their time from a technical point of view, their architectural expression often derived from the ancient example of the Roman *thermae* not only in 1883 when the eldest one had been built at The Hague (Mauritsbad), but also in 1921 when Stoop's model bath and swimming pool at Bloemendaal (near Haarlem) had been completed after a design by architect Ed. Cuyper.

Nearly all swimming pools from the period 1840-1920, whether they were indoor or outdoor, had been initiated by private persons; because of the high costs of financing and exploitation the total number was not very large. In the 1920's this changed drastically, due to different circumstances, a greater awareness of water pollution and, foremost, new thoughts about swimming as a healthy sport for everyone, from schoolchildren to senior citizens. In that period a social-cultural turn took place striving for a new life-style with great support for physical exercise and (open-air) recreation. Swimming became an obligatory part of the primary school curriculum. Besides, the members of the working class had got more leisuretime when the eight-hour working day had been introduced (in 1918). Moreover, in the new town planning designs, partly under the influence of the Modern Movement,

Realization started fifteen years later with the layout of the outdoor swimming pool, which opened in 1924 (architect: D.C. van der Zwart) and it functions until today. It is the first with an inner water circulation system led over a filter.¹

Even during the great depression of the 1930's the municipal construction activities increased, when the local authorities brought hundreds of unemployed workers together in order to lay out a public park (often with an open-air swimming pool) in the meadows or moorlands outside the towns. The most famous project in this respect, fitting both the unemployment relief programme and the Modern Movement ideas about townplanning, is with no doubt the Amsterdam Forest Plan, part of the functionalistic AUP (General Extension Plan) and as large as the Bois de Boulogne near Paris. However, the inspiring examples for the new Amsterdam recreation area came from England (for the park styles) and Germany (for the sports accommodation). According to their aim of combining active sporting with passive recreation in 'free nature' the designers

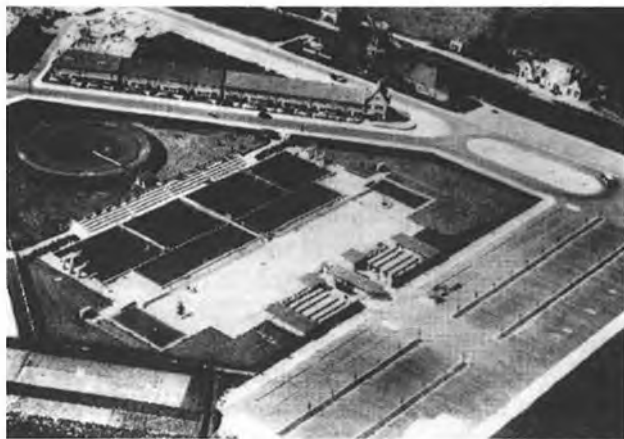
After this excursion in town and country planning, where it proved a merit of the Modern Movement to give a great spur to developing recreation areas and sports accommodation, we might go over to some swimming pools in a more or less functionalistic style, and

Although the main building was lost in a fire (and, therefore, the updating of the accommodation offers no technical problems when building them totally new), the local authorities are still waiting for an interested businessman to give this sporting area a new future.

The situation is different in the eastern town of Zwolle, where the municipal



Amsterdam,
Plan for the
Amsterdam Forest
(‘Boschplan’)
part of the
General Extension
Plan (AUP). 1935.



Zwolle, open-air swimming pool (J.G. Wiebenga), aerial view shortly after completion in 1934.



Zwolle, diving illustration as published in the Modern Movement magazine *De 8 en Opbouw*, 1935.

outdoor swimming pool has been closed since September 1991 and the area is reserved for social housing. However, a local action group is trying to save the complex and to reuse it under private administration. This abandoned complex was designed in 1932-33 by one of our leading engineers of the Modern Movement, Jan Gerko Wiebenga, who then was in charge as Director of Public Works (1931-34). In fact, this swimming pool was his first commission in Zwolle and he worked it out other than the former Director, in its programmatic, architectural and technical aspects. Wiebenga wanted to extend the lido with a great sports park - with football stadium, cinder track and facilities for other outdoor sports - but for financial reasons this plan had been carried out only on a smaller scale, across the triangular shaped swimming area. Nevertheless, the for that time generous scheme of the lido finally received approval. There were at least six basins - two to conform to the standards of the Olympic games (20 x 50 m), two shallow pools and two separate paddling pools - and a stand with 400 seats. Also a special sunbathing area with a sandy strand (now with grass), had been made complete with deck chairs and parasols. Comfort was to be found elsewhere, too.

For instance one could use a washing and drying room for the bathing clothes, including an electric washing machine and wringer - a luxury that most of the bathing people did not have at home then.

Let aside the severe symmetrical layout, the circular basin for the pre-warming and purification of the swimming water (now replaced by a round sun terrace) was the most significant element in this pure functionalistic design. The forms and routing were not only defined by the separation of sexes, but also by the separation of paying and non paying visitors. The swimmers could reach the basins only by passing the showers (and soap supplies) placed at the entrances from the box office, the strand or the stand.

Typical of Wiebenga, who was a specialist in that field, was the large appliance of reinforced concrete. As a construction material it had already been in use for more than three decades for making the proper basins (and in this case the constructor had adapted a special construction with air valves in order to resist changing upward forces from rising damp). But now concrete had been applied too when building the stand, the changing rooms, the depots, the separation walls (with the help of prefab elements) and the slim-fitted diving platforms. Therefore, it was very painful for Wiebenga that he got into conflict with the local authorities over these towers when according to the advice of controlling engineers they had ordered the reinforcing of the construction after some vibrations had been constatated a test load. In spite of this conflict the architect was so pleased with the final result that he hired a diving model and a photographer to make eye catching pictures for publishing. Some of these images appeared

in the Netherlands Modern Movement magazine *De 8 en Opbouw*, where a great debate was going on about the need identified during swimming and (sun) bathing accommodation following to functionalistic (instead of heavy and not functional 'romantic') designs.

Although the lido at Zwolle is no longer completely intact, it still has many of its original features and there is a great support for keeping this remarkable complex in its original function amongst the local inhabitants (and we are with them).

But when the local authorities hold on to their housing scheme for this place, there will be no chance anymore for this delicate DOCOMOMO-monument. In another case the situation is nearly hopeless: the outdoor swimming pool that Gerard Holt added in 1935 to the already mentioned 'swimming temple' of Stoop's bad at Bloemendaal, one of the first open-air pools of 'Olympic' sizes in our country and one of the first bathing complexes constructed totally in reinforced concrete.

When the young architect Holt became confronted with his new order, the lido at Zwolle was not yet ready.

Therefore, he went to England, France and Switzerland to study especially the technical and constructional solutions to this new building type. Finally, he created an attractive complex with a large - and undivided - pool, a well orientated sun terrace and a round paddling pool. But however advanced his creation was in those days - for its architectural shapes, its construction in concrete, its technical and hygienic supplies, its

ingenious routing - it proved to be impossible to avoid the later adaptation and exploitation problems. The outdoor pool is already out of use for fifteen years, without any maintenance but occupying very profitable building land. The indoor pool closed just one year ago and now the owners are trying to sell the whole complex (although unique for its combination of indoor and outdoor swimming pools and tennis lawns) to a property developer, while action groups are trying to keep at least the building by Ed. Cuypers.

The future for the (functionalistic) open-air pools is not pessimistic everywhere, albeit not rosy. Maybe, we can learn from the example of the Wantij Bad at Dordrecht (1936). This lido was designed as a part of an unemployment relief project by the rather unknown Allard Argelo with a butterfly-like groundplan (inspired by the work of Sybold van Ravesteyn and perhaps also the lido by Wiebenga) and it remains in use, with some latter alterations. Although the financial and operational situation is still precarious, this 'social monument' was saved from definite closure a year ago by private financial support and voluntary help. Many inhabitants gave a contribution to a specially created fund, run by a new foundation, and bought in advance a season-ticket in order to finance the necessary renovations, while the local authorities are taking the other costs to their account. The increasingly occurring or impending closure of the open-air pools especially is symptomatic for the changed circumstances compared with the decades of their development, because since the 1960's and 70's of the contest with the covered baths in number, comfort and range of users groups. In the 1930's, the local authorities were still very anxious to take the financial risk of building and operating indoor swimming pools for they had already much to pay for diminishing more urgent needs like unemployment and shortage of housing in those days. So, it was due to the rewarding initiative of one of our national water-polo-players that, before the Second World War began, the number of covered pools in the whole country increased to 41 with nearly twenty new

buildings being financed by the 'Sports Funds' (to which the future users contributed by a kind of savings system with shares) and run by a more or less corporate organization (formally a limited company).²

From the beginning most of these indoor pools had been provided with a

local authorities are not willing to give the necessary financial (nor the planologic) support.

In the case of the Rotterdam Eastern Pool, with its curved roof construction of concrete and glass stones (1933, Foeke Kuipers), things went better at several critical stages. After being bombed during the last war, it was restored



Haarlem, Sports Fund swimming pool (J.B. van Loghem), view from the southern side with opened terrace doors, 1935

'sun lounge' or a sliding roof in order to bring the bathers more directly in contact with the open-air during sunny summerdays. Other covered baths were therefore combined with open-air pools, sometimes even with sunbathing and playing areas. The first functionalistic indoor swimming pool arose at Haarlem ('Sports Funds Bath', 1934-35), designed by one of the main architects of the Dutch Modern Movement, J.B. van Loghem, and equipped with several technical specialities, like the first waving installation and a changing system with chlorinated water. Originally, this clear sports building, made of a combined steel and reinforced concrete skeleton, had a glazed sliding wall between the inner swimming hall and the south oriented sun terrace on the first floor, but later on this was replaced by a closed wall with some glass strips. Also at the inside the original lucid architecture is affected by later changes (place and appearance of changing rooms, colours, ceiling, diving terrace, and so on).

But in spite of these alterations the original creation is still recognizable and worth to be saved from demolition while new building schemes are in the making for this attractive spot and the pool was closed one year ago. So, this is another endangered sports building on our attention list and it is not easy to preserve this specimen because the

immediately and in 1953 it got a new entrance. Under the pressure of a near closedown in 1975, the local authorities gave their support for ten years. Then, a new rescue came by founding a special limited company affiliated with the Sports Funds organization; this formula has been quite successful until now and maybe it can serve as a model elsewhere.

Football stadiums

However, swimming is not the only branch where the typical (preWar) sports buildings are in danger of destruction for financial or political, but by no means structural, reasons. The same is true for football stadiums. The most significant example - if not the hottest item - is the Olympic Stadium at Amsterdam, built in 1928 by Jan Wils for the only Olympic Games ever held in The Netherlands and now having its fate heavily discussed by (local) politicians, townplanners, investors, football club boards and 'conservationists', including the DOCOMOMO-working party. The local authorities have already given permission to break the stadium down for the sake of already developed housing schemes. But the demolition can only be started when a new stadium is ready and although there are several serious building options the most crucial decisions about financing and final location have not been made

yet. Meanwhile, we are trying very hard to preserve the Olympic Stadium - a unique sports monument and an important landmark in the famous southern quarter of Amsterdam - as a national listed monument.

The Olympic Stadium is the first Dutch stadium with a reinforced concrete skeleton (albeit clad with brickwork) and cantilevered roofs with steel framework (being a cheaper alternative for the originally intended concrete construction). From the beginning the stadium has been planned for several branches of sports and so it got an athletics track (now disappeared) and a concrete cycling track, too. The stadium was the 'heart' of a greater Olympic complex completed by only temporary - and therefore replaced - sports buildings. The architecture, especially at the Marathon Porch and Tower, is like all

seemed to be more important (and it is famous for its quality!) than the concrete staircases, the brickwork or the steel frames and so there came more and more defects to restore. In spite of this critical situation Ajax recently won the European Cup before the eyes of thousands of spectators in the Olympic stadium. Other great events are planned for the near future, but long term planning is quite impossible as long as there is no decision about the stadium's renovation or new building projects.

To finish with a happy end, I would mention the Feyenoord stadium at Rotterdam (1936-37, J.A. Brinkman en L.C. van der Vlugt) - the famous 'Kuip' (tub) - and the Apollohal at Amsterdam (1934, A. Boeken and W. Zweedijk), both elegant specimens of functional sports buildings with steel frameworks and both still 'going strong' after a

even cheering - test 1500 unemployed workers had been hired, proving with the music of a band of the Royal Marines that the construction calculations had been right. Then, they could not know that since the eighties pop concerts would be given in order to have good (additional) receipts. Although the stadium had to go through several alterations (e.g. synthetic plates instead of glass walls, new seats), the original features are still standing for the true Modern Movement architecture and let us hope that they will do so for a very long time!

Reference:

1. In 1940 there were only twelve open-air pools (from a total number of 474) with a filtered water circulation system and six others in combination with the system of an



Amsterdam, Olympic Stadium (Jan Wils, 1926-28, 1936-37), general view (situation July 1992).



Rotterdam, Feyenoord Stadium (J.A. Brinkman en L.C. van der Vlugt, 1936-37), general view outside (situation 1983).

Wils' works from the 1920's evidently inspired by the horizontalism of Frank Lloyd Wright, but nevertheless also very crisp and functional. The original capacity contained but 31,600 places (to lower the building costs and, as it is rumoured, to keep a certain exclusivity for the visitors), which was obviously not enough. Therefore, in 1937 the complex was extended at the short sides with uncovered shell-like stands and outer staircases (all in 'naked' concrete), providing a total capacity of 50,000 places.

Because the future of this stadium is uncertain for a long time, the upkeep has been restricted to a minimum during at least fifteen years. The condition of the - uplevelled - soccer field

short dip (and, of course, both occurring on our attention list). The Apollohal, meant as a temporary building for indoor tennis and expositions, was restored a few years ago. The Feyenoord stadium was built in direct competition with the Olympic Stadium, being better for its cost (five times cheaper), capacity (twice as much: 65,000), sight (closer to the field) and pure functionalist architecture. It was because of this rivalry that the Olympic Stadium had to be extended. The creative adaptation of a double-decked stadium, proposed by the foreman at that time, had been inspired by the examples of the Arsenal stadium in London and the New York Yankees base-ball stadium in the United States. For a load - and

adjacent indoor pool (see: P. van den Boom, "De Nederlandse zwembaden", in: 100 jaar KNZB, 's-Gravenhage 1989, p. 54).

2. In 1940 the total number of indoor swimming pools was 41. Thanks to the 'Sports Funds' there arose 18 covered baths in: Amsterdam (1929 and 1938), Arnhem, Zwolle, Maastricht (all 1933), Breda, Schiedam (both 1934), Haarlem, Eindhoven, Apeldoorn, Venlo, Heerlen (all 1935), Delft (1936), Nijmegen, Rotterdam North, Amersfoort (all 1937), Dordrecht (1938), Zaandam (1940) (see: Van den Boom, o.c. p. 56; Toelichting bij de overzichtstentoonstelling samengesteld t.g.v. het 40 jarig jubileum van de N.V. De Sportfondsen en van Mr. J.A.C. Bierenbroodspot, Amsterdam (1963).

The Sanatorium, the evolution of a new functional type in the early 20th Century

Introduction

The evolution of the sanatorium for treating tuberculosis (t.b.) and its effects are an interesting chapter in the history of architecture and cultural life. A new kind of building - the tuberculosis sanatorium - developed between about 1855 and the turn of the century to take into account changes in the treatment of tuberculosis due to advances in medical knowledge.



Sigfried Gideon: *Befreites Wohnen*, Zürich 1929.
Umschlagseite zur bekannten Werbeschrift für das
Neue Bauen.

State of the art advances in medicine, hygiene and technology were integral to the development of sanatoria, resulting in a progressive design which ser-

ved as the model for modern hospital design in the period between the two World Wars.

The successes achieved in tuberculosis research and the efforts of the tuberculosis movement decisively influenced the modern understanding of hygiene. They led to a new awareness of life among the generation between the Wars. Society began increasingly to realize the importance of gymnastics, dancing, light athletics, physical education and bathing, in addition to anatomically appropriate clothing and the rationalization of household chores. It was because of its emphasis on light, fresh air, sunlight and hygiene, the architecture of sanatoria became the ideal during the 1920's. The slogan of tuberculosis therapists at the turn of the century was the motto of new style during the late 1920's: light, air, sunlight, openness.

Davos, a mountain resort and cradle of successful tuberculosis treatment, is an outstanding example of a town dominated by this modern spirit. Its architecture, artistic and literary works and the consciously formed modern image testify to the town's aura.

I wish to break my presentation down into four chapters:

1. The social and hygienic basis in the 19th Century
2. The development of tuberculosis treatment .
3. The evolution of the sanatorium as a type of building and its influence
4. Davos - the sunny Alpine town.

The basis

Industrialization and the explosion of the population resulted in a catastrophic deterioration in living conditions and hygiene in the centres of industry during the 19th Century. The towns were ill prepared for the inflow of the masses. Owing to the lack of sufficient

accommodation, the healthy and the sick lived together in cramped conditions. Malnutrition, chronic fatigue owing to long working hours and unhealthy working conditions exacerbated the physical and mental susceptibility of the people. Conditions were ideal for epidemics.

Tuberculosis was a widespread illness in the 19th Century. It appeared in various forms, including tuberculosis of the lungs, kidneys or bone and lupus. The disease was a lengthy process that gradually consumed the body. It was for this reason that tuberculosis of the lungs was commonly called consumption.

Tuberculosis was regarded as a constitutional disease until Robert Koch discovered the tubercle bacillus in 1882. People were unaware of the acute danger of infection from those with tuberculosis. It is important to note that around one in six deaths were still caused by tuberculosis as recently as the turn of the century.

Tuberculosis treatment

Recommended treatments for tuberculosis varied tremendously in the course of the centuries. A change of climate, advice already given by doctors in ancient Rome, held the best hope of success.

The foundation for the first systematic treatment was laid by the German doctor Hermann Brehmer in Gröbersdorf (Silesia) in about 1855. The most important element in his treatment was fresh air. His patients were instructed to take in fresh air in the large park in Arnstadt and to strengthen themselves by physical exercise.

Doctor Alexander Spengler made a major contribution to tuberculosis therapy in Davos in about 1860. In order to strengthen the body's natural

rest, physical exercise, a rich diet and cold showers to toughen up the body. Alexander Spengler's successful mountain treatment led to the promotion of Davos as a world renowned health resort.

Peter Dettweiler, one of Brehmer's pupils, improved his teacher's method



Ansicht der Frauenliegehalle einer Volksheilstätte. Die Geschlechtertrennung wurde zur Durchsetzung der Disziplin strikt eingehalten

of treatment. To better supervise his patients, he set up a sun room equipped with special deck-chairs at his sanatorium at Falkenstein in Taunus in 1875. This marked the discovery of what remained the mainstay of tuberculosis treatment for decades: fresh air rest treatment.

It was Dr. Karl Turban in Davos who combined Dettweiler's strict management of treatment with Spengler's mountain air therapy. The "closed sanatorium" he established in 1889 soon attested to its success. Owing to the efficiency of his treatment, it became possible for the first time to build public sanatoria and to treat the huge number of less wealthy patients. The heliotherapy discovered by Dr. Oskar Bernhard in St. Moritz introduced a completely new aspect. In analogy to the method used to dry-cure beef in the Grisons, he exposed open tuberculosis wounds to intensive sunlight at high altitudes and achieved high healing rates.

Bernhard's discovery was developed into a comprehensive heliotherapy regime by Dr. August Rollier in Leysin. Systematic treatment with sunlight was always combined with work therapy or physiotherapy.



Kindersonnenterasse der Kinderklinik Dr. A. Rolliers in Leysin Rollier hatte spezielle Kinderbetten für seine Heliotherapie konstruieren lassen, um eine möglichst optimale Behandlung zu ermöglichen

The benefits of heliotherapy for general medical purposes were quickly realized, and it was soon used for various other purposes. Heliotherapy became a component of the contemporary understanding of hygiene at the beginning of the twentieth century.

The evolution of the sanatorium as a type of building and its influence

Taking a health cure was an important event among high society in the 19th century, and the aristocracy and upper class flocked to health resorts during the summer. The purpose was to heal, relax and invigorate body and mind in scenically and architecturally charming surroundings.

The first sanatoria for tuberculosis patients were just like the other sanatoria at health resorts. The fact that the patients had tuberculosis was apparent only from the treatment. These establishments had no special architectural fea-



Kurhaus Davos um 1870. Dieses Etablissement entsprach dem damals üblichen Typus des Kurhotels.

tures. The traditional health sanatorium consisted usually of several annexes, treatment pavilions, entertainment faci-

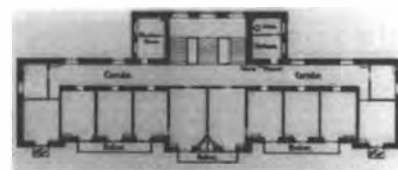
lities and a well kept park. Brehmer's sanatorium and the Kurhaus sanatorium in Davos conformed to the general pattern of sanatoria at that time.

No architectural changes were needed until Peter Dettweiler introduced his more rigorous treatment at Falkenstein. The sun rooms for the strictly supervised course of treatment were the first feature of sanatoria specifically established for pulmonary disorders.

The closed sanatorium established by Dr. Karl Turban in Davos in 1889 adhered basically to the pavilion style layout. However, the ground plan exhi-



Sanatorium Dr. Turban ca 1895. Diese Heilanstalt war das erste Sanatorium, in Davos, das die Patienten mittels geschlossener Anstaltsführung behandelte.



Sanatorium Dr. Turban, Grundriss eines Bettengeschoßes.

bited major changes that were dictated by the therapy. For instance, all patients' rooms faced south for hygienic reasons, and the corridor on the north side was naturally lit and ventilated above the facade. These features and the sun rooms in front of the actual sanatorium on the south side were the first characteristics of sanatoria for pulmonary diseases.

Shortly afterwards, Turban published his so-called Normen zur Erstellung von Heilstätten für Lungenkranke (= Principles for the Construction of Clinics for Pulmonary Patients - the translator) in which he laid down the requirements for sanatoria. The conception he outlined was astonishing in the layout and arrangement of the facilities. It was regarded as the basis for the successful

construction of public sanatoria for many years.

The sanatoria faced south, and this side was dominated by a protected therapy zone in which the sun rooms were situated. The sanatorium was entered from the north, where the catering facilities were also situated, and not from the south as in other resort hotels. This polarization between the north and south sides also governed the internal lay-out of the building.

The rooms facing south were reserved for patients, and included bedrooms, recreation rooms for use during bad weather, and the dining rooms. Rooms used by the catering services were on the north side. The sexes were strictly separated to help maintain discipline, which was a problem anyway.

Dr. Karl Turban and the well known Swiss hotel architect Jaques Gros submitted two projects in reply to an open invitation for tenders for a sanatorium in England in 1902. The proposals refined Turban's principles and placed them in an architectonic setting. The ideal project based entirely on his therapeutic requirements was never



Idealsanatorium Dr. Turban, 1902. Dieser Entwurf wurde zwar nicht ausgeführt, hatte aber einen nachhaltigen Einfluß auf den späteren Heilstättenbau.



Idealsanatorium Dr. Turban, 1902. Innenraumperspektive eines Patientenzimmers. Mit der Stahlrohrmöblierung, der vollverglasten und öffenbaren Südwand sollte das Zimmer selbst zur Loggia werden. Mit dieser Lösung nahm das Projekt Forderungen des Neuen Bauens um dreißig Jahre vorweg.

built, but the publication of the project had a lasting influence on future sanatorium design. Light, air and hygiene had become the principal determinants of sanatorium architecture.

Turban's therapeutic approach was introduced only gradually at existing health establishments. Many of the establishments belonging to private sanatoria were not converted to incorporate sun rooms until after the turn of the century. The new basic principles were applied mostly in new sanatoria intended for the general public. In private sanatoria, the more sophisticated requirements of the private patients had to be taken into account, so that compromises were necessary.



Sanatorium Schatzalp 1899-1900, Pflegehard und Haefeli. Dieses Sanatorium war die erste Privatheilstätte in Davos, die ihre Patienten nach der Turbanschen Therapie behandelte. Der Bau war das erste Stahlbetongebäude der Region.



Chirurgische Klinik der Zürcher Heilstätte Clavadel, 1931-1932, R. Gaberel. Das architektonisch eigenständige Bauwerk stellt mit seinen durchlaufenden Balkonfronten und den verglasten Eckveranden eine Beziehung zum damaligen Spitalbau her. Dieses Gebäude ist heute durch einen bevorstehenden Umbau in seiner architektonischen Substanz bedroht.

The introduction of heliotherapy had a major impact on the exterior of sanatoria. The treatment of bedridden patients necessitated the provision of balconies adjacent to the patient's rooms. Light and sunshine in the rooms was the commandment of the day. Therefore, from about 1915 onwards, new sanatoria were built with large flights of balconies, and these were also added to most existing sanatoria. After World War I, the verandah became an additional typical feature of the sanatorium.

Sanatorium buildings profited from the progressive attitude of those backing them right from the start. The application of new technologies and building methods, the use of novel ground plans and cross sections were completely in line with the way tuberculosis doctors thought. The advancement of architectonic approaches, liberation from traditional solutions and application of modern technologies followed logically from the therapeutic principles used in the sanatoria.

The sanatorium became the precursor of Swiss hospital buildings after World War I on account of its clarity of layout, technical details and the important



Loryspital Bern, 1929, O.R. Salvisberg. Das Spital für Chronischkranke stellt ein typisches Beispiel der damaligen Schweizer Spitalbau-Architektur dar.

influence of heliotherapy on medicine in general. Three specific characteristics of hospital ground plans found their precedent in the architecture of tuberculosis sanatoria: the southern orientation, the long front balconies with glassed in corner verandahs and the lay-out of the interior.

In 1929, Richard Döcker showed a relationship between modern building and the architecture of sanatoria in his book *Terrassentyp* (=The Terrace Type - the translator). Writing in defence of the new style, Siegfried Giedion also referred to tuberculosis sanatoria at this time in the broadsheet *Befreites Wohnen* (=Liberated Living - the translator). He wrote at least part of it in Davos.

Within the framework of the new philosophy of life after World War I, the sanatorium can be considered the forerunner of modern architecture in the same way as industrial buildings, steam boats, motor vehicles and aircraft.

steam boats, motor vehicles and aircraft.

The sanatoria built between the Wars were dedicated completely to the spirit of the new style in the spirit of their surroundings. Contemporary architecture had caught up with its ideal. The further development of the sanatorium as a discrete type of building took place outside of Switzerland during the 1930's. The designs by Pol Abraham and Henry le Môme in France, Duiker in Holland and Aalto in Finland during this period are particularly worth noting. The discovery of streptomycin brought the ninety-year development of sanatoria to an abrupt stop after World War II. Tuberculosis could be treated successfully without sanatoria there after.

Davos - the sunny alpine town

Between 1865 and the turn of the century, the Alpine village of Davos in the Grisons developed into the world's leading health resort. The medical success of Dr. Alexander Spengler combined with the spirit of enterprise and belief in progress helped this mountain valley to prosperity in only a few decades. A sti-

mulating cultural life developed in the community as a result of the largely well educated clientele, and this attracted artists, authors and intellectuals. After the turn of the century, winter sports began to play an increasing role in the life of the resort besides tubercu-



Eisbahn Davos, 1934, R. Gaberel



Rathaus Davos, nach dem Umbau von 1930 durch R. Gaberel. Durch den einschneidenden Umbau des ehrwürdigen Rathauses stellte sich sogar das offizielle Davos hinter das moderne Image des Kurortes

losis treatment. The new health consciousness that developed at the beginning of the 20th Century and the town's rich cultural life transformed Davos from a place where the sick convalesced into a modern town dedicated to health and fitness. This image was consciously promoted by targeted publicity and public patronage for modern art and architecture even for public buildings. In 1929, the manager of the tourist office published an pamphlet on contemporary Davos in the same series as Giedion used to publish his *Befreites Wohnen*. The town was intentionally given a modern, contemporary image. In the course of the town's refurbishment, the Davos architect Rudolf Gaberel even remodeled the town hall to give it a modern appearance.

An outstanding example of contemporary architecture and modern lifestyles, the Alpine spa at Davos is a unique example of contemporary history.

Trade Union School in Bernau by Hannes Meyer

The Bundesschule Bernau

The historic Bauhaus is very much embodied in the place where we are holding our congress, and I therefore find it quite inspiring to speak about what is probably the most important building created by one of the Bauhaus directors, Hannes Meyer.

The concept was born in these very rooms, the design completed in the department of architecture, and the building is now one of the impressive and very early examples of the school which we know as Neues Bauen. I am talking about the Bundesschule, or College, of the ADGB, Germany's trade union federation, which was built in Bernau near Berlin between 1928 and 1930. While Meyer was responsible for the entire project, a good deal of the design work was done by Hans Wittwer, a talented architect who was in charge of the construction office until 1929.

Today, 62 years later, essential parts of the complex which lies amid forests in an area known as the Mark of Brandenburg, have survived. Despite a number of badly constructed annexes and other structural alterations, it is now a monument in the formal sense and as such may be destined for conservation or decline. After the political changes in East Germany, ownership remains unclear.

But whoever turns out to be the owner, as a cultural asset the building could still be saved and its upkeep ensured with a reasonable outlay of money. The alternative would be to let the law of

entropy take its course of aging and degradation.

It now appears that this monument of modernist architecture could be re-evaluated in the same way that neo-conservative and post-modern schools look at modernism. Eventually it is the value attached to these historical phenomena by society which will play a certain role, and it can only be hoped that a general appreciation of cultural history will strengthen the conservationist element.

Let me now deal with the question, first, of how to determine the value of the structure involved, second, what the present situation is with regard to protection and, third what a registered association, the Verein Bundesschule Bernau, proposes to do for preservation.

Competitive design, Axometry, Aerial view

The College was the first building project of its kind in the Weimar Republic to be widely propagandized, and it received considerable attention throughout the trade union movement. It was meant to signal a modernization both of the organization and its general policies through education, and union dues went toward its financing. At the time, the project was described in detail by the architect and a number of architectural critics. From a different perspective, its new aspects were publicized by a group of people belonging to the Neues Bauen movement, among them Adolf Behne, Sigfried Giedion, and Steen Eiler Rasmussen.

It is also remarkable that more than a dozen reports on the competitive design and the finished project appeared in trade journals, some of them abroad. This indicates the high esteem in which it was held by those who advocated cultural innovation in the

Neues Bauen school and the trade union sector of the labour movement.

While the Bauhaus was intended as a home for modern designers and craftsmen, the concept of building the trade union college was directly linked to political groups wishing to stimulate social development. Contemporary assessments, for one thing, stress the new way of expressing, in terms of architectural content and form, the modernist search for social innovation at a higher level of civilization and technology.

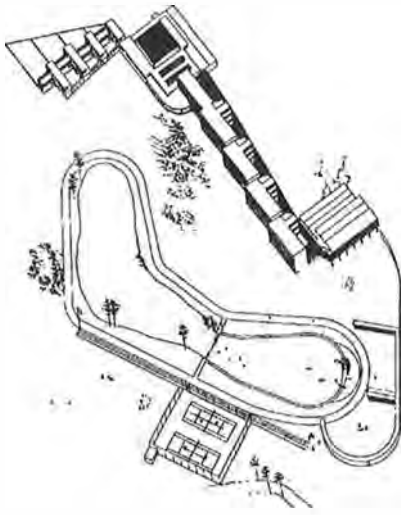
On the other hand, new formal trends were noted in the layout of the complex, in which freely designed structures blended with a natural environment. The block arrangement was seen as a model for boarding schools, and the unpretentious architecture was also emphasized. The Bundesschule was thus widely discussed as an example of the new ideas which the Bauhaus had adopted after Gropius under the directorship of Hannes Meyer, a discussion which was encouraged by Meyer himself.

All of this goes to show that the project reflected a number of contemporary Bauhaus concepts and, more specifically, the beginnings of Meyer's own theory which relied on scientific analysis, rationality and functional design. The underlying ideology is set out in two articles, 'Bauhaus und Gesellschaft' and 'Bauen', which appeared in the Bauhaus periodical. Ernst Kallai, the journal's editor, generally described the new orientation as follows: 'The search of the Bauhaus for harmony between soul and reason, and between art and technology, does not mean a fanciful overstepping of frontiers in the sense of a new universal art work (the first Weimar period), nor does it imply constructivist restraint (the second Bauhaus period). What it calls for is the fullest respect for the element's own

laws and their freedom of movement, rather than complicated or simple uniformity and centralistic or formal summarizing. Only the most liberal concepts of style can protect us both from traditionalistic and modernistic trends and make our forms compatible with the new life in all its breadth, variety and strength...'

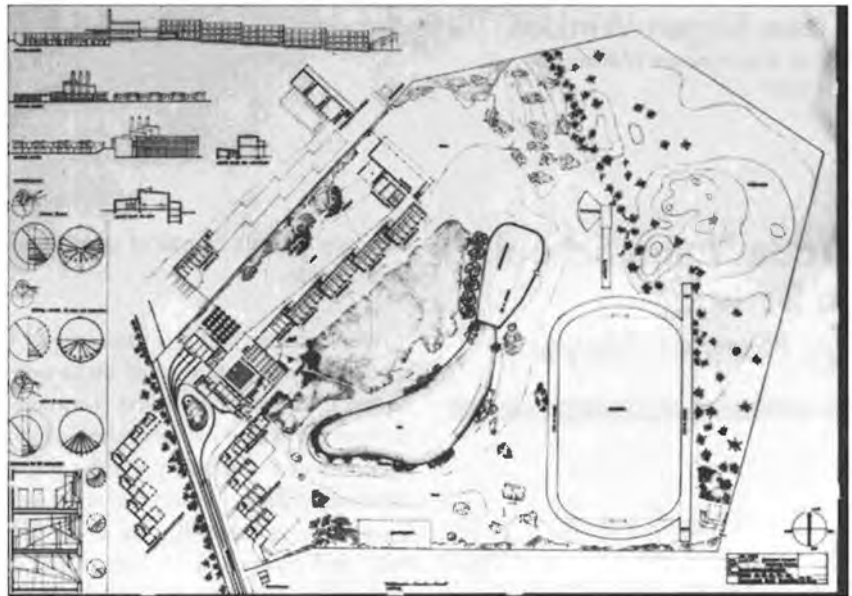
In: Bauhaus, Vol. 2 (1928), no. 2/3, pp.1-2

Work on the competitive design began at the very moment when Meyer, initially with Gropius' help, succeeded the latter as director of the Bauhaus. It was actually Meyer's first opportunity to bid for a larger building project, and he and his co-workers prevailed by a wide margin over the other bidders, all of them renowned architects representing the Neues Bauen movement such as Max Berg, Aloys Klement, Willi Ludewig, Erich Mendelsohn and Max Taut.



Axometrie des Wettbewerbsentwurfs.
Hannes Meyer und Hans Wittwer, 1928.

With only slight variations on the original plan, Meyer and his team carried out the design work in a private construction office in Berlin from which they also supervised the progress of work. Their explanatory report reads like the basic concept for a new society, a modern Utopia. Here Meyer adopts the impassioned tone typical of modernism by confessing to the optimistic slogan that 'Building means designing the process of life'. This was meant as a return to the origins of architecture, a new design approach free from esthetic calculation.



Planzeichnung des ausgeführten Baus. Lageplan, Ansichten, Schnitte und Besonnungsdiagramme, 1930.

One of the basic ideas in Meyer's concept was that all aspects of the educational process going on at the College could be designed into its building. He looked upon the institution as intended for universal performance and achievement, similar to a society that worked according to the Taylor plan. Four weeks of community activities and the interaction with nature from a modern structure would give students a new outlook on life.

In this respect, the layout of the College clearly reflected its principles of teaching and organization. The structure of the residential section and the arrangements made for tutorial groups, communal living and eating, etc. were all modelled on Pestalozzi's theory of the small circle from which larger circles would emerge. Here, these were groups of ten who would finally be absorbed into the overall community of 120 students. The main thoroughfare was a glazed corridor, providing orientation and serving as a diorama for experiencing nature from an enclosed space.

The students' living rooms, the smallest cells in this organism, were built for a 'comradeship of two', with beds arranged in parallel and two cupboards and wash-basins each. Large windows looked out the landscape and provided maximum daylight for people who

otherwise lived in the big city and probably had never enjoyed such high standards of hygiene, whether awake or asleep.

Tutorial groups (10 students, 1 tutor) met at a round table.

The three lecture halls were arranged above the gymnasium, and to get there students had to climb up stairs as a somewhat arduous exercise. This was actually meant as a psychological reminder that learning, too, required an effort. The lecture halls were multi-functional, with different seating arrangements and adjustable lighting, and generally designed for maximum daylight from a southeasterly direction. The Poloceau roof trusses were given a trapeziform cross-section so that their undersides reflected light at an angle.

The common rooms near the entrance hall were purposebuilt with a number of aesthetic features added. For example, the refectory has glazing of a shop window size which looks out on the surroundings, ample light from the sides and through the ceiling, and two-legged reinforced concrete frames as a structuring element. The assembly hall looks almost introverted with its square layout which Meyer regarded as an expression of community spirit. Technically, it was a perfect structure. Its walls were covered with a light reflecting and

sound-adsorbing material specifically developed in the Bauhaus workshops. Lecturers only had to press buttons to operate the projector and blackboard, and to darken the hall. The architecture is extremely unpretentious, even spartan.

In contrast to the romantic surroundings, the interior furnishings were of the highest technical standard. This is a view of the kitchen. On the entrance side three chimneys were built for the oil heating system, a modern feature at the time. Sport was thought to be an important incentive for better achievement, and the gymnasium has doors for access to 7 outdoor sports fields arranged around a natural lake to which a swimming pool was added.

The philosophy behind this architecture is perfectly expressed in its relationship with the surrounding natural landscape.



Junkers-Luftbild der Gesamtanlage, 1930.

It was Meyer's aim to achieve a complete blend with nature. An aerial view reveals the new aesthetic concepts developed in opposition to aestheticism and emphasizing free composition. Most probably, this approach would have been impossible without the constructivist theory of rhythmic balance and elementary form. The architectural details are by no means shapeless - there is an emphasis on aesthetic materials and design, and technical systems are not concealed. The interior rooms were designed to the appropriate scale, and allowance was even made for elements of perceptual psychology.

In contrast to the traditional approach, this architecture abandoned the pattern of symmetrically structured blocks with the accent on the static axis, and com-

plete with decor. Reading the explanatory report one gets the impression that Meyer's architecture was meant to embody his philosophy of functionalism. In all its casual austerity, the complex is full of romantic notions.

On the other hand, the rigorous attempt to design a world view into a building was bound to bring problems and lead to curious situations. Meyer sometimes sounds like a stickler for his principles, for example when he speaks, somewhat ironically, of a 'school of solar therapy' and implements the idea in the form of large glazed areas. This indeed gave rise to many physical problems in the practical use of the building which must be solved today in its preservation.

From a historical point of view, the architecture of rational functionalism can be compared to the views held by the Swiss ABC group represented by such names as Stam, Schmidt, Artaria, Wittwer and Roth. In some points, there is agreement with the philosophy of Härtling.

Comparing the style of Meyer's buildings with that of Gropius one finds a clear divergence from the latter's technoid forms and the elementary concept of Stijl. The only exception is, perhaps, the building of the Labour Exchange in Dessau.

It was my intention to show that, from an axiological point of view, this particular building is unique as an expression of modern age concepts. These were deliberately followed by the circle around Hannes Meyer who attempted to give architectural shape to a utopian programme of total education for the individual and total organization for a community, and of mastering technology at the highest level while respecting the natural environment. It was tantamount to creating a Phalanx of the 1920's. Even though some philosophical views of modernism appear open to criticism in the light of our present experience, the fact remains that both the building and the concept behind it represent a cultural phenomenon that should not be allowed to slip from our historical memory.

The ADGB as the owner used the College from May 1930, when it opened, until the trade unions were banned by the nazis in 1933. It is thought that during that period the building largely performed as expected.



Die Schulanlage in den Händen der Nationalsozialisten.
Maifeierlichkeiten 1933 oder später.

The political changes which occurred after 1933 were responsible for a truly erratic turn of events in which the complex was first used by the German Labour Front, the organization with which Hitler had replaced the unions. An oversize nazi flag was draped over the three chimneys on the entrance side which were originally meant to symbolize the unity of German's Social Democratic Party, unions and cooperatives.

The site later became a school for high-ranking SS officers and, in a macabre episode, served as a training ground for preparing the attack on the Gleiwitz radio station which triggered off World War II.

After the War the Soviet occupation



Nutzung als Gewerkschaftsschule des FDGB.
Aula um 1950.

authorities handed the College over to the East German trade union federation which in 1947 began to train its officials here. In the early 1950's the architect Georg Waterstradt added a building of almost the same size which stood in parallel to the existing one and was modelled on its architecture.

During the 40 years of the GDR, the complex was given the status of a Trade Union Academy and extended sporadically and in an unsystematic manner despite the planned economy prevailing at the time. The old structure was disfigured by the erection of giant annexes to the section which contained the common rooms. These architectural monstrosities resulted from pragmatism, economic restraints and ignorance as to the cultural value of the original building. An unsightly heating station now adjoins the section which accommodates the lecture halls. On higher ground, an indoor swimming pool was built from concrete in shoebox architecture. The forest was allowed to spread from the lakeshore to the immediate vicinity of the buildings.



Lagesituation des Komplexes der Gewerkschaftshochschule um 1987.
Aus: Diplomarbeit T. Günter 1988.

Until the political changes of 1989, the complex was surrounded by a security fence and was off limits to the public. The original building had a place on a list of protected monuments for the county of Frankfurt/Oder. The first modest attempts to conserve it go back to the 1980's, but when architects told the faculty about the history of the site in 1986 few were aware that they were living and teaching in a monument.

Let me now illustrate a few points with regard to preservation by comparing the original situation with the present state of affairs. In the early 1950's, a



Kopfbauten mit Direktionsgebäude (links), Verbindungstrakt und Vorbau, errichtet Anfang der 50er Jahre. Heutige Situation.

larger kitchen and refectory were needed and another storey was built onto the old entrance section with its canopy, stairs, group of chimneys and single-storey administration building. This structure was given a clinker facing and had a building added which connected it with the director's offices and served as the main entrance.

While the administration building was executed in the style of the first building phase, a modest attempt was made particularly in the entrance zone to introduce some historicizing elements in keeping with what was then called the national tradition. The background to this was a discussion among architects during the early years of the GDR in which the official party press argued that the Bundesschule and the buildings designed by Waterstradt were examples of a negative architecture. This resulted in a trend toward historicism which we now find reflected particularly around the entrance. Although the clinker/reinforced steel structure looks quite solid on the outside, considerable damage has been done in places near lintels and eaves (where reinforcing steel lies exposed).

The original balance between the building and the landscape has been severely upset by filling up the area in front of the corridor, and there is no longer a smooth transition from the surroundings to the structure. The vegetation on which conceals most of the facade looks out of place. The same is true of the east front of the building. Previously one could see the complex from across the lake but now the buildings have disappeared behind tall trees.

The facades of the residential section

are now overgrown with creepers and have thus lost their bleakness, quite in keeping with Meyer's intentions who advocated greenery on buildings. A semicircular veranda which filled the angular space between restaurant and club rooms had to make way for an ugly new building with a basement when these facilities were extended. In the corridor leading to the lecture halls, glazing was replaced by masonry, and the same happened to the glass front of the gymnasium. Removing these brick walls would be desirable and possible without too many problems.

This means that the original appearance has been falsified while many of the old building features have been retained, the only exception being that steel windows were replaced by wooden ones. One big problem which affects the entire structure is that the exposed



Internatstrakte.



Verbindungsgang.

concrete is severely weathered. Many details such as the steel windows on the west side and openings filled with glass bricks have survived. It was impossible in East Germany to find glass bricks for repairs which would meet the standards for building preservation. The light-filled glass corridor, the main thoroughfare which afforded a view of the surrounding landscape, has been

boarded up. In an early phase of restoration, during the 1980's, it was given a wood parapet and a row of windows. Ideally, it could be converted back and generously glazed. The very last alteration was to renew the glass roof at the lower end of the corridor without, however, using wired glass as in the original building.

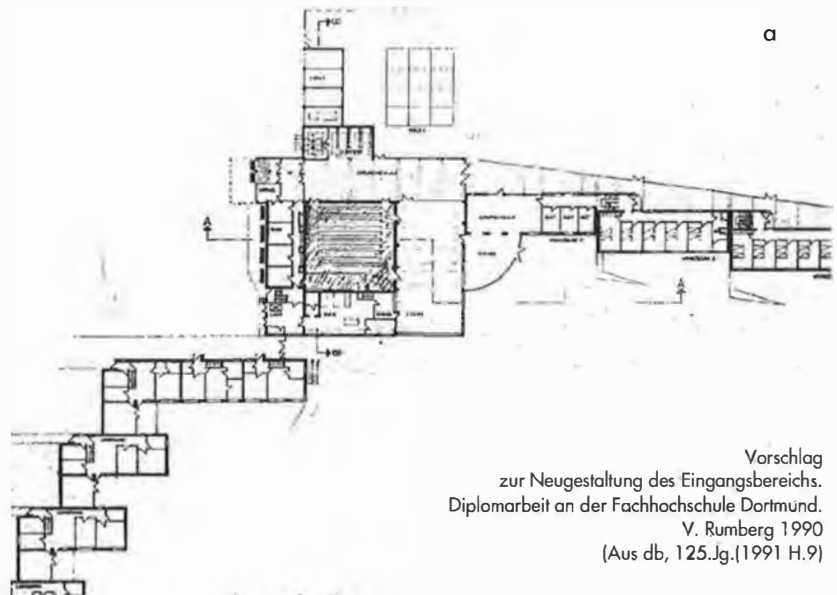
The foregoing was meant to show that principal parts of the Bundesschule are still there with the status of an architectural monument, that the original building is in need of restoration, and that the complex as a whole has been disfigured by structural alterations. This detracts much from its original appearance and value as a cultural asset.

Assuming ideal conditions for adequate use, and economic feasibility, the challenge facing conservationists today is what to do about the building in future. The same question was asked in 1986 by planners who went to work on a new refectory for the then Trade Union Academy. The project would have freed the old building from some of its previous functions and indeed led to preliminary studies which took the form of papers and diploma theses assigned to students of the College of Building and Architecture in Weimar.

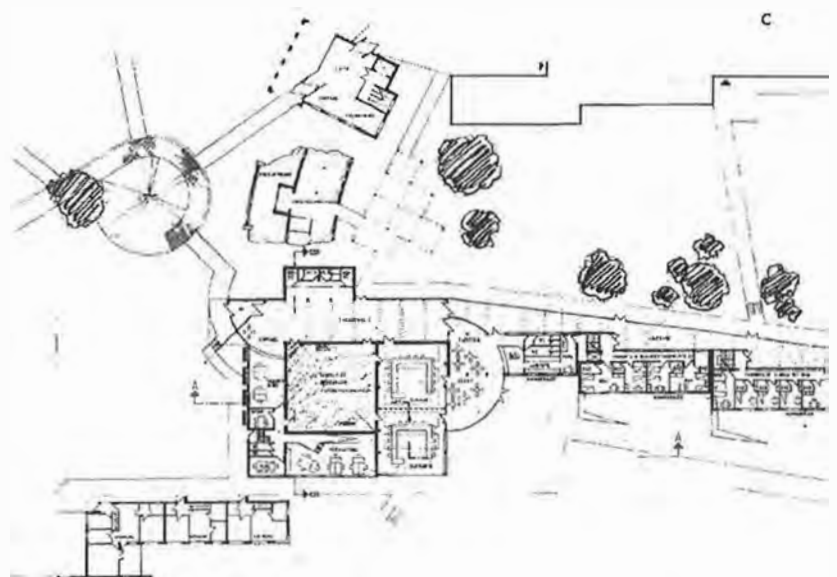
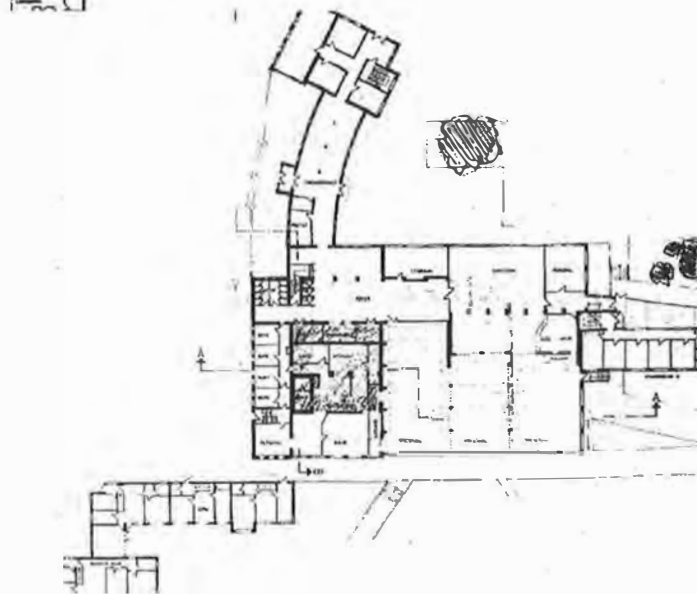
Two of these papers (diploma theses), which also dealt with the overall development of the Academy, were quite idealistic in proposing that the more recent structures be removed to expose the original building. Its interior was then to be converted back to resemble the previous condition as much as possible. Most of the reconversion work was to be done on the communal section. All annexes dating from the 1950's were to be removed except for



Vorschlag für die denkmalpflegerische Wiederherstellung des Hannes- Meyer-Baus.
Diplomarbeit an der HAB Weimar,
T.Günter, 1988.



Vorschlag
zur Neugestaltung des Eingangsbereichs.
Diplomarbeit an der Fachhochschule Dortmund.
V. Rumberg 1990
(Aus db, 125.Jg.(1991 H.9))



a free-standing building housing the vice-chancellor's offices, and the entrance zone with the symbolic chimneys was to be restored. This would have given the monument its rightful place on a restructured site.

After the refectory had been built in 1988/89 it looked as if these projects could become reality under the conditions then prevailing in East Germany. But the political changes in 1989 quickly led to the demise of the GDR, and in May 1990 a registered association, Baudenkmal Bundesschule Bernau e.V., was founded by members of the faculty and experts from the eastern and western parts of the country. Its aim was the preservation and upkeep of the monument.

When the East German trade union federation (the FDGB) ceased to exist on Sept. 30, 1990, that was also the end of its Trade Union Academy. The property fell to an investment management company which started looking for buyers so that uncontrolled marketing and new structural alterations became an immediate danger. The association, established just in time to prevent the worst from happening,

went into action. Its hopes that the legal successor to the FDGB, the DGB, would again use the facility for its purposes were, however, dashed. It is hard to understand why the DGB has so far evaded its moral duty to preserve this part of its cultural heritage. The reasons which have been offered are political and financial, and the property has now been rented by the state of Brandenburg as a college for training administrators.

The fate of the monument, and whether the public will have access to it, will largely depend on the future owner and the type of use. In the present circumstances it is, however, merely an illusion to hope that it could continue as a boarding college possibly run by the trade unions.

The association, together with the conservation authorities, seeks to protect the building as a cultural and moral asset and participates in channeling state money into repair and rehabilitation work which is now beginning. It has also made a concrete proposal (a conservation and rebuilding programme) based on a number of expert discussions, and it publicizes its preserva-

tion effort through exhibitions, literature, talks and guided tours of the building. Today it has 67 members, including many experts and public figures from Eastern and Western Germany and abroad.

In the two years of its existence it has done a great deal of work certainly in keeping with DOCOMOMO's principles. In doing so it has faced, and is still facing, a number of problems, and there is now an acute danger that it may lose its office and exhibition and meeting rooms in one of the former staff buildings.

My report was intended to introduce what may be described as a classic monument from a period known as the modern age, and to tell you about the problems it presents in terms of preservation. I also meant to tell you about an association that is active in the spirit of DOCOMOMO, in the hope that the organization takes note of what is happening to the Bundesschule Bernau. Finally, I wish DOCOMOMO could, with its own means, support the efforts of the association which are of a cultural nature in the widest sense.

Utopian living in Brazilian life; projects of Reidy and Costa

Brazilian modern architecture is first of all known for its plasticity. The adaptation to the tropical climate and the implementation in an exuberant nature are other qualities that had a worldwide exposure.¹ Buildings of Oscar Niemeyer (1907) and the landscaping of Roberto Burle Marx (1909) are examples of this practise. The emphasis on form leads one to suspect a lack of social content in this architecture. Brazil has not only palaces, but urban misery as well. Was housing not the main concern in the Athens Charter? Some efforts to tackle the Brazilian housing problem with modernistic models are presented here.

The word reaches Brazil

Publications of the European avantgarde were brought to Brazil from the 1920's onwards. A pioneer in São Paulo was the Russian architect Gregóri Warchavchik (Odessa 1896 - SP 1972). He had studied in Europe before immigrating in 1924. Warchavchik constructed some houses and published a manifesto.² A direct influence came also from Le Corbusier. He visited Brazil for the first time in 1929 to give lectures in São Paulo and Rio de Janeiro. The 'Marvellous City' inspired him to develop the spectacular Plan Rio, which was further elaborated in Plan Obus for Algiers.

Soon after the revolution of 1930, Lúcio Costa (1902) became director of the Escola Nacional de Belas Artes in Rio de Janeiro. He only kept the job for one year. In this period the school

became the center of the Brazilian avantgarde. Warchavchik was invited as professor and even established a firm together with Costa (1931-33). Their office realized one of the first social housing projects in Brazil: Rua de Gamboa (Rio, 1931).³ Another experimental settlement was that in São Paulo by Flávio de Carvalho: Conjunto Lorena (1933).⁴ Costa developed a plan for the mining town Monlevada (Minas Gerais) in 1934.⁵ It contains residences for the miners, a church, a cinema and shops. Pilotis lift the houses over the landscape, hence avoiding expensive 'egalizations'. Yves Bruand stresses the modernistic intentions: 1) the social concern; 2) the rational application of both modern and traditional techniques, and 3) the careful examination of local circumstances.⁶

During these years the state had no active role in housing. The fast growing urban population was absorbed in 'cortiços', a tropical version of 'Mietkasernen'. Only when the hygienic situation got dramatic (cholera) the government launched sanitary reforms. Cortiços were for instance substituted by beautiful avenues in Rio de Janeiro. These interventions served the traffic, but did not provide alternatives for the dispelled residents. They improvised shelters on mainly unsafe locations (slopes), close to the center. These settlements are called 'favelas' and inspired Le Corbusier's for his Plan Rio 1929.⁷ Le Corbusier was struck by the rational implementation of the sheds and admired the feeling of freedom the inhabitants would have, overlooking the city, the Ocean and the Guanabara Bay. Plan Rio was an attempt to solve housing needs on a large scale (90.000 inhabitants). At the same time it contained the beautiful avenue, at a height of 100m.

In 1936 Le Corbusier spent five weeks

in Rio de Janeiro. He gave six conferences and worked with a Brazilian team on designs for the Ministry of Education & Health and the University. This visit was the start of a lifelong contact with architects like Niemeyer, Costa and Reidy. The lessons of the Athens Charter and La Ville Radieuse were to be put in practise in many expanding Brazilian cities. That is to say that 'Hausmannian' interventions were executed as parkways and lifted speedlanes with separated traffic. Individual buildings were constructed with pilotis, façade libre, fenêtre en longueur, plan libre and (sometimes) toits-jardins. Consistent urban planning, however, was impossible due to frequent political changes. The priority for housing, expressed in CIAM-manifesto's, never existed in Brazil. The concept of the Modernist City could only be used comprehensively in visionary plans for a future capital on the Central Plateau. An early example is the plan for Brasília by Carmen Portinho, published in 1939.⁸

The modern neighbourhoods which arose in Rio de Janeiro (Reidy) and Brasília (Costa) were exceptions in Brazilian housing practise. The projects stem directly from European models and were widely reviewed in Europe and America.⁹ Pedregulho and Gávea (Reidy) are a mixture of Le Corbusier's Plan Rio 1929 and his Unité. Brasília, developed by Lúcio Costa, builds up the most complete Ville Radieuse ever made. The residential wings with superquadras are reminiscent of dom-kommuna and the linear-cities of Milyutin and Leonidov (1930).

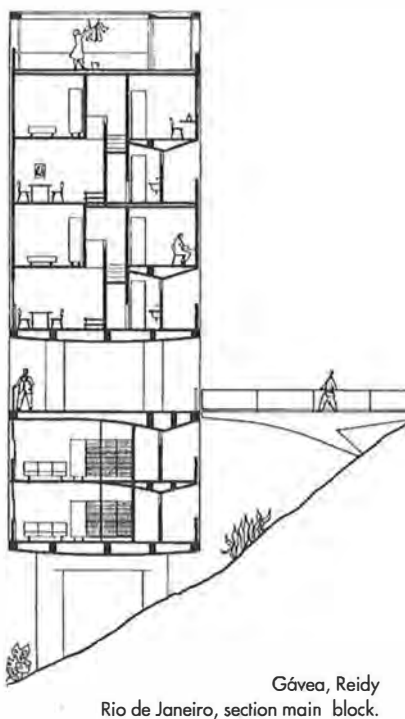
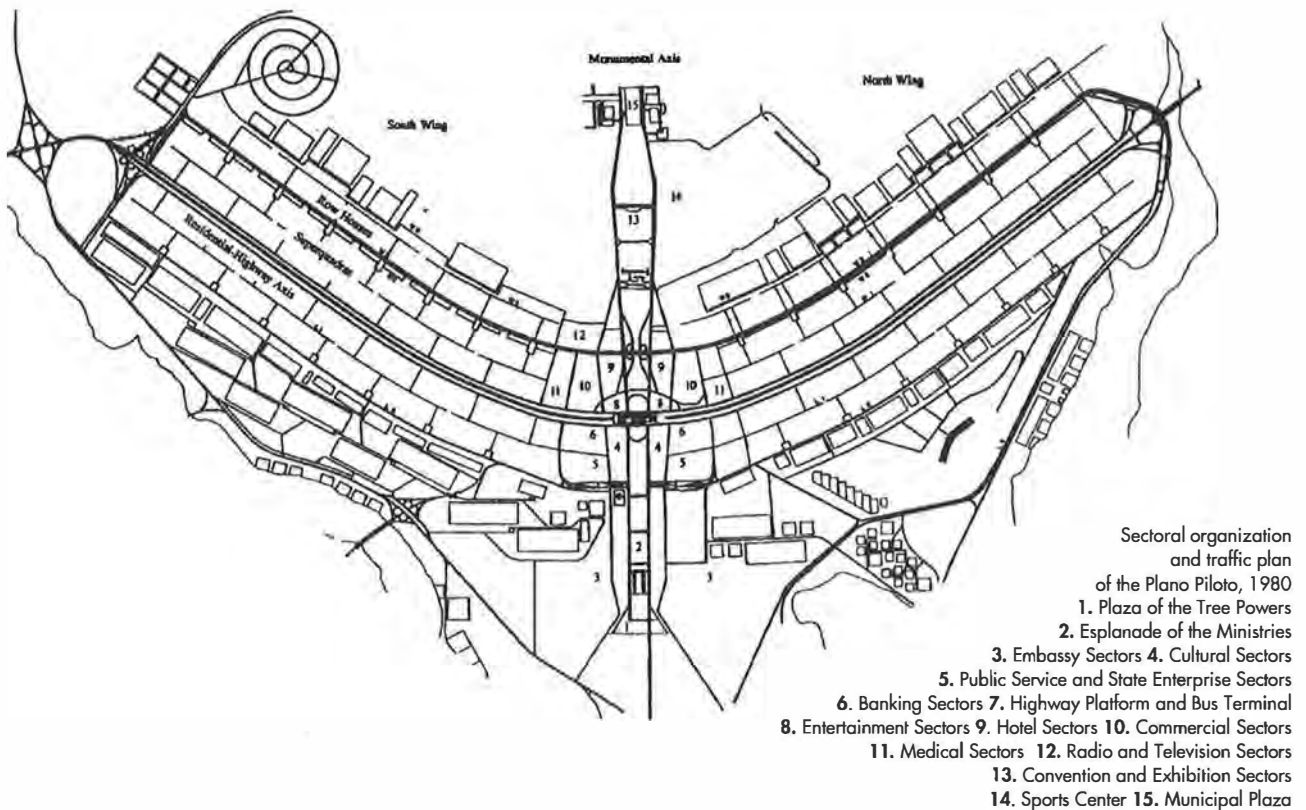
Again, the admiration for the aesthetic solution seems to predominate. In order to come to a critic evaluation of the functional achievements of modernistic housing in Brazil, one should first examine the intentions and secondly see how those matched the habits of the users.

**A.E. Reidy:
Pedregulho and Gávea,
Rio de Janeiro**

Afonso Eduardo Reidy (1909-1964) worked in the group with Le Corbusier in 1936. Unlike his team-mates, Reidy did not open a private office after-

wards, but entered Rio's public service (1932). In 1948, Reidy became director of the Department of Urbanism. Central issues in his work are an interest in urbanism and his social concern.¹⁰ The experimental housing projects Pedregulho (1947) and Gávea

for this purpose. Pedregulho is situated on a slope north of the center; the site (5ha) has an inclination of 50m. Gávea appeared in the *chique* South Zone of the city, next to Ipanema-Leblon, at the foot of the Pedra Dois Irmãos. The tunnel that was later on

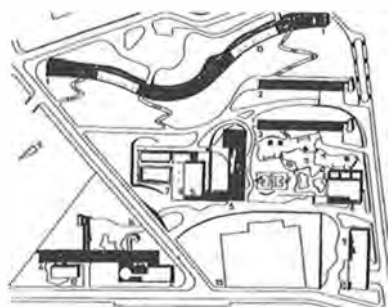
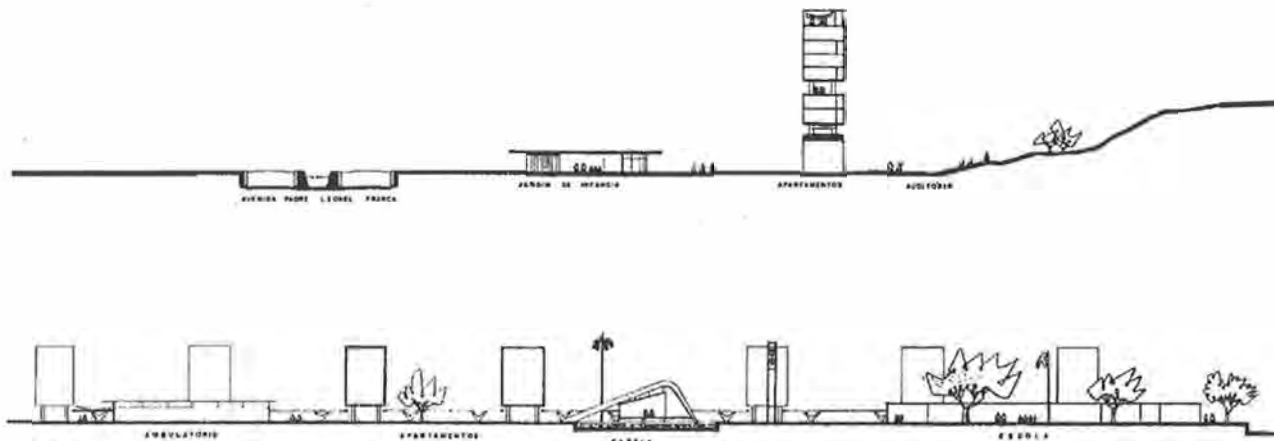


(1952) were realized in cooperation with the engineer Carmen Portinho. She had traveled to England during the Second World War to make studies of urban reconstruction and picked up the idea of self-supporting neighbourhoods.¹¹ Back in Brazil, Portinho won over the municipalities to this possible solution of the housing problem. The initiative led to the creation of a department for social housing; directed by Portinho. Together with Francisco Bolonha she also developed the neighbourhoods Visconde de Santa Isabel and Paquetá.

Reidy's pilot projects aimed to offer good and cheap housing for civil servants with low incomes. Possible locations were selected close to the city; a daily advantage for the inhabitants. Only left-over areas in between existing neighbourhoods could be purchased

constructed through the mountain also penetrates the block.

The main buildings curve (some 250m) with the slopes, as in Plan Rio 1929. They contain two rows of duplex flats in the upper part and two floors with flats below. In between is an open access floor, which can be reached by bridges from uphill. An open loft to dry the laundry was added to Gávea. The maisonettes (in Pedregulho) have two bedrooms, a living room with veranda, kitchen and bathroom (65m²). There is even space for a void (2m²) next to the staircase. The flats have one multi-purpose room with a small kitchen and a bathroom: 38m². The width of all the apartments is 3,25m. Gávea has a similar organization, although the flats are wider; two of them correspond to three maisonettes above. The minor



Pedregulho, Rio de Janeiro.

blocks of Pedregulho consist of two rows of duplex apartments with three bedrooms, a living room, veranda, kitchen and bathroom: 74m² (5,25m wide). Pedregulho was not fully completed; 384 out of the planned number of 508 apartments were executed. Construction at Gávea stuck to the main block (328 apartments). Minor blocks (420 apartments) and facilities were not realized. The projects have a density of 500 inh/ha.

Reidy tried to come up with a modern alternative for the favelas.¹² The house itself was not enough for that; the entire community life had to be planned. A number of services were made in the neighbourhood. This would help emancipating women, educate and raise children, or save money, as for instance in the cooperative market. Pedregulho possesses a laundrette, kindergarden, grammar school, nursery, playground with gymnasium and swimming pool, market and clinic.

The complexes implied a new type of living and a conditioned social beha-

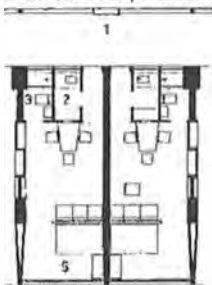
viour of their inhabitants. It was hard to adapt though. Portinho had to teach the inhabitants how to live in their homes. Still, the step from rural Brazil (less than two generations after the abolition of slavery) to a modern apartment was a bit too abrupt. Strange errors were made: the bathtubs were used to grow vegetables, etc.

The collective services also caused difficulties. Although laundry was for example included in the rent, many inhabitants were too embarrassed to hand-in their worn out clothes.

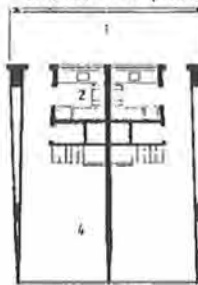
The biggest failure was the demand on collectivity which is implied in the project. As the user codes were never

Seção transversal e vista parcial do Bloco A – escala 1:500

Planta do 1º e 2º pavimentos



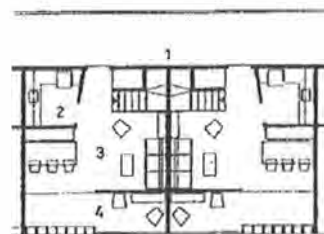
Planta do 4º e 6º pavimentos



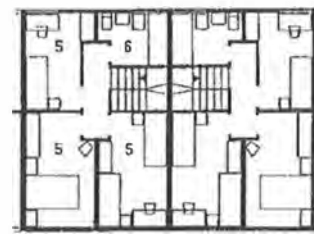
Planta do 5º e 7º pavimentos



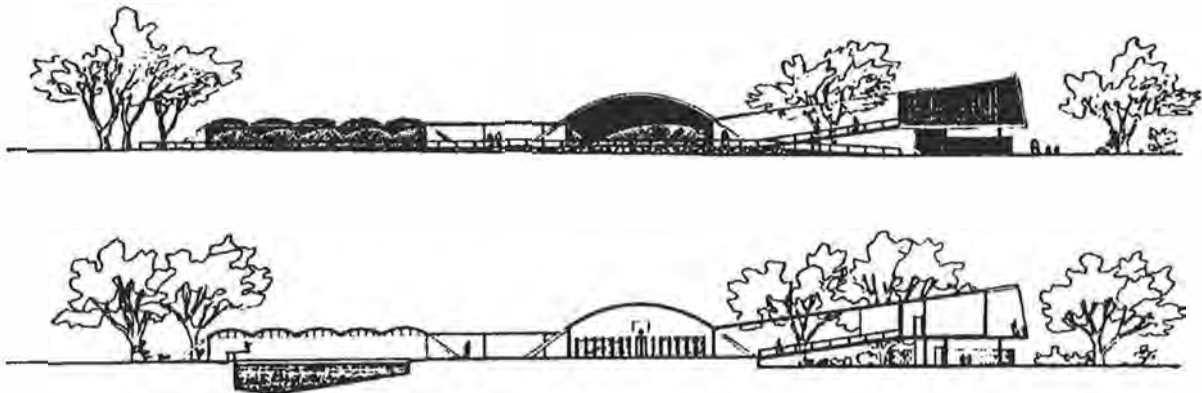
Plantas do Bloco A



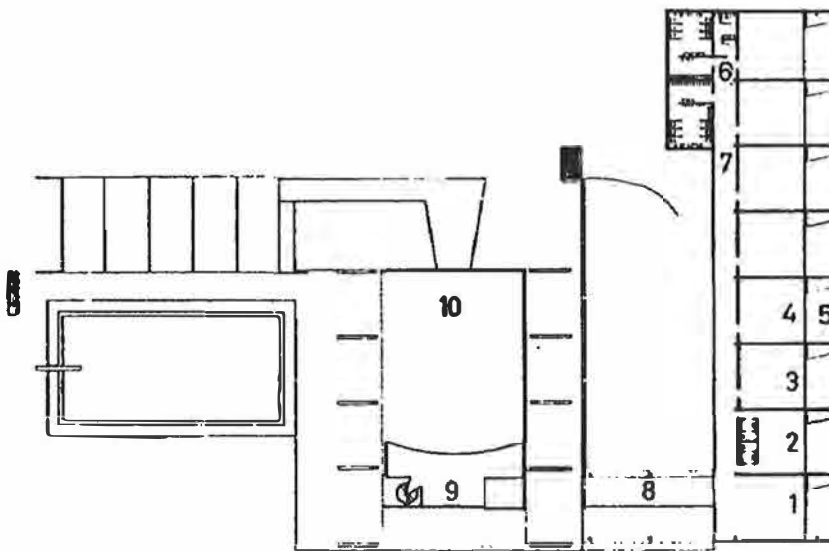
Duplex apartment: lower floor, scale 1:200



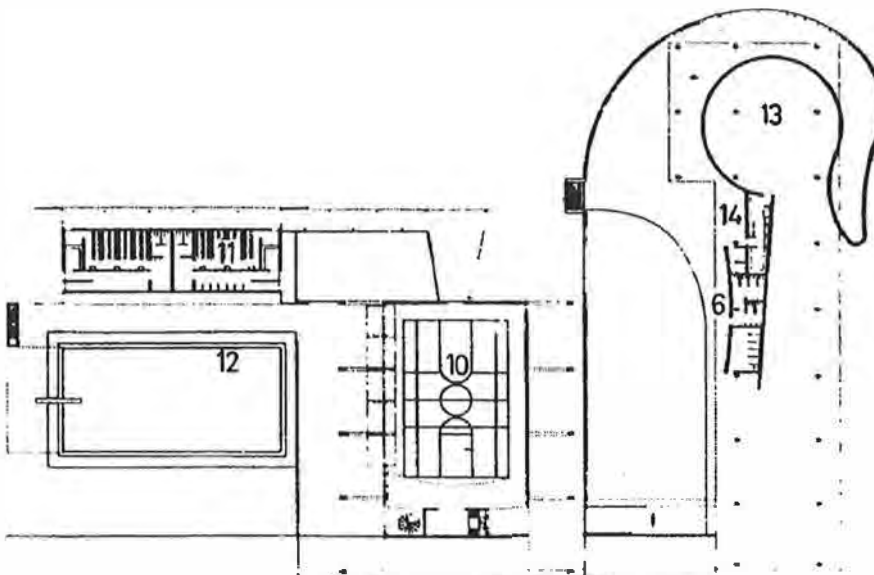
Duplex apartment: upper floor, scale 1:200



View and longitudinal section, scale 1:1.000.



Top-floor plan, scale 1:1.000.



Ground-floor plan, scale 1:1.000.

Primary school and sportsgrounds
in the Pedregulho complex, Rio de Janeiro

recognized, they could therefore not be respected. Public space got slowly privatized, in an attempt to gain back social control over for instance the galleries. What was supposed to be utopian living turned out to be anonymous, violent and individual. Instead of 'ideal' communities, surrounded by the (hostile) city, the projects became (beautiful) ghettos which are isolated within that city. Architecture and education did not make the inhabitants change. In fact, Pedregulho and Gávea are a confirmation of the inequalities in Brazilian society: masterpieces of transparency that house the hybrid structure of another social reality.

Lucio Costa: Superquadras, Brasília

The transfer of the capital (in 1960) gave a sudden opportunity to plan and construct a Modern City of half a million inhabitants. President Kubitschek appointed Oscar Niemeyer as architect.¹³ Niemeyer suggested to organize

sing. They run east-west and have a rational division in neighbourhoods with community facilities, superblocks ('superquadras'), blocks and apartments.

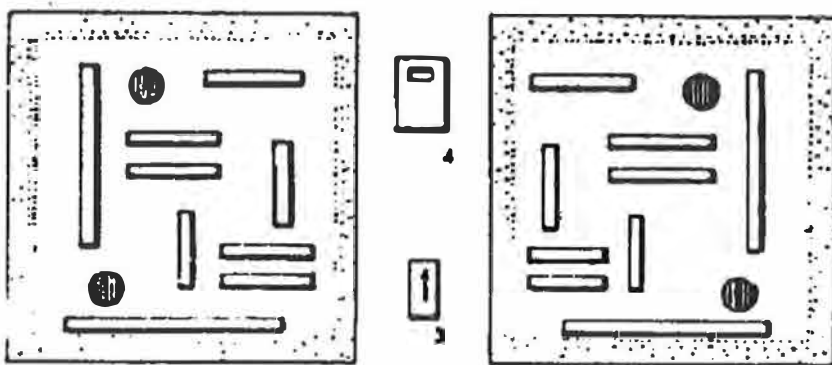
Each wing consists of 9 parallel strips or zones, which are composed of 16 blocks. The typological diversity is spread over the strips; roads and motorways run in between. The heart is formed by a 14-lane speedway with two strips of superquadras on either side. In strips 1-3 the buildings have six floors; 4 combines a height of three stories with a higher density. Further to the west are strips for commerce (5) and row houses (7). The limits of the wings house facilities like churches, high schools, hospitals and institutions (strips 6 and 9). Thanks to this linear organization, the city could be completed over 30 years time, without losing the separation of functions. Prior to the inauguration in 1960, the entire layout of roads and blocks had been establis-

The three types of dwellings (row houses and apartment slabs with three or six floors) enabled a distinction in different income levels; reserving the row houses for low-ranking public servants. The 120 superblocks (sized 240 x 240m) are the main type.¹⁴ They have just one access road and vegetal boundaries. As the built-up area is never more than 25% of the total surface, and the buildings stand on pilotis, the blocks have an almost continuous open space with plenty of playgrounds and lawns. In between are so-called *entrequadras* for services like local shops, clubs, chapels and schools. In this way, four superquadras are clustered in self-supporting neighbourhoods. The solution is an elaboration of Costa's studies on the vertical garden city which started with Parque Guinle in Rio de Janeiro (1948-54).¹⁵ Unlike that luxurious housing project, the Plano Piloto of Brasília was meant for everybody. The wings would (literally) show a cross-section over society. Rich and poor would frequent the same shops and send their children to the same schools.¹⁶

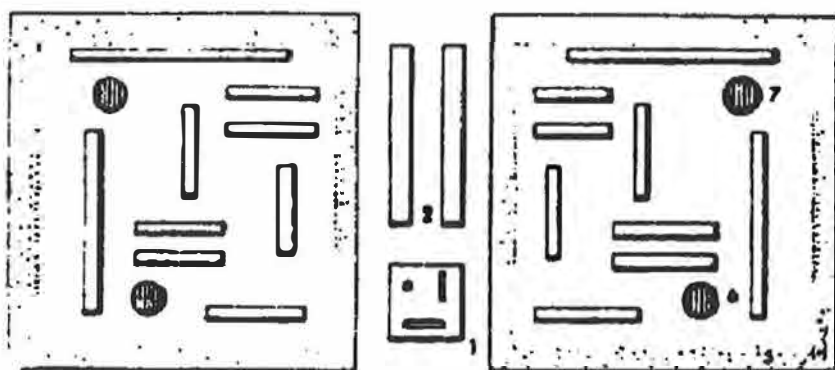
But, something went wrong, as early as 1958.

The design for Brasília presented, like the Athens Charter, a final stage of the Modernist City, but lacked an appropriate strategy to get there. In fact, there was no place in Brasília for the (60.000) people that made the city. Most of them ended up on squatters land and were later on removed to remote satellite towns.¹⁷ Some managed to arrange a place within the Plano Piloto. That is why the row houses of strip 7 were never inhabited by poor public servants. The blocks got immediately confiscated by the executive staff of NOVACAP (the state organization that coordinated the construction). A lucky few arranged 'provisional' villa's around the lake of Paranoá.

The co-existence of classes might work in utopia, but not in Brazil. Hierarchic structures stayed intact at work and in the social configurations.¹⁸ The sudden integration in the residential areas was regarded as unnatural and disturbing. Within a few years, the superquadras



Brasília: neighbourhood consisting of four superquadras. 1. cinema 2. shops 3. church 4. park-school 5. vegetated boundary 6. grammar school 7. Kindergarden.



a national competition for the urban plan, which was won by Lúcio Costa in 1957. His so-called 'Plano Piloto' includes two wings (7x3km each) for hou-

hed, but only some fragments of the south-wing had actually been constructed. Subsequently it was just a matter of filling in the blocks.

were sold at market values. The division of officials (Plano Piloto) and constructors (satellites) soon changed into the more ordinary division of rich (center) and poor (periphery). Compared to other Brazilian cities, the distances extrapolated and workers spent more money to reach their jobs. All in all, Brasília did not become as egalitarian and compact as was planned. The contradiction between the Plano Piloto and the satellite towns increased, due to another unforeseen development: a part of the internal migration of Brazil ended up in Brasília. Hope for a better future made people opt for the capital, which nowadays has almost 2 million inhabitants.¹⁹ Apparently, it was impossible to create an ideal and utopian island in Brazil, not even far out on the Planalto Central. That is why Brasília did not turn into an administrative city, but became a diverse metropolis.

A closer look at the use of the residential wings shows a number of minor adaptations to the concept. The uniform lay-out (equality), was perceived as boring, anonymous and unsuitable for individual ambitions.²⁰ The glass-curtain homes are regarded as intimate as office-buildings. Collectivity did not work as was planned; the structuring element of the residential wings is not the cluster of four superquadras (neighbourhood), but the superquadra itself. The open space of the quadra got restricted by guards and fences. The reduced service area inside the houses was no reason to establish collective households. Servants have just less space to work. The elimination of the street diminished the chance for informal contacts. Brasília is felt as too cool. Some compensation was found in the entrequadras where the shop-fronts turned from the quadra to the access roads, resulting in a mixture of cars and pedestrians. These streets even have traffic lights.

The superficial completeness of the Plano Piloto is surprising. In 1985, Costa was more impressed by the similarities to the concept than by the differences.²¹ For him Brasília is a success: nobody has doubt about its symbolic

meaning (the image of the capital) and the Plano Piloto offers better living conditions than cities like Rio de Janeiro or São Paulo, especially for families with children. Costa is concerned with the 75% of the population that could not reach the superquadras, but insists on the solution itself. He sees external factors (developments like the military coup of 1964 and migration), as causes for the expulsion of the poor, but still feels that the utopian exception can survive in the Brazilian reality. In an attempt to socialize the quadra, Costa developed the low-cost Quadra Econômica, which was tried out in the satellite of Guará.²²

The construction of the model city required a workers' town that is three times larger. To keep the myth intact implied that all unforeseen developments had to be banned. But, can the Modernist City (i.e. the Plano Piloto) be regarded as a static form in which urban dynamics have been eliminated? Apparently it can, as Niemeyer and Costa strongly supported the inclusion of the city on UNESCO's World Heritage List.²³ This city, where natural developments are considered as threats, is doomed to become unnatural. A complex process of inversions is already taking place in the Federal District: the satellite Taguatinga becomes the new core of a metropolis in which the protected Plano Piloto will end up as a snobby outskirts.²⁴

Preservation of dreams

How to preserve Pedregulho, Gávea (too poor) and the superquadras of Brasília (too rich)? The universal value of these projects is clear. The Brazilian avantgarde could realize their plans in the purest way and on a scale their colleagues elsewhere could only dream of. Still, this is a paradox of Brazilian modern architecture. The CIAM-models of housing were only implemented in exceptional cases. One could even argue that their (conceptual) significance is more strongly felt abroad than in Brazil. The problem all over Europe of coping with modernist urban expansion areas does not exist in Brazil. There, housing problems deal with various

forms of slums: *favelas*, *cortiços* and *alagadas*.

Pedregulho and Gávea are elaborations of a romantic vision of favelas by Le Corbusier. Logically, the projects would not exist, according to Costa.²⁵ The realization relied on the efforts of two personalities: Reidy and Portinho. Ever since, it is clear that the most beautiful architecture can not solve the housing needs of Brazilian workers. Despite their elegance, the blocks are hostile; the appeal to collectivity resulted in an undefined public space in which inhabitants (and visitors) do not feel safe. Conservation would imply the adaptation of users. This can hardly be expected in Brazil. A possible solution is to take the concept back to its roots; to a place where water and mountains meet, as in Rio de Janeiro, but where affinity with modern living also exists. Why not add a copy of Pedregulho with senior flats to the shores of Lake Geneva?

Brasília: the inheritance of Howard, Garnier, Perry and Le Corbusier; mixed with Costa's amorous memories of Paris. Despite the fact that the superquadras seem to function remarkably well, their safeguard should be regarded as part of a policy for the larger and more complex urban reality. The preservation of the Plano Piloto as an urban monument, denies the existing city, and in the end results in an immense caricature of the Modernist City. The concept of Lúcio Costa functioned as a guide for the construction of the city, but now seems to be outdated. Actually, there is no need to freeze the scales of the city. Brasília can easily handle destabilizing developments, because of its strong and omnipresent urban form. Growth and dynamic changes are the best way to prove the vitality of the concept.

Notes:

Research in Brazil was made possible by the Foundation for Visual Arts, Design and Architecture, Amsterdam.

1. The international interest in Brazilian architecture started with an exhibition in the Museum of Modern Art in New York

- (1943). On this occasion Philip Goodwin published 'Brazil Builds, architecture new and old'.
2. Gregóri Warchavchik, 'Acerca da Arquitetura Moderna', in: *Correio da Manhã*, Rio de Janeiro 1-11-1925.
 3. Rua Barão da Gamboa was a private initiative of a doctor, Fábio Carneiro de Mendonça, to establish low-cost houses for workers. The two-floor block has 14 dwellings. See: Lauro Cavalcanti: 'O arquiteto e a habitação popular', in: *Projeto* 103, SP 1987, p. 143.
 4. Conjunto Lorena has 17 houses for middle-class families. Is is grouped around a common 'praçinha' (public yard) in the Vila América. See: Luiz Carlo Daher, Flávio de Carvalho, arquitetura e expressionismo, São Paulo, Projeto Ed, 1982, p. 53.
 5. Costa's design was an entry in a competition, organized by the Companhia Siderúrgica Belgo-Mineira. See: Lúcio Costa: 'Vila Monlevada; memória descritiva' in: *Sobre Arquitetura*, Porto Alegre 1962, p. 42-55.
 6. Influences of Le Corbusier and Auguste Perret are mentioned. Yves Bruand, *Arquitetura Contemporânea no Brasil*, São Paulo, Ed. Perspectiva, 1981, p.75.
 7. See: Elisabeth D. Harris, *Le Corbusier; Riscos Brasileiros*, São Paulo, Nobel, 1987, p. 22, and Mario Ceriquel, *A Prática Arquitetônica como Forma de Elaboração de uma Crítica Arquitetônica*, São Paulo, FAU USP, 1990, p. 78.
 8. Carmen Portinho: 'Ante-Projeto para a futura Capital do Brasil no Planalto Central', in: PDF, Vol. VI, 3, Rio de Janeiro 1939, p. 284-297.
 9. *Architural Forum*, Nov. 1947, Nov. 1960; *Architectural Record* Jan. 1958, Jul 1958; *Architectural Review* Jul. 1952; Dec. 1957, Feb 1959, Apr. 1962; 'Architecture d'Aujourd'hui' 42-43 (1952); 74 (1957); 80 (1958), 90 (1960); *Arts & Architecture*: Apr 1959; *Aujourd'hui*, *Art et Architecture* 5 (1955); 12 (1957); *Bau und Werk* 1 1962; *Baukunst und Werkform* XV 1962; *Domus* 229 (1948); 254 (1951); 331 (1957), 434 (1966); *l'Oeil* 59 (1959) 184 (1970); *Progressive Architecture* Aug. 1955; *RIBA* Mar. 1960; *Werk*, heft 8 (1953); *Zodiac* 6 (1960), 11 (1963).
 10. Geraldo Ferraz, 'Individualidades na história da atual arquitetura no Brasil, II: Affonso Eduardo Reidy', in: *Habitat* 29, São Paulo 1956, p. 38.
 11. Hugo Segawa, 'A arquitetura moderna e o desenho industrial, entrevista de Carmen Portinho', in: *Projeto* 111, São Paulo 1988, p. 118.
 12. Affonso Eduardo Reidy, 'Conjunto Visinhança de Pedregulho, Rio de Janeiro' (*Architects Year Book* 1955), in: *Habitat* 29, São Paulo 1956, p. 51-54.
 13. Reidy was asked by Marechal Pessoa to plan the new capital (prior to the election of Kubitschek). Reidy intended to call upon Le Corbusier. The new president, however, appointed Niemeyer, with whom he had worked since 1942 (Pampulha). Reidy did not participate in the subsequent competition. See: Roberto Burle Marx, 'Depoimento', in: Affonso Eduardo Reidy, catálogo, Rio de Janeiro, PUC/Solar Grand Jean de Montigny, 1985, p. 16.
 14. Giedion concluded (in research at Harvard) that the monumental artery outstrips human imagination, and that the superquadras are too small: 'there is an obvious danger of beehive developments.' Today, one can criticise Brasília, but should be grateful that Costa limited the size of the superblocks. See: S. Giedion, 'A.E. Reidy and Contemporary Brazilian Architecture', introduction in: Klaus Franck: *The works of Affonso Eduardo Reidy*, Stuttgart, Verlag Gerd Hatje, 1960, p. 10.
 15. Costa projected 6 blocks (6 floors on pilotis) for Parque Guinle of which three were constructed. The project was completed with blocks of Marcelo and Maurício Roberto in a more profitable density (1954-62).
- See: Hugo Segawa: 'Lúcio Costa: a vanguarda permeada com a tradição, entrevista', in: *Projeto* 104, SP 1987, p150.
16. Milyutin tried to achieve a similar integration of industrial and agricultural workers in his linear city. See: George Collins, 'Ontwerpen van bandstedelijke ontwikkelingen, vormen en functies', in: *Forum*, maart 1968, p. 13.
 17. The so-called 'Brazilianization' of Brasília is studied in: James Holston, *The Modernist City; an antropological critique of Brasília*, Chicago, The University of Chicago Press, 1989.
 18. Neighbourhood clubs were no success. Instead, people founded private clubs which occupied the shores of the Paranoá-lake.
 19. The lack of jobs is more than compensated by the presence of power. A popular saying: If one has to be poor in Brazil, he is better poor in Brasília.
 20. Holston, op. cit, p. 171.
 21. Lúcio Costa, 'Brasília Revisitada 1985/1987, Complementação, Preservação, Adensamento e Expansão Urbana', in: *Projeto* 100, São Paulo 1987, p. 116.
 22. The Quadra Economica (1987) consists of simple blocks, 3 floors on pilotis, that are grouped around an open space. Apart from the fact that the pilotis were closed by the residents at once, the solution brings in no way an answer to the mega-scale problems of the satellite towns.
 23. Governor José Aperiçido made Brasília a monument with the support of Costa and Niemeyer, meanwhile negating all popular and professional organizations.
 24. The conurbation Taguatinga-Ceilândia-Samambaia has over 1 million inhabitants. Its economic importance is slowly increasing.
 25. Lúcio Costa, 'Pedregulho', in: *Catálogo PUC/Solar GrandJean de Montigny*, op. cit, p. 17.

The cultural environment project Bandung/West Java Indonesia

1. The Indonesian town.

Already in the pre-colonial era, the Indonesian town functioned as a centre of Governmental power or a commercial settlement often situated on the coast.

With dislodgement of the Portuguese and exclusion of the British, the Dutch 'East India Company' established their trade factories -from the end of the 16th Century- in the Indonesian archipelago.

These factories were mostly a combination of warehouses, peoples housing and fortifications, founded in the direct neighbourhood of a sea-harbour.

During the period of the 17th and 18th Centuries, one recognizes an enlargement and transition of some important settlements into real townships like Surabaya in East-Java, Semarang in Central-Java and Batavia 'Jakarta' in West-Java and also elsewhere in Indonesia.

At the end of the 19th Century these towns each numbered around 100.000 inhabitants. The great majority of the Indonesian society -in those days- lived in the rural areas.

Nowadays Surabaya has 3.600.000, Semarang 1.200.000 and Jakarta 9.000.000 inhabitants.

The construction of railways -at the end of the 19th Century- and the introducing of the motorcar -at the beginning of this century- created new opportunities for the Western managed agriculture to explore new rural areas and

was a stimulation for the establishment of new town settlements up in the mountains, where the climate is so much cooler.

Since the beginning of the 20th Century, one recognizes a tremendous increase of growth in the Indonesian population, from around 38.000.000 in 1900 to more than 190.000.000 in 1990.

After taking all the available land for agriculture, the people move to the town settlement -like all over the World. Thus the elder areas and neighbourhoods in the cities are suffering under a great pressure, the extraordinary growth of the population, insufficient and weak infrastructures, not enough financial sources, lackings in the legislative framework, etc... So the implementation of urban management is almost something one may dream of.

2. Bandung, town in West-Java

Considering the history of town-development in Indonesia, one recognizes Bandung as a relatively young town. A boomtown which expanded in a short period and started to grow at the beginning of the 20th Century.

Bandung is the capital city of West-Java, about 200 km from Jakarta, high up on the mountain plateau of Priangan, more than 700m above sea-level.

The growth and extension of every town is a product of historical development of human settlement, perceptible in the spatial patterns of the town and in the architectural morphology.

The 'image' of the city can be defined in terms of geographic position, cultural/historical and urban/architectural matters; in coherence are those factors stipulating the affinity of the inhabitants and visitors to the city.

The 'image' of Bandung is featured by factors such as :

- The cool climate, compared with the Javanese coastal cities.
- Bandung : 'garden city'.
- Bandung : 'preWar modern architecture'.

Bandung accommodated, compared with other cities, the most 'European' society in preWar Indonesia; this is recognized in the architectural expression and the layout of the town.

At the end of the colonial period -in 1940- more than 26.000 European residents shared the town with almost the same number of Chinese residents and together with 164.000 Indonesian residents.

But nevertheless, more than 50% of the urban area in Bandung was occupied by the Europeans and still nowadays one will recognize the references to the Dutch architecture and urban planning from this period.

At the present time there are more than 2.500.000 residents in Bandung and the increase - in population growth - is still going on very fast; in the year 2000 the town will probably number 3.800.000 residents.

This enormous increase is also influenced by the boundary change since April 1, 1989.

Considering the actual circumstances; the old urban-system has to function under great pressure, there are tremendous traffic problems - particularly on the north-south radials, passing the centre of the city.

Private gardens are vanishing, to make room for car parking; the road profiles are too small, so the trees on the road-sides have to vanish as well.

3. The RUDS-BMA project

In this lecture, I should like to pay attention to the 'RUDS-BMA project' in which I participated with the so-called 'Cultural environment study' in 1989. RUDS-BMA is an abbreviation of

'Review Urban Development Strategy Bandung Metropolitan Area'. The project started in August 1988 and had a two year implementation-period until 1990.

I participated in this project with the so-called 'Cultural environment study', a sub-project in the greater RUDS-BMA project. As the name indicates, the project should conduct a review of the Bandung urban development strategy and the activities undertaken to implementation of that strategy.

The project had an architectural and urban planning impact.

The study analyzed the architectural heritage of the town and described the characteristics of the different types of areas which have been identified.

The outcome of the study is based on the following components :

- Analysis of the historical development.
- An inventory of worth while buildings; worth while from an architectural and an urban planners point of view.
- Analysis of urban space- and dynamics; an inventory of culturally important sites, like places or streets or elements in the urban area such as parks, landmarks etc...
- A review of institutional structures and legal aspects.

The result was published in a project study report and an inventory report which contained the figures of more than 130 buildings/complexes.

At this conference, I shall focus on the aspects of urban management and strategies for the revitalizing of neighbourhoods and sites; the second part of the 'Cult' project.

4. Historical development of the town

One of the first known maps of Bandung is from around 1825 and indicates the spots of historic interest. Developments clearly have been started on the location of the present city centre at the beginning of the 19th Century. The area around the Asia-Afrika Avenue can be classified as the central business district; the traditional

Javanese square the 'Alun-Alun' with the big mosque and the former residence of the Bupati (Regent) might justify the conclusion that this area is the oldest part of Bandung.

The backbone in the urban layout was - and still is- the Asia-Afrika Avenue in west-east direction and the important north-south element, the river Cika-pundung.

Although already in the year 1910 proposals for the town's extension were prepared - and in 1929 an overall plan was approved - the town planning mainly concentrated on the development of separated areas, more particularly residential areas.

The coherence between the different town areas was -and is- still weak; especially the relationship between north-south and east-west, due to the railroad and the valley of the river Cikapundung.

Old historical/rural roads became integrated in the development plans and became the important north/south-radials.

Particularly the Europeans lived in the northern part of the town in the new developed areas (1910-1940).

The river Cikapundung manifested itself - in this part of the town in a natural valley with designed green- and park facilities.

Bandung-North was divided into an army area, a governmental area, residential areas for dwelling houses and villas, small-housing for the lower-class people and 'kampung'-areas¹ for the labouring people.

The Chinese inhabitants lived - the greatest number - in the compact quarter Pasar Baru, south-west of the railroad. The greatest number of Indonesian people lived -and still lives- in the southern part of the town.

5. The urban landscape and different types of area

The process of historical development

of Bandung is reflected by the qualities and functions of the architectural heritage, urban layout, public spaces and conditional-factors such as :

- The landscape, partly sloping areas and partly flat.
- The rapid growth of the town in the preWar period.
- The inspiration - in the second decade of the 20th Century - given to plans with the intention to make Bandung the new capital of the nation.

Bandung is established on the change-over of the slopes of the Tankuban Parahu volcano and the Priangan plateau. Between the southern area Tegallega and the northern end of the Cihampelas road is a great difference in height.

The garden city concept was successfully applied in the northern part of the town. Particularly the northern part of the town is developed with spacious parks and gardens: avenues with trees were considered to be the basic elements of a healthy urban development. Nowadays the trees are important for the quality of the air; certainly in Bandung where the degree of air pollution is above acceptable standards.

But on the main radials of the town area a process of commercialization is going on and the traffic problems are oppressive, which has a destructing influence on the private greenplanting. Some of the important avenues have already gradually changed into bare city streets.

The valley of the river Cikapundung - which was once fitted up as a park-landscape is nowadays occupied by spontaneous kampung-settlements.

6. The different types of areas. The centre of the city

When we compare the town at the beginning of this century with the situation in the mid-1930's, we will be aware of a complete metamorphosis.

The country-like atmosphere in the heart of the town was set down in history.

Office- hotel - and shop buildings of different storeys arose: one realized closed street facades with shops on the ground level and dwellinghouses on

the first floor, which is very unique in Indonesia. In the interbellum period, the oldest part of the city became naturally the central business district' which nowadays still remains.

This preWar architectural atmosphere became obstructed -particularly in recent years- but is still dominating the environmental quality of the city centre. Important parts of street facades do have a monumental -and coherent- value and can be nominated as worthwhile ensembles.

The problems with the traffic and car parking are enormous; the north-south traffic moves through the small profile of the Bragaroad, originally the most important centre of Bandung. The old square - the Alun-Alun - lost its green character and functions as a bus-taxi terminal and parking place for cars.

The governmental area

The discussion to remove the capital from Batavia ('Jakarta') to Bandung was very actual in the year 1917 and it did have an enormous impact on the urban planning of Bandung.

The Municipal-council decided to create an area for the new settlement of several Governmental-Department buildings in Bandung-North. But only the building for the Department of Public Works was realized.

However, despite all Bandung's efforts, Batavia remained as the capital city. The planning and reservation of a Governmental quarter was of great importance for the urban design of Bandung-North as a whole.

The military area

In the year 1912 the military headquarters was moved from Batavia to Bandung.

The army-engineers designed - in co-operation with Public Works - an extension plan north-east of the railroad. Grounds were occupied to build barracks, depots and industries; dwelling houses were realized for the officers etc.. Nowadays, the army is still present in this area, its and the urban environment kept original character.

If the army ever considered to move

their quarters outside of Bandung it would create a tremendous opportunity for Bandung. What to do and how to manage an area nearby the centre of the city, with a lot of open space and a low density in buildings which are normally in a very handsome condition and of a great monumental value?

Housing in Bandung

There are a number of mutual environmental-features to be recognized: the spacious residential areas.

- Open building sites, the houses are solitary in the environment.
- The dwelling house/villa is a solitary building, situated at some distance from the road in a private garden.
- There is a consistent relationship between the building and the green planting which takes care of the necessary shadows.
- The primary and secondary roads were originally treelined; the primary roads on both sides with between the trees and the private hedges room for pedestrians and drains.
- The 'open' architecture, the royal gardens and public greens feature Bandung as a garden city.
- One could recognize the use of a building line ordinance.
- The differences in level of the landscape were used by the town planners and architects; buildings react to the natural- and urban qualities of the environment, sometimes they can be designated as a 'landmark'.

Dense residential areas

- 90% of the people live in the kampungs, occupying 30% of the available land.
- The kampung areas are estimated at an average density of 800 inhabitants/ha.
- Kampung areas are perceivable in planned projects and spontaneous squatting settlements.
- The planned kampung areas had -originally- a small-scale urban grid, sanitation, watersupply; although the systems are obstructed by the tremendous increase in inhabitants.
- The spontaneous squatter areas lacking an ordered urban grid, are often established in unsuitable geographic conditions and sometimes (in

the beginning) lacked sanitation or water supply.

- The architecture of the kampung offers a most varied collection of curious examples. From just what you find on the street to create yourself a shelter, up to a small house of stone; it depends how much money you are able to spend.
- The municipality tries with the implementation of kampung improvement-programs to create better life conditions; although the regulation of the density of inhabitants and development/planning and management of the kampung areas is very hard to do.

7. Summarized analysis

Architecture

- Architectural 'high standing' qualities can be found in all categories of buildings in Bandung. Sometimes the buildings/complexes are in a pitiable condition or are partly demolished; efforts to be made to restore these buildings depended on the availability of drawings, historical prints and descriptions, photographs, etc... and also to their contribution to the urban environment.
- Particularly the larger hotel buildings, bank buildings, churches and military buildings are in an original and healthy condition. In general it can be concluded that these buildings still accommodate their original functions. The monumental stature of these buildings/complexes represent the stature of those who are accommodated in such buildings.
- In the most important shopping streets in the centre, the facades are sometimes hidden behind plating; behind such a decor the original architecture is often to be found.
- Considering warehouses, industrial buildings and shop buildings, it is concluded that these have an important influence on the urban atmosphere in Bandung. The condition of these buildings is quite different. These buildings generally kept their original function.
- Schoolbuildings generally still accommodate their original function but are not always in a handsome condition.
- The proceeding -and even increasing-

demolishing of the worthwhile/architectural historical heritage in the centre of the city is a very alarming indication regarding a fundamental/environmental change in the near future of the city.

Considering houses and villas in the preWar areas, the following conclusions could be drawn :

- Particularly on the mainroads (radicals) a fast and continuous change in the use of former houses and villas is underway. New functions like offices, shops, restaurants, etc... are introduced.
- These changes of conditional qualities do not occur in the areas around the mainroads; in these areas however changes of architectural qualities can be observed caused by rebuilding, extension of buildings and rearrangement of gardens and fences. These changes can be considered as an ongoing movement changing the historical/architectural qualities of the buildings and repressing the environmental atmosphere and qualities.

The urban landscape

- The enormous increase in motor traffic, the extending growth of the town is a deadly attack on the tree planting on the mainroads.
- Various main road shave already been reconstructed by offering tree-planting and broadening the road-profile. In coherence with the road-construction projects, replanting programmes for trees/public green should be implemented.
- In the city centre all public space is occupied by motorized traffic. For the survival of the city centre and the remaining of the historical heart, one will have to solve the parking problem, by realizing parking lots.
- From the point of view of how to manage and revitalize the existing structures, it is recognized that the absorption capacity has already been exhausted. At several spots, demolition of existing structures to attack the traffic problems, or to make room for commercial expansion and settlements is foreseen.
- Architectural monuments should not be considered as objects in themself-

ves, but have to be considered as a part of a neighbourhood, which is a part of the greater urban structure.

Institutional and legal framework

- The designation of buildings as 'monuments' in order to protect them is based on the 'Monument Ordinance' of 1931 and describes the procedure to be followed.

The execution of the Ordinance is the responsibility of the Ministry of Education and Culture; each Province has its own agency, including a section of heritage-care.

- This 'Monument ordinance' is almost an archaism and a 'dead letter' without implementation. There are hardly possibilities to initiate a structural strategy for rehabilitation/revitalization of the urban environment or preservation of the worthwhile architectural heritage.
- The municipality of Bandung lacks a formal registration/documentation of monumental buildings/protected areas or sites. In practice the only legal control is the building-permit-procedure, which is a technical procedure and it is not a real problem to demolish a worthwhile building, if you have the intention to do so.
- The central- and local agencies are not particularly focused on architectural/historical questions. The care for the preservation and conservation of the architectural heritage in Bandung depends mainly on private initiatives and investments; this can be considered as positive but not enough to guarantee the maintaining of the historical city.

8. Policies and strategy

Introduction

In the previous section we dealt only with the historical and spatial analyses of the city. In order to come to a quality-management policy, broader analyses are needed.

Traffic and transportation aspects, social development and sanitary conditions do have influence on the formulation of such a policy.

We also should be aware that urban development processes cannot be managed by governments alone.

Private initiatives, money, time and the availability of legal instruments are very decisive for the success of whatever policy, let alone the attitude of the citizens toward the cultural heritage.

The interest and the care for the architectural/cultural heritage should be anchored in the public awareness, or in other words it seems important to use an information/confrontation strategy that appeals to the interest of the society as a whole.

However we formulated some starting points concerning policies and strategy.

Suggestions and priorities

Some areas do have specific characteristics, which should play a role:

The central business district with the zones influenced by this area.

This area contains most of the protected zones and can be identified as a core area for a conservation policy.

The development of an attractive city centre needs, besides a set of incentives, detailed planning.

A strategy has to be developed, regarding proposals and guidelines for land management, spatial planning, traffic regulation and parking facilities.

Concentration of efforts will be more effective if the developments of commercial activities will be functionally limited in the other town areas.

It is recommended to develop and apply a standard set of regulations as there are :

- Fixed building lines.
- A maximum height and architectural standards.
- Design and management of public space, parking facilities, pedestrian space and greens.
- Implementation of urban environment upgrading projects.

The zone which we clearly identified as a garden city area

It is beyond any doubt that some of the neighbourhoods are of a unique environmental quality.

However especially the edges (urban development zones) of this areas are already seriously affected by commercial developments, increasing traffic streams and parking problems.

Recommendations are :

- No change from residential housing

to other functions.

- Limited densification, maximum extension of the groundplan, maximum 2 or three storeys.
- A strict control on occupation of public space/green facilities.
- A strategy to integrate planting with infrastructural programs.

The urban development zones

These zones are heavily influenced by the urban economic development. The zones are connected with the central business district and function as radial mainroads of the city.

Since they affect the central business district -which is proposed as a protected zone- the development should be steered in order to prevent negative influence on the selected protection zone.

Recommendations are :

- Limited commercial developments are only to be allowed at the main radials.
- In coherence with traffic plans/road-reconstructions, developing restoration projects regarding public green areas, like parks and tree planting.

Small scale kampung areas

Some of the kampung neighbourhoods do have already an old history and are deliberate parts of urban planning. Other areas are spontaneous settlements with hardly any infrastructure such as sanitation, watersupply, paved roads etc...

On the one hand we recommended to improve all those kampung-settlements to give them the facilities, which are basically needed. On the other hand it

is necessary to control and to manage these neighbourhoods in order to remain a healthy urban environment.

Recommendations are :

- To insert the kampung-settlements in the greater urban-planning of the town.
- To develop small scaled urban-plans, to steer the urban/architectural developments in the future.
- The implementation of kampung improvement programs.

Architectural qualities and preservation

As said before, in this particular contribution, I have to focus on the aspects of urban management and strategies, but the 'Cultural environment project' had a lot to do with the architectural heritage of Bandung.

We did a methodological survey and produced a inventory list regarding buildings/complexes, ensembles which are classified for protection.

However the value and importance of the architectural heritage has a direct relationship with the urban environment. Urban management or neighbourhood revitalization also includes a vision of urban development as well a vision on the integration and use of the architectural heritage.

Legal- and financial aspects

To reinforce the use of the existing legal framework and regulations is a first priority. Streamlining of the implementation of the existing legal framework on governmental, provincial and municipal levels is another priority.

The most expeditious way to provide a clear structure of responsibility is by integrating the conservation aspects into the building-permit process. A building-permit should only be granted if the proposed project does not violate the conservation policy.

International funding to revitalize the town could be a possibility; for instance UNESCO support concerning the cultural heritage of the capital city of West-Java.

Revitalization of city areas could act to stimulate an increase in tourism

Governmental investment in the restoration and re-use of monumental buildings -with a public function- will be a stimulant for private initiatives.

In some areas -particularly shopping streets- could be upgraded, payed by the owners. These owners do however need to have some confidence in the willingness of the municipal government to improve their environment. Traffic measures, pedestrian facilities and some street furniture might be a first step.

Incentives in the sphere of tax alleviation might be found, to stimulate owners of buildings/complexes to take care of and to preserve their precious properties.

Note by the editor:

1. 'Kampung' is Indonesian for local settlement. In an urban context it is used for slums as well.

Kurt Jonas and a project for 'Native Housing' in South Africa, 1938-1939

Almost all the other faculties had their heroes overseas. We had them right here, in Johannesburg and in the south east corner of the second floor of Central Block. There had been an architectural revolution in South Africa. The South African Architectural Record which Martienssen had edited and mostly written himself were all around and 'Zerohour' was still in the library. Some of the new, stark and strange buildings had actually been built. They were the beginning of 'The City of Tomorrow'. Le Corbusier had written to the local revolutionaries. One could read the letter; it was published in the first pages of the first volume of 'L'oeuvre Complete'.

Professor A. d'A.M. Guedes, 1975.

Cher Martienssen,

I was very touched to read through your copies of SAAR. In the first place because it is amazing to find something so alive in that far away spot in Africa, beyond the equatorial forests. But especially because there exists there youthful conviction, feeling for architecture and a great desire to attain a philosophy in these things.

Le Corbusier, September 23, 1936

Before introducing Kurt Jonas and the project for 'Native Housing', a term which you will please note is in inverted commas, I think it is important to give a little background to the socio-economic and architectural milieu of South

Africa, or rather more particularly of Johannesburg, in the 1930's. There had truly been an architectural revolution, of course it was the revolution of Kerensky and not that of Lenin, but it was a revolution none the less. Suddenly South Africa was no longer a colonial backwater but was at the cutting edge of an international movement. It was a golden age of South African architecture, and was published quite extensively in European journals, and exhibited at overseas exhibitions. The revolution was led by Rex Martienssen, aided by the likes of Gordon McIntosh, Norman Hanson, Kurt Jonas et al. There were also those, who though not as ideologically sound as Martienssen and his coterie, built a fine corpus of modernist work.

I shall concentrate on the contribution of Kurt Jonas, a most amazing young man who unfortunately died aged 27. In that brief time, he was able to make a considerable impact on the South African architectural firmament, designing and building three buildings, publishing numerous architectural and political articles, founding an architectural trade union, 'The Association of Architectural Assistants and Draughtsman', writing a Master's thesis on Greek Colour perception, all before his untimely death in Jerusalem in 1942.

In 1919 Jona's parents decided to return to Germany with the misplaced hope that Weimar Germany was going to be a good place for Jews to be. They returned to Frankfurt, and where Kurt attended the Lessing Gymnasium, a school that still exists today, where he gained his *Abitur* in 1932. He was partially exempt from the written examinations because of a thesis on 'The Importance of Mining and Metal trade Early Capitalism in Germany', which he had spent his last two years at high school producing. With the intention of becoming a political jour-

nalist, he went on to study law and economics at the university in Berlin. The rise of nazism and Hitler's accession to power made continued study impossible and after only 15 months study Jonas was forced to leave Germany and return to South Africa, where his parents and family had gone some months earlier. Even whilst at university in Berlin, he had been highly politicized, being involved in the underground railroad smuggling Jews out of Germany and in the Zionist Socialist movement. It was during his German years that his socio-political ideas crystallized. He was a staunch Zionist Socialist, with strong Bolshevik leanings. If it had not been for Jonas' belief in the need for a Jewish homeland, Jonas would have been purely a Marxist. His experiences as a Jew in Germany left him with no doubt about the necessity of establishing a Jewish state in the Holy Land, then under British Mandate rule.

Whilst in Johannesburg, Jonas was very involved with the Zionist Socialist Party, writing for their journal, and for a while working as an organizer for the South African Zionist Federation. His critiques on society were firmly based on the principle of dialectical materialism, which he saw as more than merely a philosophical system, but as a method of thinking, 'A new logic,' The search for a logical and scientific methodology was to pervade all Jonas' work, both architectural and political.

But what of the Johannesburg to which Jonas returned in 1933. Johannesburg in the 1930's was only some five decades old, but it was a city that had grown exceptionally quickly since its beginning as a mining town. The population of Johannesburg in 1886 was 600 people but within six years it was over 40,000. Gold was, and still is, central to the economy and the political life of the city. One need only think of the Boer War, the mines, the single-sex

hostels that house the mine workers even today, the 1922 General Strike, the dominance of the mining house headquarters in downtown Johannesburg, the list just goes on. What also must be remembered is that since mining began in Johannesburg, the labour force had been organized along racial lines. Thus *de facto* apartheid predates the National Party and *de jure* apartheid by more than a half a century. An example of this is that the slogan of the 1922 Strike was 'White Workers of the World Unite!' By 1934, with the Fusion government of Smuts and Hertzog's United South African Nationalist Party, the South African economy, and most particularly Johannesburg began to boom and there was an unprecedented amount of construction beginning in the city. The city began to thrust upwards and take on a most American feel, as can be seen in Pearse's Escom House of that year.

Jonas on his return to Johannesburg was unsure about what career to pursue. He did, however, know that he did not want to study any subject that was either language or nationally related, most particularly to South Africa, which he saw only as a waystation. Jonas turned to the architect Herman Kallenbach, a fellow German Jew and family friend for advice. Kallenbach, who is best remembered for having been a close confidante of Mahatma Gandhi, suggested architecture.

Kallenbach is a very good starting point for a rapid and brief history of Johannesburg architecture. The School of Architecture at the University of the Witwatersrand in Johannesburg was founded in 1921, and Geoffrey Pearse was appointed the first professor. Most importantly, Pearse, like Reilly at Liverpool, allowed others to develop. It was Pearse who, in 1925, brought Stanley Furner out to South Africa from London to be the senior lecturer. Soon after his arrival, Furner published 'The Modern Movement in Architecture', where he exposed South African architects for the first time to the work of architects such as Perret, Garnier, Holden, Saarinen, etc. Furner's attitude to Le

Corbusier was most interesting and rather ambiguous. Intellectually he felt that Le Corbusier 'spoke to him' but emotionally he had second thoughts. This can be seen in his own work, the Plaza Cinema of 1929, and the Benoni Synagogue of 1932, both built after he left the university in 1929 to become a partner at Kallenbach, Kennedy and Furner. It was Rex Distin Martienssen (1905-1942), architect and classical scholar who was the central figure in the revolution. Even though he was not necessarily the best designer in the 'Transvaal Group', he was the undisputed leader. Whereas Furner was ambiguous in his relationship to modern architecture, Martienssen was not. In 1930, after seeing the Weissenhof Siedlung, he declared 'There is only one architecture'. In 1931 Martienssen was appointed editor of the South African Architectural Record (SAAR) as well as teaching at the school of architecture. In 1934, Martienssen went into practice with John Fassler and Bernard Cooke. Earlier that year Martienssen had gone to see Le Corbusier, who was quite moved by this committed young man, provided him with entry to his houses, and even asked him to contribute to the special issue of *L'Architecture d'Aujourd'hui*. It was the beginning of a great friendship, and was to continue until Martienssen's death in 1942, age 37. Amongst Martienssen's best known works are Peterhouse, 1934-35, and House Stern, 1936-37.

In 1933, the triumvirate of Martienssen, Hanson and McIntosh produced the superb publication, *Zerohour*. *Zerohour* 'is a section through space-time, a still caught from the world's movement and held for one significant instant' The purpose of the publication was threefold: 1, to issue a manifesto, 2, to comment on the international masters, Mies, Gropius and Le Corbusier (This was before Mies and Gropius had been removed from the pantheon of architectural Gods.) and 3, to introduce the public to South African modernist work.

The second member of the triumvirate was Gordon McIntosh (1904-1983) who practiced in Pretoria where he

built House Munro in 1932 and a block of flats in 1937.

The third and most talented member of the triumvirate was Norman Hanson (1909-1991). 'Rex was the teacher amongst us, and it was just always accepted, he was going to teach. I wanted to produce...' and produce he did. In the years before the War, Hanson aided by his partners, Tomkin and Finkelstein, produced South Africa's finest modernist buildings. Buildings which were almost lyrical in their feel. Plans had a freedom that was rarely seen in the Modern Movement, and that almost verged on the expressionistic.

These include: House Harris, 1933; House Hanson, 1938; House Suzman, 1936; Hotpoint House, the 1934 Yeoville Flats project, 1935, where Hanson is at his most Baroque, Reading Court, 1936, and Denstone Court, 1937 'which was the social condenser for the revolution that never happened'.

Other modernist work of the period includes Aiton Court, 1937-1938, by Steward and Cooke, which was published in Yorke's *The Modern Flat*. Normandie Court, 1937, by Leopold Grinker, an angry young man who wrote excellent letters to the SAAR, *vide* this letter where he chastized Martienssen and Hanson for excessive adulation of Le Corbusier.

'What extraordinary pure young men, these pure young men must be - these disciples of Le Corbusier, I mean.... There is only one God, say the pure young men, ultra-ultra modernism - and Le Corbusier is his prophet. Like all religious fanatics, they ignore or are unaware of the 101 creeds and sects and see only the divinity in their own' Grinker was, of course, right, and the relationship to Le Corbusier did not last forever.

Mention must also be made of the German refugee, Wilhelm Pabst (1905-1964), who had come to South Africa as a refugee in the 1930's. He had trained under Hans Poelzig who he described as the 'lonely heir of the Baroque tradition'. In some ways it was this mantle that Pabst picked up when

he came to South Africa. His influence in Johannesburg was almost minimal. If Hanson was the great practioner of the idealists, then Harold Le Roith was the great practioner of the pragmatists. It was for Le Roith that Jonas went to worked for in his practical year. An interesting move, considering Le Roith's status, and considering Jonas' position as the great socialist ideologue of the architectural school. Jonas, after all, considered architects 'accessories to the game of rent profiteering'.

When Jonas entered the architectural school of the University of the Witwatersrand in 1934, the architectural revolution was well under way. With the upturn in the economy in that year, the young modernists were able to make the quantum leap from theory to practice. Jonas rose to prominence in his second year when he demonstrated his superb intellectual and speaking abilities in an Architectural Student's Society debate. The following year he became chairman of that society, a position he was to hold until his graduation in 1939, and one that he used as a vehicle for propagating his own views and ideology. It was also as chairman of the Society that Jonas organised the Abstract Art conference of 1937 and the Town Planning conference the following year, both extremely influential conferences attended not only by students but by practioners as well. The Abstract Art Conference dealt with the abstract in man (painting), in nature (photography), and man's abstraction imposed on nature (architecture and most particularly townplanning of Le Corbusier). The influence of Le Corbusier can, once again, be seen very clearly in the plan for Cape Town done by a group of Johannesburg practioners for the planning conference. The conference sub-title was Theory, Programme, Action. This was to be the action. An action that fortunately Cape Town was spared!

Jonas also wrote extensively in the pages of the SAAR, on a variety of subjects. I would very briefly mention his most important publications, the first was a series of four articles, published in 1935 and 1936, where he attempted to define a systematic approach to

architecture. These articles were central to his approach to architectural design and to his later critiques on House Stern and on Reading Court. In the first article, 'Revelation at Venice', Jonas rejects the static qualities of the Classical tradition, preferring instead the 'dynamic equilibrium' of the Piazza San Marco. This dynamic assymetry was unfortunately lost in the 'Native Housing' thesis. However, the parti of each function of a building expressed as a separate element, as seen in Le Corbusier's Russian work and, of course, in this building, are still evident in the thesis.

The other articles in the series were entitled 'Towards a Philosophy of Architecture', 'Psychology and Architecture', and 'The Language of Architecture.'

In 1938, Jonas published 'The Architect and the Social System', a dense eleven page article outlining his philosophical views. Marxist views that were considered so radical that the SAAR in its editorial comment that it did not necessarily endorse the views of the writer. Architecture could not be a 'pure spiritual activity' as Martienssen saw it. As Jonas had learnt from bitter experience in Germany, one had to stand up and be counted. The notion of art divorced from life was a luxury one could no longer afford. It was Jonas' acute perception of what happening in Europe that led him in 1939 to start publishing *Facts*, in an effort to try to bring home to the student population in Johannesburg what was happening and about to happen in Europe. This was especially relevant in a country that was somewhat ambivalent about entering the War on the side of the British, especially after the Anglo-Boer War.

Martienssen on the other hand did not even acknowledge the outbreak of War in the pages of the SAAR!

In Jonas' design work, the Russian influence can be seen very clearly in his design for a Concert Hall of 1936, and in the school built at Langelaagte in 1937. The influence of Le Corbusier can also be seen quite clearly in Jonas' two other built works, Radoma Court of 1937-1938 and Illovo Mansions (or Dunkeld Mansions) of 1937-1939. As I

have said, it is surprising that Jonas went to work for Le Roith, especially as Jonas believed that 'An architecture was to be born out of the spirit of the new society'. Jonas, unlike Bruno Taut, did not see the new architecture generating a new society.

All of this considered then, what possessed Jonas to not only get involved with a thesis for 'native housing' but to be the driving force behind it? First a brief chronology and explanation of the project. The project was carried out by five architectural students at the University of the Witwatersrand architectural school; Kurt Jonas, Roy Kantorowich, Charles Irvine-Smith, Franz Wepener, and Paul Connell, and was entitled 'A Collective Thesis by Five Architectural Students'. Jonas' belief in the power and need for collective thinking was obviously the reason for the joint thesis, for as he said in his article, 'The Architect and the Social System', '*I have strong doubts whether a town for 100.000 people could or should be constructed to the design of one architect or one intellect. But if ten architects got together and worked out such as a problem collectively, they might produce something which would stand the test of time*'.

The impetus for the project came from a lecture by Alfred Hoernlé, the professor of philosophy at the University of the Witwatersrand, given to the Architectural Students Society on native housing in South Africa. The impact of the lecture must have been quite exceptional as the next morning, July 1st 1937, the five authors of the project, then fourth year students, drafted a memorandum applying for permission to tackle the problem as a joint thesis. Eight months were then spent engaged in research, field trips to black housing areas, and interviews. Today this may not seem exceptional, but in South Africa in 1937, this was not the norm in a society where separation according to colour was already rife. In January 1938, design on the project began, originally on a actual site but later on a theoretically typical Johannesburg site. The project was in effect chaired by Jonas and Kantoro-

wich. Jonas, in charge of the research and ideology, and Kantorowich in charge of design. The document, which by the time it was published in 1939, ran to some 250 pages. The work was divided into five sections, Part I, the Sociological Approach was by Jonas; II, the Psychological Approach was by Wepener, supervised by Jonas; III, Planning by Kantorowich; IV, Construction by Connel, and V, Finance was by Irvine-Smith. This was followed by various appendices and a full set of drawings. The scheme was extremely well thought out, having had a gestation period of some eighteen months. There were full structural calculations for all the structural elements, the financial aspects were well resolved, (the scheme would have been economically viable within 60 years!), and there were plans and elevations for all aspects of the scheme. Much of the design was to be standardized and rationalized, and methods of mass-production were to be used wherever possible.

The scheme itself was a model township for 20.000 inhabitants. The inhabitants lived in 10 superblocks, 1000' (304.8 m) x 500' (152.4 m), 2 000 people per block. A density of 434 people per hectare. This was seen as the optimum density necessary to support a primary school. It was also a solution to Kantorowich's statement, 'we want space, and we need concentration.' The organization of the scheme must be read from the railway station south, as it is by train that the populace would have arrived.

The debt to Le Corbusier's Ville Radieuse is clearly evident, most particularly in the use of the setbacks (*en redent*) in the residential areas. Like the Ville Radieuse, its origin was in a plan for an existing city, it has a 'classless' residential area, the organization is linear, etc., etc. An important difference is that in Le Corbusier's scheme provision is made for the separation of pedestrians

and vehicles with elaborate vehicle circulation diagrams, whereas in the Native Housing project, it is essentially a pedestrian project, as almost no blacks in South Africa in the 1930's owned cars. Thus the central axis would have been pedestrianized with cars dipping under the main axis to gain access to the housing blocks.

But it is this acceptance of the status quo by Jonas that I find quite surprising. Here is a man who felt so passionately for the socialist cause, for the need to change society, yet he was prepared to design a project for housing blacks in a segregated area, with a 'pass' office, accepting that blacks do not and will not in the foreseeable future own cars, etc., etc. The restaurant is for food only as blacks were not allowed alcohol, there is only a technical college (a vocational high school) as that was the only form of higher education open to blacks at the time. What is also surprising, looking back on the project with hindsight, is the slightly patronising tone of the text,... 'It is only a very few who would go to such a technical college in order to learn crafts, book-keeping, and how to write messages.' or 'Natives are extremely fond of reading and, given the opportunity, do as much thinking as the average white person.' Jonas wrote in the first chapter of the collective thesis that, '*there is little chance of any radical change from within the social and economic structure of South Africa. That holds good for the position of the Bantu within that structure. For there is, as yet, no militant organization of the Bantu proletariat - on a big enough scale - to bring about such a change*'. I think that the realization of how dire the plight of the black in South Africa was, allowed Jonas to get involved with this project.

But the criticisms aside, it was a radical solution to a problem that had hardly been addressed before and not that much since. The project was, certainly in the English speaking and liberal

world, very well received. It was reviewed in the press, being referred to as 'more than an academic thesis, it is a generous gesture of goodwill, a hopeful augury for the future of our land...' Did it have any impact? Probably not. Black housing in South Africa is essentially about slums, squatter housing, badly planned blocks of flats, and the rational township solution of house types 51/6 and 51/9, the two houses developed by the National Building Research Institute in the 1950's. Over 400.000 of these houses were built, many of them in townships such as Soweto and Alexandra. Of course, Soweto et al are not the way they are because of the house type, but because of a rotten society. Yorke and Gibberd in their book, *A Modern Flat*, posed the question; we are giving up green fields, for this, i.e. suburbia, instead of this, i.e. the block of flats surrounded by greenery. In the passage of time, suburbia and the detached house have fared far better than the free-standing tower block, and as we approach a post-apartheid South Africa it might possibly be easier to renovate and adapt house 51/9 than the housing superblocks of the collective thesis, had they been built.

The collective thesis was Jonas' last real contact with architectural design. The next two years were spent writing his M.A. thesis on 'The Historical Development of Colour Perception as illustrated by the deficiencies of the Ancient Greeks', for which he was awarded a Union Government Post Graduate scholarship.

This enabled him to leave South Africa for the Holy Land where he was to study 'Near Eastern Architecture and Palestinian Archeology' at the Hebrew University. However, on the 22nd of February, 1942, he died of a heart attack at the age of 27. A brilliant career cut tragically short.

DOCUMENTATION AND REGISTRATION



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Modern architecture in the Latium region: classification and safeguard issues

In this essay I am going to describe the indexing programme of the heritage of modern architecture in the Latium region recently set up by the regional Administration. Firstly, I will describe the magnitude of this heritage, then the protection problems related thereto and, lastly, the criteria followed for their indexing and classification.

Architectural heritage in the Latium region

Undoubtedly, most of the works of modern architecture in the Latium region are located in Rome. While this concentration has enabled experts to study and gain further knowledge about the most significant works, on the other hand it has also caused the heritage of so-called 'minor' works, spread both in the city and in the provinces, to be forgotten.

In order to have an outline of the existing heritage, buildings may be grouped into six main categories:

1 Works in Rome located in large groups of buildings

These works, such as the Foro Italico, the Città Universitaria, EUR, have been the object of many researches and studies¹. Although rather slowly, public opinion is becoming more and more aware of their value, separating the quality of the works from the Fascist regime which produced them. Some important restorations have been performed, like the one in the Palazzo dei Congressi (Conference Palace - the editor) by Adalberto Libera at EUR, where the open air roof-theatre has been ope-



Giuseppe Minucci, 'Dopolavoro' Building in Città Universitaria of Rome, 1933-34.

ned again. More restorations have been planned, like the one concerning the large underground volume of the Palazzo della Civiltà del Lavoro, (House of Labourers - the editor) which will be used as an exhibiting area. Generally, however, many of these works have been altered or changed by uncontrolled interventions. In some instances alterations were so deep as to cause the destruction of the buildings (as is the case of the Dopolavoro Building (Worker's Club - the editor) by Gaetano Minucci in the Rome Città Universitaria) or as to compromise the general architecture of the area (as is the case of the Foro Italico following the heavy changes made to the Olympic Stadium on the occasion of the World Football Cup).

2 Major works spread in Rome.

These consist of a series of public buildings made by some distinguished experts in Roman modern architecture,

the importance of which is underlined by the urban role they play, as is the case of the post-offices built according to the 1932 competition, or of buildings which are famous for their architectural quality, such as some designed by Capponi, De Renzi and Aschieri.

Though an increasing amount of study is carried out on these buildings, their preservation and restoration has been most discontinuous. Following the heavy changes made during recent years (some of which were highly destructive, like those to the interior of the post-office in Piazza Bologna by Mario Ridolfi), some important works were damaged: the via Taranto post-office, for instance, by Giuseppe Samonà (where the views were spoiled by the insane idea of putting some boxes for air-conditioning in front of them), and the EUR post-offices designed by the BBPR studio. In some cases the use of some buildings is being changed through restorations which, by virtue of the very change of use, cannot be considered as philological. This is the case with the Casa del Lavoro dei Ciechi di Guerra by Pietro Aschieri where, however, the volumes added after the War to the front part of the building are now being removed.

3 Minor works in Rome.

There is a heritage made up of service buildings (i.e. cinemas, schools, etc.), industrial buildings and houses which were designed by unknown authors or



Pietro Aschieri, Workshops for the Blind of War.

which are considered as minor works of famous authors.

These are the buildings that are most at

risk insofar as they are neither ascribed great architectural value nor are they considered as major evidence of urban history. Indeed, the lack of more in-depth studies and failure to spread the importance of these buildings did not bring about the consent needed for their preservation and safeguarding.

Recent episodes have shown (not only in Rome) that the preservation of the modern heritage is not simply a matter of historical research but, on the contrary, that it often involves a conflict of interests where the only way of safeguarding assets is to demonstrate the value of the work itself. This value is not an objective datum, but it largely depends on the consent the work enjoys. Most regrettably, in order to counter speculative interests each time it is necessary to show the 'cultural legitimacy' of the work.

These buildings are numerous, and it is thought that they contributed to creating Rome's modern face to a larger extent compared to major buildings. Here only a few of these categories of buildings can be mentioned.

The heritage of cinemas located in Rome is one of the categories of buildings which is currently most threatened. The importance of this heritage is twofold: being relatively new types of buildings, cinemas represented a rich field for experiments for Roman modern architecture; often, they represent the formal emerging element in the linking texture of residences in the newly built districts.

In addition to such 'top' buildings, as the Supercinema by Foschini and Spaccarelli and the Corso cinema by Marcello Piacentini, there are some quality cinemas, which are disappearing, partly spoiled by heavy changes, partly being demolished. The chief problems are the dramatic decline in viewers and the consequent conversion of cinemas.

One vivid example of alteration is supplied by the Palladium cinema, designed by Innocenzo Sabbatini between 1927 and 1930, now turned into a discotheque where the facades have been

completely spoiled and the beautiful vault has been covered by a new ceiling. Yet another significant example is set by the Jolly cinema (former Atlante). Guilty of not having noble origins and of having being designed too late (the plan approved by municipal authorities in 1947 was signed by the unknown engineer De Intinis) this cinema was deliberately left to degradation so as to justify its demolition. A plan to change it into a supermarket has already been submitted to the authorities. If the value of this building, which is very original and has evident expressionist references, were brought to public attention on a larger scale, it could be saved by adapting it to a more suitable use, such as a conference hall or a small room for shows run by the University.

Another category of works in danger are industrial buildings, which are often abandoned or illegally used as houses. The Pantanella building, by Aschieri, 1929, is one of them. It is one of the few Roman works where the problem of the purely utilitarian building helps to follow international rationalism themes, with its entrance door being designed to support a railway wharf. This work was deeply admired also by the academics especially for its solid architecture. After having been abandoned for years, the large building has been occupied by clandestine immigrants. Recently, after a fire, it has been cleared out by the police and today it is in complete decay, the proposal to use it for the University having been abandoned.

Many modern school buildings built in

the period between the two Wars are also affected by a total lack of concern as far as the preservation of their origi-

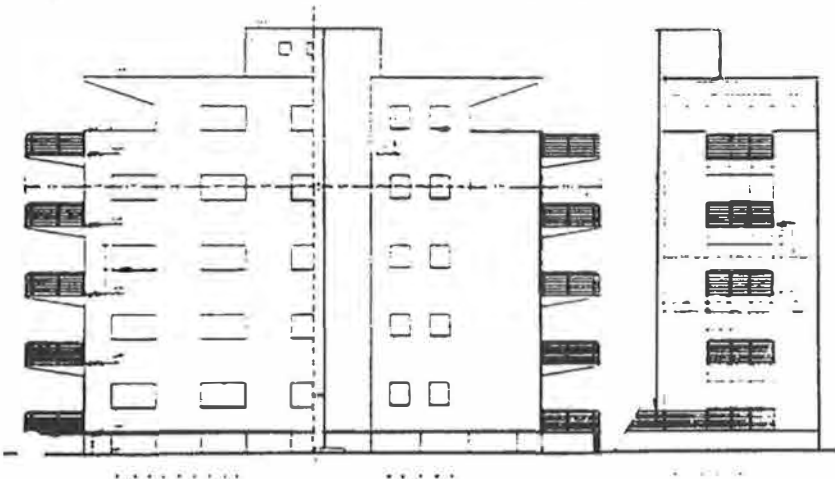
nal architectural values is concerned. The most common alterations include the external emergency stairs (whose large dimensions are compulsory to prevent fires) or the ramps for the handicapped which are often built in a way that spoils the original aspect of the building (for instance M. Guglielmotti school designed in 1932 by Ignazio Guidi in via Vetulonia);

In some cases little is also known of the modern residential buildings heritage, mainly owned by the IACP.

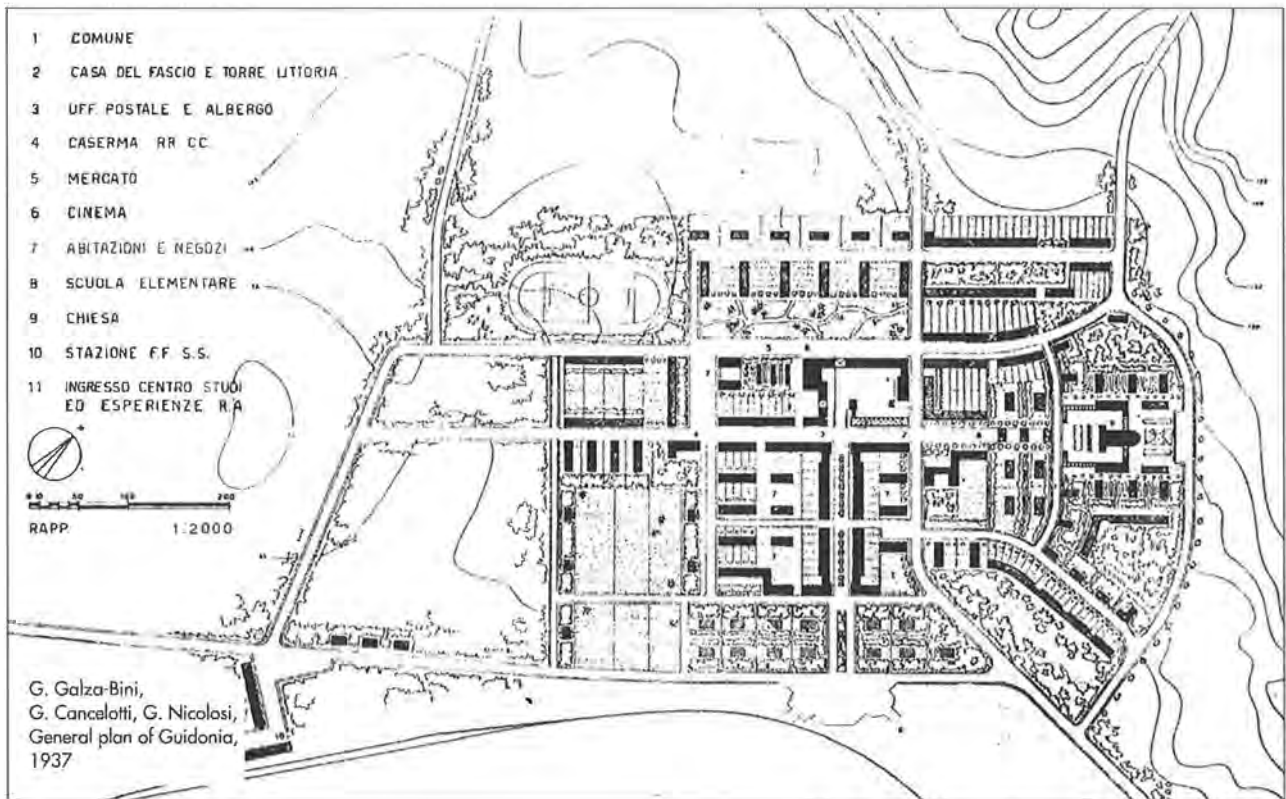
These works have not undergone major changes because they are inhabited by tenants. Now the IACP has decided to sell the buildings of highest historic and architectural value to private corporations, with serious risks of alteration being involved. A press campaign for the preservation of these buildings (particularly the houses of the 'lotto 24' at the Garbatella built for the House Exhibition and for the Town-planning Schemes in 1929) forced the Rome Superintendancy for Architectural works to place a preservation order on many of these buildings.

4 Works spread in Rome's hinterland

They are buildings standing in developed districts or in districts founded in the 1920's and 30's, just like those in the seaside resorts of the Roman coast. Particularly in Ostia many of the bathing establishments of great architectural quality have been demolished



A. Libera, houses in Ostia, 1933.



or completely changed and many villas and holiday houses are now in danger. In this respect, an example are the houses built by Libera according to a competition organised by the *Società Immobiliare Tirrena*: those in Viale della Vittoria have had their 'nautical' model balconies which represented their main distinctive element partially covered by added elements.

Those in via San Fiorenzo have been coated by an ochre layer of bricks. Restorations underway (the sea colony of Vittorio Emanuele III in Fasolo, and the Mazzoni post office) do not always seem to abide by the original architecture. Another example is the 'aeronautic town' in Guidonia designed by Giorgio Calza Bini, Gono Cancellotti e Giuseppe Nicolosi, which was opened in 1938.

The architectural theme pursued an innovative intervention and, actually, at that time this building was celebrated as 'a remarkable example of modern Italian architecture'².

Nowadays the criterion of urban planning and the architecture of many buildings are unrecognisable because of the many changes they have suffered.



Latina 1932.



Latina 1943.

5 Foundation towns of the Agro Pontino

An important part of the Latium region's modern heritage is to be found in the new towns (Pontinia, Aprilia, Pomezia, Sabaudia, Littoria) built between 1932 and 1938 in agricultural areas, south of Rome, mainly in Latina province, in an area of recently reclaimed lands.

They were planned after the famous speech (May 26th, 1927) whereby Mussolini supported a new anti urban course of action with the slogan 'let's empty the towns'.

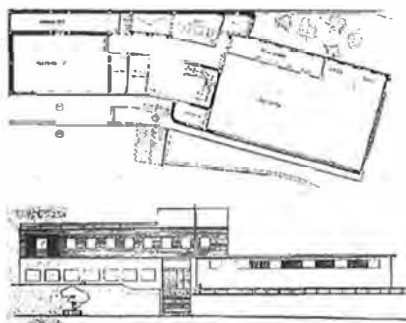
Looking beyond the rhetoric of the 'farm culture' and of the 'redemption of the lands' proposed by the regime, they represent one of the most interesting modern urban experiments made in Italy. The most important buildings of the new settlements were destined as administrative and religious institutions: seat of the municipality, the Fascism House, the Balilla House (then GIL's), the army barracks, the police barracks, the post office, recreation buildings, schools and cinemas. Particularly important are Sabaudia, started on the 3rd August 1933, designed by



A. Mazzoni, Latina Post Office, 1932.

Piccinato, Montuoro, Scalpelli and Cancellotti, and which was inaugurated 8 months later and Littoria (today Latina) on the via Appia, 46 km from Rome, designed by Frezzotti and Pappalardo of the *Opera Nazionale Combattenti* and inaugurated on 30th June 1932.

The original design of these towns is now spoiled by a heavy speculative building activity which took place in the 1960's and 70's. Some hope for the preservation of what remains of the foundation towns is found in the new consciousness of the inhabitants about the value of the original settlement. A plan made in the 1970's in Latina, which involved the complete destruction of the original design, has been turned down by people who put forward 800



M. Paniconi, G. Pediconi, Casa Balilla, Frosinone, 1934.

signatures in opposition. The new plan, the one I am taking care of, will involve the total preservation of the existing elements. The only settlements which will be realised are the houses started by Paniconi and Pediconi in 1942, still to be finished. The most valuable buildings will be restored according to the original plan, like Mazzoni's post-office, which is now spoiled by an addi-

on of volumes, which will be eliminated by building a new post office in the new office-districts of the town.

6 Works in Rieti, Viterbo, and Frosinone provinces

This is still an unknown heritage as far as public opinion is concerned. A recent guide of Italian modern architecture³ showed 33 examples of architecture in the Latium region before 1945; 30 of them in Rome, two close to Rome, one at Sabaudia, and none in the rest of the region.

There are a considerable number of buildings built in the period between the two World Wars which should be saved. Some of them were designed by famous architects, such as the Girls House in Anagni designed by Alberto Calza Bini. More buildings have a historic documentary value and play a consolidated urban role, such as the provincial Administration Building in Frosinone, designed by Jacobucci and Moscati.

Outlines on preservation and safeguards.

The problem of safeguarding such a large and variegated heritage is a complex one. In Italy the most common legal instrument is the application of Law No. 1089 of 1939 on the 'safeguard of items of historic and artistic interest'. According to this law, a list of particular assets of great interest which have to be saved and which are under some restrictions is drawn up. With respect to buildings the bond is shown in all official documents concerning the building and relevant transfers of title. More important, as far as we are concerned the bond sets forth that the various 'owners are required to submit the projects of any work they wish to execute to the competent Superintendent authority for the buildings, in order to obtain the authorisation.¹⁴

In this way the danger of causing uncontrolled changes in the buildings of greater value should be smaller.

One of the problems relating to the enforcement of the law concerns the impossibility of placing restrictions over buildings which are less than 50 years old, or in cases where the authors are still alive. This explains why only

recently modern heritage can be protected by *ope legis*. While awaiting a much-needed change to the Law, there is the proposal to protect valuable buildings less than 50 years old by Law No. 633 of 1941⁵ which states that: 'creative works in the fields of music, figurative arts, theatre and cinema, regardless of their form or expression, have to be protected'.

The matter is far from being a simple one, as the spirit of the Law tends to protect the author rather than the building⁶. According to the law in fact the author cannot oppose changes to the building unless they are harmful to the designer's own reputation, this being a difficult element to be defined by law. Only in the event that the work is ascribed 'artistic value' will the changes have to be designed by the author himself (this does not always guarantee the protection of the work, as is the case of the transformation of the Rome Olympic Stadium, which was entrusted to a group headed by Vitellozzi, who designed the original structure together with Roccatelli at the beginning of the 1950's.)

However, the need to have all necessary data to start any legal action is self-evident. In this connection, special reference is made to documents certifying the dates of execution of the works and the names of the authors of less known works. In this respect, indexing and classifying modern buildings will contribute considerably to the preservation of the works.

Indexing and classification

The indexing and classification programme of modern architecture in the Latium region, currently got underway by the regional administration, aims at creating an instrument analysis for further researches and studies of a synthetic and interpretative kind to preserve heritage and to promote knowledge of modern architecture, it being yet another contribution to preservation per se. Though this research has independent aims and funds the indexing criteria are based on indications provided by the *Istituto Centrale per il Catalogo e la Documentazione* (ICCD), issued by the Ministry for Environmental and Cultural Assets, for the census of the national

architectural heritage⁷. The main goal of the ICCD indexing is to ascertain how an architectural asset can bear value as a testament and a document, why and how it was built, and through what changes it has arrived at its present aspect. The relevant cards are meant for a thorough census of architectural testaments, not only extant ones, but also those of minor importance. Thus the analysis is not made point by point, but on whole areas of the territory. There are different kinds of cards. The ones which are more closely concerned with the architectural heritage divide data into: topographic, chronological, legal, technical and are organised according to their typology. The card for single buildings is called 'A' (architecture). Even if 'A' cards are similar for each building type and for each historic period, indexing modern architectural works is a problem which involves some specific problems:

1) One of the major problems in indexing ancient architecture is the location of homogeneous areas. On the one hand, from a scientific point of view it would be better, in general, to divide the territory according to the cultural areas which have produced the different artistic civilisations, but, on the other hand, practical reasons seem to suggest that the territory be divided according to administrative areas.

In fact, the goal of the ICCD cards is to protect the cultural asset, with their natural addressees being the administrations. As far as modern architecture in the Latium region is concerned, reference cannot be made to homogeneous areas as such, not only because of the circulation of typologies through various publications (a circulation which took place all over Italy), but also because the plans of many public works were either designed or directed by local technical offices (often those located in the province) depending on administrative areas, more or less coinciding with present ones.

The classification according to administrative areas corresponds to criteria of access to homogeneous sources and it fosters the relationship between research and protection. For this reason the indexing programme refers to the territories of the province (Rome,

Latina, Rieti, Viterbo, Frosinone) and then to the municipal ones.

2) The existence in many towns of town-planning schemes which allow us to analyse the proposals for changes of the environment and the role that single modern buildings had (or should have had) in the general context of the territory.

3) The existence in most cases of the plan and in some cases of the building yard documents which are sure sources for obtaining essential information on the original status of the building, thus allowing restoration to be performed on a scientific basis and the building and the original conditions of the building to be reinstated.

4) The use of modern and sometimes innovating materials not any longer in production nowadays. Widely used were Masonite, a new material obtained from wooden waste fibres, Linoleum, obtained from linen oil and resins, Suberit, obtained from pressed cork. Innovating glasses such as V.I.S. (*Vetro Italiano di Sicurezza*) Opaline, Termolux and Pisa's Saint Gobain Nevada elements were also employed, as were modern plasters like Marmorit, Terranova, Silitinto, Terrasit, Stalfit. Some of these materials were foreign derivatives, but after 18th November 1936, with the introduction of autarchy laws, emphasis was given on development of national technologies. Widely employed were alloys of aluminium which became the 'rea' Italian modern material (large bauxite mines were active in the Amiata mountains area). Anticorodal, Cromalluminio, Duralluminio, Aluman alloys were employed. Also new alloys from copper and nickel were in use⁶.

Apparently less relevant but playing a major role on the practical level is another specific aspect in the study of modern architecture: the novelty of the study of the relative heritage. In indexing modern architectural legacy one has to deal with the little attention paid to the matter by public administrations who are entrusted with the preservation and documentation of ancient architectural heritage, often of great value.

General indexing problems include: organisation of the research; data on the use of the buildings; the study of

both architectural and technical characters of the buildings and their history.

A Indexing organisation

Order - It is mainly topographic with reference being made to the province, to the municipality and to public toponymy. Inside the urban or territorial context the building will be transferred on a cadastral paper drawn to a scale of 1 to 1000, even when the original paper, as often happens is 1 to 2000, so that it is possible to obtain joining pictures and comparisons.

Object - The buildings to be indexed are those built between 1915 and 1945. Since the goal of this research is to provide materials for future elaboration through general research on architectural heritage, the word "modern" takes on an extended value, with no distinctions among the various trends of that period of time, which, on the contrary, are complex examples of modernity.

For each building the following characteristics are taken into consideration:

- original denomination
- present denomination
- name of author (or authors)
- pre-existing elements in case of the transformation of building structures in situ
- documents concerning the date of the works.

The third and fifth points, as mentioned earlier, are useful for the safeguard of works in compliance with the present laws.

Organisms - With respect to complex organisms there is a 'guiding card' with a general framing function for a series of 'composing cards' involving the different parts of the building. Wherever the parts show a strong linkage between each other, the cards can also be used outside the time length set for the research.

B Architectural and technical aspects of the building

Data on morphological, structural and distributive aspects of the building should provide a synthetic but complete description of the object of the research. Data is not always available: in this case the card represents the first

phase of the inquiry.

Plant - It shows the relationship among the surrounding elements (isolated building, series of buildings, etc.) together with a description of the planimetry scheme, possibly underlining any typology of reference or irregularity. The description may involve a short comment on the organism (hierarchy of its parts, status, number of stairs, etc.).

Coverings - The following is indicated:

- External morphology (practicable, vaulted, dome, terrace or roof, specifying the number and arrangement of pitches, etc.)

- The load-bearing structure (concrete, wood, metal, etc.)

- The covering structure (tiles, stone slabs, etc)

Stairs, vaults, floors - The same distinction made for coverings among morphology, structure and coating (floors) also applies to stairs, vaults and floors.

When floors are important per se (such as mosaics made by artists) a separate 'enclosure' must be filled in.

Vertical structures - They are divided into:

- load-bearing structures (in concrete, in load-bearing masonry, metal, etc.)

- secondary structures (partitions, paneling elements, etc.)

- external coverings (materials and morphology: i.e. rustication tufa, travertine string courses, etc.)

- internal coverings; when they are important per se (such as wall paintings, mosaics, etc.) a separate enclosure must be filled in.

Fixtures (doors, windows etc.) Special attention must be paid to materials. Often composite materials and sometimes innovative technologies were employed (for example the anticorodal-copper fixtures in Mazzoni's Postal Office in Ostia or the walnut wood, aluminium covered entrance doors in Minnucci's GIL building in Montesacro, Rome).

A special case is represented by artistic glass windows of which the Superintendancy has been taking care for some time. There will be an 'enclosure' for this case too.

Furniture and frames - In some buildings there are original pieces of furniture, and often - due to their conditions - it is impossible to use them. They could be

restored (in these cases the state, the number, the aspect of the objects still present should be pointed out).

C Use of the building

Information about the use of the building is essential for the safeguard of the structure. Information is divided into:

Use - The original use, the subsequent uses in chronological order and the present use must be described. The latter is fundamental: the few examples of restoration which have been made have shown that one of the major problems is the incongruous use of the structures, as a result of which the building cannot be restored according to its original aspect. One of the first operations should be, when possible, to find a use compatible with the nature of the building.

Unlike many works of international modern architecture, the design of most modern buildings built in the Latium region in the period between World War I and II is based on the idea of an organism derived from classic elements (the idea of transformability and consume in the architectural structure, together with the free-plan architecture being uncommon in these buildings). It is also based on a strict hierarchy and a close relationship of need among the various parts of a building which does not allow alterations because of the risk of spoiling the interpretation of the building as a whole. The problem is deemed to be of considerable importance also because of the need that has arisen lately, of making old structures fit for new technologies, such as for railway stations (e.g., the Ostiense Railway Station in Rome recently transformed through connection with a new Air Terminal) or post offices spoiled by transformation (as is the cases of the Angiolo Mazzoni post office in Latina, or many post offices in Rome).

Ownership - Another serious problem and connected with the others is the kind of ownership of the buildings. After the War many of the institutions which promoted the realisation of the buildings and which owned them were eliminated, as happened with the O.N.B (*Opera Nazionale Balilla*) founded in 1926 for the education of youth,

which built many sports centres and the local seats of the institute (Balilla houses); or like the GIL (*Gioventù Italiana del Littorio*) which succeeded the O.N.B. in 1937; or the O.N.C. (*Opera Nazionale Combattenti*) which started the colonisation work of the foundation towns. In many cases these properties have been divided up and given to different Institutions, often religious ones, which introduced many changes, as is the cases of many heliotherapeutic colonies - for example, the one on Monte Mario created by Enrico del Debbio, one of the most innovating episodes in Roman modern architecture, or, again, the metaphysical Vittorio Emanuele III colony designed by Vincenzo Fasolo at Ostia).

Indexing entails dividing ownership into: State properties (directly owned by the State) with the indication of the Administration in charge; properties belonging to public institutions (regions, provinces, etc.); properties belonging to private institutions (associations, religious institutions, etc.); properties belonging to companies and to private citizens.

Bonds - The presence of legal bonds, if any, and the law they refer to must be indicated.

D Building events

The abundance of archival records makes it easier to describe the events which created and changed the building up to its present status. The main points refer to:

Building history: this involves chronology and classification of:

1. the architectural pre-existent elements, if the building originates from the change of pre-existent elements.
2. building genesis (causes and ways of building)
3. transformations undergone over time.
4. restorations, if any.

Documents needed:

A - Cadastral: excerpt of the map of the cadastre, scaled off as we said at the beginning, with the indication of the origin. Also any cadastre plans 1/200. Existing plottings, when applicable.

B - Plans: photos of the original plans

kept in the archives of technical, historical or private offices. Copies of the technical reports of the plans.

C - Bibliography: specific literature on the work, also including magazines, archival documents, maps, surveys, etc.

D - Various documents: pictures, technical yard reports and reports on the state of works.

Preservation state:

Since it is not possible to have a detailed analysis because of the high costs, there will be a short report on the general conditions of the building with specific observations on:

substitution of architectural elements or parts of the building

damage

degradation (water leaks, humidity, etc.)

Conclusions

The research is organised so as to be recorded in simple PC files. However, data can be transferred to the programmes of the Ministry for Environmental and Cultural Assets which has drawn up a set of rules⁸, a specific programme (SAXA) for data archives and which is going to create a dictionary of terms to be used also for indexing architecture works. This effort is to be made with a view to making sure that the data stored can be transmitted and safeguarded.

Even though I realise that in terms of bureaucracy this is quite a difficult goal to reach, I feel it would be necessary to set forth a single European criterion for indexing as a first step towards the creation of an international register for the indexing and preservation of modern architecture.

Notes:

1. Particularly interesting is the proposal to include many of the modern architectural works in the 'Historic Atlas of Italian Towns' plan, directed by Bocchi and Guidoni (of the Italian committee of the International Commission for the History of Towns) together with ancient monuments: A. Greco, S. Santuccio, *Foro Italico*, Rome 1991 has been included in the Historic Atlas of Rome. Another volume is going to be published about EUR. The volumes *Sabaudia*, Rome 1988, and *Latina*, Rome 1990, published by A. Muntoni have also appeared.
2. See: Guidonia, città dell'aria, in 'Architettura', 1938.
3. S. Polano, *Guida all'architettura italiana del Novecento*, Milano 1991.
4. See: Italian Law No. 633/ 1941, art. 20.
5. See: Enrico Milone, *Chi tutela l'architettura contemporanea?* in 'L'architetto' February-March 1990.
6. See: E.A. Griffini, *Dizionario di nuovi materiali per l'edilizia*, Milano 1934;

E. Tedeschi, *La Mostra dei sistemi costruttivi moderni e dei materiali da costruzione alla VI Triennale di Milano*, in 'Architettura', 1937; A. Petrucci, *Materiali autarchici per l'edilizia*, in 'Architettura', 1940; M. Ridolfi, *Normalizzazione degli elementi costruttivi: suoi rapporti con le convenienze costruttive ed estetiche*, in 'Architettura', 1940; E.A. Griffini, *Nuovi sistemi costruttivi, nuovi materiali, opere di finitura*, in: *Costruzione razionale della casa*, Milano 1946.

A short account of the matter is given in: V. Bernardini, F. Del Falco, *Architetture moderne; Tecniche, materiali, criteri progettuali*, in 'AU Tecnologie', *Restauro dell'architettura del Movimento Moderno*, special issue edited by Tonino Paris, March, June 1992.

7. Istituto Centrale per il Catalogo e la Documentazione, *Norme per la redazione delle schede di catalogo dei Beni Culturali*, part I, Norme generali, Rome 1983, and part VI, Norme per la redazione della scheda 'A', Rome 1984.
8. Istituto Centrale per il Catalogo e la Documentazione, *Normative di compilazione per i modelli di rilevamento dei dati dicatalogazione e precatalogazione dei BAAAS - Specifiche tecniche per il trattamento informatico*, Roma 1990. See also: S. Papaldo, O. Signore, *Specifiche tecniche di cui alla legge N° 84 del 19/4/1990*, Rome 1990.

Some aspects of protection of the MoMo-architecture in Poland

The Modern Movement in Polish architecture emerged around 1925 and coexisted with more traditional forms. In the course of its development a significant role was played by the innovative trends from the countries of the East and the West. The goals were the same: rationalism against post-romanticism and classicism, the idea of architecture as a tool to solve social problems rather than an individual work of aesthetic values, anti-decorativeness, economic and technological considerations in design. In the history of the Polish avant-garde movement two artistic groups - the 'Blok' (1924) and the 'Praesens' (1926) were particularly important and active; they maintained close ties with other countries. It is worth mentioning that the first International Exhibition of Contemporary Architecture was held in Warsaw in 1926, with designs from Belgium, Czechoslovakia, France, Holland, Germany and the Soviet Union on display.¹



The Warsaw Housing Cooperative,
Barbara and Stanisław Brukalski, 1932.

The Modern Movement in Polish architecture was closely related with deve-

lopments abroad. The major stimulus came from Le Corbusier and his theory of architecture. Although his book 'Vers une Architecture' had never been translated into Polish, his ideas and designs were well known. The discussions on Le Corbusier's ideas, which in fact reflected all the major questions of the MoMo architecture, exerted considerable impact on the designs of Bohdan Lachert, Józef Szanajca, Roman Piotrowski, Jan Reda, Mieczysław Szczuka, Juliusz Zorawski.²

As regards the Dutch influence, the papers and articles by Theo van Doesburg, Piet Mondriaan, J.J.P. Oud were published in the major avant-garde journals of the time. The impact of Dutch art and architecture can be seen, e.g. in the Brukalskis' villa (1927), some housing units, the interiors designed by a painter Henryk Stazewski (not preserved).³

The concern with neighbourhoods and low price houses stimulated interest in German solutions and the Bauhaus ideas of linear building, which was applied in the planning of housing areas in Łódź and Warsaw.⁴

As far as the influences from the East are concerned, the major stimulus came from the Soviet Union and for many an avant-garde artist, mostly of leftist views, the ideas of Constructivism and Suprematism were like a voice from the promised land. The exhibition of Malevich, held in 1927 in Warsaw, was a great artistic event.⁵

The links with Italy were not manifested in the impact of Futurism, but in the fascination with the achievements of Italian architecture - the changes in the urban planning of Rome, the building of Littoria and Sabaudia, a new railway station in Florence. In the 1930's, when the avant-garde faced a crisis and disillusionment with the ideas of a 'bare wall' and a 'cold box' the achieve-

vements of Italian painting and monumental sculpture were most admired and appreciated.⁶



Architect's own villa.
Barbara and Stanisław Brukalski, 1927-29.

The above influences together with genuine solutions by Polish architects contributed to the development of the then avant-garde architecture, which is now of historical value. When embarking on a discussion of the selected aspects of protection of the Modern Movement architecture in Poland it needs to be said that it was only thirty years ago that its historical value was recognized in terms of legal protection. Until then the building could be listed provided it had been built not later than in 1850, which was of disastrous consequence not only for the Modern Movement, but also for Art Nouveau, all the neo-styles from the end of the 19th Century, and the like. The present regulations do not define any time limits for listing objects. By the law of 1962, which is still in force, the notion of a 'historical monument' was extended into the notion of a 'cultural good'. The article 2 of the law reads: 'A cultural good (historical monument) is every object, movable or stationary, old or contemporary, which owing to its histo-

rical, artistic or documentary value is of significance for the heritage and development of culture'. In article 5 of the same law it is stated that subject to protection are: 'the building stock, objects of urban planning and architecture, such as historical urban layouts of towns and neighbourhoods, parks and decorative gardens, graveyards, buildings, their interiors and surroundings, housing units of architectural value and edifices of historical value, irrespective of the condition of their preservation.'¹⁷

It is beyond any doubt that such a broad definition of a historical monument embraces the Modern Movement too, especially as further in the law in question the industrial and engineering constructions are included as well. However, the criteria which are binding for all the monuments covered by the law (the historical and aesthetic values) function differently in the case of the Modern Movement objects - this is due to the psychological factors, which are not mentioned in the law and which will be discussed further in this paper. In 1969, the architect Zdzisław Bieniecki published a broad study, 'Potrzeba i drogi ochrony obiektów architektury najnowszej' ('The need for the protection of the most recent architecture and the ways to do it') in which he attempted to synthesize all the questions concerning the architecture from the mid-19th Century until 1939. Of course, a number of statements in that study apply to the protection of any monument (demolitions, major repairs which have not been conducted properly). As regards the 'possibly objective' criteria of selection Bieniecki suggested the criteria of basic and auxiliary character. Among the former he distinguished: 1. the practical ones; 2. the theoretical ones (of documentary and educational value). The practical criteria included: a. the present condition of the object, b. the technical condition, c. the utility value, d. the role of the object in the urban planning for the area. The theoretical criteria presented by Bieniecki were as follows: a. the age of the object, b. its uniqueness, c. how typical was its spatial solution, d. how progressive it was in relation to current architectural developments both at

home and abroad, e. to what extent it reflected the local character, both on the regional and national level, f. the design by outstanding architects, g. the historical value (e.g. the relation with men of merit or memorable events). The auxiliary criteria, which are of more subjective character and, consequently, more difficult to apply, included: a. the aesthetic value, b. how representative the object was of its time, style, artistic influence, etc.



Post Office.
Julian Puterman-Sadłowski, 1928-33.

Of course the above, broad range of criteria can be subject to discussion on the hierarchy and order of their application. Personally, I consider the aesthetic criteria of major importance. Let me pass now to the already mentioned psychological factors.

Although by law and in practice 1850 is no longer a deadline for the recognition of an object as a monument, for the majority of society and, regrettably, for a considerable number of professionals too, the notion of a 'monument' is still identified with objects erected by that time. Although the Modern Movement architecture, together with the 19th Century buildings, frequently constitutes the original architectural stock in contrast to numerous postWar reconstructions, the understanding of its value is still very small. My M.A. and Ph.D. students who study the interWar period are often asked why the 'new'

architecture is the subject of art history, as if those 'new' buildings were not 70 years old. The already quoted Bieniecki suggested even (though a quarter of a century ago) that, for 'strategical' reasons, the Modern Movement architecture should be referred to as 'objects subject to protection' instead of being called 'historical monuments'.

And, as we know all too well, the role DOCOMOMO is to fulfil in this field cannot be overestimated.

Let me now discuss briefly the situation in Poland. First, it needs saying that in comparison with other architectural styles Modern Movement architecture is in the minority and, at its best, is confined to a small number of neighbourhoods, villas and public buildings, mostly in cities, and particularly in Warsaw. And here lies the basic difference between the Modern Movement and any other style in architecture - the demolition of a few buildings or neighbourhoods practically eliminates the former from the history of architecture. Great historical styles (gothic, baroque), although rarely represented by their most outstanding examples, can nevertheless be found throughout the country, including smaller centres, and their value is not questioned, at least in theory. The 19th Century neo-styles and the Art Nouveau were also very widespread, though until now their value has been occasionally questioned. The Modern Movement architecture was neither widespread nor appreciated, which only increases the threat of its destruction. Moreover, at the end of the 1950's the whole avant-garde was condemned as 'bourgeois formalism', the majority of buildings in the last forty years were owned by the state, which in practice meant nobody, and consequently the dilapidation of the urban stock, mostly of housing estates of the 19th and 20th Century, has been considerable.

Therefore the question arises: what should be protected and by what criteria? In Polish conservation practice distinction is made between three basic modes of operation: 1. protection, which does not interfere with the form and substance of a monument, and

includes legal protection; 2. preservation, that is the activities aimed at maintaining the building in its condition, which permits, however, some minor removals and additions; 3. restoration, that is preservation combined with adaptation aimed at restoring the utility value to the object that has lost its capital value; the task of the restoration is to find a new function for the object and not the opposite.⁹

Let me now summarize the present considerations. As conservation practice has demonstrated instances of a complete protection of an object, that is of its restoration to the original condition, are very rare, especially in the case of interiors, which have been practically destroyed, or, in housing estates, considerably altered. (The Polish section of the DOCOMOMO has recently reported on the threatened interiors of the 'Feniks' building in Kraków.) Those problems were anticipated by the already quoted Bieniecki, who distinguished between complete protection which covered the whole object and a partial one - limited to its elements (facades, construction, the interior, etc.). Personally, as an art historian who views architecture as a visual art, I would tend to argue for the protection of a facade, though I am all too well aware that my position is most questionable in relation to the Modern Movement architecture, in which the facade - according to functionalist theories - was to reflect 'the interior design'. I am afraid, however, that in most cases the destruction of interiors has been already completed or they are not accessible, whereas the facade and its alterations can be seen by everybody, as exemplified by the detached houses of 1934-35, designed by Bogdan Lachert, Jozef Szanajca, Jan Reda, Roman Piotrowski, or the post office of 1928-33, designed by Julian Puterman-Sadlowski. The interior of the latter, representative of the Bauhaus style at its best, is no longer accessible and, consequently I do not know whether it has been preserved or not. On the other hand, it should be added that in some instances the redevelopments of the interiors were caused by the improvement in the standards (e.g. of the

bathroom) of the originally cheap community houses.

Let me return now to the question of the legal protection of monuments and their documentation. The chief supervision over monuments in Poland is held by the Minister of Arts and Culture. Attached to the Ministry is the State Service for the Protection of Monuments, headed by the General Keeper of Monuments. The regional keepers are appointed by the Minister at the recommendation of the General Keeper. The central inventory is run by the Centre of Documentation of Monuments. The basic information about a monument is recorded in the inventory card. Ideally, each object of historical value should have its own inventory card, which however, is not synonymous with its being listed. The card has been designed for Architectural objects from all periods, whereas the MoMo objects require entirely different techniques of description than traditional objects.



Residential and administrative House.
Tadeusz Koslowski 1931-32.

The first MOMO objects, such as the villa by Lachert and Szanajca of 1928 - an outstanding example of the application of Le Corbusier's ideas in Polish architecture - were listed at the beginning of the 1970's. Another example of the ideal application of Le Corbusier's '5 points' - the house designed by Juliusz Zorawski - was listed only three years ago. Generally, in Warsaw, the-

re are approximately 60 listed objects (not to mention the 20th Century architecture, which is not representative of the MoMo, such as, e.g., Art Deco buildings, and the like, which are of historical value too and which are being listed now). The listing of the objects is frequently not properly planned and systematically conducted. In Gdynia, for instance, it is only 54 objects (including 12 units) that have been listed so far, whereas to our best knowledge there are 500 objects there that should be listed. To change this we shall work towards the closer cooperation of our keepers with the Polish section of DOCOMOMO.

Regrettably, the legal protection of the DOCOMOMO objects is rarely effective in the case of rebuildings and redevelopments. At present, when the ownership of buildings in Poland is subject of major economic and legal changes, those threats increase, though, in some cases the changes may open new and unexpected possibilities of protection and preservation too. These, however, depend on the condition of the social consciousness.

Whatever its future prospects may prove to be, the MoMo architecture in Poland is in a minority and therefore I would suggest that if the value of some objects is to be duly recognized and acknowledged on an international scale they should be protected both by UNESCO and DOCOMOMO.

Notes:

1. The basic publications on the subject include:
 - I. Wislocka, *Awangardowa architektura polska 1918-1939*, Warsaw, 1968;
 - J. Minorski, *Polska nowatorska mysl architektoniczna w latach 1918-1939*, Warsaw, 1970;
 - A.K. Olszewski, *Nowa forma w architekturze polskiej 1900-1925. Teoria i praktyka*, Wroclaw, 1967;
 - A.K. Olszewski, *Polish Art and Architecture 1890-1980*, Warsaw, 1989;
 - Avant Garde polonaise - Architecture - Urbanisme*, Warsaw, 1981;
 - L. Heyman, *Nowy Zoliborz 1918-1939*, *Architektura-Urbanistyka*, Wroclaw 1976;

- E. Chojecka, *Architektura i Urbanistyka Bielska Biala 1855-1939*, Katowice 1989;
- I. Poplawska, *Architektura Łodzi w dwudziestoleciu międzywojennym*, 'Kwartalnik Architektury i Urbanistyki' 1983, vol. XXVIII;
- M. J. Zychowska, *Miedzy tradycja a awangarda. Problem, stylu w architekturze Krakowa lat międzywojennych*, Cracow 1991;
- W. Odorowski, *Architektura Katowic w latach międzywojennych (1922-1939)*, Katowice 1989 (unpublished);
- A.J. Koseski, *Architektura Gdyni w latach 1922-1939*, Warsaw 1991 (unpublished).,
2. A.K. Olszewski, *Les influences de Le Corbusier sur l'architecture polonaise*, 'Polish Art Studies' 1986, vol.VII.,
 3. T. van Doesburg, *Ewolucja architektury nowoczesnej w Holandii*, 'Architektura i Budownictwo' 1931, Nos.8-9;
 - J.J.P. Oud, *Wychowanie przez architekturę*, 'Praesens' 1926, No.1;
 - T. Szydlowski, *Wybitna rola Holandii w kształtowaniu nowego stylu w architekturze*, 'Kurier Literacko Naukowy' 1936, No.5;
 - T. Berlinerbau, *Spoldzielnie mieszkaniowe w Holandii*, 'Dom Osiedle Mieszkanie' 1936, Nos. 5-6;
 - P.M. Lubinski, *Współczesna architektura holenderska*, 'Architektura i Budownictwo' 1930;
 - P.M. Lubinski, *Architekt Van der Vlugt przestał budować*, 'Arkady' 1936, No.10;
 - A.K. Olszewski, *Koncepcje architektury w kregu ideologii grupy Blok in: Z zagadnień plastyki polskiej w latach 1918-1939*, Wrocław 1963.
 4. P.M. Lubinski, *Gniazdo modernizmu*, 'Antena Polska' 1928, No.5;
 - P.M. Lubinski, *Nowy Frankfurt*, 'Architektura i Budownictwo' 1930;
 - P. Krakowski, *Recepcja Bauhausu w architekturze polskiej dwudziestolecia międzywojennego in: Sztuka XX wieku*, Warsaw 1971;
 - H. Syrkus, *Ku idei osiedla społecznego*, Warsaw 1976;
 - K. Pawlowski, *Kierunki rozwoju urbanistyki polskiej okresu międzywojennego a ewolucja osiedla mieszkaniowego in: Sztuka XX wieku*, Warsaw 1971.
 5. A. Turowski, *Konstrukttywizm polski*, Wrocław 1981.
 6. P. Bieganski, *Rzym w przededniu otwarcia perspektywy na Kopule św. Piotra*, 'Architektura i Budownictwo' 1936, No. 6;
 - P. Bieganski, *Architektura Włoch mussoliniego*, 'Architektura i Budownictwo' 1937, No.10;
 - T. Szydlowski, *Rzym Mussoliniego*, Warsaw 1936;
 - T. Wyszomirski, *Nowy dworzec kolejowy we Florencji*, 'Polonia-Italia' 1936, No.6;
 - J. Hryniewicz, *2% we Włoszech i u nas*, 'Arkady' 1939, Nos. 4-5.
 7. The law of 15 February 1962 on the Protection of Cultural Goods and Museums, 'Kurier Konserwatorski' 1991, No.2.,
 8. Z. Bieniecki, *Potrzeba i drogi ochrony obiektów architektury najnowszej*, 'Ochrona Zabytków' 1969, No.2.,
 9. J. Bogdanowski, *Przyczynek do współczesnych problemów ochrony i konserwacji zabytków*, 'Kurier Konserwatorski' 1991, No.3.

Critical analysis and computer recon- structions of three unbuilt projects by Giuseppe Terragni

Summary

This paper discusses the potential strengths of computer aided architectural design in the area of documentation and analysis of architecture using, as examples, three unbuilt projects that were reconstructed either by the author - as part of a research on the architecture of Giuseppe Terragni (1904-1943) granted by the Graham Foundation for the Arts of Chicago - or by his students at Carnegie-Mellon in Pittsburgh (1984-1990) and ETH Zürich (1991-1992). Although critical analysis is the central scope of these reconstructions, realistic simulations of the unbuilt projects in some cases are achieved. The paper is divided in three parts - dedicated simultaneously to one project and to a specific computer environment - each of which shares an identical structure. Information and critical interpretation about the 'Officina del gas' (1927), the 'Villa sul lago' (1936), the 'Danteum' (1938), are provided at the beginning of each section. The second subsection in each part addresses the technical components of the use of computers in the area of (1.) Hyper media and interactive teaching, (2.) Solid modeling and interpretation and (3.) Object Based Modeling and simulation. An evaluation with trade offs of each environment is provided in the final section of each part.

The Introduction contains basic information about computer possibilities in the field of documentation and analysis applied to graphic database and ani-

mations, while in the Conclusion the overall approach that guides the author in documentation and analysis of contemporary architecture with computers is briefly summarized.

Introduction

The interest in using Computer aided architectural design (Caad) for Documentation and analysis of modern architecture (Daa), began for the author almost a decade after his first studies on the history of Italian rationalism. Since the mid 1980's, he has started to develop and to teach university level courses on architectural theory which incorporate computers as an increasing important tool. The first course, which used the just-born Macintosh in the realm of Daa, was taught at Carnegie-Mellon in Spring 1985. Students used an innovative program to relate information to graphic objects. *Filevision*TM¹, a graphic

database, allowed the user to append text as properties to graphic entities. Each graphic element (which, for example, creates the drawing of plan) is linked to a record containing related information concerning size, dimensions, color, type of furniture or other information. The information is normally hidden from the user, but it can be easily accessed by clicking on the various parts of the graphic.

This environment allowed: 1. storage of large amounts of information in a structure meaningful for architectural scholars; 2. advantages of database search based on specified criteria to be applied not only to the text but also to the linked graphic elements (so that all graphics that match a specified criteria become automatically highlighted); 3. the possibility to disassemble and reassemble the drawing accordingly to the database categories (figure 1).

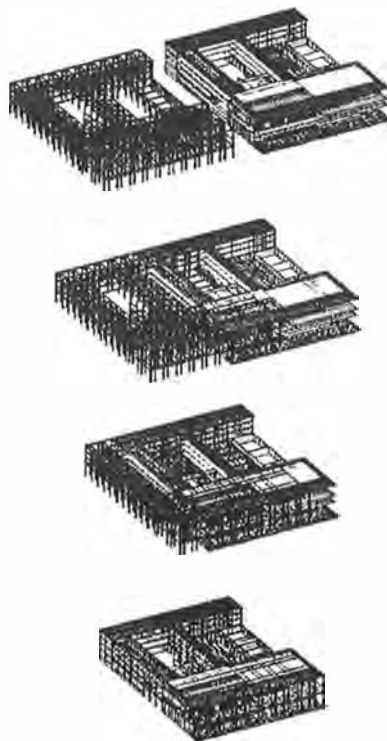


Fig. 1 Palazzo di Congressi for the E'42 by G. Terragni, P. Lingeri, C. Cattaneo. Roma 1937. Animation sequence by C. Feederle, ETH 1992.

The second course that used computers in the area of Daa was taught in Fall 1986, at Carnegie-Mellon. Students selected a villa of the Modern Movement and they analyzed it with a set of different tools. Animation was used for the first time for teaching Daa at Carnegie-Mellon. After several experiments, it became clear that best use of computer generated animations was to create a 'design story'. The use of animation techniques forced students to develop a deeper understanding of architectural issues and to present them in a chronological order with a 'before' and an 'after'. This approach developed an attitude to describe a project as a sequence of subsequent design decisions which influenced deeply the way of dealing with architectural theory when it was applied back to the traditional tools of the publications.

The most recent course was taught at the Caad Chair of ETH Zürich during the Winter semester of 1992.

'Giuseppe Terragni Architecture. A Formal Analysis using CAAD' focused on a critical reconstruction of unbuilt projects by the most well known architects among the Italian rationalists. This course, whose results will be partially discussed in the final section of this paper, has shown the potentials of computers and of object based modeling in particular, in the realm of Daa (figure 1).

Thanks to the experiences briefly summarized above, the author's attitude to the study of modern architecture as a practising architect - who wants to find design principles to inspire his own work - was reinforced and stimulated by Caad. Computers became more and more a tool of central relevance to study and analyze architecture.

Objectives of the paper are two fold. First it intends to present reconstructions of unbuilt projects relevant to the history of Italian rationalism. Second, the analysis of the technical aspects of Caad is intended to show potential applications and limits of this technology to a non-specialist audience.

The first project that is presented is the Officina del Gas 1927 (Workshop for gas production) and, using it as example, the potentials of Caad for interactive teaching will be analyzed. Second project is the Villa sul lago (Villa on the lake). In this crucial project of 1936, the interrelationship between design analysis and model reconstruction will be addressed.

The Danteum of 1938 is the third project. Here thematic views depicting various aspects of the design were available to the user simultaneously with a complete tridimensional model that allows outside and inside explorations. Studies and hypothesis about construction materials were also achieved in this environment since it was also possible to generate photorealistic simulations of the project.

1. Interactive architecture analysis and teaching: the Workshop for gas production

For several years the author was inter-

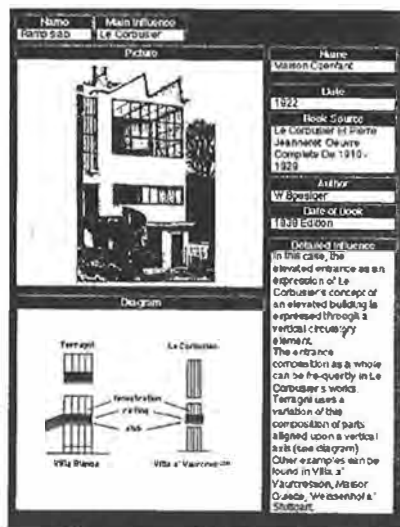


Fig. 2
Villa Bianca by G. Terragni, Seveso 1936.
Graphic database by T. Sanders and S. Shaw.
CMU 1988

rested in developing interactive tools to communicate and explore architecture, but the task was too complicated for a non-programmer specialist. Only in 1988 was he able to develop computer based lectures for studies in architecture that provide effective interactive modes. These lectures include access to database sections with pictures and texts, direct tridimensional exploration of the building under analysis, animation insertions in addition to electronic sketching and note taking. But the most important aspect does not concern the isolated materials present in these examples but their level of integration and of interaction with the user which are provided through four different levels: to see, to explore, to study and to interpret. In this section an example of this interactive lesson of architecture is applied to the Officina del gas, the first important project by Terragni².

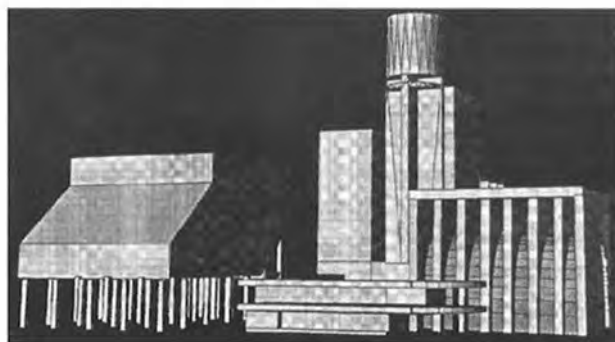


Fig. 3
Officina del Gas
by G. Terragni,
Como 1927.
Reconstruction
by A. Saggio,
Rome 1988.

1.1. Workshop for gas production, Como 1927

The room of 'Gruppo 7' at the first show of rational architecture, held in the Palace of Exhibition of Rome in the spring of 1928, exhibited a number of proposals similar to those presented the previous year at the III Biennale of Figurative Arts at Monza.

Functional programs replaced the monumental ones and describe a different and modern city: the exposition of low income housing studies, public services, and industrial buildings.

Terragni focuses on the last of these programs, deciding to give public importance to two of his first projects: the Workshop for Gas Production and the design for a Pipe Foundry.

Terragni's insistence on the industrial theme is not accidental. The functional destination of the architecture is the tool for creating a direct connection with the short history of artistic vanguard on the one hand and with the affirmations of the contemporary European architectural culture.

It is also evident that this project for a workshop - designed a little more than a decade later than the projects of Italian futurists - creates a connection with Antonio Sant'Elia and with the drawings by Mario Chiattoni and Ugo Nebbia.

But the major difference from the Futurists that Terragni wants to make evident in the design as well as in the writings, is the capability of modern architecture to give a concrete answer, and not a utopian one, to the demands present in Italian society at the end of the 1920's

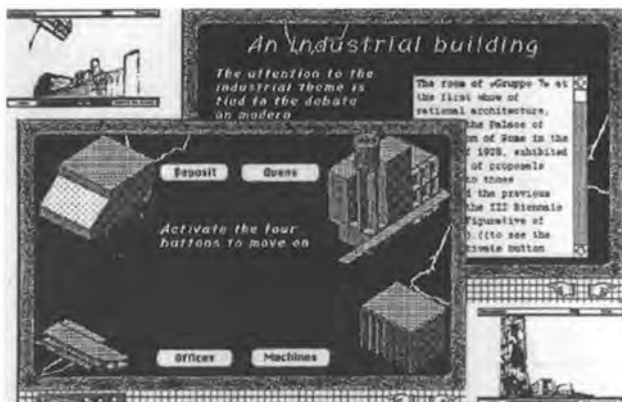


Fig. 4
Officina del Gas
by G. Terragni,
Como 1927.
Interactive lesson
by A. Saggio
(with M. Cesaroni),
Rome 1988.

The Officina del Gas is not an imaginary project, a formal exercise on the industrial theme.

The project is located on a real site in the periphery of Como and commissioned by a real client. Although the design materials that have been preserved (perspectives, pictures of the model and plans) do not reach working drawing completion, it is evident that the study is based on a realistic functional and distribution program.

The project is articulated in four different bodies which through their separation reveal the different functions they are serving.

The first - with a clog shape - contains the coal deposit, the second - composed by several volumes among which the most characteristic is a tower with a tank on top - contains the ovens, the third - with a semi-cylinder section - contains the machines and the fourth - two-stories high - the offices.

Terragni uses four design devices for the four objects.

The ideation of the first body is related to the research of expressive emphasis on the volume.

The design action which creates the object is 'hoisting': the volume's individuality is affirmed through the separation from the ground floor. The pilaster grid which supports the volume is not an element of semantic weight comparable to the volume.

The definition of the second body follows an operation of 'assemblage': the pieces, volumetrically distinct, are combined together creating three parts:

two parallelepipeds, for the ovens and one composite for the tower.

The development of the theme of the 'joint', which is present in a minor way in the tower, has a complete application in the definition of the third body containing the machines. Six walls, which recall the serial composition of Giacomo Balla and are often used by Sant'Elia, are joined with the central barrel shaped nucleus. The resulting volume is closed by a 'C' structure carving the two heads with the inner vaulted volume.

The fourth body of the office appears to be the most simple one. The volume is carved in order to create the slots for the horizontal window expanse. The volumes of the two levels are treated as independent entities through their reciprocal sliding. The strongest aspect defining this building is the shape of the floors in its final stage. These floors describe a quarter of the circumference linking the building to the machine room. This gesture reveals that the generating force of this body is not internal - as happens in the other cases - but it is generated by a will of 'connection'. In trying to assemble the pieces created, beside the canopies put in place for that purpose, the architect felt the need to deform the dimensionally less important object in view of the overall composition. Through its longitudinal shape, this building dynamically ties the machine room and the coal deposit. The horizontality of the tie is figurally interrupted - at the half of its longitudinal development - by the vertical axis of the tower located in the second body.

While 'hoisting', 'assemblage', 'joint' and 'connection' are four different

devices that the architect used for the different parts of the building, in the overall composition we are in front of an original system.

This is not a constructivist syntax, as the objects maintain a separation which is foreign to the 'unity in the diversity' of the constructivism. This is not an approach of Gropius because the buildings, although they invade the dimension of the perception in time, are too strong in themselves to hide the story of their autonomous existence. This is not a Corbusian approach because the existence of the volumes is subject to the two previous inspirations which result indissolubly merged with it.

The syntax that guides the overall composition is the subtle relation between the autonomy of the pieces (the coal deposit, the tower and the room for machines) and their assemblage or joint. The capability proven by Terragni is that of solving the implicit contradiction in the combination of the two approaches through a disposition of the shapes in the space in a calibrated asymmetrical way.

1.2. Interactive documentation and teaching

The thesis presented above is available in a computer file which provided, for the first time, an example of interactivity in the realm of architectural analysis. The program that has been used is *Hypercard*™⁴ which, thanks to its programming language *Hypertalk*™, allows one to create with ease a personalized electronic environment. The basic entity of this environment is a card. The collection of cards, which create a computer file, is called a stack. Each card may contain a number of elements belonging to three categories: images (directly created or digitized), text fields and buttons. Buttons are used to perform specific instructions (such as 'go to a linked card', 'search for a word', 'show an animation', 'go to another program and then come back'). Using graphics, text and buttons it is possible to create a structure to collect and display all kinds of information. While the creation of the stack

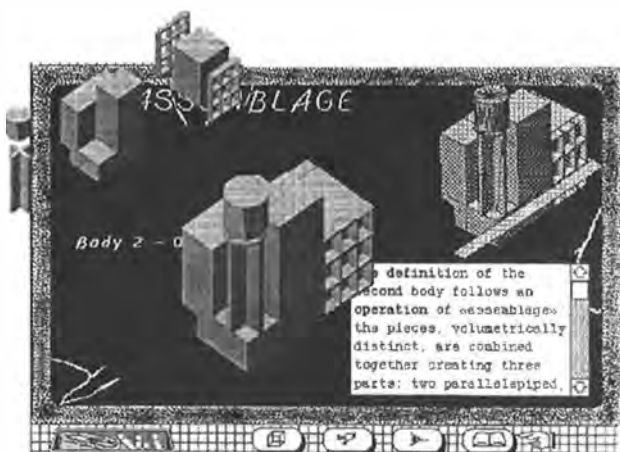


Fig. 5
Officina del Gas
by G. Terragni,
Como 1927.
Interactive lesson
by A. Saggio
(with M. Cesaroni),
Rome 1989.

provides the overall framework and a general metaphor to display the information and he/she must have a basic knowledge of the environment, the end user can read and utilize the stack by just clicking the mouse.

This environment has been commercially available since the Fall of 1987. The author used it the following year in the field of Daa in a first stack dedicated to the Donnelly Erdmann Dormitory of Louis Kahn at Bryn Mawr and later, with the help of the architectural student Massimo Cesaroni, for the Workshop for Gas production.

While in the first case a sketchpad metaphor was used, in the second a different one was adopted. Each card is represented as a blackboard. In the central area images and text fields are contained. At the base two buttons with an arrow shape allow the user to go from card to card, proceeding in the analysis at his/her pace.

The lesson begins with the title and the basic information about the project. In the next card the user finds a button with a movie icon. By clicking on it, an animation with a walkthrough of a reconstructed three dimensional model of the workshop can be seen in order to have a general idea of the building. In the next card, together with new information, the user will find a new button with a book shape. Clicking it on a data base section can be accessed where all the existing materials about the project (site plan, general plan, perspective views, pictures of the original model), which are singularly digitized, titled and referenced, are contained.

The lesson proceeds afterwards in two basic parts. The first one deals with the relevance of the thematic choice. A text field with the text of the author's article is provided which has few hyper media functions such as direct access to footnotes.

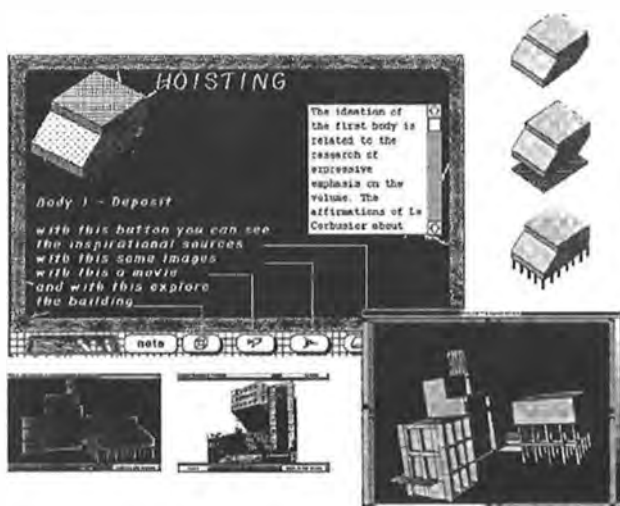


Fig. 6
Officina del Gas
by G. Terragni,
Como 1927.
Interactive lesson
by A. Saggio
(with M. Cesaroni),
Rome 1989

The second part, devoted to the functional and architectural language of the project's themes, makes a full exploitation of hyper media.

Each one of the four bodies of the overall buildings has its own card which share an identical structure:

- a title which summarizes the basic design devices used in that part (hoisting, assemblage, joint and connection)
- an axonometric view depicting the specific body
- a text file which describes the architectural choices
- four buttons: the first brings one into a three dimensional electronic environment where a direct exploration of the model can be made; the second, again with a camera icon, allows one to watch an analytical animation that in few seconds depicts the fundamental design action; the third displays a picture from a key standpoint for studying the body under analysis in the overall context; the fourth that brings one to a new database, where digitized titled and referenced images of comparable architecture - which almost certainly Terragni used as source of inspiration - are collected.

The lesson ends with a card containing text to be read in conclusion.

1.3. Evaluation

This environment was presented officially in 1989 at a European computer aided architectural design conference in Aarhus and later on many other public occasions. Since then many tests about its potential and limits were done that can be summarized as follows:

- the interaction that a user can have with this product tailors this environment to a variety of uses: from a student for individual application to a teacher as a support for in class lesson, to the scholar for in depth documentation. The time spent with this stack ranges from ten minutes (in order to have a basic understanding of its overall structure) to two hours to read the text, explore the three dimensional model, study the comparable projects and to proceed back and fourth in the stack structure;
- the second aspect concerns the

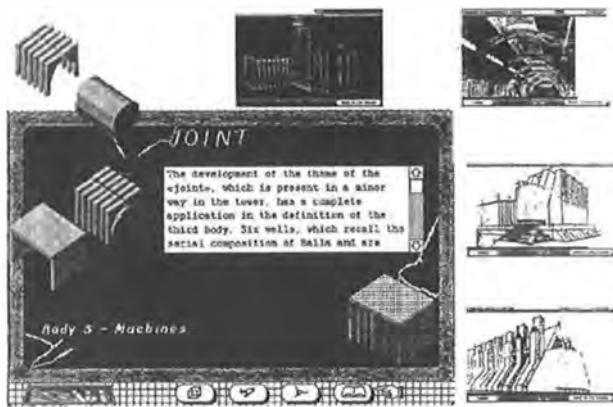


Fig. 7
Officina del Gas
by G. Terragni,
Como 1927.
Interactive lesson
by A. Saggio
(with M. Cesaroni),
Rome 1989.

potentials of hyper media in general and animation in particular. The different materials (text, digitized images, animated walkthroughs, didactic animation, direct three dimensional model exploration) are integrated in an environment that support and reinforce each other. For example while in the architectural design analysis a few seconds of animation are more effective than a full page of text, in the case of cultural and historic relevance of the project, the contrary is true.

- the third aspect represents simultaneously a plus and minus of this specific application. The stack was designed to run on the simplest model of the Macintosh computer line (the Macintosh Plus). This implied that the stack and all the support files had to be contained on only two diskettes providing ease of circulation and duplication (with the subsequent possibility for students and scholars to re-use parts of it thanks to electronic cut and paste). At the same time the characteristic of the hardware (and of the software at the time) forced the use of black and white images to be displayed on a small screen size (although projection onto a large screen brought no degradation of image quality). By current standards, the stack now appears a little crude in comparison to the extensive use of colors and photorealistic pictures and it reveals the pioneer moment of its creation.

2. Solid modeling and reconstruction: the Villa on the lake, 1936

Solid modeling (Sm) is fundamental for architectural analysis at least for two reasons. Firstly, its application requires a deep understanding of the basic

components and spaces of the building. Secondly, as with other three dimensional environments, it provides scholars with views and information about a project which may be essential if the building has been destroyed or never built. In the next section, Sm is applied to an unbuilt but crucial project by Terragni - the Villa sul lago designed in 1936 for an unknown client. The model was used to develop partial thesis for a study on the single family housing designs of Terragni. It was also used for creation of a computer generated movie that has been shown in the traveling 'Lineamenta Caad' exhibition 1991-1992 (organized by Gerhard Schmitt and Werner Oechslin), and in the 'New Realities' exhibition at the Museum of Design in Zurich during January-March of 1992 (organized by Angela Schönberger, Thomas Bernold and Alois Martin Müller).

2.1. Villa on the lake, Como 1936

In his five main designs for single family houses, Terragni puts into action a series of elements derived from the modern language of architecture and explores their expressive character. He

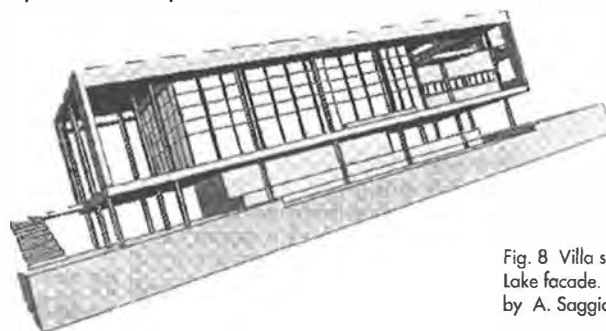


Fig. 8 Villa sul lago by G. Terragni, 1936.
Lake facade. Reconstruction
by A. Saggio 1990

experiments in the 'Casa per vacanze' of 1932 with pilotis and the double height loggia. For the first time in his

domestic architecture, he adopts the frame as definition of the construction in the 'Casa sul lago per l'artista' of 1933. While these are timid experimentings with the international rationalist architectural language, in 'Villa per un floricoltore', Terragni employs a new original element: a large scale frame that gathers the variations of the outside panels in a nexus that has its origin in Michelangelo's 'giant order'. This scheme is brought to completion with the project of a 'Villa sul lago' of 1936, creating the possibility of a syntactic connection between container and content - between the large scale frame that unifies the building and the panels that define the inhabitable spaces. This organization is then overcome in a contrast between pure volume and free elements in the project for the Villa Bianca. In this last work, the frame becomes a free standing object, and in unison with the ramp, the platform and the balcony, attacks the static box of the building.

The Villa sul lago of 1936 marks therefore a crucial passage in the architect's linguistic search. The formal grammar applied here, which had been little known before the first publication of the project in 1968⁵, could have had a significant impact on Italian architecture if the project had been built. The Villa sul lago, very probably located on Lake Como, creates a pure solid of about 12 meters wide and 35 meters long. In layout and organization, it shares the some basic organization of the contemporary 'Villa per un floricoltore'. Along the elongated rectangle of the plan, bedrooms are distributed on one side, with the dining room and

living room on the other side. The kitchen, service area and stair are located in the center. The interior is enriched by

curvilinear elements, and by numerous spatial events such as: the living room double height (which allows the master bedroom above to be opened below) the second floor gallery that overlooks the entrance zone of almost seven meters of height, a terrace patio which carves the second floor volume and gives access to the terrace roof.

The work is based on an original effort to combine the syntax of purism and neoplasticism, and not merely the appearance of architectural elements coming from those examples. From one side, the volumetric organization is that of the pure prism raised from the ground. But while in purist planning, wall defines volume, here the architect reintroduces in the modern vocabulary the late renaissance 'giant order'. Terragni creates a large scale frame, marked by a parapet beam approximately one meter and twenty centimeters against the sky, that gathers together the variations of the elements that defines inhabited spaces of the house. This frame, supported by the setback pilasters of the ground level, is an empty, transparent box. Formally unifying the variations of the panels it allows their free arrangement: with forward and backward shifts, with different shapes of windows, and with loggias of various depths.

The structure is exposed along the length of the building at ground level and is continuous with the basement, but it is elevated figuratively in a variety of ways. The pilotis are no longer the elements of a measuring grid of universal space; rather, they become formal elements creating an asymmetric and dynamic rhythm. While the street front is an asymmetrically-carved solid wall, the lake facade is organized around the transparency of a large expanse window.

In any case, despite the different ways in which the walls of the house are treated (transparent and continuous on the lake facade, carved by the strip windows on the street, hidden by three cuts asymmetrically in the facade containing the bedrooms on the opposite side to the living room), the play of the walls is never directly revealed to the

outside; rather it vibrates because of the contrast against the large scale frame that defines the whole volume.

It is in this contrast between the monolithic raised prism marked by the frame, and the variations of the exterior surfaces of inside spaces, that the syntax of this work is affirmed. Terragni synthesizes here the elements that inspire his poetics: the pure volume comes from Le Corbusier, while the free composition of the planes come from Mies and Rietveld. But in the Villa sul lago one device lives within the other; one creates the order for the variation of the other in an original manipulation of the formal grammar.

2.2. Solid modeling and architectural interpretation

The Villa sul lago has been reconstructed using *Pro3d*⁶ a computer program which belongs to the category of Solid modeling.

The three dimensional volumes of the project are created applying to two dimensional polygons two basic operations: 'Extrusion' (the linear duplication of the profile) and 'Revolution' (the rotation along an axe of the profile). In very schematic terms, it can be said that with extrusion the family of parallelepipeds is created, while with revolution the cylindrical volumes are created (This is technically incorrect because a pyramid or a cone can be created in both ways: either manipulating the distortion of the basic profile along the extrusion or the number of rotations while revolving).

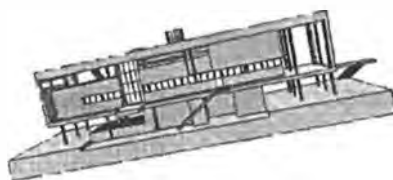


Fig. 9 Villa sul lago by G. Terragni, 1936.
Street facade.
Reconstruction by A. Saggia 1990.

What is crucial in a Solid modeling environment is that a complex model is achieved not only by adding the various pieces created with extrusion and revolution, but also using what are known as 'boolean operations'.

Boolean operations - in *Pro3d* - can be applied only to two volumes at the time. Each volume must be characterized by a '+' or a '-' sign. If both are pluses the resulting object comes from the merging of the two. If they have opposite signs, the volume with a minus sign will carve the other. Finally, if both are minuses the resulting object will represent only the intersection part of the two original ones.

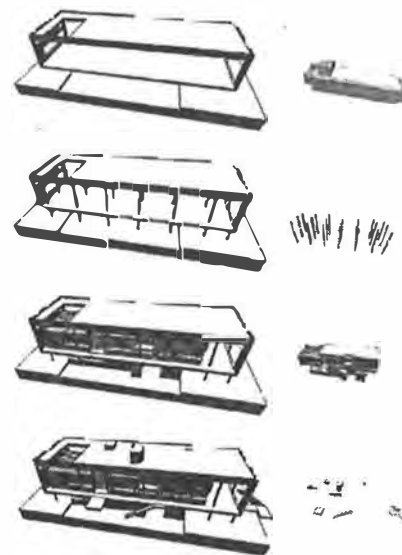


Fig. 10 Villa sul lago by G. Terragni, 1936.
Animation sequence by A. Saggia 1990.

Solid modeling puts an interpretative lens to architecture. This environment forces the user to interpret and analyze architectural masses and language: a strategy to create the various pieces of the building and to assemble them with boolean operations must be developed beforehand or during the model construction. The reconstruction process becomes a test of the design interpretation.

The reconstruction of the Villa sul lago started from two basic objects. The ground and a solid prism raised on top of it.

With boolean operations, the box (+) was carved with a series of volumes (-). The largest (-) volume transformed the solid prism in a large frame structure, while other smaller (-) volumes created the openings in the end walls and the patio on the roof.

Afterwards, the pilotis grid was created

as independent system (+) and merged to the frame (+). The solid modeling capability allowed to automatically resolve all the correct intersections of the two parts

The system of the inhabitable spaces defined by the outside panel was therefore created and merged with the rest. Finally all the free elements (outside stairs, gangplank, roof structures) were created and merged to achieve the complete model (figure 10).

2.3. Evaluation

The final model achieved several objectives:

- it creates an electronic environment that allows the study of the unbuilt project. In a fashion similar to a traditional one, it provides scholars of Italian rationalism with some extra knowledge. At the same time the simulation is contained in a diskette that can be easily distributed and studied individually. The end user can see directly the final result in a very simple environment (*Clip3d*) that freezes all the possibility of accidental manipulation;
- a series of views - which can be mounted together to create a continuous animation - can be taken from the model. Although this is also possible in a traditional one, in an electronic environment the production of such movies is very much easier and more practical;
- if the in-progress versions of the model are stored as separate files, the boolean phases of model construction can be used for didactic support. They show simultaneously the progress of construction and the architectural interpretation that has been adopted (figure 10). As it forces one to analyze and interpret architecture, solid modeling is a useful tool for the teaching and the studying of architectural design;
- The model may become part of a larger hyper media environment as previously described. In fact the model of the *Officina del Gas* was also produced in *Pro3d*;
- Solid modeling is now included as a special option in the *Autocad*™ program, the *de facto* standard of *Caad*. *Pro3d* had an important limitation. While outside explorations are extre-

mely easy and fast— even with hidden lines removed — exploration of inside spaces is possible only in wire frame mode. This drawback is now overcome in the *Autocad* implementation of Solid modeling which makes it available to a large number of users.

3. Object based modeling and simulation: the Danteum

Object based modeling (Obm) is a three dimensional environment that offers different kinds of possibilities for *Daa. Aldus Super 3d*⁷ which belongs to this category is very different from the Solid modeling approach of *Pro 3d*. Although boolean operations are not possible in this environment, it provides an extremely important tool for reconstructing architecture. This environment was utilized in a recent course at ETH Zürich. Students analysed and reconstructed the Accademia di Brera, the Villa del floricoltore, the competition project for Palazzo dei congressi at E'42 and the Danteum. The following section is devoted to this last building and, as in the previous cases, to a brief explanation of the technical aspects and to their evaluation.



Fig. 11
Danteum
by G. Terragni,
Roma 1938.
View from
via dell' Impero.
Reconstruction
by A. Saggio
and C. Zimmermann.
ETH 1992.

3.1. The Danteum, Rome 1938

The Danteum is the project by Terragni situated in the ancient part of Rome on a site located in front of the Basilica of Massenzio. It was promoted by Rino Valdameri, director of the Brera Academy in Milan, to celebrate Dante Alighieri with a building-foundation that in a metaphorical way follows the Divine Comedy.

Through the emphasis put to the imperial ideas contained in the poem by Dante, the other intention of the proposed building was to pay homage to the colonial adventures of the fascist regime. This aspect was particularly strong

because of the foundation of Mussolini's impero two years before, and because of the proposed location of the Danteum in the via dell'Impero, the new axe that goes from the Colosseo to the Piazza Venezia cutting in two the archaeological area of the Fori imperiali.

The building is structured as a tripartite temple with its major parts (Inferno, Purgatory and Paradise) connected by an ascending path.

The architectural promenade starts from the Hall of the 100 columns, a metaphor for the forest in which the poet starts his voyage. The visitor then encounters the chamber of the Inferno, closed to the sky except from the strips of lights coming from the juxtaposition of the various independent parts of the upper floor. The path proceeds to the next level and it encounters Purgatory with its ceiling open to the outside with a series of progressive smaller squares. At the top level is located Paradise and it is characterized by a grid of glass columns and by a system of trellis creating the transition with the open sky. At the intermediate level there is a library,

which can be accessed directly from the outside, while at the end of the promenade there is the room dedicated to the Imperio. The visitor exits from the building along a narrow stairwell on the opposite side of the entrance.

Many of Terragni's architectural motifs are present in this building : the golden section used to proportion the relationships of the various parts (and the different elements of each chamber); the circular promenade with different locations of entry and egress; the shifted rectangle composition creating a gap for the circulation systems. As the scholar who devoted the maximum attention to this building stated: 'Even in the late

1930's when the autarchia, Piacentini's power of patronage, and the alignment with Germany heavily influenced the direction of Italian monumental architecture, Terragni held his ground and used only the most rudimentary elements of mass, surface, and volume to create a monumental modernism.¹⁸

3.2. Object Based Modeling; Interactive analysis and simulation

The reconstruction of this building has been carried out by Christoph Zimmermann, a student of the special course 'Giuseppe Terragni architecture, a formal analysis using Caad' that the author offered at ETH invited by Gerhard Schmitt, holder of the Caad Chair.

The three dimensional environment (*Aldus Super 3d*) that has been used to reconstruct the Danteum belongs to the category of Object based modeling.

In an Obm structure there is a fundamental difference between what is called an 'Object' and what is called an 'Instance'.

The object is a fully operating three dimensional volume, created with operations of extrusion and revolving applied to two dimensional polygons as in solid modeling. Objects may be combined one within the other in a hierarchical structure. For example, a

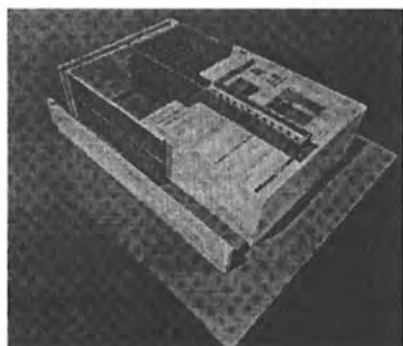


Fig. 12 Danteum by G. Terragni, Roma 1938. Reconstruction by A. Saggio and C. Zimmermann. ETH 1992.

wall-object is created and then inserted and duplicated many times in a floor-object, which may be inserted and duplicated in a building-object. When the original object is inserted in another object at a higher level of the model hierarchy (for example the walls in the

floor) it is referred to as an 'Instance'. Although each instance can be duplicated, proportionally scaled or distorted as a whole, real changes of its volumetric properties (e.g. from a rectangle to a circle) can take place only at the level of its original 'Object' creation. The various parts of the overall structure of a model can be accessed and seen singularly or at their various levels of combination.

This model's structure has a fundamental difference from the previous program. In *Pro3d*, the process of interpretation that guided the model construction can not be accessed in the final model. In an Obm model the interpretation of the building is always present because it is encapsulated in the hierarchical way in which the model is built and its parts are organized.

Students created different kinds of hierarchical organization which coincide with their interpretation of the building. Some used a dichotomy between container and content, some used a distinction between structure and infill, others articulated the various functional parts of the project. Since each part can be seen autonomously, combined with the other or hidden, a large series of critical views, were produced directly from the final model (figure 13).

Students interpreted the projects by Giuseppe Terragni through readings, sketching, the instructor's lectures and group discussions. They used seven different software programs during the 15 week course to experiment with: painting, digitizing, vector drawing, a graphic data base, solid modelling, surface modelling, animation and rendering.

The final three dimensional model which was built using Obm, represented the central effort of the students' work. To build the model, students had to devise a hierarchical structure capable of expressing the architectural design concepts that they discovered in the architect's work.

In all cases at the bottom level of the hierarchy, there are the different mate-

rials that the project is made up of. All the components of the project were created by these primitive objects. The real design analysis of the building was developed with a rich articulation of elements and spatial configurations that filled the gap between the primitive objects and the complete model. The hierarchical organization of Danteum's model was based on the functional difference between the various rooms of the temple. The model had more than fifty different elements, organized in different subcategories (the primitive elements, the sub components, the different functional parts, the overall model) which dramatically increased the possible number of thematic views. In particular, this hierarchical structure allowed the clear depiction of the different chambers (Inferno, Purgatory, Paradise, etc.) located along the ascending path that connects them.

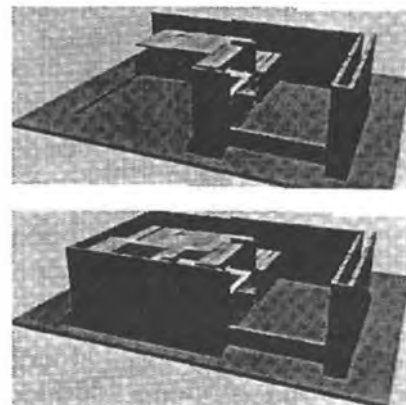


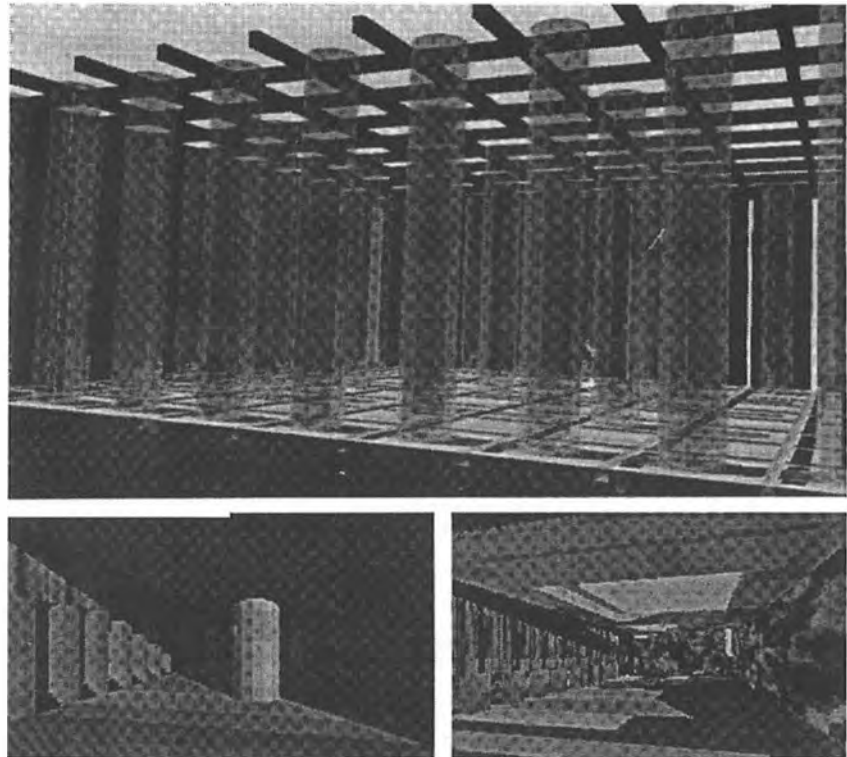
Fig. 13 Danteum by G. Terragni, Roma 1938. Animation by A. Saggio and C. Zimmermann. ETH 1992.

The difference between traditional ways of analyzing architecture and the Obm approach is that the process of de-construction and re-construction was not delegated to a set of different drawings.

The critical concepts about how the project is interpreted are contained in the way the model is built. Therefore, critical understanding of the project and hierarchical construction coincide. In this framework, students work with a tool that does not exist in a traditional setting.

It is a 'live model' able to follow his or her interpretation and to present critical ideas and discoveries to others with a series of sophisticated tools.

Fig. 14
Danteum
by G. Terragni,
Roma 1938.
Reconstruction
of Paradise,
Inferno and Purgatory
by A. Saggio
and C. Zimmermann.
ETH 1992.



Moreover, the hierarchical articulation of an Obm model (when exported to a dedicated rendering program such as *Stratavision 3d*^{TM9} allows a realistic simulation and the detailed study of materials. This is achieved through a typical Obm capability known as an 'Instantiation'. Since the transformation of colour, maps and material properties (gloss, transparency, refraction, etc.) of the original object is automatically updated (instantiated) to all its occurrences (instances) at a higher level, it is possible to make many different hypothesis about those aspects of the building that were not exactly known from the original drawings. From this point of view, the hierarchical structure of an Obm makes it an ideal tool for the scholar. According to the author's experience, Obm represents the most advanced environment in which to recreate and simulate architecture in the electronic world.

3.3. Evaluation

The most relevant advantages of Obm are:

- it allows the construction of a large and complex architectural model even on a personal computer. Because of the separation between real object and instance, the file size is minimized

(every time the program finds an instance it goes to the original object to read its properties which are therefore stored only once);

- design and manipulation of the different parts of the hierarchy that creates the entire model are controlled through 'hide' and 'show' commands. On one side this increases speed of rendering operations, on the other it allows the user to show at any time its interpretation of the building by activating or deactivating elements;

- interactive architectural analysis is possible in this environment directly in the final model without returning to a previous version of the model's file as in Pro3d. The user can easily produce a series of didactic frames which later can be incorporated in a computer movie or in critical drawings;

- the ETH course showed also an

important technical aspect. It was possible to export the Obm model from the Macintosh platform to the Silicon graphics workstations which are tailored for real time walkthroughs and fast high quality renderings. One of the several types of products that were coming out of the Danteum model was a computer generated movie that makes in this virtual reality the promenade inside the building that Terragni had planned and could not test.

Overall conclusion

'Interactive architecture analysis and teaching', 'Solid modeling and reconstruction' and 'Object based modeling and simulation' are three areas of Caad that support the work of architectural scholars, particularly when these environments are applied to the reconstruction and critical interpretation of

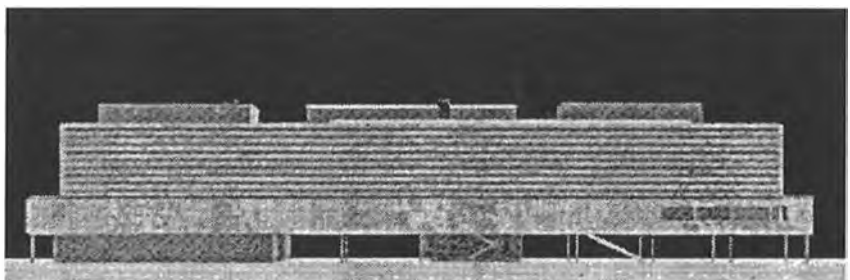


Fig. 15 Accademia di Brera by G. Terragni, L. Figini, P. Lingeri, L. Mariani, G. Pollini. Milano 1935.
Reconstruction by P. Stoppa. ETH 1992.

unbuilt projects. In the author's experience, not only the direct advantages - some of which are described above - are interesting. What is even more important is the effect of intellectual stimulus that these instruments play in perceiving and understanding architecture. When used with attention, openness and care, they influence our perception in a fashion similar to the study of an important book. They give us intellectual tools to operate, pushing our activity towards new fields of exploration.

Notes:

1. The original product was the result of a team composed by Howard Metcalfe, Matthew Jacobs and David Murray for Telos software. The last version of this product is called Filevision V and it is distributed by Visual Informatio System.
2. One example of an interactive lesson has been presented at Ecaade 1989 conference in Aarhus and in other seminars and conferences in Italy. See: 'Extrusion, Assemblage, Joint and Connection in the Workshop of Giuseppe Terragni', Proceedings of the 1989 Ecaade Conference, School of Architecture, Aarhus 1989; 'Un percorso di progettazione' (Interactive lesson about Bryn Mawr college by L. Kahn) in: AA.VV., *Progettazione architettonica assistita dal computer*, edited by A. Bridges and Elena Mortola, Progetto Erasmus, DPAU Università 'La Sapienza', Roma 1990. See also: AA.VV., *Problemi di architettura e computer*, Edizioni Ermes, Potenza 1990.
3. This section contains a short summary of the original article by the author: 'Sospensione, assemblaggio, incastro e raccordo nell'Officina del Gas di Giuseppe Terragni' *Architettura - cronache e storia*, XXXIV, 391 May 1988 (pp. 374-378).
4. Developed by a team led by William Atkinson for Apple Computer inc.
5. Cfr. 'Omaggio a Terragni', special issue of *L'Architettura cronache e storia*, XIV, 153 July 1968.
6. This product is developed by a team led by Steven Wiley for Enabling Technologies.
7. Developed by a team led by Michael Martin for Silicon Beach Softwares Incorporated.
8. Thomas Schumacher, *Surface and Symbol*, Giuseppe Terragni and the Architecture of Italian Rationalism, Princeton Architectural Press, New York 1991, p. 208.
9. This product is developed by a team led by Kenneth and Gary Bringhurst for Strata Incorporated.

Hot sun and cold steel: the Neutra, Soriano and Ellwood Collections at Cal Poly Pomona

In the Archives at Cal Poly Pomona, located about half an hour east of Los Angeles, there are two rather special items. The first, which would interest even the most incurious, is a book, in German, inscribed to 'Professor Neutra'. It must be very rare: for it contains colour and colour enhanced photographs and its cover is stamped with the eagle and swastika. This book is called *Die Neue Reichskanzlei (The New Reich Chancellery)*. The inscription, dated 1 July 1967, is by its author, Albert Speer. The second item, for the more morbid, lies in a box, enshrouded in silk. Cast in April 1970, it is Richard Neutra's death mask.

The Neutra Collection

The Neutra Collection came to Cal Poly following the death of Richard Neutra's widow, Dione, in 1990. Unlike the other two collections which are the subject of this paper, it is not the records of an office - they were largely lost in the fire of 1963 and what remained has been deposited with the University of California at Los Angeles - but it is the contents of a home.

In 1989 and 1990 Barbara Lamprecht, then a graduate student of architecture at Cal Poly Pomona, helped Dione sort through, identify, order and list the myriad of letters papers, documents and photographs which she kept in the house Richard Neutra had built over-

looking Silver Lake in the Los Feliz district of Los Angeles. Barbara had a working knowledge of German and thus she had little trouble in gaining Dione's confidence, eliciting from her anecdotes and explanations for which every biographer must hope.

The collection, as the opening example would indicate, is unique. There are letters to and from Walter Gropius, Konrad Lorenz, Marcel Breuer, Philip Johnson, Buckminster Fuller and, of course, Albert Speer. There is sensitive material on criminal action suits filed against long-term Neutra associates; on the break-up of the Neutra office in 1964-66; and on the Chemstrand ethics scandal in which Neutra was denounced by the AIA ethics committee for participating in the advertising efforts of carpet manufacturers. There are press cuttings and diaries, patents and passports, maps and manuscripts and Neutra's writings on *Erotica, Bisexuality and Sexuality*. There are photographs and photographs: of Neutra with Frank Lloyd Wright, of Neutra with Erich Mendelsohn, of Neutra with Mies van der Rohe, of Neutra with Walter Gropius.

The collection is extensive and it has been estimated that it will take one person three years to catalogue the material. Barbara's work represented just the beginning of a long attachment and lasting responsibility for Cal Poly Pomona. For Dione Neutra had determined that on her death she would leave not just this material, but the house itself, to Cal Poly. It now represents the jewel in their archival crown.

The Neutra's house was known as the VDL Research House. The Dutch industrialist Dr. C. H. Van der Leeuw had loaned Neutra enough money to build a house for himself - a Research House - in 1932. It incorporated much of Neutra's then current thinking on architecture and, when it was rebuilt by

Neutra and his son Dion in 1965, following the fire, these ideas were brought up to date. But one thing which the VDL Research House did not incorporate was a steel frame. This, it can be said, Neutra would have wished, but with a budget of about \$10,000, the cost was prohibitive, so he had to make do with thin section timber, painted gray. But why steel? A visionary client and a budget of \$ 65,000 had allowed him to use steel in Dr. Lovell's Health House at Griffith Park in Hollywood and so startling it was that when the building opened to the public for two weekends in December 1929, fifteen hundred people came to stare.¹

In introducing the metal frame into the house-building vocabulary of southern California, Neutra had achieved three things. Firstly, he identified a material which was regionally appropriate to the dry, barren landscape of the southland: secondly, he demonstrated the exploitation of space and form in a minimalist manner congruent with the aspirations of the European Modern Movement; and thirdly, he provided a structural solution to the problem of building on the unstable, often steep Californian terrain - a structural solution which was not site-specific but adaptable, interchangeable and reproducible.

After the Lovell Health House, Neutra built only two more metal-frame houses², but this was not for want of trying. As the young men working in his office in the early 1930s would joke behind his back, 'Mr. Neutra, what is the best material to build a steel house out of?'³

And it was one of these young men, Raphael Soriano, who was to pursue the development of the steel frame house in California. As Neutra's son, Raymond, once said to Soriano, 'Raphael, you did what my father wanted to do and never did'⁴

The Sorriano Collection

Despite every indication to the contrary, Raphael Soriano always argued that he was uninfluenced by Neutra's use of steel. As he said in July 1988, a few days before he died, 'I've never worked on any housing, on any details at all with Neutra. And then he added, 'The influence of Neutra was the assurance that Neutra gave me from a standpoint of planning logically.... I used industrially produced steel in modularly planned housing. Neutra never did that.'⁵

Yet looking at the buildings he did after his spell with Neutra, that is hard to believe. This apparent acceptance of Neutra's aesthetic is nowhere more noticeable than in the George and Ida Latz Jewish Community Center in Boyle Heights, Los Angeles. One early design for this building survives. It is a symmetrical, rather Beaux Arts scheme with the rooms arranged around a central octagon. As a young graduate of the University of Southern California, this is what one might expect from Soriano. Yet this was the last time he ever proposed a building like this, for what eventually was built in 1938 was Modern, minimalist and, above all, metal-framed.

Now these drawings are retained in the Sorriano Collection at Cal Poly Pomona. This collection, came to Cal Poly on Soriano's death in July 1988. It is a broad collection and represents a life's work. There are drawings: pencil and colour renderings on yellow tracing paper, working drawings on vellum, and blueprints, rolled and labelled. There are photographs: colour slides documenting the construction and completion of projects from about 1940 onwards, and a number of large black and white prints, mostly mounted for exhibition and now perhaps a little battered but nevertheless evidence of his earlier houses when they were first set upon the arid, Los Angeles hillsides. And there are hours of audio tape - lectures, dictations, reminiscences and ramblings - still uncatalogued and largely unheard. It is a body of work which documents a continuous and single-minded rationalisation by an

architect who was determined upon a goal but never quite able to realise it.

The earliest houses, like the Laiken House in Malibu, of about of 1935, were of timber, but after the Second World War this mode of construction gave way to steel and, twenty years later, to aluminum. But the basic idea did not change, nor did the style of drawing and nor, ultimately, did the designs themselves. They were all a variation on a theme determined by the climate and the terrain as well as by a firm belief in the necessity of combining a scientific approach to construction with a gentle appreciation of nature.

The steel framing he first used, at the Jewish Community Centre, was a special system known as Lattisteel, the invention of his friend Fritz Ruppell. Lattisteel was a pre-fabricated, beam and wall construction process. The woven or lattice wall panels could be cast in concrete as lift slabs or simply used naked as framing and hung on the pipe-column and lattice-beam frame. And it was this same system which he employed three years later at the Hallawell Seed Company's Nursery which was built on the edge of Golden Gate Park in San Francisco, and again in 1947, when he built the Gato House in Van Nuys, for a Mr Katz: the inter-lingua pun is intentional.⁶ But when used in conjunction with pipe columns and steel trusses, in the context of domestic architecture, these heavy panels allowed little of the exploitation of open space which such a lightweight post-and-beam frame suggested and after the Gato House Soriano did not use Lattisteel construction again. He was now intent upon greater flexibility, greater adaptability and a more sophisticated use of pre-fabrication. And these ideas became very evident in the next three years.

In 1949 and 1950 Soriano built three houses which demonstrated both his developing attitude towards the metal frame house and the acceptability of that type in the private housing market. First was the home he built for Julius Shulman, the architectural photographer and then came the Curtis House

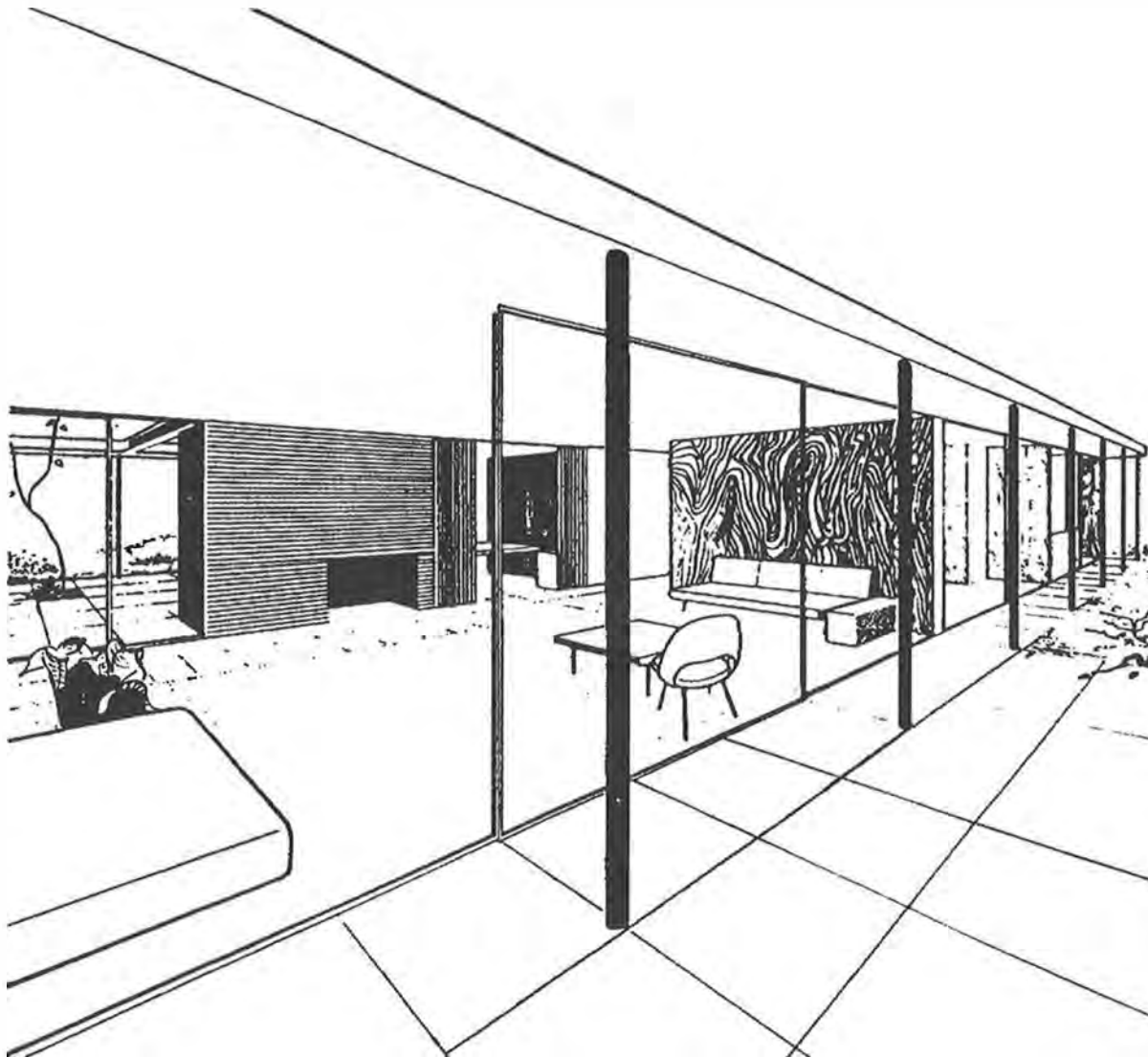
where Alvin Toffler, author of *Future Shock*, now lives.

Although the framing was the same as at the Shulman House, here at the Curtis House he introduced a new idea which was to be fundamental to his development of the metal-frame house as a building type.

This was what he termed 'Experimental Unit Development' - the use of factory-built units to replace all internal partitions. In this way, interior on-site construction work was virtually done away with and the pre-fabricated space dividers, incorporating shelves, cupboards and cabinets, were brought in from the factory and installed with little effort. The result was a shorter on-site construction time, a cleaner building process and a designed-to-fit accuracy which could be demanded by steel-frame construction but was rarely available in the confusion of a building site.

This move towards total pre-fabrication not only reflected Soriano's concern for the mass-production of public housing but echoed the intent of the now well-known Case Study House Program, being promoted at that time by the magazine *Arts and Architecture*. Soriano built the steel-framed Case Study House for 1950, which, like the Curtis House, required no bearing walls and was planned within what he called 'an orderly system of modules'. He placed great emphasis on modular planning and recognised that designing in steel demanded 'complete objectivity' and singleness of purpose: otherwise costly mistakes would occur.⁷ It took three days to erect the frame and to lay the metal roof deck⁸ for the Case Study House. and, as *Arts and Architecture* was quick to point out, the 'first indication of the practical nature of the architect's planning and engineering was reflected in the fact that the framing cost was no more than it would have been had wood framing been used - probably less'⁹.

The five Case Study Houses which followed Soriano's were all built of steel: indeed every Case Study House from 1949 to 1960 was steel framed. Few architects did more for the reputation of



Raphael Soriano, Case Study House for 1950 drawing: Cal Poly Pomona, California, USA.

the Case Study Programme than Craig Ellwood and his office records, like Soriano's, are now in the Archives at Cal Poly Pomona.

The Ellwood Collection

With the completion in 1975 of the Arts Centre College of Design in Pasadena, California, Craig Ellwood retired from practice. At the age of 53, he decided to be a painter and so closed his Los Angeles office and went to live in Italy. In 1985 the archivist at Cal Poly learned that Ellwood was throwing out the majority of his office records which had been stored, for much of the last decade, in a garage off Mulholland Drive in Beverly Hills. The collection was, to some extent, damaged, but what was rescued from bursting cardboard boxes and overflo-

wing trashcans were correspondence files for 73 projects, presentation and working drawings for over 30 buildings and pieces of furniture, 20 files of lecture notes and 3.500 colour slides.

In 1952 Craig Ellwood had designed the first of his three Case Study Houses which were to draw so much attention to the programme. These were Case Study Houses 16, 17 and 18, completed in 1953, 1955 and 1958. What becomes apparent in Ellwood's development over these years is his increasing interest in the tectonics of architecture and by 1958, Case Study House 18 was largely pre-fabricated, the steel frame being made in a workshop and being hoisted into place and welded on site. Wall panels were

actually manufactured on site, using the framed-up building as a workshop. The suggestion, through the use of pre-fabrication, was the applicability of the Case Study House to the public housing market.

Meanwhile Soriano's interest in public housing, as opposed to one-off design, had manifested itself through the house building operations of the developer Joseph Eichler at Palo Alto. Soriano built only one house for Eichler, a prototype, yet it demonstrates well his understanding of the metal-frame house. Completed in 1955, it was, as an advertisement for United States Steel explained, 'an experiment to gain cost and production experience on the use of steel for mass-production building. The finished job', the advertisement said,

'is promising evidence that sub-divisions [i.e.: housing estates] of steel are both practical and imminent'.¹⁰

It was a wish never to be fulfilled. Having rationalised the mass-production steel house until it cost no more than a timber one, Soriano turned his attention to aluminum houses.

Meanwhile Ellwood, in concentrating his efforts in the private and commercial markets, continued to refine the steel aesthetic. The Daphne House, in Hillsborough, of 1960 and the Rosen House, in Brentwood, of 1961 soon demonstrated Ellwood's mastery of the Miesian style. Both are framed, raised pavilions, on secluded sites, where much play is made of the lightness and transparency of the steel frame. The refinement continued until the structure and form became one, the final rationalisation presenting the building as a self-supporting steel truss. The 1962 Chamorro House remained only a project but five years later students at Cal Poly San Luis Obispo built a small house, based on Ellwood's designs, as a trussed bridge across a gulley. In 1970 he used the truss again as the framework for the Pierson Guest House at Malibu before the final celebration of the truss at the Pacific Design Centre, Pasadena, after which he retired.

The buildings which Soriano and Ellwood developed, first in steel and then in aluminum, are as much examples of applied technology as they are of architecture.

There is little which makes Ellwood's steel trusses houses as opposed to *brid*

ges. Similarly, Soriano's Aluminum Series Modular Plan Assembly Structures of the 1960s, which were built as workers houses in Hawaii in 1965, are impossible to differentiate from his designs for 7-Eleven corner stores or for the Dreamy Acres Modern Poultry Enterprise. In the application of technologies borrowed from other industries, the concept of *home* is too often lost. Thus prejudice on the part of the public and unwillingness from leaders of the building industry has forced the market to turn inward to comfortably familiar solutions. And 'architects', Soriano said, 'are lazy, or possibly they are not curious enough, most of them, to tap what exists today in our scientific advancements'.¹¹

Richard Neutra had understood this problem long before. Within a few years of the Lovell House, he had abandoned the technology of steel yet had retained its aesthetic. And as the young men working in his office in the early 1930's would say, 'Mr. Neutra, what is the best material to build a steel house out of?'¹²

Notes:

1. Dione Neutra, interviewed by Neil Jackson, 11 July 1988, Los Angeles, California.
2. These were at: 1981 Meadowbank Drive, Altadena (1934)
512 Ocean Front, Santa Monica (1938).
3. Thomas Hines, *Richard Neutra and the Search for Modern Architecture*, New York and Oxford, 1982, p.183.
4. Raphael Soriano, interviewed by Marlene Lakey, 19 July 1985, Tiburon, California.
See Raphael Soriano, *Sunstance and Function in Architecture*, Los Angeles, 1988, p.77. Laskey's interview were completed and published under the auspices of the Oral History Program, Department of Special Collections, University Research Library, University of California Los Angeles.
5. Raphael Soriano, interviewed by Neil Jackson, 11 July 1988, Claremont, California.
6. Soriano claimed that Mr Katz never paid him, so he preferred to call the house the Gato House.
7. *Arts and Architecture*, April 1950, p.37.
Although this passage is not actually attributed to Soriano, the tone and use of English would tend to suggest his authorship.
8. *Arts and Architecture*, December 1955, p.37.
9. *Ibid*.
10. *Arts and Architecture*, December 1955, p.8
11. Raphael Soriano, interviewed by Neil Jackson
12. Thomas Hines, *op. cit*.

Sources of a study of Modern Movement architecture

In the process of research and documentation of the MoMo monuments, the documents of that period such as author's projects and plans and also photographs of the original state of buildings, articles published about them, about their preparatory process, about competitions that can be found in specialized magazines of that period play an important role.

Its my pleasure to inform you about one of these sources, a magazine published in Bratislava which in my opinion is important for several reasons.

FORUM

NO 3 1932



Its the Forum magazine published in the years 1931 - 1939. The Kunstverein Society acting in Bratislava since 1885 was its publisher. In the Society there were two sections: architecture and fine arts. Architects associated in the Kunstverein saw the Forum as their convictions. Architect Andreas Szönyi, a man with a wide declaring vision, full

of enthusiasm, ready to make sacrifices, was its actual publisher. He prepared the Forum for publication in his own house and the costs were often covered by the profit gained from his own successful design office. At the time of its foundation, the magazine was published in three languages: Slovak-Hungarian-German because intellectuals and ordinary people used to speak all of them in Bratislava at that time. Szönyi and other authors guaranteed large space for democratic orientation and tendencies to modernism. The magazine started its activities providing 'spiritual meetings and creative cooperation among nations in the Danube area'. Its subtitle was the Magazine for Arts, Construction, and Interior. As a couple of months later, two other magazines - the Slovak Builder and New Bratislava - were launched and written in Slovak only, the Forum turned out to be a two-language magazine. German prevailed and a clear program was declared: 'German is the esperanto in Central Europe, it is a mediator between the Czechs, Slovaks, Poles, Hungarians and, of course, Germans, in the three neighbouring countries' (1933, p.233).

The Czechoslovak state ordered this magazine for all its representations abroad. It had become an important source of information about the situation in Czechoslovakia from the international point of view and was actually accepted in the whole of Central Europe. The magazine was published in very difficult years - its authors had to cope with the disappointment resulting from the return of academism in Moscow and the closing of the Bauhaus in Dessau and later in Berlin. But the theoretical evaluation coped with these events very honestly, from a bird's eye view with no resignation - in the name of continuity in the modern spirit and of modern architecture. Although, the architecture section was in 1936

published in German only, the magazine was abolished for its progressiveness immediately after those supporting Hitler took power.

The magazine outrightly and very professionally criticized nazi interferences into culture and politics - it immediately offered news and analyses of the Bauhaus' fate. After the Bauhaus in Dessau had been closed in 1932, Rezső Szalatnai wrote: 'The opinions of German society on the new school differ. The petit-bourgeoise look at its revolutionary aspect full of hatred. However, the big-time financiers have found the way to the Bauhaus because they have recognized that steel furniture, lighting appliances, new houses, new building materials are the commercial values ready to conquer the world and able to manage it.' He also describes a double crisis of the school - the struggle with nazism on the one hand and with its own formalism filling up the salons of cultural snobs rather than fulfilling its original social program on the other. We can learn that the nazis intended to pull down the Gropius buildings and only after trade-off discussions with other parties they got satisfaction when the school was closed. The article ends with the following words: 'Buildings remain as a live obituary to a progress of the new art stopped by reaction.' I do not want to paint a lily, just to point out the year in which these lines were written, to stress the ability of synthetic and clear thinking presented in the magazine. Later on, it expressed sharp protest against the school abolishment. In the later period, the magazine was more oriented towards the issues of all arts. It does not mean, though, that it was less attractive. I would like to underline the following fact - in the past decades, architecture and architects, their education and thinking have become too technical. In the period between the Wars, it was not so - art and technical

thinking, art and technical interests were more closely related. The researchers of the history of architecture of that period, as well emerging aspects of neo-functionalism, tend to forget that it was a movement, the Modern Movement, with a widely set out outlook in unity with the practical view of the world; it was a new style, a revolution in all spheres of life and arts. The Forum readers found information about all these areas in the pages of their magazine and their education was expanded. There were the following sections in the magazine: Architecture and Interior, Fine Arts and Sculpture, Cinema and Photography, Theatre, Man and Society, Aesthetics and History of Art, Book Reviews, Exhibitions (Vienna, Berlin, Paris, London, Budapest, Brno, Bratislava and occasionally other cities like Stuttgart, Frankfurt), Survey of Magazines from all Europe, Lectures, Reports, Contests. Information on social sciences was presented with respect as major goals of the magazine. The whole concept as well as substantive matters and objectives of the magazine prove that Bratislava ranked among vivid centres of the Modern Movement movement at that time and no problem between Central-East and West was seen.

We can also learn much about the history of one of the Bratislava schools in the Forum. It gives evidence that sti-

mulation emitted from the Bauhaus was creatively transformed. On October 26th, 1930, the SUR (School of Arts and Crafts) was opened in Bratislava with effect. It was established to prepare students for the following jobs: house-painter, photographer, bookbinder, typographer, hair-dresser, ad-maker and others. There were two thousand students in 86 classes with 116 teachers. A full-time instruction was provided in 67 classes; the school had its own library, it screened films and provided language lessons. Composition, decorative and graphic drawing, modelling, design of textiles and ceramics were taught by progressive and outstanding young artists - such as Ludovit Fulla, Julia Horova, Mikulas Galanda, and architect Rossman, a Bauhaus graduate, too. The program was clear - to teach young people new feelings and new way of seeing, to new work with materials. Moholy - Nagy also gave lessons on issues of arts and crafts in 1931.

And finally, I am getting to the reason why Forum may be an important source for many of you, too. It is a significant source of the history of modern architecture not only for the researchers of Modernism in Slovakia, as it recorded all new works of most of the domestic architects - Bellus, Weinwurm, Vécsei, Konrad Ludwik, Wimmer, Szönyi and others and those from

Prague; we can also find there many original articles on architectural life in Vienna, on its new housing quarters, on works of Josef Hoffman and others. Hungarian researchers will certainly be pleased by many articles written by Virgil Bier-bauer, an architect [1863 - 1956], one of the main propagators of MoMo in Hungary, an editor and theoretician-in-chief of the *Tér és Forma* magazine published in the years 1932 - 1942, and also by articles on works written by Farkas Molnar.

Articles for the Forum were written by Siegfried Giedeon (1937), Max Bill (1938) and Marcel Breuer (1938) from Zürich, Richard Neutra (on new construction in America - 1938), Nervi (on the Rome Airport, 1938) and Walter Gropius. Many theoretical articles published here were written by Ernst Kallai (Ornament and Picture, Paul Klee as a Drawer, Back to the Ornament, A Bio-Visionar etc.) who was a teacher in the Bauhaus in Dessau and an editor of its journal; he came back to Hungary in 1935.

The substantial part was complemented by excellent graphical and polygraphical work and photographs. All these taken together form an invaluable source that can be used for the sake of documentation and reconstruction of MoMo architecture in Central Europe.

Architectural periodicals in Belgium, 1918-40, modernism published

Architectural historians use architectural periodicals as 'published sources', as a collection of evidence for the historical study of the projects and buildings these periodicals publish about. Architectural periodicals not only document architectural production by publishing plans, photographs and descriptive analyses.

They also ventilate opinions. In the most interesting cases these opinions are underpinned with a more or less developed body of theoretical and/or historical justifications.

This type of 'serious' periodical takes a substantial part in the contemporary architectural discussion: they play a specific role in the development of a critical, theoretical and historiographic context for the contemporary architectural praxis, and so become, in a very specific way, active participants in this praxis.

For this reason architectural periodicals cannot only be looked at as sources of objective, factual, archaeological evidence for the historical study of buildings and projects documented by them: the factual evidence they produce is not self-evident at all but coloured very much by the opinions they want to defend, the concepts on architecture they want to propagate.

As a critical background for the correct evaluation (understanding and eventual explanation) of the information supplied by a periodical one has to supplement the systematic study of its written and visual content as such (an

archaeology of idea images of the periodical) with circumstantial research on the 'material' conditions determining its production and its effective function in the contemporary development of architectural theory and praxis (the institutional history of the periodical): the relationship with professional organizations of architects and with the building industry, but also with the all pervading political, economic and cultural institutions; the composition of the editorial staff and the professional position of its individual members (e.g. in architectural, building or teaching practice); the distribution and reception of the periodical; the social or professional stratification of its readers; relations with other periodicals...

This institutional history is necessary knowledge for a fuller understanding, if not a correct explanation, of the historical relevance and role of the periodical in the development of contemporary architecture.

1. Architectural periodicals in Belgium: a research project

Belgium developed a strong tradition in the publication of architectural periodicals from the end of the 19th century on.

This paper is a first intermediary report on a research project, developed during the last seven years under my direction at the Art History Institute and at the Department of Architecture and Urban Design of the University of Leuven (Belgium), concerning a series of important architectural periodicals published or active between 1918 and 1940 (some of them were already founded before the First World War), in relation to the contemporary development of the Modern Movement¹.

A series of Belgian periodicals have already been the subject of a detailed inventorialisation and analysis (in chronological order according to their foundation year):

L'Emulation (1874-1939), *De Bouw-*

gids (1909-1933), *La Cité* (1919-1935), *Lumière* (1919-1923), *ça ira* (1920-1923), *Ruimte* (1920-1921), *Het Overzicht* (1921-1925), *Le Document* (1922-1933), *Bouwkunde* (1924-1925), *De Driehoek* (1925-1926), *Opbouwen* (1928-1937), *KMBA* (1930-1938), *Kunst* (1930-1935).

In these individual studies abstracts were made of all published articles: three different indexes (names of persons and institutions, topographical names, topics) give entries to the abstracts of related articles.

These abstracts are arranged according to the alphabetical order of their authors' names (if identified) or initials (with their eventual identification).

Documentary evidence on contemporary architecture published in the periodicals is further systematized through lists of photographic or graphic documents (with identification of subject, author, source) and related indexes (names of architects, buildings, topographical coordinates).

Attention is also paid to information in the periodicals besides the main articles and their illustrations or plates: all sorts of short announcements on different activities and initiatives such as lectures and exhibitions necrologies, commercial information, advertisements, miscellany columns etc.

Interesting information is collected from the study of critical reviews of books and fellow (or rival) periodicals: this not only informs us about the circulation and critical reception of contemporary books and periodicals but also helps to clarify the institutional position of the periodical under study in the architectural debate, to identify the 'network' to which it belongs, as said before, necessary information for the correct evaluation of its content.

We are already able to report on some results of this inclusive and extensive reading and critical analyses of peri-

odicals in relation to the Modern Movement-study

2. The Modern Movement, an international network: periodicals in the 1920's

Het Overzicht (1921-25) together, with *7 Arts* (1922-1928) (published by the poet Pierre Bourgeois and his brother, architect Victor Bourgeois and the painter Pierre-Louis Flouquet) has been the subject of a separate, thematic study on its role in the propagation of the Bauhaus-idea in Belgium².

There was in both periodicals a particular interest in the development of the Weimar and Dessau Bauhaus, as one can learn from the correspondence and personal contacts of Peeters, Seuphor and Victor Bourgeois with several Bauhaus-members. A crucial role in the diffusion of the Bauhaus-idea in Belgium has been played by the critic Adolf Behne who wrote articles about the Bauhaus in both periodicals. This could be important for a true understanding of the creation in Brussels, in 1927-1928, by Henry van de Velde of a 'Belgian Bauhaus' - the Institut Supérieur des Arts Décoratifs, better known as La Cambre (Ter Kameren). In this context one can also mention the study by Katelijne van de Moortel of the periodicals *Opbouwen* (1928-1937) and *Kunst* (1930-1935)³ which resulted in interesting information on the relationship between Henry van de Velde and Huib Hoste, and Hoste's original intention to teach at La Cambre, and on the role of the critic Jean van de Voort.

The articles of Behne in *Het Overzicht* had illustrations of Bauhaus-works but 'their informative character was minimal... Their main aim was an evocation of the theoretical points of view of the Bauhaus as presented in the articles', rather than to give exact, objective information on e.g. functional and constructional characteristics of the Bauhaus buildings.

The struggle in defence of the Bauhaus-ideas was still ideological. A similar role was played by the other avant-garde magazines of the 1920's (most of them only lasting for rather short periods and producing few and irregu-

lar issues). Even if these magazines do not provide extensive information in a descriptive, archaeological way about modern architecture (they can hardly be said to inform about building, constructional and functional aspects... they only evaluate the ideological relevance of the images produced by Modern Movement avant-garde) they nevertheless produce interesting evidence on the existence and functioning of a wide international 'network' - the term is used explicitly in *Het Overzicht* - of institutions and individuals involved in the ideological defence of the Modern Movement.

Studies like these could also be of great value - a point which I have to stress in the international context of this seminar - as additional information on developments outside Belgium.

One could expect that the study of how Belgian magazines like these reacted - in their specific context - to foreign developments in a certain field, could eventually shed new light on them (no longer looked at in their own national context or in relation to a certain standardized, generalized image of the main international currents).

3. From modernist exclusivity to inclusive indifference, from ideas to buildings: periodicals in the 1930's

In the early 1930's the situation in architecture was clearly changing. Now the fight for modern architecture is on - modern architecture becomes an established International Style - periodicals become more 'objective', analyses of buildings are now strictly technical and functional.

At the same time the selection of buildings for discussion is no longer exclusively modern radical, white modernism stands besides moderate modernism (mixing modern and traditional technologies, modern and traditional functional typologies and spatial concepts), International Style-architecture is published besides straightforward examples of the 'New Tradition' (as labelled by H.R. Hitchcock).

An interesting illustration of the development - in one and the same periodi-

cal - from an avant-garde position in the late 1920's to a sort of formal indifference in the 1930's, based on a strictly functionalist and constructionalist premise, is the periodical *Le Document* (1922-1939) published by the Association Professionnelle des Architectes Belges⁴. Originally a rather traditional and eclectic magazine, the attitude changed fundamentally with the arrival as secretary in 1927 of the modernist Gaston Brunfaut (1894-1974), friend of a.o. Victor Bourgeois and the designer Marcel Baugniet. Their modernism is radically social (if not socialist), which is very much expressed in their concern for urbanism, inspired by Tony Garnier and Le Corbusier.

Brunfaut writes on contemporary avant-garde architecture in Holland and the Soviet Union and reacts with indignation against the result of the Société des Nations-competition in Genève in 1926, publishing a reaction by Bruno Taut (already published in *La Cité*). One inexplicable omission in *Le Document*: the Bauhaus is only once mentioned in a general article by Brunfaut, entitled 'Confiance en l'architecture' (1931, nr.83, pp. 1-17)!

In December 1930, one month after the third CIAM-meeting in Brussels (which was extensively documented), the original subtitle of the magazine 'Architecture, at décoratif, technique' is changed into 'Architecture, technique'. At the same time the constructivist cover of 1926 by Maurice Gaspard was replaced by a simple typographic design. In 1930 (nr. 68, pp. 1-12) an anonymous article was published on rural architecture, in defence of regional forms and referring to Schulze-Naumburg's *Kulturarbeiten*.

In 1935 A.C. Duesberg wrote about 'a cubist formalism' which leads to all sorts of impractical forms (unreadable letter signs) which do not conform with functional premisses.

Le Document becomes a periodical for practitioners: projects are extensively documented in a cliché functionalist terminology. At the same time some collaborators reject the banal formalism of this functionalist architecture and readily accept with enthusiasm the new aca-

demism and the return of 'décor'.

One of the most important Belgian periodicals, *La Cité* (1919-1933) shows a similar development⁵. Initially *La Cité* defended a rather moderate position, in the context of the reconstruction after the First World War and as the magazine of the Société des Urbanistes Belges, directed by Louis van der Swaelmen. The editing staff consisted at that time of a.o. modernists Van der Swaelmen, Huib Hoste and Raphael Verwilghen and traditionalists like Fernand Bodson and R. Moenaert. In 1923 the society changed its name into Société Belge des Architectes et Urbanistes Modernistes, after contacts with a.o. Victor Bourgeois (who only joined the staff in 1930). *La Cité* further developed a radical modernism of international orientation. From 1927 on an internal crisis in the SBUAM - a growing divergence between modernists and traditionalists - in the end seemed to be just an expression of a growing crisis of the Modern Movement itself. It finally led *La Cité* to apathy and indifference: on the one hand the acceptance of eclectic academism as seen in the Royal Library competition and the World Exhibition in Brussels (both 1935), and on the other hand taking refuge in technical questions, rationalization of housing and the role of the building industry. *L'Equerre* (1929-1940), *Bâtir* (1932-1940), *La Technique des travaux* (1925-1973) and *L'Ossature métallique* (1932-1954) are important periodicals, all of them active in the 1930's, not yet dealt with in this research project.

The last three mentioned periodicals are very much coloured by their institutional background, which is the building industry. This also means that the information in these periodicals does not as much deal with ideological modernism as the 1920's avant-garde periodicals generally do, but informs 'objectively' about technical and functional (utilitarian, even) aspects (construction and equipment), no longer excluding non-modern examples. The table of contents of the July 1936 issue of *La Technique des Travaux* is a good illustration of this attitude: the H.A.V. Bank in Schiedam (Holland) by

Willem Marinus Dudok, the new railway station in Florence by Giovanni Michellucci, the fire brigade station in Paris by Robert Mallet-Stevens, technical installations of the Polytechnical School in Zürich (Switzerland) by O.R. Salvisberg, the covered market in Gennevilliers (France) by Louis Grossard, barrages in the Tennessee Valley in the United States and the Storström bridge in Denmark.

L'Ossature Métallique and *La Technique des Travaux* both have a clear international profile - very well informed on developments abroad as the commercial interest of their owners are of course international - which makes them the more interesting for our concerns. *Bâtir* has a more national profile but financed by the local brick industry it documents very well the moderate modernism in brickwork masonry of the 1930's (in the 'bad company' of its more traditional contemporaries, using exactly the same technologies).

Epilogue

There are fully acknowledged 'Monuments of the Modern Movement', known and respected by all of us. Their position seems even to be undisputed: they seem to have eternal value based on a once and forever definitely established body of knowledge on them.

A 'contextual', inclusive reading of what one or another periodical published on them - taking into account where the specific periodical stands institutionally - and also of whatever else the same periodical wrote about, could eventually shed unexpected light on these, so to speak, permanent facts. It is in my opinion not a problem of major and minor works of architecture: what is important is that even the best and most explicit work cannot be fully understood (and thus further dealt with seriously, adequately) if completely isolated from its temporal or material context, from contemporary (or even ancestral) and neighbouring buildings. These can be, eventually, of very different character and even of very different quality, at least for our post-factum, late-20th Century standards: it is astonishing to notice how in con-

temporary periodicals (even the dogmatic modernist ones) these major, established Monuments of the Modern Movement are published in the 'bad company' of what one nowadays dares to call secondary works of minor creators but which were then sometimes fully appreciated as valuable contributions to this same Modern Movement. This richness and diversity of the original Modern Movement debate and practice has been tremendously impoverished by decades of writing and teaching architectural history on the Modern Movement (of the Giedion and Pevsner type: without any doubt, writings of great importance, at least if looked at as theoretical works rather than as historical analyses). The image of the Modern Movement in Belgium, and abroad, that we extract from contemporary periodicals in Belgium is definitely different from the established, official History of Modern Architecture. One can also add - following the same line of reasoning - that the sole, individual conservation of an isolated Monument of the Modern Movement, isolated from its obliterated 'minor' contemporaries (modernistic or even traditional), will definitively and completely empty the Monument itself of all relevant meaning. This is a major reason why we have at least to reconstruct the 'correct', inclusive images established by contemporary periodicals. It is also the reason why we do not see the relevance of a separate, exclusive list of Monuments of the Modern Movement, to be preserved and eventually restored by priority. This is a misleading sort of information and a wrong, inadequate way of proceeding. Read again the contemporary periodicals, in an inclusive and contextual way, in order to arrive at a correct historical understanding: this will do more than physically save Monuments because by acknowledging and preserving before all their context, it will safeguard their meanings.

Notes:

1. Luc Verpoest, 'Marc Dubois, Architectuurtijdschriften: een fragmentair beeld', in: *De beschikbare ruimte: reflecties over bouwen*, Tiel, 1990 pp.131-141.

2. Carl van Cammeren,
Het Overzicht en 7 Arts: de verspreiding van het Bauhaus-idee in twee Belgische tijdschriften, Leuven, 1987 (unpublished thesis; research directed by Geert Bekaert).
3. Katelijne van de Moortel,
De tijdschriften *Opbouwen en Kunst* en het architecturaal bewustzijn in de jaren 1920 en 1930: architectuurkritikus Jean van de Voort en de architecten Huib Hoste en Henry van de Velde, Leuven, 1988 (unpublished thesis).
4. Johan Haesendonck,
Le Document: en analytische studie van een architectuurtijdschrift, 1922-1933, Leuven, 1985.
5. Kristel Putseys,
La Cité, maanblad van de Société Belge des Urbanistes et Architectes Modernistes (1919-1935) en het stedenbouwkundig onderwijs, Leuven, 1989.

TECHNOLOGY



Berthold Burkhard,
Cécile Briolle,
Francesca De Caroli,
Wessel de Jonge,

Stefania Mornati, Rinaldo Campomolla, Rosalia Vittorini,
Jaques Repiquet,
Christopher Dean,
Sergio Poretti.

Pier Giovanni Bardelli,
Anna Beatriz Galvão,

Berthold Burkhardt
Roland Dorn
Benedikt Holze
University of Braunschweig,
Germany

The Marie von Boschan Aschrott old people's home in Kassel, 1930-31 Architects: Otto Haesler and Carl Völker

Solving the housing shortage and improving the quality of life on a social, economic and technological level was one of the central concerns of the architects of the Modern Movement. In addition to estate housing, in the 1920's and 1930's buildings typifying international developments in architecture in the form of residential homes, schools and sports centres were built.

Across Europe workers' clubs, children's homes, young people's and student residences, convalescence homes and sanatoria, treatment centres and old people's homes became visible symbols of reformed social awareness.

Particularly outstanding amongst these in its typological clarity, its simplicity of construction, its design and its economy in physical and technological terms is the old people's home in Kassel designed by Otto Haesler and Carl Völker.

In 1929 the administrators of the Aschrott Foundation announced an architecture competition for the design of the old people's home.

The panel of judges met on 19th December 1929. The panel comprised the following people: Bonatz, Stuttgart (represented by Döcker, Stuttgart); Häring, Berlin; Roth, Darmstadt; B. Taut, Berlin; Jobst, Kassel; Dr. Stadtler, mayor (chairman).

First prize, with a recommendation to go ahead with the plans, was awarded to Otto Haesler and Carl Völker from Celle. In their supporting statement the panel described the submission as 'Systematically extremely well-thought-out design, which meets all requirements and demonstrates an excellent approach to the communal areas.' Second and third prizes went to Walter Gropius and Heinrich Tessenow, both from Berlin.

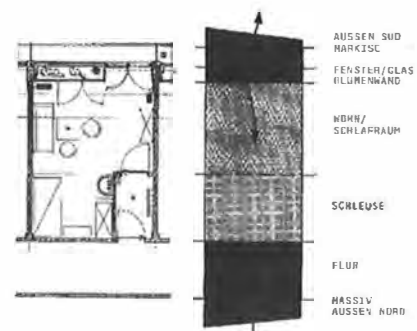
Planning for the old people's home moved ahead quickly. It was built in 1931/32 on the western side of the town, directly adjacent to the Aschrott park, about half way between the town centre and Schloß Wilhelmshöhe.

The design of the old people's home



South facade with entrance and glass-fronted residential wing, 1931.

Largely independent of the adjoining buildings and surrounding streets, two dominating residential wings 63 m in length extend parallel to one another in a west-east direction. The individual rooms, all of which are south-facing, are arranged in four storeys above a basement floor. The glass-fronted south facades with their sun balconies contrast with the closed north facades, in which uniform horizontal rows of windows light the open corridors behind them. This construction, from the closed north side to the open south facade, from the cool corridor to the sun balcony, is in keeping with Otto Haesler's carefully elaborated structural design



Plan of living room and cross-section of air-conditioning system through the residential wing.

and air-conditioning system.

At the west end of each corridor are verandah-type communal rooms, while on the east side a lower, two-storey block of buildings like a spine contains communal areas such as the dining room, library, music room, sundeck, covered walkway and the main kitchen. To the south, slightly projecting, the block forms the main entrance, which is flanked with offices and above which is a reading room.

The whole U-shaped complex also incorporates to the north a building for the heating system and rooms lit from the east for trainees and the sick. Distinctive chimneys consisting of three massive free-standing steel pipes complete the northern side. To the west the site opens up into the neighbouring Aschrott park and the grounds are divided into four green areas, each of which is laid out differently; a south-facing front garden at the entrance, a north-facing park with 'natural' paths, a delivery area to the east and finally, as the central point, the peaceful inner courtyard, the orthogonal shape of which derives from the basic pattern of the residential wings.

Haesler attached greatest importance to the design of the 100 one-bedroom apartments, the size of which at 22 m² compares well with today's standards,

even if the sanitary arrangements do not. Nevertheless, his experiences of building flats at subsistence level stood him in good stead. Thus, just as the whole complex is divided into a number of different functional areas, the design of the flats is based along clear functional divisions. In the integrated system typical of the 1920's, the flats are reached via a long open corridor, and are entered through a lobby containing wardrobes. This opens into the living room. The sleeping area, which is the same depth as the lobby, lies to one side and is separated by a curtain and suitably furnished. The south-facing glazed outer wall with flower and French windows onto the adjacent balcony is a stylish yet practical feature. It takes up the whole width and height of the room. The approximately 60 cm deep flower window emphasises the visual integration of the green outside world and provides each resident with her own individual design in contrast to the functionalism of the glass architecture.



View from the living room of the flower window, balcony and awning.

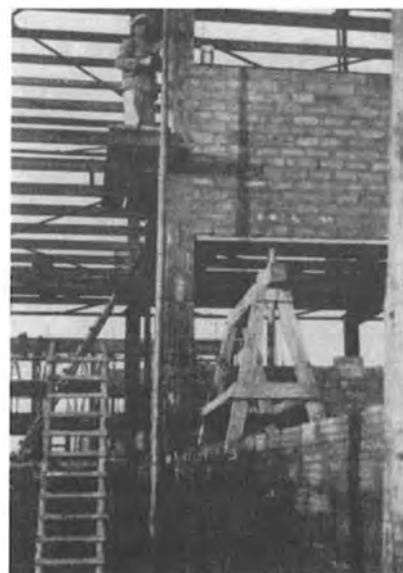
The 'double glass wall' as used by Paul Scheerbarth and Bruno Taut, for example, has a practical application here.

Construction

The outside appearance of the complex as a skeleton structure derives from the way in which the flats are joined together. At 4 m intervals there are

five-storey connecting frames, every third one of which is deflection resistant. Ceiling joists run along the length of the building and are braced crosswise by diagonal braces made from steel plate. A composite structure consisting of straw fibre panels (solomite panels) topped with a cement floor spans the 75 cm distance between the ceiling joists and together with an asphalt layer and linoleum coating forms an approximately 10 cm thick lightweight floor structure. Plaster on reed tissue is applied to the underside of the joists.

The external walls are of a double-wall construction (with hollow tiles on the outside and tectonic plates on the inside). All steel profiles are faced using the sandwich structure common at the time and attached to the brickwork by butterfly wires to give uniform plaster surfaces.



Building site in 1930, steel skeleton construction and masonry.

The internal walls are made of breeze block, and are 12 cm thick where there

is crossbracing, and 10 cm thick otherwise. Contrary to the original plans all the window frames were made from wood rather than iron, with the exception of the internal flower window glazing, which consists of narrow iron profiles.

Alteration and restoration

It is fortunate for the history of modern architecture that this building has continued to be used for its original purpose as an old people's home, and is still run by the Aschrott Foundation in Kassel.

Over the past 60 years the building has undergone a series of at times important alterations to its design and construction and it has also been extended. Some of these alterations were made even after the building was finally placed under protection as a historic monument. In a detailed survey undertaken from 1988 to 1990 the original was compared with the present state. This survey is part of a study into structural systems and developments in construction in the modern period, conducted by the Institute for Structural Design at the Technical University in Braunschweig.

Example 1: extensions

Profitability, demand for places and changes to requirements frequently resulted in extensions and alterations. Through the purchase of a neighbouring building the Aschrott Foundation was able to meet its need for space. Alterations were still made to the main building, however. The flexible structure of individual parts of the building was utilised to make these alterations, for example

- by converting the roof terrace into a living room
- by extending the 'floating' front of the residential wing for hospital rooms and garages, etc., on the ground floor
- by converting communal areas into single rooms at the front of the residential wings.

As these measures kept to the existing boundaries of the building and the various existing parts of the building were 'improved', an observer today



Comparison of original rear facade and solidium, before and after conversions; 1932 and 1990.

[...] these important [...] [Translator's note: text missing from original]

Construction and facade

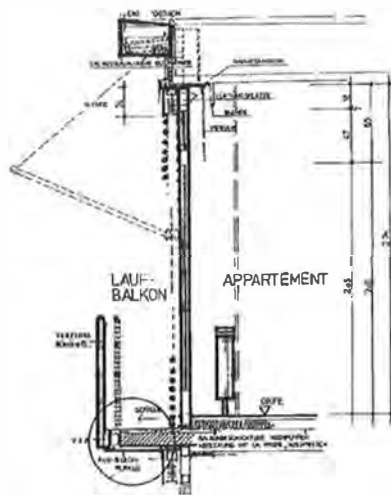
As with most steel skeleton constructions of the modern period, the girder system is visible only from the framework. The braced, bricked and plastered steel skeleton makes it possible to have a completely closed facade, one which is broken up by windows and one which is completely open and glass-fronted.

Today the facade of the Aschrott home includes large tiled areas which were probably added in the 1960's. Aside from factors such as style and permanency, which were used to justify surface cladding at the time, in this case it also addressed a problem of construction. Tiles were used to try to prevent cracking in the external facade, and more particularly to conceal them. In fact the primary steel skeleton, braced with cross-struts, is a relatively 'weak' construction. The all-over brickwork does not provide any interlocking structure, unlike today's composite steel constructions. Expansion due to temperature differences can be assumed to be a further cause of cracking in the brickwork, in both internal and external plaster.

Example 2: south facades of the residential wings

Together with plaster and flat roofing, windows and window frames in particular are classed as the most maintenance-intensive elements of the outer shell. In order to carry out the complete replacement of these as is necessary, the original building construction has to be reproduced, despite the fact that today's market prefers other systems.

On several storeys of the residential wings the original wooden windows with their 60 cm deep flower windows made from thin steel profiles have been removed over the years. This was due to age-related damage and the conversion of the living rooms into 2-bedded rooms for a hospital unit. The newly fitted insulated glass units made from plastic-coated aluminium profiles do not meet the requirements for the preservation of historic monuments as they alter the design of the air-conditioning system as conceived by Haesler.



Cross-section of facade of residential wing, flower window removed, coloured elements and insulating glass and blinds inserted. (Thicker lines = alterations)

The awnings, now replaced by vertical slatted blinds, delineate the outer area, which can be altered to suit individual requirements, the flower window marks the transition to the living room. The hallway, which can be cross-ventilated, closes off the building to the north with a massive external wall. Otto Haesler proved his interest in the details of construction in conjunction with utilisation

and physical building requirements to be greater than that of almost any other architect of the modern period. Haesler's air-conditioning plans can be retained in any restoration of the residential building not involving a change of use. In any case it is an outstanding example of a diverse natural air-conditioning system in terms of both the residents' well-being and of building physics, even if by today's standards the heat insulation is inadequate.

The moisture balance may be altered by the installation of additional sanitary equipment and new 'sealed' windows. This may have consequences for the steel structure, which is only protected by mortar.

Corrosion damage to the main girder structure has so far been found primarily in those areas where moisture was able to penetrate into the building from outside (roof, windows).

Example 3: chimneys

The three external chimneys which complete the northern part of the building with the residential wings and the adjacent heating block are an important architectural element. Together with the heating wing they divide up the long side of the residential wing and when viewed from the west and east perspectives they clearly mark the end of the heating block and confront the higher residential wing and the vertical, glass-fronted staircase there.

The proportions of the three chimneys, the distance between them, their cross-sections and height, the masonry base conform to the other parts of the building and they fit in as part of the building complex.

Haesler made use of technical elements in his design. This architecture is undoubtedly consistent and recognisable by aspects such as technical utilities and installations. Thus the chimneys are not brick-faced, nor are they bricked into the building; instead they are left as free-standing steel chimneys.

Parallels with the design of steamers (marine architecture) are unmistakable.

The various changes to and conversions of the heating system and the associated usability and state of the three chimneys is described as follows by the architect A. Engel of Kassel: 'After conversion to oil-fired boilers in 1960 the original chimneys, which were first designed for coke-fired heating, showed severe corrosion damage to the internal and external walls, having been attacked by sulphur'.

The conversion of the heating system and installation of new boilers in 1987-'88 confirmed the conclusion that all the chimneys need to be renewed.

The chimneys and base together tower 18 m above the ground and 5 m above the heating block.

The height and differing cross-sections of the three chimneys were influenced both by calculation and by function. The design of the chimneys and the fact that they were split into sections meant that they could be lined with fireclay as the pipes were being assembled. The tried and tested joints and fastenings of the period were rivets on the installation side and screws on the structural side.

The original restoration was confined to

replacing the outer shell of the three chimneys, and repairing or renewing the bracings, servicing bridges, cowls and sheet metal covering.

The steel parts of the chimney installation were originally painted silver-white. The new construction is heat galvanised initially, then after 1-2 years' reaction time it is painted. Reference to painting with 'aluminate' was found in one of Otto Haesler's letters which has recently been discovered.

General theory of monument restoration

These three examples make reference to what are in construction terms the most important areas of restoration. A document drawn up by the authors records all the alterations to the original building and any damage to the building. This survey extends from the internal structure, including safety issues, to any changes to external buildings.

Unfortunately it is not possible for the necessary building and restoration measures to be undertaken in a logical and historical context, as has been the case with comparable restoration work to buildings on the Weißenhof Estate in

Stuttgart, for example, for which considerable public funding was made available. All the costs have been obtained by careful management by the owners, the Aschrott Foundation, through their running of the home.

For this reason repairs, modernisation work or work complying with safety regulations are governed by the speed and sequence appropriate to monument restoration

Of primary importance is the careful sealing of the roof and facades, as virtually irreparable damage can result from structural weaknesses. Restoration of the main facades can include the removal of the large tiled areas.

Although this could be a long process, not least because the building is to remain in full use and the Foundation's funds are limited, detailed evaluation and planning is needed for the moment when work can begin on the various stages.

Note:

The unabridged article will be published in 1993 by Verlag Ernst & John, Berlin.

Three public buildings of the 1930's in Rome: analysis and reuse problems

This note presents a few brief comments about three public buildings put up in Rome during the 1930's, followed by some considerations regarding the problems bound up with their possible restoration. The buildings are Gio Ponti's School of Mathematics in the University City (1932-35) and the two buildings of the Littorio Youth Movement (*Gioventù Italiana del Littorio*) in Trastevere (1933-37) and at Monte Sacro (1934-37) designed, respectively, by Luigi Moretti and Gaetano Minnucci.

The need for a direct study of these buildings springs not only from interest in a pure and simple rediscovery of some works of Italian architecture, but also from the intention of recognizing the crucial role that construction modalities played at that time in defining the architectural image. Noting a general lack of technical knowledge that would permit proper conservation intervention for modern buildings, detailed analysis, which is here reported only as regards some singular aspects, becomes a natural but essential prerequisite for defining and perfecting modes and techniques of restoration, conservation and innovation in full respect of both the architectural and distributive characteristics and the construction solution, bearing in mind that the latter is to a large extent responsible for the singularity of these buildings.

Today we are witnessing not only

recognition of the architectural value of modern buildings that were previously considered simple building constructions, but also the rapid decay of the constituent materials, which poses grave problems for restoration purpose.

As is well known, the years between the two Wars saw architects make more frequent use of new construction techniques and new materials, often with little or no prior experience.

Furthermore, changing economic conditions and the evolution of production techniques have ensured that many of these procedures have already gone out of use: they belong to a recent construction 'past' of which - at least partly - all trace has been lost. The specificity of the restoration of modern works, unlike the consolidated restoration techniques employed for ancient buildings, therefore derives from the need for preparing intervention techniques to be applied to materials of industrial production that in some cases, given their experimental nature, proved ephemeral and are often quite irrecoverable. Though the methodological approach remains unaltered, what does change is the specific technico-operative aspect.

Apart from the difficult maintenance problem of some modern manufactured products - the solutions of which can fluctuate between 'artisan' restoration of an industrial product, the ad hoc remaking of construction elements (with all the problems bound up with falsifying history), and substitution with modern products that are intrinsically different from the original ones - there yet remain to be tackled all the other questions that always given rise to debate in the restoration field: reuse with analogous or modified functions, integration, distributive enlargement or modification and, not least, the need for bringing regulations up to date. The three buildings here chosen as

examples have construction affinities that place them in a homogeneous cultural context. Notwithstanding their different formation, the designers dedicated themselves to the formulation of a genuinely Italian and modern architectural language.

To all intents and purposes, they engaged in a common experimentation that one can also note in other buildings of this epoch, and which consisted of the search for mediation between tradition and modernity and had repercussions on both architectural language and construction techniques. Unlike the public buildings designed by traditionalist architects, the care lavished on the typological, volumetric and functional aspects of these buildings is of itself sufficient to confer an innovative stamp upon them.

Lastly, making painstakingly careful use of construction techniques, these designers sought to declinate the instances of representativeness with the attributes of an antimonumental modernity by employing both new materials and traditional materials, though - in the latter case - they also reinterpreted the significance of these materials by means of novel applications.

The School of Mathematics in the University City

There are various reasons why the construction of the University City assumes particular interest in the Roman panorama of the 1930's: there is the architectural outcome, the special collaboration that came into being between different personalities, the streamlining of the administrative procedures, the highly advanced approach of the Technical Office and, lastly, the setting up of a research laboratory on new materials and their employment modalities, which sought to provide the building industry with updated working instruments and techniques.

The general definition of the project and its realization were entrusted to Marcello Piacentini. He specified the architectural and constructional criteria that were to be observed: he thus suggested the proportions of the windows, decided the colour of the external plaster finishes and the use of brick in view and travertine; he also opted for limited use of the other regional stone and materials not produced within the region.

The actual design of the School of Mathematics was entrusted to Gio Ponti (1891-1979), an architect who formed part of the particular Milanese tradition founded on the simplification and reinterpretation of the classical languages. Seen within the ambit of the otherwise homogeneous university context, the School of Mathematics distinguishes itself not only by its original layout in both plan and volume, but also by the articulation of the expressive languages that spring from the Roman mediation between Milanese neoclassicism and the rationalist lexicon.



Gio Ponti, School of Mathematics in the University City, Rome, 1932-1935.

The building is divided into two distinct parts that have their counterparts in similarly diversified languages: the frontal parallelepiped facing the central square and the classroom 'tower' at the rear, with the latter linked to the former by means of low curved wings that, following a horseshoe pattern, delimit an internal courtyard.

Following the design directives received, Ponti employed the language of modernity, sometimes dissimulated, sometimes openly and emphasized, using a technical and formal repertory capable of expressing a renewed conception of the architect's art. This was not limited to just a few aspects, but rather characterize the entire building, from the structural solution right through to the elements of detail.

The supporting structure is a reinforced concrete cage. In the main building blocks this frame is hidden by the uniformity of the volume, which is further accentuated by the travertine facing that, enhancing the image of solidity conveyed by this block, confers the required air of aulic severity upon the frontage overlooking the central square.

In the rearward tower, on the other hand, the structural skeleton assumes accents of considerable interest. Here the structure consists of multiple frames arranged in the manner of a spoked wheel, each with four inclined cross members spanning a distance of 17 metres. The structural configuration corresponds to the need for reducing the floor thicknesses, while the geometric layout is determined by the need for assuring adequate visibility and specific acoustic requirements.

This block openly expresses its functional character and represents the moment in which the language of modernity adopted by the designer becomes particularly free and forceful. The audacious vertical scansion of the superposed classrooms, read externally through the great windows, enables the reinforced concrete frame to play a fundamental and open role as the vehicle employed for figuratively solving a technical requirement.

No less interesting are the finishing elements, for here we have the full development of the dialectics between what is expressed and what is understood or subtended. Ponti here employs a face dressing of large sheets of travertine that, at one and the same time, suggests the classical solidity of a wall and yet belies it: in fact, the sheets are arranged in such a way as to stress the complete coincidence of their vertical joints. The facade overlooking the courtyard, neoclassical in taste, is lined with a material that is highly modern in its functions but figuratively similar to the traditional brick: lithoceramics. It is presented as a material that combines constructional requirements with decorative efficacy, characterized by its 'vivacity of colour and tone, as also by precision and regularity of form', and also by a singular compactness, a minimum degree of water absorption, great hardness, and considerable resistance to atmospheric agents; its compressive strength is 5 or 6 times greater than that of ordinary bricks; when used with structural functions, it permits the thickness of the wall to be cut down to about half of what would be needed if the wall were to be made of common bricks.

Turning now to the internal environments, the entrance hall or atrium merits particular mention, as it represents a point where Ponti's expressive language becomes particularly dense. One wall is lined with black Italian marble, while the others are finished in square sheets of white Carrara marble, though arranged in diagonal pattern. The originality of the design becomes even more apparent at the corners, where the perfect coincidence of the joints arriving from the two contiguous walls conjures up the image of a textile or paper fabric, thereby almost denying the material valence of the marble.

In the entrance hall Ponti also introduces yet another new material: anticorodal, a silvery white aluminum alloy that is both cheap and capable of developing considerable strengths. This material is used to line the deep vaulted barrels of two lateral passages, and the care and attention lavished on the

detailing here is a feature that is equally characteristic of the furnishings of the classrooms and lecture theatres.

Designed for a number of students that has since increased ten-fold, the School has undergone numerous additions and transformations. However, the mere fact that the original purpose of the building has been maintained has also facilitated the conservation of the materials, limiting substitutions to a few, though important cases, including - for example - the splendid glass screen designed by Ponti for the principal facade, some window frames, and the translucent glazing of the classrooms, which is of the 'thermolux' type, another new material consisting of an insulating layer of Vetroflex contained between the sheets of plate glass. Moreover, the new subdivision of the internal spaces, carried out in the vain hope of bringing the building into line with its present-day requirements, has led to the annihilation of the visual perspectives that Ponti painstakingly constructed by means of transparencies and appropriate alignments.

The Building of the Littorio Youth Movement in the Monte Sacro and Trastevere Quarters.

These two buildings were commissioned by the *Opera Nazionale Balilla*, an agency set up to provide education and assistance for young people by organizing sporting and cultural activities for their leisure (or nonschool) time. In 1937, *Opera Nazionale Balilla* was absorbed by the Littorio Youth Movement, an organization in which the paramilitary aspects in support of the fascist party came more clearly to the fore. Following its capillary-like spread over the entire national territory, the organization decided to proceed with the construction of headquarters buildings in all the Italian provinces.

The building for the *Federazione dell'Urbe* of the *Opera Nazionale Balilla* in Rome's Monte Sacro quarter was designed in 1934 by Gaetano Minnucci (1896-1980). This building consists of two blocks that are functionally distinct: the gymnasium building and the headquarters building in the



Gaetano Minnucci, building of the Littorio Youth Movement in Montesacro, Roma 1934-37.

true sense of the term with offices, refectory, library, theatre and covered swimming pool. The modernity of the language in the first draft of the project - which was rather simpler than what was eventually built - on account of a balanced composition of pure volumes and overhead cantilevers.

The centrality of the relationship between the functional scheme and the volumetric composition also emerges very clearly, for it confers legibility upon the architecture and gives expression to the overcoming of the traditional distributive schemes based on symmetrical systems.

Minnucci was particularly competent as far as the technical aspects of construction were concerned, and he combined this competence with first hand knowledge of rational architecture in Northern Europe, especially its Dutch variant; he was also fully convinced that the new architecture was essentially underlain by reasons of a technical and industrial type. This attitude reflected in his search for a strict correspondence between the new compositional values and original construction aspects, i.e. new techniques and new materials.

From the constructional point of view, the building has an intentional masonry consistency, which is heavily underscored by the complete lack of windows (other than those of the gymnasium building) on its principal frontage. The reinforced concrete skeleton, employed in the "utilitarian" manner, is inserted in the great thickness of the walling (in full bricks and "alla romana") and becomes an element of the architectural language only on special occasions: in the long horizontal strips of the stairwell at the rear of the building or the diving board platforms of the covered swimming pool. All said and done, therefore, the structural frame does not assume autonomous formal values, but rather represents a technical solution that assists the traditional load-bearing masonry at the more difficult points and also to solve the problem of the long spans.

Rather, Minnucci entrusted the task of defining a modern architectural language to the clarity of the volumetric composition, to the use of new industrial materials and to special technical solutions: we thus find steel frames for the windows, linoleum as floor covering in the gymnasium, and the use of concrete-framed glass blocks for covering the great entrance hall and the principal staircase, as also for the inspection trench that runs along the basin of the covered swimming pool and the lighting fixtures of the gymnasium and the entrance hall, which are arranged at the same points as the corresponding sources of natural light. For the external facing, on the other hand, he relied on a traditional solution: a lining in sheets of Carrara marble, arranged with stepped vertical joints. But the thickness of the marble sheeting, which is barely 2 cm, and the capillary and almost invisible joints not only accentuate the abstractness of the volumes, moderating the constructional valence, but also deprive the material of its traditional decorative value, conferring upon it a finishing function that is both more precious and more durable than plaster.

The original solution of the ventilation problem, as too that adopted for the

natural and artificial lighting of the gymnasium, clarify Minnucci's design attitude. The gymnasium is uniformly illuminated and ventilated by means of two immense apertures that run the full length of the environment: one of these is situated in the upper part of the main facade, the other on the roofing terrace. The former is constituted by a great trellis in reinforced concrete dissimulated in the thickness of the walling, from which there spring three superposed series of square openings that animate the compact façade with their interplay of light and shade. The other aperture, closed by square glass bricks set in concrete, is carved out of the thick reinforced concrete roof, which consists of very deep beams spanning a distance of 21 metres, artfully hidden by the false ceiling. Opaline glass placed within the trellis work filters both the natural and the artificial light, with the latter produced by lighting fixtures so arranged as to produce exactly the same effect as the natural daylight.

Though the gymnasium - managed by the Municipality of Rome - has maintained its function over the course of the years, it has undergone a long series of wholly uninhibited interventions: a gallery has been constructed, the false ceiling has been demolished and removed, floor and wall finishes have been changed, and the steel windows have been replaced by frames in anodized aluminium. The remainder of the building, which is now being used by the Post Office, has been made the subject of even more substantial and continuous alterations that have irremediably compromised the internal space distribution. The stairwell and the entrance hall have been completely eliminated to make room for new offices, thus cancelling the different floor heights characteristic of Minucci's design. The theatre, originally of double height, has been transformed into two large superposed environments by the construction of a steel-framed intermediate floor. As regards the outside, the construction of a ramp for vehicular traffic against the rear facade has completely overwhelmed the exterior architectural image. Although the covered swimming pool has so far

maintained its original aspect, it is in a grave state of deterioration and will shortly become subject to very substantial interference, since it is to be transformed into the Post Office archives. Other alterations undertaken mainly with a view to bringing the building into line with current safety regulations have paid little or no heed to maintaining its overall appearance.

All these alterations, imposed by the non-correspondence of the original functions and the present use to which the building is put, clearly bring out the need for planning - in this case and in other similar ones - a rehabilitation of the building based on functions similar to its original purpose, thereby avoiding wholesale destruction of the erstwhile characteristics. This becomes even more essential when one bears in mind - as is only appropriate in the case here considered - that the city of Rome suffers from a grave lack of public sports facilities.

The building designed by Luigi Moretti (1907-1973) and constructed in the Transtiber quarter between 1933 and 1937 was the first Roman neighbourhood centre of the *Opera Nazionale Balilla*. It was intended as a model build-



Luigi Moretti, building of the Littorio Youth Movement in Trastevere, Roma 1933-37.

ding that was to inspire the designers of similar centres proposed for all the Italian provinces. An articulated building programme here gave rise to a building that proved extremely complex

both on account of its space distribution and its architectural and constructional solutions. The building in question, intended to be used by some two thousand youngsters each day, comprises swimming pools, gymnasias, solariums, libraries, a refectory, an exhibition hall, a kindergarten, infirmaries and various workshops.

The load-bearing structure is a reinforced concrete skeleton that performs its function completely independently of the walling.

This gives rise to a frame that clearly reveals the structural function of its various members, though the resulting constructional image is intentionally a rather 'hybrid' one.

This image is the direct result of the presence of frames closed both by delicately patterned glass screens and by continuous wallings, some of which are figuratively designed in the manner of load-bearing walls, while others clearly reveal their intrinsic lightness by means of large apertures at the structurally most delicate points.

Thus, even though - functionally - the wall loses its tectonic value, it recuperates the formal and allusive value of masonry structure. At one and the same time, however, Moretti also alludes to the formal archetype of the frame when he presents it as the structural ribbing by means of an artifice similar to the one used in classical Roman architecture, where the parastades became part of the wall.

Thus, while he gives a clear definition of the structural frame in the overhead platforms of the superposed gymnasias (where he achieves an extraordinary coincidence between load-bearing structure and constructed space), he attributes purely formal values to the pure structure of the series of columns that, lined in shining marble, are split into two halves by the expansion joint that also cleaves the entire building. Moretti emphatically presents both the wall and the frame, manipulating them with an expressive formalism and an ambiguity that is often to be found in the repertory of other representatives of Italian rationalism.

Over and above using the reinforced concrete frame as the innovative element of his design, Moretti also employed a number of other artifices that confer a tone of modernity upon the building: from the projecting roof of the tower to the horizontal sun blinds of the classrooms, from the glazed shell of the elevator shaft to the porthole-type windows and the long series of window opening mechanisms.

Moretti paid similar attention to numerous functional aspects, studying - among others - the routes followed by the users and the transformability of the building, the location of the sources of artificial lighting, the use of the sun blinds and the application of the logarithmic law for varying the riser heights of the staircases to make the climb more comfortable.

But Moretti's endeavours to give expression to a modern monumentality did not limit themselves to the structures, the masses and the architectural spaces, nor were they limited to the definition of a new typology with pronouncedly functional connotations, as in the case of the building here considered, but also extended to the expressive function of the surface finishes.

It is true that he used traditional materials: Tuscan marbles for the interi-

ors and travertine from Tivoli for outside, thus conferring a tone that was both more representative and more 'Roman', and plastering that was curved around the corners in order to moderate the sharp stereometry of the volumes and spaces.

But at the same time there was no lack of modern materials: from the vividly coloured linoleum to the glazing of the steel window frames with their internal aluminium stops, to the cement-framed glass blocks used to cover the skylights. The great wealth of this building, expressed in its volume distributions, its functions and its materials, ought not to be lost.

The use of this building as a centre for young people proved very limited in time: immediately after the War it was assigned as the headquarters of a welfare organization and it is currently divided into two parts: one of these is used by the Municipality of Rome, the other by the Latium Region. Some parts are in a state of abandonment and degradation, others are being used in a manner that pays no heed to either the form of the internal spaces or the finishings. The Superintendence for the Architectural Assets of Latium, having designated the building as one to be safeguarded, should henceforth protect Moretti's work against further interference.

In spite of this, recent partial attempts to adapt the building for re-use have brought to the fore not only the lack of factual knowledge about the building and the technical limitations of those responsible for the work, but also economic, organizational and legislative problems and, above all, a lack of sensitivity for modern buildings in general. It thus happens, as in the case here considered, that the building is left in its state of degradation or, even where intervention is actually undertaken, that the spaces are adapted for new and altogether improper functions, while the highlighting of the original architectural features is left to chance, to the haphazard technical capacity and sensitivity of the responsible parties.

While the themes today debated by those who concern themselves with the restoration of modern buildings are becoming more and more concentrated on specific technical knowledge, the cases here described clearly show that there still remain some more basic problems to be solved, problems that are bound up with the capillary diffusion of a culture sensitive to the recovery and safeguarding of the milestones of modern architecture. To this end it is quite essential that their value should be made more generally known by means of purposeful and complete fact-finding studies.

Restoration of the Villa Noailles (Robert Mallet-Stevens, 1924)

In a comprehensive survey of the remnants of the Modern Movement, the work of Mallet-Stevens seems at first sight to be far from brilliant: after several years of neglect and systematic looting whilst awaiting reclassification, the Villa Cavrois near Lille has finally been designated for office use; the property belonging to Barillet, the glass-makers, has gradually been completely changed by modification work; in spite of the presence on site of a Preservation Society, the private mansions in the Rue Mallet-Stevens have one by one undergone dubious face lifts which have left them covered in smooth white rendering, decked with aluminium door and window fittings and open to 'creative' restructuring of the interiors, in a violent 'reinterpretation of the modern movement'.

The lack of interest in a knowledge of this architecture is apparent not only amongst the general public, owners and clients, but also amongst architects themselves, and this naturally has much more serious consequences.

The case the Villa Noailles has shown the importance of an exhaustive historical study before the preservation operation, forming a solid basis for the work.

This is a highly complex building that offers the opportunity to explore many different aspects of restoration; from the time it was built, the villa has been to some extent a collective work, provi-

ding an intimate dialogue with the site and blending harmoniously with the existing structures.

It is also a place that is laden with memories of the social and cultural life that has gone on there over the years.

Depending on how the various parts are treated, the restoration of the Villa Noailles thus calls for different levels of intervention when it comes to selecting a method of restoration or a technical option.

The restoration programme was initially limited to a third of the whole building; the works were completed in June 1991, whilst the rest of the structure continued to be in danger of complete collapse.

The Villa d' Hyères, commissioned in 1923 by the patron Charles de Noailles, is now regarded as a landmark in the history of modern architecture. It does not, however, mark any particular stage of technical innovation, but it displays the new forms connected with the work of the De Stijl group, who were little known in France at that time. It also demonstrates the search for a hitherto unfamiliar lifestyle, based on body culture and a love of art; a history of the customs and activities that went on here shows that some of the literary and artistic avant-garde groups active between the Wars came here to try out a new way of life around the pool and the huge terraces set aside for sports.

Mallet-Stevens included in his project several existing buildings that were restored and altered to form an integral part of the whole. Towards 1930, at the end of its construction (which was interrupted every Winter to allow the Noailles to take a holiday), the 'house' covered a surface area of two thousand square metres, divided into sixty main rooms, in several blocks, connected by long galleries, forming a vast

complex that also included terraces and gardens.

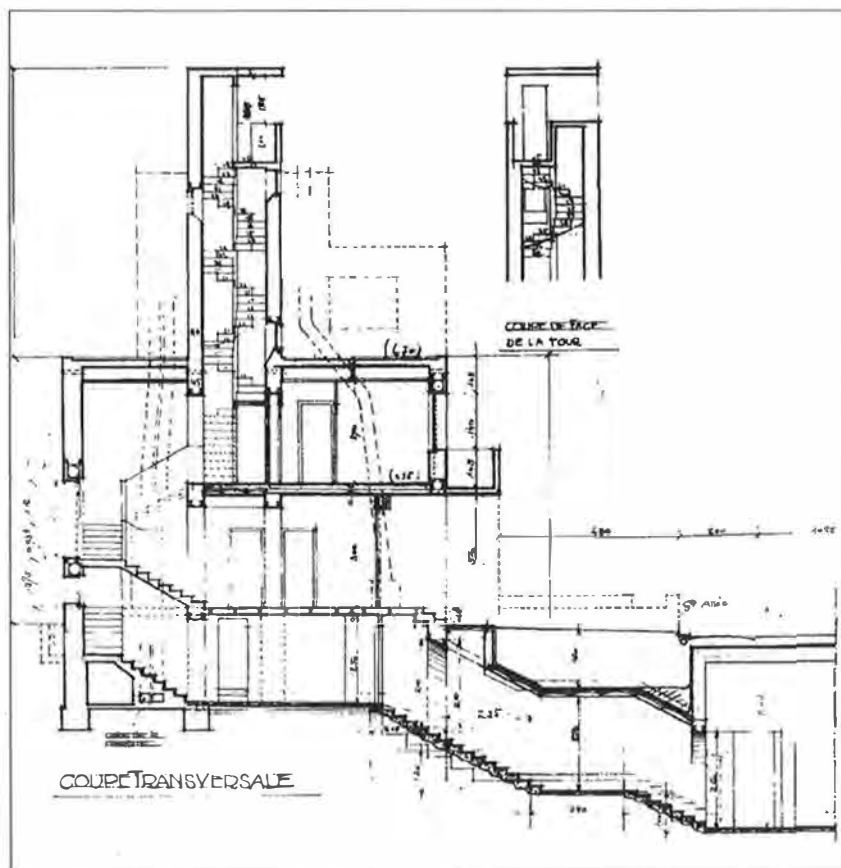
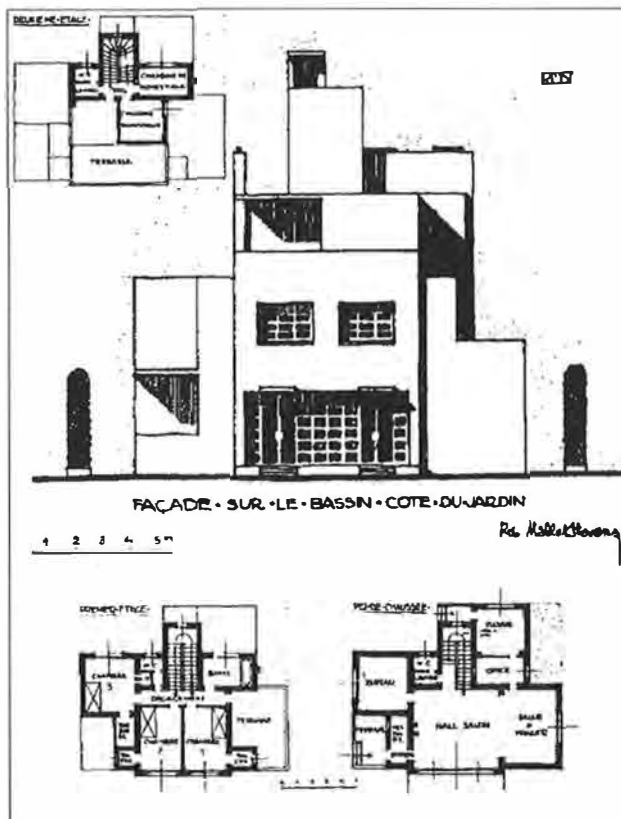
The architect employed the key members of the group that was to become UAM, along with little-known artists, in the creation of this real 'modern château'. Djo-Bourgeois conceived the decoration of the lounges and designed the wing of bedrooms known as the 'little villa'; Gabriel Guévrékian (who was then in charge of the Mallet-Stevens office) supervised the construction of the 'Salon rose' in 1927 and built a 'cubist garden' in the same year. Pierre Chareau designed an 'open-air room'. Theo van Doesburg was commissioned to decorate the 'little flower room' and Seybold van Ravesteyn was entrusted with designing the shell and the furnishings for a guest room. The collection of people involved in the building is supplemented by the artists involved and their works.

It would seem that some sectors, including the final extension to the villa and one wing of bedrooms built on the west side of the property, were not under the direct control of Mallet-Stevens, who would have left these projects to a local architect.

The conditions dictated by subsequent use

We can now see that the restoration operation that was carried out was the logical consequence of the first detailed study of the history of this heterogeneous unit; this study was completed in 1980 as part of a dissertation for a Diploma in Architecture. Since then, this almost archaeological research has been systematically supplemented, leading firstly to the publication of a monograph and then to a number of preliminary studies containing proposals for re-use. Essentially, these studies consisted of a summary of the known history of the building, supplemented by on-site test drillings and precise surveys; these meant that a technical diagnosis

Rob Mallet-Stevens,
project for a villa, 1924



Section, May 1924

of the state of the building could be prepared, forming a basis for a summary evaluation of the cost of an 'identical restoration'. Finally, various proposals for re-use were tested from the point of view of their impact on the monument.

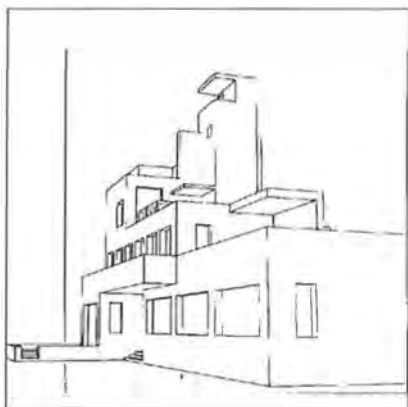
A 'sensitivity chart' - a sort of general specification - was drawn up, allocating a level of alteration to each zone of the building so that, whatever the future use of the building was, the 'spirit of the place' would be preserved overall through the retention of the atmospheric lighting, the strange atmosphere of the long corridors and the succession of bedrooms, and through the way in which this 'collection of cubes of grey cement' arising in the Mediterranean countryside is shown off.

All areas were re-usable, to be re-used, but the architect's work would generally have to fulfil a variety of different criteria. There would need to be faithful restoration of the remarkable swimming pool areas, the 'salon rose' or the 'initial building', whilst it seemed possible to change the organization of the internal walls in the 'outbuildings' which were not of any major interest, and where the floors had fallen through in places, or the interior of the west wing, which is of mediocre design. From the very start, the servants' quarters and service areas were treated very differently from the 'public' areas; although the general layout is similar to that of the other areas of the house, on a more modest scale, the finishes, floor coverings, door and window fittings, locks and sanitary fittings were absolutely standard. Instead of the modern equipment and materials selected by Mallet-Stevens for the nobility, we find here more everyday products probably chosen by the project architect.

The reference documents for the restoration

The restoration was based on various documentary sources and on surveys carried out in 1980, supplemented by test drillings and preliminary studies. The files for the period 1924-1926, including specifications, construction

drawings, contractors' records and letters provided a good deal of background information, as did the correspondence between Mallet-Stevens and Charles de Noailles from 1923 to 1927. Many preWar articles and documents, including in particular a complete photographic report carried out in January 1928 by the American photographer Thérèse Bonney for the review *Art et Décoration*, and films including that made by Man Ray in 1929, were to be invaluable in defining some of the structural details and for reconstructing elements that had disappeared.



Perspective, May 1924.

From 1923 to 1930, the Villa Noailles was constantly changing. The restoration was based on a state that was regarded as being ideal: the appearance in 1930, when the building was completely finished and before certain superficial changes were made, on Noailles' instructions, which changed the original form.

Phase I of the works: museum

On the basis of the decision reached by the City of Hyères in 1986, the re-use of the Villa Noailles as a museum would cover the three vaulted rooms (predating the villa), the building initially commissioned in 1923 by Noailles, the studio built in 1927 and the area immediately surrounding it: the triangular garden known as the 'cubist garden' by Guévrékian, the square in front and the 'open air room', i.e. a total of 750 square metres of buildings and 610 square metres of the most architecturally important gardens.

In spite of the building's status as a Historic Monument, protected comple-

tely since 1985, the restoration operation was undertaken, at the request of the City of Hyères, on the same administrative terms as any other communal building due for refurbishment, with an invitation to tender sent to general contractors, strict control of the costs and compliance with the current standards.

The restoration work on site

Apart from the mess caused by the neglect of the villa since 1972, the looting and the absence of maintenance, the construction had suffered from occasionally careless workmanship and some technical errors.

For his first construction project, which was, in addition, located outside the capital, Mallet-Stevens employed an architect to be responsible locally for supervising the work on site and producing the specifications from the construction drawings.

The Parisian architect was happy to control the 'artistic aspects' of the operation, to coordinate the work of the decorators and to provide the plans.

Apart from the swimming pool area, reinforced concrete was only used, at the end of the day, for isolated elements, and that only when the design required it: for the fine sections of the porticos over the false doors and the balustrades.

After a somewhat unconvincing attempt to find a company capable of producing a concrete frame, and in the absence of a clearly defined structural strategy, the architect on site chose to resort to traditional methods, which were ill-suited to the general scale of the construction but which were more in line with local practice.

Photographs of the site in 1924-1925 already show that the loadbearing walls were made up of masonry using both finished and unfinished stones and columns and jambs for the windows in solid bricks that an unscrupulous mason had mixed with hollow bricks.

A programme of test drillings, at the start of the restoration work, later confirmed by stripping the masonry, revealed that the structure was in good con-

dition, but that the thick rendering was poorly bonded to the heterogeneous masonry base.

The spandrels of the ground floor windows on the street side had to be rebuilt, as they were different in construction from the rest of the structure. Because they were moulded to follow the shape of the radiator recesses, they were made from coarse, nonreinforced concrete, with a low cement content.

The suspended floors, consisting of brick arches between metal joists, were found to be unsuitable for uninsulated



Terrace and guarding in front of the guest room on the second floor, 1928.



The buildingsite after instalment of the woodwork (August 1925)

flat roofs; in the absence of tie-beams, the metal in the floors expanded due to the effects of heat and frost, causing the structural separation of the roof parapets from the walls. In general in the Villa Noailles, expansion of materials was not taken into account during construction, and this led to the rapid deterioration of the plaster, of the poorly covered metal reinforcements and of the roof parapets.

Where the floors ran immediately above the services space, rising damp - which is acceptable in traditional masonry - here led to the systematic

corrosion of all the metal reinforcements, which then collapsed around the end fixings in the walls.

The 'experimental' use of waterproofing systems using a new bitumen product called 'La Callendrite' was found to be inadequate on all the terraces. The layer of sand placed on the concrete slope covered with Callendrite did not allow heavy rain to drain off. The heavy horizontal protection, consisting



of cement slabs simply placed on the sand bed followed a precise design. The restoration work showed that all the waterproofing had already been repaired once: the cement tiles had been taken up, the bed of sand removed and a new waterproofing course had been installed; but the cement slabs, which had been damaged during their removal, had been stuck on directly and coarsely jointed to follow the existing slope.

The rain water thus flowed directly over the waterproof surface of this floor. This second attempt, no doubt dating from the immediate postWar period, was certainly more effective, but destroyed the appearance that Mallet-Stevens had wanted: the horizontal level of the precise layout of the slabs.

Finally, it was noticed that there was a large vertical crack in the whole ground floor bedroom wing, caused by uneven setting of the land in the area where the building was on a single level.

Conservation and restoration of the original appearance

The options for restoration took many objectives into consideration. Firstly, those that had been determined by the preliminary studies and which, in our opinion, represented the whole point of the operation: *restoration of the original appearance* of all the buildings,

especially that of the areas classified as 'sensitive', which required identical restoration of the existing elements and complete reconstruction of the elements that had disappeared. Within the framework of Phase I of the works, the initial building and the 'salon roses' required this type of restoration.

Secondly, there were the conditions dictated by the client concerning the subsequent use of the building. In practice, these were the normal conditions for operation and opening to the public of a municipal property, i.e. compliance with the current standards on safety, energy saving, conservation of public collections for museum purposes, maintenance and preservation of the communal buildings and gardens.

Certain minor alterations were carried out in the vaulted rooms, for example in connection with the new function as exhibition rooms. The central room was enlarged by the extension of the floor, and two openings were made in the basement to allow the public to circulate.

Removal of ancillary structures

Marie Laure de Noailles had a lean-to built to house her domestic animals on the north-east of the building. With the raising of the balustrades of the neighbouring terraces, this meant that Mallet-Stevens' east facades had become almost unrecognisable. Removal of

various additional ancillary buildings revealed once more this corner of the building and the concrete footbridge connecting the gentleman's terrace to the garden.

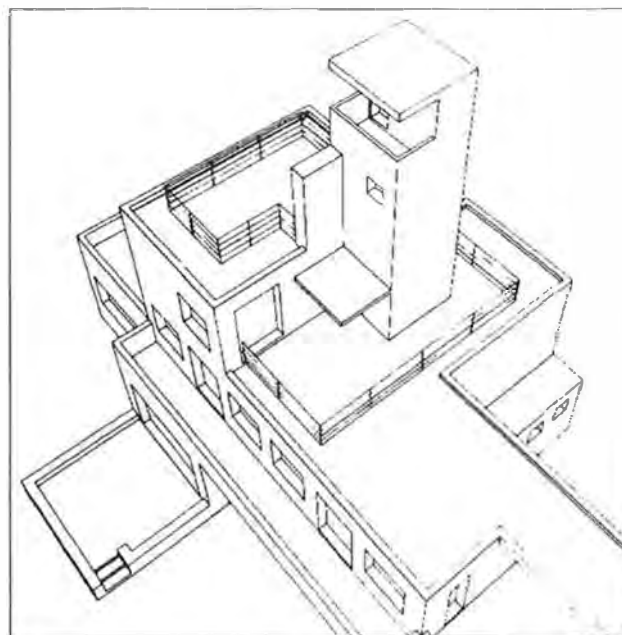
The enclosing wall around the forecourt had been raised by 1.50 m by the Noailles'; the lintels of its large bays needed repair. When the upper section was demolished, the outline of the original fixed ends was found, giving the exact height of the bays in the original wall.

The reinforced concrete canopies added to the facade to protect the large cavans blinds were removed, and the wooden roller shutters were repaired.

Technical improvements and repairs:

The first floor balustrades, which had been severely damaged, were rebuilt in reinforced concrete in order to retain the original thickness. The height of these was also retained, following a waiver of the safety standards, to preserve the consistent lines of the façades.

The aim of the repairs to the waterproofing of the roof terraces was that the floors should once again be horizontal and the concrete slabs properly laid, as shown in the film by Man Ray and the photographs by T. Bonney; this time, however, the waterproofing should also be effective.



Computer reconstruction of a perspective of the ensemble.

The initial system of heavyweight protection of the weatherproofing was improved by placing concrete slabs, prefabricated according to Mallet-Stevens' notebooks, on plinths built up on site. These then act as thermal floats and a sufficient cavity is then created for water to run off.

A number of additional measures meant that it was possible to comply with current standards on waterproofing without any detrimental effect on the fixed requirements of form. Thus the masonry protection of the upstands along the external walls was treated decoratively to retain the original appearance. The parapets below the windows, made from a concrete mixture, showed considerable erosion; they were rebuilt in stone masonry to provide a more uniform base. The rendering, which was badly damaged, was completely replaced.

On the basis of the description of the composition prepared in 1924 (white-wash plaster applied in three coats, the last being applied using a heather broom) and a chemical analysis carried out by Ciments Lafarge, it proved essential to improve the first coat by using a silica sand and by adding to the binder a latex based resin. The second coat was applied on wire netting for improved bonding; the finishing coat, which followed the original description exactly, was made up of a hydraulic lime-based mortar, applied using the heather broom producing the same grain differentiation and the same appearance as the original plaster.

However, it was impossible to find the original sand (with high silt content) which came from a river not far from Hyères, as it had run dry. The sand used was of the correct grain size.

Identical restoration

All the partition walls, all the door frames and some of the doors that were still in good condition were retained. The brass door handles, designed for the villa by Mallet-Stevens, and reproduced and sold commercially, were returned to their original location.

All the door and window fittings were preserved and restored: the wooden sash window fittings were removed and adjusted; the steel door and window fittings were brushed, treated and repainted. The mechanisms for the automatic sliding doors in the studio and dining room were repaired.

The large 2,5 m window which can be completely retracted into the floor of the small salon using a crank mechanism (and use of which was condemned by Ch. Noailles) was restored, along with its mechanism - a system of chains and counterweights. To avoid any risk of corrosion, the vertical cavity that takes the large window in the lower position was fitted with a rainwater drainage outlet.

The excellent original workmanship, which had been extremely expensive, meant that it was possible to re-use the complete lead drainage system, which had been regularly modified using tin soldering and which was discovered during the work to be in a perfect state of preservation; it had been thought that this would need repair. On the other hand, the mains supply network, also made in lead, had to be completely replaced by a system of copper pipes that could withstand modern water pressures.

It had been possible to carry out this overhaul of the system without causing too much damage in the building (demolition of the old system and installation of the new one) by using the chimney work of the old heating system as vertical technical ducting. For economic reasons (safety requirements for instalment of a boiler in a public building; need for economy at investment level), an electric boiler was chosen to supply the original heating system.

Application of safety standards

The suspended ceilings, built using a procedure commonly found in the Provence at this time (the Salusse system), were made up of brick panels, finished with plaster and suspended by iron hooks from timber joists; a beige limewash covered both ceiling and walls. Although the suspended ceilings

were in good condition, it was not possible to retain them since the method of suspension was rejected by the Buildings Inspectorate as being too dangerous for use in a public building. The ceilings that replaced them retained the original appearance, and were made using a metal cell ceiling structure, textile-finished, with a coating of plaster.

The electrical system, which was built in from the outset, had been modified several times by the Noailles; however, it required upgrading to comply with safety standards. Some original switches and sockets remained, along with the figures of an electric clock designed by Francis Jourdain which sounded in all the rooms. It was easy to reconstruct the clocks.

In contrast, it had been hoped that it would be possible to produce identical reproductions of the switches, but the switchers and push buttons that had been originally made in brass did not comply with current standards. An old stock of identical switches was found by chance. These were subjected to 'high-level electric surveillance' to ensure that they complied with current regulations: low-voltage networks, systematic earthing of all switches - all those measures that are not part of conventional installation work.

Reconstruction of elements that had disappeared:

It is clear that, after 1930, the building underwent certain changes that affected its appearance. Some damage, thought by the Noailles to be irreparable, led to the loss of P. Chareau's 'open-air' room and the triangular garden designed by G. Guévrékian. Other important elements, such as the horizontal stained glass window in the 'salon rose' were quite simply stolen during the time in which the building was left empty, as was most of the hardware, cupboard fittings, tap, etc.

The triangular garden certainly suffered from the effects of hot weather alternating with severe frosts. The poorly protected brickwork started to flake, and the black vitreous glass flooring tiles

expanded and lifted. The Viscount replaced the vitreous flooring with a terra cotta tiled floor very early on.

The general shape of the garden was reconstructed on the basis of the marks of the ornamental plant troughs that are still visible on the enclosing walls. An article dating from 1928 described the materials and showed a model of the garden in colour; thanks to the black and white photographs taken by Thérèse Bonney, it was possible to measure the thickness of the plant troughs and to calculate their precise size: a few samples of vitreous glass in six different colours were discovered accidentally on site. On the basis of this range, the manufacturers Les Emaux de Briare reproduced the mosaics in the exact colours. The research already carried out indicates that it was this old-established company that had made the mosaics for G. Guévrékian in 1928.

The new plant holders, made from prefabricated concrete, were built to the nearest centimetre to fit in with the strict geometric composition, and the brickwork plant troughs were made from concrete panels of the same section as the originals. The black paving now has an expansion joint which forms part of the general structural grid. Only the planting programme, which is managed by the City of Hyères services department is not the same as that planned by the Viscount.

All the glass panes that made up the ceiling in the workshop designed by Louis Barillet were stolen in 1982.

The precise report prepared in 1980, along with some fragments found on site, meant that reconstruction was possible. Almost 150 glass panes of varying sizes and of four types were assembled, two by two, using lead joints, and placed on a metal framework that had stayed intact. The glass was cast and printed using cast iron rollers which had been engraved or which contained small bumps (*verre soleil*).

A stock of ribbed glass like one of the samples was found at the Saint-Gobain factory, which started to produce the three other types of glass. A cast iron

roller existed for one of these, but the firm of Saint-Gobain had to build a new roller with two engravings corresponding to the other two types of glass.

The 'open air' room built in 1927 by Pierre Chareau had ceased to exist a long time ago. The five window frames sliding on rails, placed on a wooden panel, protected in turn by a zinc sill flashing, were installed on the unstable base of the terrace waterproofing. They certainly experienced some subsidence, and became difficult to operate as a result.

A few marks could still be seen, and the upper rails were still fixed under the false doors, which gave the exact dimensions of the panels.

When the waterproofing was being repaired, a brickwork base of regulation height (10cm) was installed, covered by the waterproofing, which was itself protected by the metal casing enclosing the guide rails. Since, for reasons of public safety, the Buildings Inspectorate had required the use of laminated glass, the weight of the whole unit was almost 800 kg at the pivot of the rail-mounted trolley. In order not to damage the structure of the floor, the load was taken up by a built-in bracket and transmitted to the brickwork of the wall. In addition, to prevent corrosion and reduce maintenance, the metal frames were thoroughly sanded down, then metallized by spraying with hot zinc, and then painted.

Inside, the floors of the public areas were in 'terrazzolith' terrazzo tiling, in a uniform straw yellow colour; on the ground floor, they had been damaged by flooding over the last ten years and the tiles had lifted.

This material, which is used in both hospitals and grand hotels like the Ritz, is modern, smooth, flexible and warm. It is a real 'hygienic parquet floor without joints', it absorbs noise and the upward-cast skirtings do not attract dust.

Since the craftsmen had disappeared without trace, a study was carried out

to determine the composition of this floor covering and to reproduce some twenty square metres in the entrance hall. A mixture of magnesium cement without lime, asbestos and wood fibre (or chestnut wood sawdust and powdered cork or asbestos, as required) was cast in two layers of 16 mm total thickness. A few repairs were carried out by the Noailles themselves, and it was possible to retain all the floors in their original state apart from the hall. In the other rooms, it was only necessary to treat the existing floor covering. Because of the rigidity of the schedule for the operation, it has not been possible yet to complete the restoration of the building by the installation of some of the decorative elements, such as furnishing, light fittings, fireplaces, etc.. Some of the fittings that formed an integral part of the walls could not be reproduced; the two stained glass windows by Barillet that decorated the staircase, and of course the Lipchitz sculpture have not yet been reinstated. These limitations, plus the fact that the works were only undertaken in part of the buildings, doubtless reflect the hesitation of the owner in the face of the austerity of this architecture, and his scepticism as regards the building's classification as a Historic Monument.

We are still a long way from saving the Villa Noailles: the buildings whose restoration has been deferred to a second stage of the works include many important elements: the swimming pool, the 'little villa' or annex, which are some of the main factors that make this building so famous, are still at risk of collapse.

Their repair would finally give a coherent image to the whole structure within its setting in the countryside, so that we can rediscover the building's spectacular endless corridors and take a measured view of this immoderate way of life.

Le Corbusier Unité d' Habitation: techniques, strategies for restoration

Foreword

With the recent classification of Le Corbusier's Unité d' Habitation at Marseilles as an historical monument, protection was extended to all common parts and to an apartment.

At the same time, the poor condition of the building, and in particular of the roof terrace and facades which have been included in the supplementary inventory of Historical Monuments since 1964, led the owners to promote a restoration program, which is now being carried out under the supervision of the 'Conservations des Monuments Historiques'.

Through the kind offices of M.J.P. Dufoix, 'Architecte en chef des Monuments Historiques', who is in charge of the program, and M. L. Santiano, former 'Chef de Service Departimentale de L'Architecture de Marseilles', the authors were able to follow several stages of the restoration work being carried out by the 'Conservation des Monuments Historiques', the French national agency responsible for safeguarding items of historical and artistic interest.

Our study interprets the restoration work in a documentary and historical, as well as technical light; particular attention is devoted to the roof terrace and facades, where the restorers' efforts were initially concentrated.

The roof garden and prefabricated cladding panels on the facades are, in any case, the areas where reinforced concrete is employed in the most innovative fashion, both as regards the con-

ditions under which it is used and as regards the technological and architectonic demands placed on the exposed concrete. The novelty lies not only in the distributive architectonic approach and in the types and forms of Le Corbusier's language, where the 'beton brut de décoffrage' is used, directly exposed to the weather, to construct parapets, ramps, stairways, canopies, vertical closure members and so on.

For the facades, this novel character is also apparent in the invention of detailed technological solutions for forming the prefabricated curtain panels, anchoring them to the structure and waterproofing the many joints between the panels.

The exposed reinforced concrete structures of the Unité d' Habitation - physical-chemical deterioration mechanism

The premature deterioration of the exposed reinforced concrete surfaces of the Unité d' Habitation, as witnessed by the numerous 'scars' in the regular shutter pattern caused by repairs to the concrete covering the rebar made in the early stages of the building's life, was to a large extent due to the poor quality of the original poured concrete. The major defects in workmanship have been documented: poor dimensional quality of the poured structures (i.e. the lack of correspondence between design dimensions and the actual dimensions of the poured concrete), reinforcing bar displacement, and the concrete's considerable porosity and permeability.

As modern fluidifying additives were not available at the time, it is likely that an excessive amount of water was added to the concrete mix in order to produce the workability required for such thin poured structures as the terrace. This resulted in an extremely porous concrete, which was inevitably subject to a high degree of shrinkage and hence to cracking. Concrete cover permeability and cracks are among the most

important factors for concrete durability (see fig. 1)

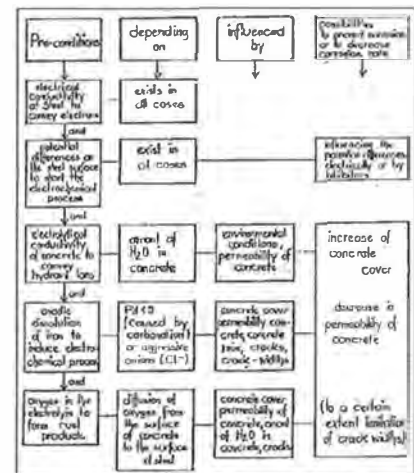


Fig.1 Scheme for electrochemical corrosion of concrete reinforcement.

Similarly, the poor curing of the poured concrete, which we know today to be particularly important as regards shrinkage and microcracking of thin structures, must have jeopardized the durability of the reinforced concrete from the outset.

It is likely that the consequences of neglecting certain measures and precautions such as the correct water/cement ratio and providing a sufficient embedment for the rebar could not be accurately evaluated at the time.

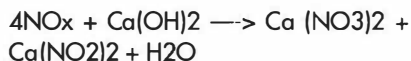
For the 'pilotis' and 'sol artificiel', the areas of exposed reinforced concrete at the lower part of the building, deterioration is fairly limited. Though the rebar is exposed at certain points, oxidation has not extended to a depth where it could cause generalized deterioration to the concrete surface layer.

The fact that these areas are less exposed to the rain and, given the difference in elevation, to the wind, permitted dust and smoke from the urban atmosphere to settle onto the rough concrete surfaces, blackening them much more quickly than the rain-washed structures located 50 meters higher on the terrace.

ce. On the other hand, this exposure protected the concrete from the direct action of rainwater, which is the main agent behind many physical and chemical deterioration processes and the migration of corrosive chemicals into concrete.

In addition to CO₂, the polluted air of a large urban center contains significant amounts of sulfated compounds and oxides of nitrogen, or NO_x.

Oxides of nitrogen attack calcium hydroxide as follows:



As with carbon dioxide, the process involves an intermediate stage in which nitric and nitrous acids are formed by reaction with water in the liquid phase. These reactions, which are in themselves very slow, are accelerated by the fact that the atmosphere contains positive catalysts originating from the combustion of petroleum and carbon derivatives (vanadium, lead and molybdenum). These catalysts are readily deposited on the porous concrete surface.

Both nitrous acid and nitric acid carried by rainwater are much stronger than carbonic acid, and thus act even more readily on the pH which safeguards the reinforcing iron from corrosion.

The products of the reaction include calcium nitrate and calcium nitrite. Unlike calcium carbonate, these are both soluble in water, and thus leak out to increase the concrete's porosity and vulnerability.

One of the most harmful effects of the sulfates contained in acid rain regards the deterioration of concrete. Though from a theoretical standpoint sulfates could be assumed to attack the passivating oxide film which covers the rebar, they differ from CO₂ and NO_x in their large ionic dimensions, which hinder their diffusion.

The components of concrete which are most vulnerable to sulfates are calcium hydroxide and tricalcium aluminate. Where structures are exposed to polluted rainwater, the sulfates may attack calcium hydroxide and carbonate to form calcium sulfate. The latter is soluble up to 1,2 g/l and is thus subject to leaking.

In addition to being protected from chemical aggression by rainwater, the concrete of the 'pilotis' and 'sol artificiel' are also protected from what is probably the most harmful physical action of water: freezing.

If the water contained in the capillaries freezes, the resulting 9% increase in water causes the concrete to expand. Freeze/thaw cycles thus lead to cracking. Where structures are exposed to freezing, the concrete deteriorates rapidly.

The reinforced concrete structures of the terrace, on the other hand, show a more general deterioration (fig. 2 - 3).



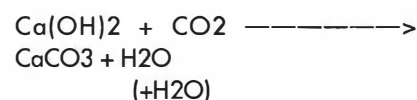
Fig. 2 - 3 General deterioration of reinforced concrete structures of the terrace.

Corrosion is widespread on the skin reinforcements, which have been laid bare on many surfaces, and has also affected the longitudinal reinforcements in some of the more exposed points. The fact that these structures show more extensive deterioration than the poured surfaces lower down on the building is probably due to a combination of several factors. Exposure to weathering together with the low thickness of the poured concrete must have played a fundamental role. During construction, this aggravated the defects in mixing, pouring and curing the concrete, thus affecting porosity, embedment, cracking and durability from the outset. As the structures in question are thin, they are subject to large unit stresses. This, together with the fact that they are

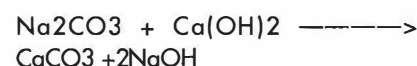
exposed to extreme variations in temperature and moisture content, makes them prone to cracking during the building's life. Nor must we forget the difference in behaviour between thin and thick poured structures as regards carbonation rate and the extent of the related shrinkage.

The drop in the concrete's pH is the most well-known effect of the carbonation process, and the most deleterious to its durability.

In the environmental conditions characterizing the Unité, this process is one of the major causes of deterioration in the concrete structures. Carbonation starts from the carbon dioxide normally present in the atmosphere:



The reaction proceeds from the surface in contact with the atmosphere towards the interior of the structure. The process is influenced by the presence of a thin layer of an aqueous solution of KOH and NaOH, called precursors, at the interface between the carbonated area and the area which has not yet been carbonated. It would appear that the CO₂ first combines with the alkalis to form the associated carbonates, which then react with the free lime as follows:



The depth of the carbonated layer depends on the diffusion of carbon dioxide in the concrete.

The properties of concrete which affect its permeability, such as the type and degree of porosity and the water content, are determinant factors: a micro-structure with fine, widespread porosity increases the specific surface area of the binder and thus promotes carbonation.

Temperatures above 15-20°C and relative humidity around 50% have been identified as the environmental conditions which promote the fastest rate of advance in the carbonation front (see figures 4 and 5). These temperatures are high enough to permit the reaction to take place, but sufficiently low to

prevent water from clogging the concrete's pores, which would interfere with the transport of gaseous phase CO₂.

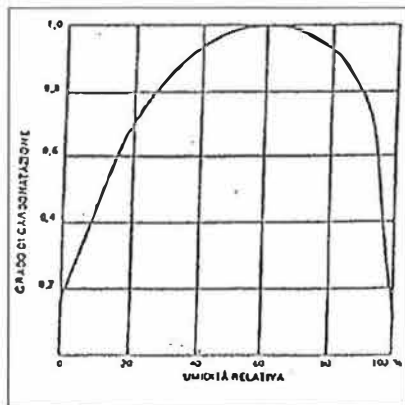


Fig.4 Influence of relative humidity on Carbonation process.

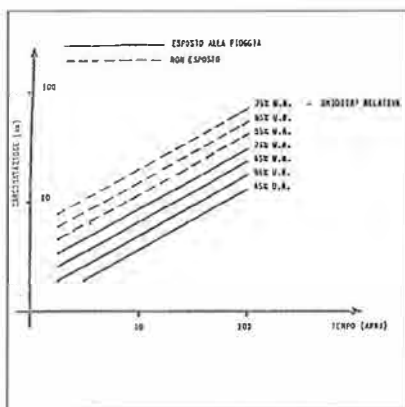


Fig.5 Depth of carbonated concrete depending on exposure and relative humidity.

The structures' low thickness also played a far from negligible role, given that the moisture freed by the carbonation reaction must spread to the exterior in order for the hygrometric equilibrium between the structure's interior and the environment to be maintained. If the water vapor spreads too slowly, the vapor pressure in the concrete reaches saturation and prevents the spread of carbon dioxide inside the structure.

The precursor front advances with time, involving ever-deeper layers and dividing the cement into two zones with sharply differing chemical and physical properties.

The carbonated zone shows a higher density (specific gravity may increase by 2 to 3%), increased compressive strength, high local shrinkage and pH below the limit of corrosion under strain for the reinforcements because of the neutralization of free Ca(OH)₂,

to which the high basicity of fresh concrete is chiefly due.

Electrochemical corrosion is triggered when the precursor front touches the surface of the rebar.

Corrosion proceeds until the effective cross sectional area of the rebar is considerably reduced. The resulting loss of bond between the steel and the concrete makes the reinforcement less effective. Corrosion products can also cause a significant increase in volume at the metal-concrete interface and generate high localized tension stresses in the concrete; together with the stresses arising from blocked shrinkage, the latter leading to cracking and spalling (figure 6). Pieces of concrete thus fall

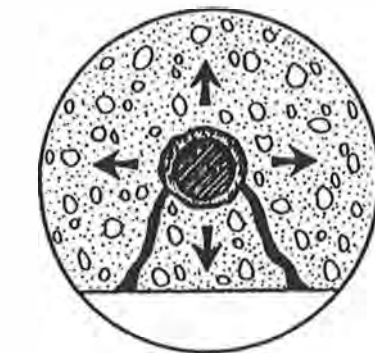
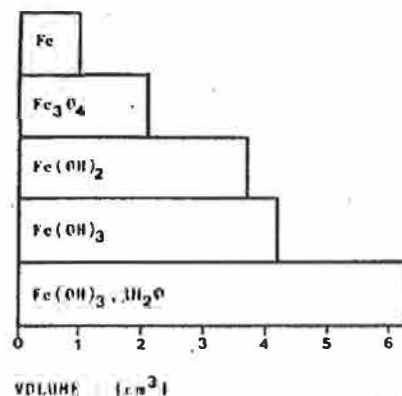


Fig.6 Relative increase in volume of corrosion products in comparison with metallic iron. High localized tension stresses at the metal-concrete interface lead to cracking and spalling.

off to expose the rebar, which hastens deterioration considerably.

Shrinkage due to carbonation has been explained as the dissolution of Ca(OH)₂ crystals under compression caused by drying shrinkage and the subsequent precipitation of CaCO₃ (which is practically insoluble in water) in the voids, which are obviously free from stress.

Under certain environmental conditions, the carbonation shrinkage plus that due to drying produces a total shrinkage of more than double, as shown in figure 7.

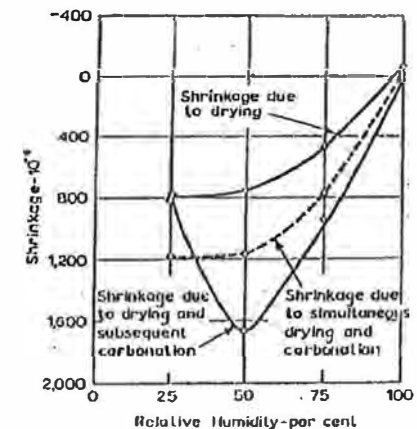


Fig.7 Shrinkage due to drying and shrinkage due to carbonation for different percentages of relative humidity.

In relation to the concrete's expansibility and tensile strength, the total shrinkage can give rise to cracks which sharply increases the permeability of the areas covering the reinforcements and accelerates carbonation with the resulting cracking (see figure 8).

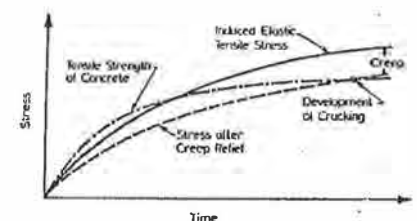


Fig.8 Cracking can be avoided only if elastic tensile stress increased by shrinkage induced stress is always lower, after creep relief, than tensile strength of concrete

When the concrete is subject to alternating wetting and drying the carbonation shrinkage during drying becomes increasingly evident. The total shrinkage at each drying cycle increases because carbonation increases the irreversible portion of shrinkage.

Nor must we forget the contribution of the chlorides carried by the prevailing wind (the 'mistral') from the nearby Mediterranean.

Though they are not a determinant cause of deterioration, these chlorides without doubt add to it.

In coastal areas such as Marseilles, a

fine seawater aerosol can be carried a considerable distance from the coast by the wind. After being deposited on concrete surfaces, the water evaporates to release the salts dissolved in it. When rain wets these surfaces, the chlorides penetrate into the concrete through capillary action.

The poured structures of the terrace are subject to environmental conditions in which periods of water saturation alternate with periods of non-saturation. Such conditions are highly favorable to corrosion. Moreover, in Portland cement concrete, carbonation causes the concrete to lose its capacity to bind chlorides, thus permitting corrosion to occur even when the chloride content of the concrete is less than 0.4% of the cement's weight.

Carbonation also causes aluminate compounds to decompose and any chlorine ions to be freed.

It should be noted that only the fraction of chlorides in solution in the water contained in the concrete's pores is dangerous as regards corrosion, while the chlorides which are chemically bound to components of the concrete mix or physically adsorbed on the surface of the pores are harmless for the reinforcement.

The critical content of chlorides in solution increases together with the pH, and the risk of corrosion thus increases with the Cl^-OH^- ratio.

The carbonation process with the simultaneous presence of chlorides is thus one of the most severe conditions for rebar corrosion.

For a carbonated concrete with a pH of less than 9, the effects of chlorides on the reinforcements do not take the typical form of pitting corrosion.

In such conditions, the passivating film dissolves to expose the reinforcements to more generalized corrosion.

The contamination of the concrete at the Unité with chlorides, which can be readily determined by treating samples of the concrete with suitable reagents, would dictate special restoration precautions. Failing to take these precautions could make the restoration work entirely ineffective.

Different restoration methods were used for the exposed reinforced concrete surfaces of the elevator turret and of the

'pilotis' and 'sol artificiel'.

Restoration work on the elevator turret

The turret was originally designed and built in exposed reinforced concrete, as shown on the drawing of fig.9.

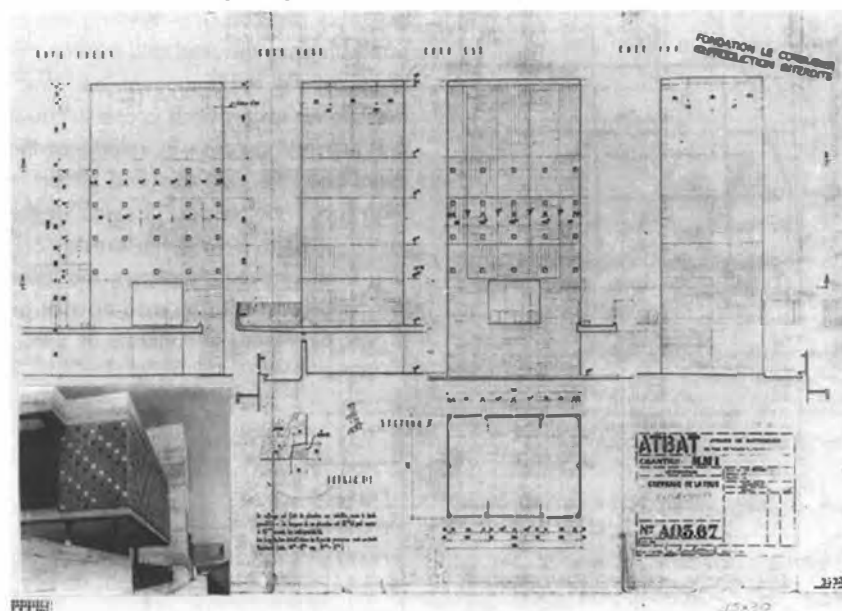


Fig.9 Original drawing AT. BAT of 1948 (Archives Fondation Le Corbusier - Paris).

Because of the many exposed reinforcements and the porosity of the concrete, which led to recurrent water infiltration, Le Corbusier finally chose, as the lesser of two evils, to cover the turret with a thick coat of plaster¹. As expected, the plaster cracked and thus could not prevent the underlying reinforcement

from corroding. As plaster adhesion was already poor, the expansive action of the corrosion products caused large portions of the plaster to fall off.

The elevator turret was the first terrace structure to be restored, given that plaster separation problems had intensi-

fied with the consequent risk of pieces falling from a considerable height as shown in fig. 10 - 11.

The first possibility considered was that of restoring the plaster, which Le Corbusier had fallen back on as a means of protecting the exposed reinforced concrete.

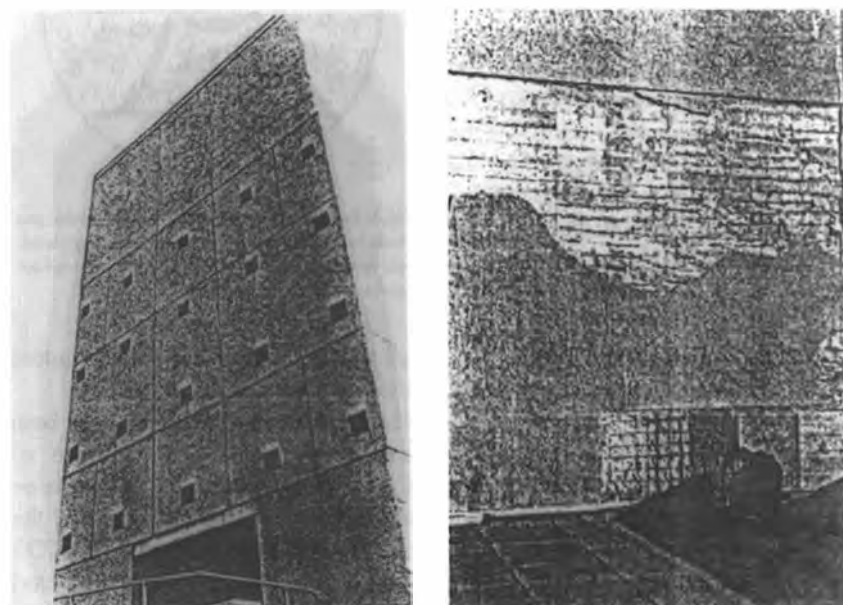


Fig.10,11 The elevator turret in 1987 before restoration works.

The solution which was finally chosen, however, was quite similar to the one Le Corbusier would have preferred to use had the materials and techniques available to him so permitted, and consisted of restoring the underlying surface to its 'brut de décoffrage' condition.

The remaining plaster was removed to reveal the pattern produced by the wooden shuttering. Exposed reinforcements were laid completely bare by removing the concrete with a hammer and chisel, and were then brushed and scraped prior to a passivation treatment.

Facing material was selected in accordance with requirements for adhesion, waterproofing and reproduction of appearance and color of the original concrete (which can also be affected by resin additives). Material selection also involved studying the aggregate type and particle size.

For this purpose three samples were made on the turret so that the product whose texture was most similar to that of the original could be identified (fig.12).



Fig.12 Samples made on the elevator turret to choose the product whose texture was most similar to that of the original.

The facing mortar was thixotropic, and was prepared using a lignosulfonate-base water reducer additive to enhance plasticity. The mortar was trowelled on in several layers, to a total thickness of around 5 cm with an interposed electrically-welded mesh reinforcement secured mechanically to the support.

Panels consisting of fir planks prepared for the purpose were pressed onto the fresh facing to reproduce the marks left by the original wooden shuttering. The planks were first sand-blasted to expose the grain and facilitate the formation of markings in the concrete. A release agent compatible with the additives

used in the mortar was then applied.

Care was taken to create small defects, runs and irregularities in the joints so that the surface finish would reproduce the rough appearance of as-poured concrete.

These operations brought the thickness of the reinforced concrete on the turret from the original 16 cm to around 20 cm, thus altering the proportions based on the MODULOR.

Restoration work on the exposed reinforced concrete surfaces of the pilotis and sol artificiel

A simpler procedure was used for the exposed reinforced concrete surfaces of the 'pilotis' and 'sol artificiel'. Here, the reinforcement which was exposed at certain points because of incorrect positioning in the forms was subject to a passivation treatment (frametaux) and coated with a protective paint (pio-lite) whose color is similar to that of the concrete. Care was taken not to soil the adjacent concrete with paint. It was not considered feasible to cover the entire exposed reinforced concrete surface of the 'pilotis' and 'sol artificiel' with several centimeters of facing mortar, as was done for the elevator turret.

The facades

The Unité d'Habitation was an experimental construction site, where one of the most innovative features was the use of prefabricated facade panels produced using the 'beton vibrée' technique, which made it possible for the forms to be re-used immediately. With this method, rationalization efforts are concentrated through standardization,

large-scale prefabrication and industrial production of components in order to contain construction time requirements and costs.

Three successive designs were developed for the facade cladding in an effort to simplify modular panel construction and increase uniformity.

Figures 14 show an example of the first and second design versions for the type 21 panel used to cover the flat fronts.

AT.BAT subsequently revised the prefabricated cladding design and developed the final version.

On the contractor's suggestion, a change was made in the method used to retain the panels to the underlying concrete block curtain wall. According to the design, the panel anchor device was to be caught between the blocks of the wall. This curtain wall was constructed of 15 cm thick perforated concrete blocks, and was to be reinforced by 'ceinturese' consisting of 8 mm diameter steel bars spaced two or three blocks apart in the AT.BAT design. In the actual construction, weakly reinforced beams were poured in the thickness between the block walls, and the W-shaped anchor device attached to the longitudinal panel reinforcements was embedded in this beam.

The 1,5 cm wide vertical joints were sealed with simple cement mortar poured from above before installing the top row of panels.

The mortar was to have filled the space between the concrete panel and the block wall in order to protect the 6 and 8 mm diameter steel anchor bars from corrosion and ensure that the joint was air- and water-tight.

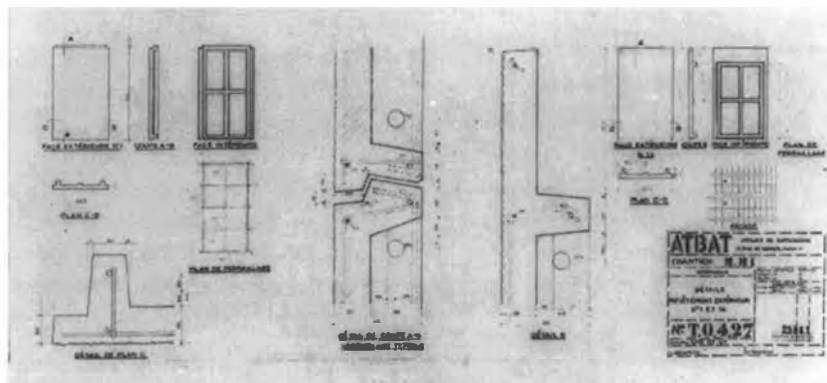


Fig.13. Second design version for the type 21 panel used to cover the flat fronts. Original drawing AT. BAT. (Archives Fondation Le Corbusier - Paris)

Water-tightness of the horizontal joints was to be ensured by the configuration of the panel's horizontal edges.

The many defects in prefabricated panel production and installation became obvious during construction. The edge reinforcement was missing in many panels, while some panels even lacked the reinforcement inside the ribs. Consequently, many panels were cracked or had broken edges, partly as a result of the inappropriate and careless handling techniques used at the construction site. Many adjacent panels were not coplanar, a defect which was particularly apparent along the edges. The space between the vertical ribs was often incompletely filled, with external runs of mortar.

Additional defects arose as a result of the difference between the design dimensions and the actual dimensions of the reinforced concrete structures as poured.

The poor dimensional quality of the poured structures resulted in presence of horizontal joints in the prefabricated cladding, which in some cases exceeded 10 cm in width. These joints were simply filled with mortar and covered with gravel of the same type and size as used for the prefabricated elements. During the 1960's, work had to be done on the blind portion of the east front as a result of recurrent water infiltrations. Major cracks and the joints between the panels were filled with cement mortar, which was then covered by a thick waterproof plastic coating. This seemed to be successful in preventing further infiltration, but seriously affected the appearance of the prefabricated front.

Restoration work of the facades

As the facades were blackened by several decades' worth of dust and pollution on the rough concrete surfaces and their appearance had been altered by the thick waterproof plastic coating described above, the restorers chose to use a questionable chemical cleaning method.

Given that the initially envisaged method, viz., washing with hot pressurized water, was found to be entirely ineffective, it was proposed to use an alkaline, sodium hydroxide-based pro-

duct with a pH of 1.4. This product was brushed on and then rinsed with hot pressurized water, a procedure which was repeated three times until the original surface was revealed. The use of chemical treatments in general, and in particular of sodium hydroxide, to wash reinforced concrete surfaces would seem to be extremely unwise considering the many chemical interactions between alkalis and concrete. The proposed cycle also involved a final application of two coats of a sulfuric acid-based neutralizing product, with each coat being rinsed with hot water.

On the advice of the Bureau Veritas, the treatment was performed without the final application of neutralizer, which was considered to be useless.

In fact, this treatment is worse than useless, and indeed harmful, in view of the effects of sulfuric acid on concrete.

The panel joints, which had been filled with cement mortar and covered with a plastic coating, were milled using a double, diamond tip disc for a width of 8 mm and a depth of around 15 to 20 mm. A layer of inert material was placed in the bottom of the joint to prevent the elastomeric sealant from adhering. Three coats of a waterproof acrylic resin-based product (Renaulag 13) were then applied using a roller following the manufacturer's directions. As it was not possible to use a transparent product for this specific problem, great care was taken in selecting a product with the correct color and matte appearance, while the thickness of the coating was appropriate for the size and configuration of the areas to be covered.

The treatment is reversible, as the coating can be removed using a suitable chemical cleaner followed by a water rinse. The fronts were washed after removing a number of unsightly additions on the loggias made by the various owners. The intense polychrome decoration was then restored using the original colors for each loggia as indicated on the general color scheme conceived by Le Corbusier and conserved at the 'Fondation Le Corbusier'.

Even if the conditions required for the alkali-aggregate reaction do not arise, it is sufficient to consider the role of alkalis in the carbonation reaction and,

were this is not enough, the capacity to transform insoluble calcium carbonate into soluble sodium carbonate, which then leaks out.

Indeed, it is likely that the fine white powder which appeared on the surface after treatment and disappeared after a short time under the action of water was sodium carbonate produced by a reaction between the sodium hydroxide and the carbonates in the cement matrix. Obviously, the leaking caused by an aggressive treatment of this sort makes the surface layer of the concrete more porous and hence more vulnerable.

Considerations regarding the various restoration techniques adopted at the Unité d' Habitation

The criteria used in selecting restoration techniques can be reduced to terms of the greater or lesser weight assigned to the work's aesthetic and artistic values as opposed to its historical/documentary value or physical consistency. In restoring modern work, we believe that the work's aesthetic and compositional, and hence artistic, values must be given priority when selecting the type of technique to be used.



Fig. 14 The elevator turret in 1991 returned to the original appearance with the texture of the 'beton brut' and the patterns left by the wooden shuttering.

In line with the French cultural tradition in restoring historical monuments, the attitude of the Marseilles restorers

would also seem to have been that of giving priority to the aesthetic and compositional values, which in the case of the Unité d'Habitation, also coincided with the historical/documentary values.

For the elevator turrets, in fact, it was decided to reproduce the texture of the 'beton brute' and the patterns left by the wooden shuttering, which are essentially aesthetic and compositional values, and thus returning to the original appearance as desired by Le Corbusier (see fig. 14).

For the facades as well, the removal of all additions and alterations to the loggias and unsightly accretions such as curtains, pergolas and verandahs together with the efforts to restore the original color scheme of each loggia after washing the fronts were intended to reconstruct the historical document and reinstate the aesthetic and compositional values through a return to the original image (fig.15).

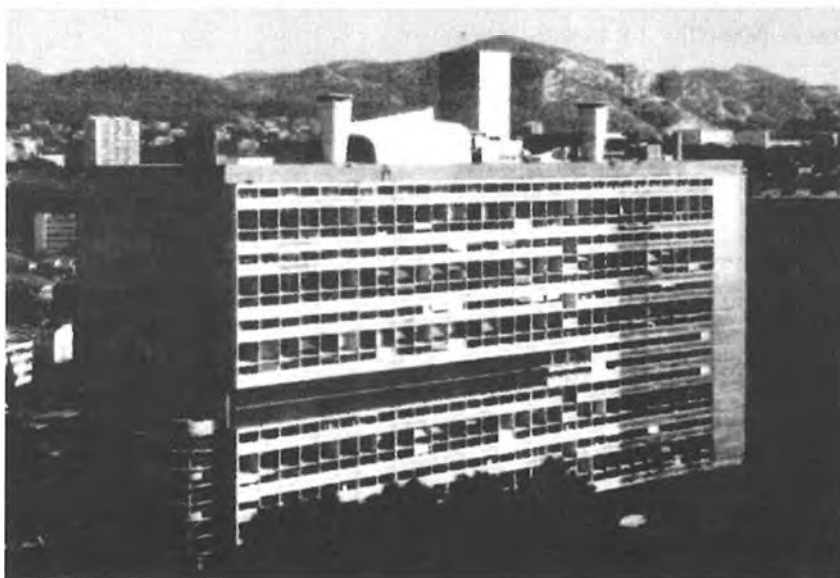


Fig.15 The west front during washing works in 1991.

Washing the facades revealed a number of patches in the regular shutter pattern which characterizes the surface of the exposed reinforced concrete and on the prefabricated cladding.

These patches were the result of past attempts to repair areas where the concrete had fallen off from rebar, reconstruct chipped panel edges and fill major cracks. These operations, many of which were performed immediately after construction, were carried out

with no attempt to camouflage the added materials.

The restorers' policy was to avoid a 're-built' appearance which would have made it obvious that the work had been restored.

Seen in this light, the patches and 'scars' mentioned above were considered as signs of the building's past life, and hence not to be concealed.

Where we take issue with such an attitude, however, is in the complete reconstruction of reinforced concrete surfaces in modern buildings, as was done for the elevator turret. Here, it appears that the restorers even intended to subject the concrete surface to an artificial ageing treatment to reproduce a sort of patina together with the surface damage caused by temperature shock and weathering.

The treatment was not in fact carried out, as it was opposed by the 'Bureau de Contrôle' on the grounds that it would reduce the facing material's

durability. It is important to recognize that the selection of a restoration technique should follow a careful analysis of the criteria and values involved, an effort which should draw on input from a number of disciplines and cultural viewpoints. Restoration should also be the beginning of a new life for the building, the first of a series of activities which will be carried out from time to time to conserve the building for posterity, and is thus approached in the spirit

of a conscientious caretaker rather than that of the restorer per se.

Note:

1. For a full account of the reasons behind Le Corbusier's decision to plaster the turret, see: De Caroli F., *Conoscenze tecniche per le strategie di intervento su edifici significativi dell'architettura moderna*, atti del Convegno A.N.I.A.S.P.E.R. 'Il Restauro dell' Architettura Moderna', Rome, 14-15-16 May 1992.

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United Kingdom

Lawn Road Flats and the development of 'minimum' living

This lecture centres on the Lawn Road flats designed by Wells Coates in 1933 for Jack and Molly Pritchard, and for which we are in the midst of a conservation project. But the lecture also traces the development of 'minimum' living from the conceptual ideas of the avant-gard architects from the early 20's to the highly sophisticated factory produced products of today.

The first slides show the Lawn Road Flats, later to become known as the Isokon Flats, named after the company



Lawn Road Flats. Wells Coates, 1934.



Lawn Road Flats, interior of the 'minimum flat'.

set up by Jack Pritchard for the manufacture of plywood furniture. At first Jack Pritchard had the intention to build a single house on the site which he had

acquired from the LMS railway company and had commissioned another architect to produce a design, this was a vague Art Deco scheme, and was eventually dropped when Jack met the engineer Wells Coates, who had recently made a strong impression with his avant garde designs for shops and BBC interiors. Coates had spent some years previously in Paris and became acquainted with Le Corbusier and the modern artists and architects of the 1920's.

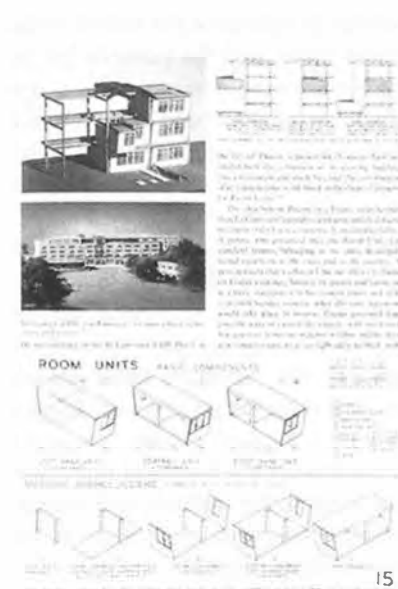
One of the first excursions in mass produced housing was by Le Corbusier published in 'Vers une architecture' in 1927. This was followed in 1928 by the famous 'existence minimal' based on dimensions to fit minimum human requirements. The first building of Le Corbusier for this was the Merburt exhibition 'Weissenhof' at Stuttgart, where the single space is convertible from day time to night time accommodation.

At the same time major developments were occurring in Russia, Holland and in Germany at Breslau, now Wroclaw in Poland. H. Scharoun built the stunning single person flats also with accommodation for two person flats, but no children: a restaurant was provided and the work concept was geared as a pattern of living not really seen as a norm for another 60 years.

The second CIAM congress at Frankfurt in 1929 addresses the concept of minimum living as its central theme as its title 'La maison minimum' implied.

Although the subject of mass produced units was on the agenda apparently no actual schemes were realised as an outcome of the conference.

Although there is some mystery as to who, of the 'advanced thinkers' - Wells Coates, Jack Pritchard and his wife Molly-, was the first to alter the Lawn Road building project from that of a single family house or a pair of 'semi-detached' houses, for both of which



Prefabricated Room Units, Wells Coates, 1946.

Wells Coates provided sketch schemes, to the block of flats. Both Wells and Jack had been under the influence of Le Corbusier and both had a passion for 'modern' living. However there seems to have been a very felicitous mutual agreement that the scheme was for mostly single professional people with four flats for couples, three studio flats and a double penthouse on the roof for the Pritchards. The flats were planned to have minimum kitchens as a central kitchen and services were planned. Full meals could be served in individual rooms. The wise precaution was taken to exhibit a full scale mock-up flat at the exhibition of British Industrial wares at Dorland Hall London. This attracted widespread interest and on the strength of this building project.

The original plan, as noted, contained a central kitchen and staff quarters, but this concept was felt, after two years, to be restrictive and Jack Pritchard approached Marcel Breuer, just having escaped from Germany, and F.R.S. Yorke to convert the central large kitchen to a club room, the Isobar, dining room and smaller kitchen. This was an ideal step and lasted elegantly until the Pritchards

sold the building to the left wing weekly 'The New Statesman'.

The Lawn Road Flats continued from before the war up until the late 70's as a Mecca for architects and professionals. The list of well known residents is phenomenal and included Gropius, Breuer, The Rountrees, Frank Newby, Alan Colquhoun, Jim Stirling et al. The restaurant and Isobar were famous, at one time the chef was Philip Harben, the first T.V. chef of note. No wonder the kitchens in the flats were never complained of as being too small.

The sale of the building was thought, by the Pritchards at the time to have been successful and they were under the impression that The New Statesman would administer it in the way they had intended. To their astonishment and anger immediately the sale had gone through the purchaser, sold on to a building firm who indulged in a total act of vandalism and ripped out the Isobar, restaurant and kitchens and installed poorly fitted out flats. The dream had been shattered.

The recent history of the building is sad. After a initial brave decision by the local authority of Camden, led by the then Chairman of Housing Corin Hughes-Stanton, a friend of the Pritchards, the building was brought by the socialist Council to the great relief of many. However after Hughes-Stantons' term of office the council lost interest and the building deteriorated, faults developed in the heating system and electrical services and so on.

Repairs were carried out in a very dictatorial manner and a general lack of maintenance meant that the building lost much of its elan and agreeableness. In 1988 Laura Cohn, the daughter of Wells Coates wrote to the Thirties Society asking if anything could be done to stem the decline.

The chairman then asked if the newly formed DOCOMOMO-UK-group to help. We have made proposals for the building to be a. up graded in the national list of meritorious buildings and b. for a take over by a housing association who may have resources to run the building more efficiently. These proposals are now being studied but, alas, I can not report the outcome at this conference.

We also propose the restoration of the Isobar, to give the residents at least a meeting room.

I now turn to the core of the matter, the small or 'minimum' living space, and will quote some statistics. In Great Britain now in 1992 approximately 25% of households are for one or perhaps two persons. From the demographic projections this will rise, in only eight years, in 2000 to 40% mostly accounted for by the rise in proportion of elderly single people and young unmarrieds. In Stockholm, for instance the proportion of one or two person dwellings is 60% and the projection for 2000 is greater. There is therefore an overwhelming need for more smaller dwellings. Point One.

We have noted the early projects by the founding architects of the Modern Movement for smaller and industrialised housing units. Wells Coates was one of many before the war to produce such schemes. But it was only after the war that the gear was changed and mass produced housing was realised to be an absolute necessity. In Great Britain we had a tremendously successful programme of mass produced 'Prefabs' but that is another story.

Buckminster Fuller in 1946 developed the prototype Dymaxion House and

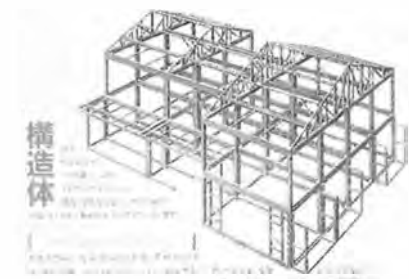


House of the Future, a. and P. Smithson, 1956

introduced a new logic and dramatic concept of economical space. A mathematical revolution was set in train the full importance of which is only recently being realised. At the same time Euclidian concepts of form began to be questioned by architects.

Alison and Peter Smithson, after losing the competition for the rebuilding of Coventry Cathedral, by far their best project, to Basil Spence, were offered a morsel by him to design the 'House of

the Future' for the Daily Mail 'Ideal Home Exhibition' in 1956. This scheme was designed to be factory built and universally applicable to a variety of geometrical aggregation configurations. The free form living space was planned round an open courtyard or Roman Atrium (in the true sense) and like the Roman prototype it had virtually only one exposed elevation. The foresightedness of the Smithsons was neglected by the building industry although the exhibition visitors were fascinated, but probably more by the 'new Fangled' gadgets, than the total originality.



Prefabricated house frame, Sckisui, 1980.



House Production Line, Sckisui, 1980.



Complete house, Sckisui, 1980.

However, not long after, in Japan, naturally, things got going. Amongst others who were working on the theme of minimal factory produced housing was Kisho Kurokawa, who, during the 1960's produced a wealth of ideas culminating in the 'capsule tower' of 1972.

In Europe, where we appear to be not so adventurous, most of such similar exercises never left the drawing board. For instance the elegant project by Wolfgang Döring for *Stapelhäuser*.

We now turn to the second point of my thesis: factory produced housing on the grand scale is now a reality.

Toyota are producing, as their cars, robotic constructed houses in vast numbers, in factories with no lighting as so few functionaries are involved. Just as we thought they would never be able to compete with the west in the manufacture of optical and audio equipment, motorbikes and cars. The western 'house building' industry refuses to believe in 'pre fabricated' units. The Building Societies will not finance them and the public appear to be apathetic.

Toyota, Sekisui and other Japanese firms have a stated policy in the export market. To target their volume sales to Northern Europe and North America and expect to be the chief house builders in these regions in 10 years time. In the meantime they are setting up discreet finance companies here who will provide direct mortgage assistance to purchasers so cutting out the Halifax, the Woolwich and all.

What are we doing about it?

The forerunner of the British firm Trinity Modular Technology started building factory produced elderly person housing for the GLC in 1980. A built example is a four storey block of flats

at Crissold Park in North London. Serial production was planned but cash problems prevented development of that project. However, undaunted, the core team led by John Prower set up TMT and proceeded to study the Japanese Technology referred to previously. They then produced a further prototype of Microflat in 1986. This is a much more sophisticated example than the Clissold Park project and is aimed at an upper price bracket. Again taking the Japanese philosophy of producing a quality product to establish a confidence in the potential market and dispel doubts of shoddy 'prefab' work.

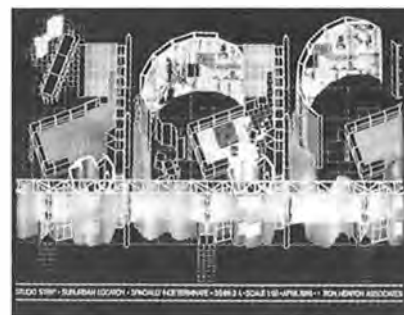
The interiors are Herman Miller and the complete communications wall is by



Tri Modular Technology. 'Microflat' 1986

Sony, all fittings and furnishings are provided in the package which is housed in a factory produced steel frame box. The aggregation of units is of either wet (concrete) zones between the units or a dry (isolated steel connections). The illustrations are of the prototype interiors and a computer projection of a complete building.

Parallel with this work by TMT the distinguished member of Archigram Ron Heron was developing his concept of the 'Robo House' which was presented at the 'Visions de Modern' Exhibition at the Frankfurt Architecture Museum in 1986. The concept is for a flexible space in a structural grid, and components being factory assembled. The chief feature is the entirely flexible external wall which accommodates whole wall imagery at will. This can be seen better in the accompanying video.



Robo House, Ron Heron, 1986

Here is a vision as dramatic and essentially architectural as the Smithsonian's 'House of the Future'.

DOCOMOMO may be chiefly interested in the elements contained in its own acronym, but at least an acknowledgment of the progressive architecture of the international style must be supplementary for our enthusiasm for the progressive architecture of today and tomorrow.

Marble facings in Italian architecture from the 1930's

Introduction

Modern Italian architecture is distinguished in the international scenario on account of the particular cultural and economic situation that prevailed under fascism.

Marble facings used in buildings with a reinforced concrete structure represent one of the characteristics responsible for the originality of Italian works of the 1930's.

In the more traditional buildings, which repeat the stereotype of the 'Littorio' style even though they have a reinforced concrete frame, marble was still employed in the classical form of a wall cladding, i.e. facework.

In the hands of such modern architects as Terragni, Vaccaro, Libera, Moretti and Ponti, however, marble facing technique assumed an experimental character, and this both from the architectural and the technical point of view. The present paper sets out to summarize the principal phases of this experimentation.

The relaunching of marble in modern architecture

The relaunching of marble as an external finishing material has to be seen in the context of the building industry recovery sustained by the State after the great economic crisis of 1929. This recovery, essentially centered on public works, coincided with the crucial phase of the modernization process that was then taking place in all the industrial countries. In Italy, however, modernization was moving on a twin track where the policy of autarky was superposed on the international features of the pro-

cess. Partly, therefore, the transformations followed the great European current: the spread of reinforced concrete technology, the industrialized production of building elements. At the same time, however, building development also assumed an autochthonous dimension of which the two principal features were the use of light alloys and the marble, relaunching with which we are here concerned: a traditional material abundantly available in Italy at a low cost.

The National Fascist Marble Federation was called upon to undertake an action of updating both its technologies and its product marketing methods in order to stand up to the more modern and directly competitive industrial sectors represented by ceramics and the many new compounds of artificial materials.

The attempted industrialization of the marble sector proved beset with difficulties, partly on account of the great fragmentation of the production sites and partly also in view of the profoundly artisan roots of the category. Nevertheless, the response to the call for greater use of marble was full and immediate. The explanation of this phenomenon has therefore to be sought in other and more general motivations.

First of all, there was the state's capacity to influence the building materials market in a direct and decisive manner, acting both on the supply and the demand side: the technical offices and the owner authorities of all public works specified the use of marble and quite often also the type of marble.

Furthermore, modern architects reacted favourably to the campaign for giving a greater place to marble, and this quite independently of the promptings and strong conditioning of the regime. Giuseppe Pagano speaks of the exciting action that marble exerts on archi-

texts, though a less romantic explanation can be found in the cultural climate of the period.

The modern conception of marble facings

The culminating phase of the modernization of construction techniques coincided with the crucial moment of the battle for the introduction of modern architecture into Italy.

The modern architects saw the use of marble facings as a possible contribution to perfecting an original version of modern architectural language. Indeed, Giuseppe Pagano suggested this strategic function of marble as early as 1932: the intrinsic figurative riches of 'a slab of marble, well cut and of a certain size', became an element on which architects relied to substitute the traditional decoration of stuccos and artistic cements (from neoclassicism to the floral style), at the same time avoiding also the insufficient nobility of the plaster of European rationalism.

An emblematic example of this mediating function performed by marble is provided by the Post Office Building



G. Pagano,
Palazzo delle Poste in Napoli, 1928-36.

(*Palazzo delle Poste*) in Naples. It is the first example of a building with a reinforced concrete structure completely faced in marble. The solution, with its facade of a decidedly modern register, was strongly opposed by the traditionalists.

Not even Piacentini's support proved effective in this case. The episode forms part of the wider politico-cultural dispute about modern architecture that was raging in those days; it is a fact, however, that the situation resolved itself after the Minister of Communications had personally had the opportunity of seeing a 1:20 scale model of the entrance portal made of 'real' marble and verifying that, notwithstanding a drastic simplification, the architectural image had preserved a sufficient degree of nobility and monumentality. A decisive contribution to this end was made by the choice of lining the entire facade with precious marbles: Anzola diorite (from Val d'Ossola, one of the most beautiful black granites available in Italy) for the base and, for the upper parts, marble from Valle Strona 'with its opaline sea-shell iridescence', as Manzoni tells us in the jargon of the second futurists.

This importance of marble turned Vaccaro's design into an exemplary, though not by any means isolated case. The aspiration of differing from both academic traditionalism and International Style was common to many experiences of the modernists, and the use of marble facades therefore acquired a different but no less important role in many other cases: -in Liberia's elementarist language, where it contributes to creating the fable-like tonality of the image; -in Terragni's rational classicism, where it is conceived in the manner of plaster, but more solid and precious; -in the works of Moretti, where classicism assumes lyrical accents; -in the polymaterialism of the neofuturism of Mazzoni's stations and post offices, where it multiplies the chromatic effect.

And it is precisely this heterogeneity of the linguistic results that demonstrates the experimental character that the use of marble assumed when - in reinfor-

ced concrete buildings - it lost its traditional connotation as masonry face-work.

1934: the experimental phase

The experimental phase came to a peak in 1934.

Between the spring and the autumn of that year, the phase of applying the marble facings was commenced more or less simultaneously on a large number of sites where public buildings were being constructed. The situation was therefore typical of passing from a well proven technique to a new and unknown one. The designers were uncertain in choosing the type of marble. The suppliers experienced difficulty in complying with delivery dates. Under the pressure of the ever closer official inauguration dates, disputes arose nearly everywhere between contractors, owners and designers, generally on account of incomprehension of a technical or economic nature. The definition of the details by the architects turned out to be unexpectedly different from the traditional working techniques to which the contract documents still referred.

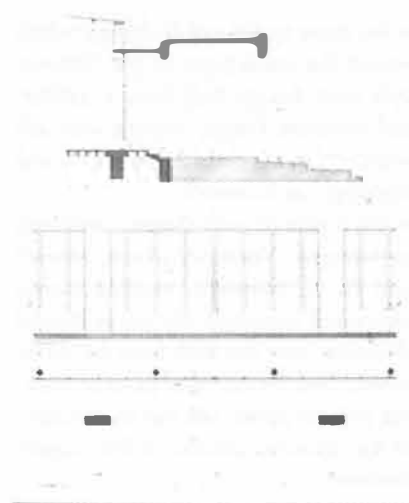
The difficulties that came to the fore immediately after the construction derived from specific technical problems rather than organizational uncertainties. Though the use of stone and marble forms part of the oldest known construction techniques, it now presented itself in altogether new terms because the facings had to be applied to the walls of buildings that had an independent reinforced concrete skeleton.

For a long initial period the method of fixing the facings to reinforced concrete buildings remained substantially the same as the one traditionally employed on load-bearing masonry walls: successive panels were rested on the immediately preceding one and then fixed to the wall with two or more cramp irons.

But this system could not be adopted for lining architraves and ceilings. In this case, excluding the arch or platband arrangements typical of walled structures, the marble sheets had to be fixed directly to the reinforced concrete struc-

ture without the benefit of being supported from below, at least during the erection itself.

The direct attachment of marble to reinforced concrete highlighted aspects of the problem that had not yet been fully considered. For the portico in front of the facade of the Post Office in via Marmorata, for example, Libera had opted for dressing the frame - a length of seventy-eight metres - in Predazzo porphyry, a violetish stone. The design envisaged large stone panels, 3 cm in thickness, to line the entire structure, including the underside of the roof. Two architrave facing panels came off within two years of the inauguration, and a ceiling panel dropped in 1939.



A. Libera, Palazzo delle Poste in via Marmorata in Rome, 1933-35.

Many incidents of this type were experienced at that time, and the causes were gradually clarified in the months to come.

Technological evolution of thin-sheet facings

The various authorities responsible for the safety and management of public buildings were in a state of alarm in 1935 on account of the frequency with which stone facings became detached,

often followed by dangerous falls.

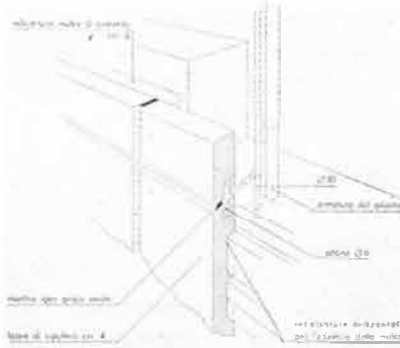
This led to an intensification of the specific studies regarding the combined behaviour of marble and reinforced concrete, with the conclusion that the difference between the coefficients of the thermal expansion could lead to differential strains between claddings and structure; these deformations, in turn, could set up tensile stresses between the cramps and the facing and also between the cramps and the structure.

The studies had thus identified the primary cause of the instability of these thin-sheet facings applied to reinforced concrete structures: the lack of expansion joints between the facing panels.

This delving into the behaviour of the two materials under the action of temperature changes led to the development and patenting of new ways of anchoring marble panels to reinforced concrete structures, systems that were based on criteria substantially different from those adopted for fixing facings to brick and stone walls.

The new devices revolved round two fundamental innovations: first, the inclusion of an expansion joint between adjacent marble panels, and, secondly, that each panel had to transmit its entire weight directly onto the structural frame, using appropriate stirrups directly connected to columns or beams, and not onto the panels immediately below.

One of the most minutely considered



G. Ponti, Palazzo Montecatini in Milano, 1937-38.

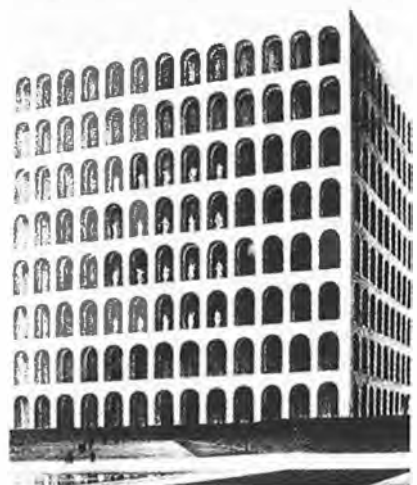
systems for fixing marble facings to a reinforced concrete structure was used in the construction of the *Montecatini Building*, designed by Ponti and put up in Milan between 1937 and 1938. This building may be considered as a kind of laboratory, where - within a completely modernized construction setup - use was made of a new fixing system patented by the resident engineer, Mr. Bosiso. The road facades are wholly lined with large panels of *Cipollino apuano*. The panels are fixed to the structure by 8 or 10 cramps of brass, 'the shaft being twisted round special vertical steel bars inserted in the concrete columns that are completely independent of the reinforcement'. A gap of as much as 6 mm is left between one panel and the next.

Return to facework

The *Montecatini Building* can be considered as the culmination point of the evolution of thin-sheet facing technology. The end of the decade, however, saw a return to traditional 'facework' techniques superposed on this evolution: a change of direction that was partly due to accentuation of the autarky policy, but was also the result of a desire for returning to a conception of classicism based on the grandeur of the building, which made itself specially felt in the case of major public works.

The most emblematic model of this traditional manner of conceiving a facing is constituted by the *Palazzo della Civiltà Italiana*, put up between 1937 and 1940 at the EUR in Rome. The panels (but here one should speak of blocks) decrease in thickness with increasing height and each rests on the

one immediately below, thus constituting an autonomous and self-supporting skin; the arrangement of the panels reproduces the conformation of a stepped masonry wall and underscores the arch geometry. And yet, notwithstanding this clearly visible tectonic matrix of the configuration, the original design attributed an essentially symbolic character to the facade: the arch is the primary sign of masonry structure, but when repeated in keeping with the abstract geometry of an orthogonal frame, it assumes a purely figurative connotation. This was made possible by the building's reinforced concrete skeleton, which was conceived of as a kind of internal staging, thus freeing the walls from the structural function of resisting horizontal forces and - indirectly - rendering possible both the



G. Guerini, E.B. La Padula, M. Romano, Palazzo della Civiltà Italiana at the EUR in Roma, 1937-40.

slenderness of the columns and the intense and invariant rhythm of the arch iteration.

Conclusion

The *Montecatini Building* is the most typical product of the architectural pragmatism that, towards the end of the 1930's, represented the image of great private industry with evident traces of the America-type 'mechanicality' that was one of the fashions of the period; the *Palazzo della Civiltà Italiana* is the most typical product of the ideological redundancy that characterized the architecture of the major public works during this same period.

In the former case the marble sheeting is the outer layer of a slender siding, in the latter case the marble becomes the unit block of a ponderous (but vital) masonry facade. The former contributes to defining the neutral image of modern technology, the latter substantiates the metaphysical and rhetorical representation of the great construction tradition of the past.

As the language of Italian modernity, the 'marble question' oscillates unceasingly between the two poles of masonry architecture and structural frame architecture, an unresolved duality that re-emerges with every reading of the Italian works of this period: metaphor

of the more general ambiguity between tradition and innovation that constitutes the background motif of Italian culture between the two Wars.

The definition of the marble facing was one of the many experimental aspects characteristic of detailed design in Italian architecture of the 1930's. Knowledge and understanding of this experimentation is therefore of importance - first and foremost - in the history of architecture. But it also has an operative and not by any means secondary scope in connection with the conservation and restoration of modern architecture in Italy.

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A restoration project in Brazil and its theoretical considerations

Introduction

This paper presents a discussion of some aspects of the restoration design of the house built by the architect Gregori Warchavchik to be his own home, in Sao Paulo, in 1928.

My design proposal was developed in 1984, during the 5th Specialized Course on the Conservation of Monu-

ments and the Rehabilitation of Historical Cities (sponsored by Brazilian Heritage and the UNESCO), at the Federal University of Bahia and was indicated by the Heritage Department of the City of Sao Paulo, where I was working. The house - considered the oldest example of MoMo architecture in South America - was built surrounded by a huge garden. During these last 65 years several renovations were made, but the biggest one took place in 1934.

All of them were made by Warchavchik, who lived in the house until 1970 - two years before his death -, and by his daughter who lived in the house till 1979.

Since then, the building has been clo-

sed, waiting for the right moment to be presented to the real estate market. However, at the end of 1983, a preservation movement, held by the neighbourhood dwellers, started looking forward to saving the house and to opening it to the general public. At this moment a restoration design was required.

A critical literature review

The possibility of the house's restoration brought up an interesting debate among different agencies of historic building preservation in Brazil. The consideration of the history of the building, designed and modified by its own author and proprietor, resulted in various positions: the defense of a design that would recuperate the original features; the maintenance of the renovated house of 1934 or even the single elaboration of an inventory, accepting its demolition.

In order to come to a clear opinion, we thought it was fundamental to do a critical literature review on the professional history of the architect, searching for a better understanding of the changes in his thoughts and, consequently, in his architectonic production.

Warchavchik, born in Russia, arrived in Sao Paulo in 1923, at a moment of full expansion of the city, characterized, as in the rest of the country, by intensive building of eclectic constructions.

Warchavchik, graduated in Rome, where he probably had contact with some aspects of the modern ideology. Once in Brazil, he wrote a manifesto - 'About Modern Architecture' - that was published in two newspapers, one in Rio and another in São Paulo, in the year 1925. His first efforts to translate his ideas into building design and construction, however, only came true when he built his own house.

The architect faced several problems with the construction, related to the aesthetical innovative and constructive

The house of 1928.



The house of 1928, the "tropical" verandah.



aspects of the building, if compared to the other buildings of the city at that time.

The City Hall refused to give a building permit for Warchavchik's house arguing the facade was 'artless'.

Thus Warchavchik added neoclassic elements to it that actually were never built using the excuse that he couldn't afford them.

Besides the lack of industrialized building materials - such as metals (steel), waterproof coating and high quality finishings - other alternatives were found:

- brick work combined with wooden beams was used to substitute the concrete, because of its high cost.
- employing masons to make windows and doors, fences and several finishings according to Warchavchik's drawings of modern inspiration.
- Spanish tiles covering a hipped roof, hidden behind horizontal pediments in order to simulate a plain roof in concrete.

In spite of the high investment and the local traditional elements used in the building, the house caused a great impact. Warchavchik's work represented a truly modern message of architecture and finally his speech was decoded to the people at large.

By trying to justify the use of traditional building materials, Warchavchik stated that he did not want to simply make a copy of the European architecture, but to pursue a modern attitude integrated into the Brazilian region and its traditions: 'I believe I produced a truly Brazilian house'.

A change of speech

The repercussion of Warchavchik's house after its opening gave place to a strong controversy, through the press, with a Brazilian architect, who did not accept the MoMo aesthetic. In order to defend the new architecture, Warchavchik decided to follow more closely the Europeans' modernist thought. He started a process of greater identification with the International Style, consequently giving up the adopted principles of his first project.

His meeting in 1929 in São Paulo with Le Corbusier - who was surprised at the

existence of a modern architecture in Brazil - would contribute to emphasize Warchavchik's new position. Since then, he was identified as the representative of Latin America in the CIAM's.

A new stage might be perceived in Warchavchik's works from then on. They were basically prismatic shapes, right angles, pilotis and garden-roofs, built on reinforced concrete. Little by little, these architectural solutions became typical of some Brazilian buildings of the 1930's. Warchavchik, whose prestige was acknowledged by then, was invited by the architect Lucio Costa to change the Course of Architecture of the Fine Arts National Academy (Rio de Janeiro), following a modernist approach. Both architects also worked together in private practice till 1933.

Warchavchik, from this time on, embodied the philosophy of international architecture, as an expression of the new industrialized world, forgetting, therefore, that Brazil was still a large territory, basically agrarian, where industrialization was just beginning. At the same time - though his speech was radically international - Warchavchik still lived in a house made of brick masonry, wooden beams and Spanish tiles! There was no concrete work.

Looking for the International Style

We believe that the reform of 1934 had not been done only for functional reasons. More than likely, Warchavchik intended to erase the traditional features of the building by using new elements in order to give a more modern appearance to it.

From then on, the so-called modernist house was deeply altered, pointing out the fragile regional character expressed in Warchavchik's first attitude in 1928. In this renewal, the main changes were:

- substitution of the varandah's roof by concrete.
- construction of an a canopy, also of concrete, on top of the main entrance.
- the end of the facade's symmetry, by walling off windows on the first-floor.
- substitution of the three windows on the top floor by a central one.
- utilization of a plaster ceiling in order to reduce the height from 3,5m (as an eclectic architecture) to 3,0m.
- the enlargement of the dining room and the living room.

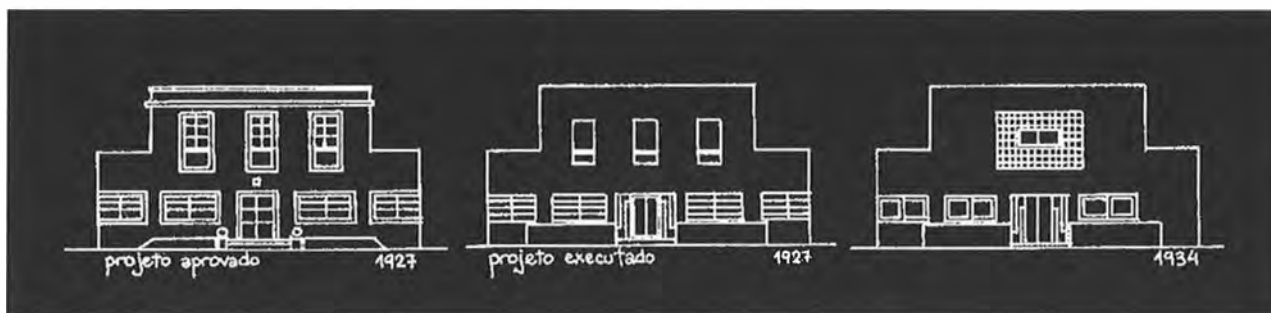
However, the Spanish tiles remained - hidden by the pediments - as well as the wooden beams - hidden between the carpets and the plaster ceiling.



The house of 1934.



The house of 1934:
the new terrace
in concrete.



From left to right: the facade approved by the City Hall, the facade built in 1927/28 and the facade of 1934, that has remained until now.

It was basically this house that lasted until now, symbolizing the change of Warchavchik's architectural thought.

On the other hand, curiously, Warchavchik had continued to show his house of 1928 in his later lectures. Even now, in the academic's milieu, only a few architects and teachers mention the reform of 1934, as well as they do not know about the wooden beams nor the Spanish tiles hidden behind the plain and 'modern' facade that appears in the Brazilian architectural books. It proves that the house of 1928 still represents the beginning of a modern aesthetic in Brazilian architecture.

Restore which 'House'?

In spite of the first house's importance, it is impossible to ignore the significance of the 1934 alteration. First of all, since it was made by its very author and secondly because it reflects an attempt at an affirmation and the contradictions of his international speech. Thus the 1934 house should be considered in the development of a restoration project.

However, during the Specialized Course, some architects-consultants had defended the 1928 house's return. They were impressed by its broad documentation obtained during the archive's survey (original design and photos). For them working with such documentation was a rare opportunity, allowing the original house's reconstruction.

In fact, these technicians had an attitude that has for a long time dominated the heritage's preservation offices in Brazil.

For them, the main point towards a restoration work was to return the building to its original feature. It was a vicious and not critical attitude, only looking for a frozen 'perfect state' (not real) of a monument and its technological questions.

I believe that there were other ways to show the former features of a building (photograph exhibitions, models, etc.) and not only through restoration work.

Besides, I concluded that the 1934 house was an example of a building's dimension, showing that this perfect state does not exist, in spite of the MoMo thought on that subject the matter being the untouchable character of the modern architecture.

Therefore, the final decision was to preserve the 1934 house. Some changes on the building would be allowed, according to the new use (it was impossible to keep it as a residence because of the high cost of maintenance as well as the neighbourhood's preservation movement, which claimed its public use).

A survey was carried out in the whole area. After this the lack of a public green area in the quarter was confirmed. Then, the development of the project was based on the public opening of the Warchavchik's yard. In this way, the Warchavchik's house would be administration headquarters of park (top floor), as well as an exhibit-

on space for the public (first-floor). A balanced intervention that respected both the historic building and its new function was pursued.

Besides its conversion, the building also needed technical alteration, because of the degree of its deterioration. Not so serious, but the terrace's floor waterproofing did not work anymore, causing infiltration problems. Nothing was as yet extremely endangered, not even the concrete's ironwork. In this case, the technical solutions could be easily solved.

Conclusion

I believe that the contribution of this paper is to emphasize the role of a historical and philosophical analysis in a restoration project. Not only as a background, but also as a process that serves to ensure memory of and to wake up a past that is almost dead.

In the Brazilian situation, we must enlarge this memory's dimension, considering that our country has lived and grown up under the myth of the 'new'. Some Brazilian preservation experts had refused to look for the dynamic character of 'time' and 'memory'. For them past had to be frozen, while present and future was progress. In this way, aren't Modern Movement and preservation two sides of the same coin?

Bergpolderflats too fit to survive?

The Bergpolderflats were designed between 1932-33 by Van Tijen, Brinkman and Van der Vlugt for a site in Bergpolder, a new extension for Rotterdam, in the Netherlands.



Bergpolderflats in the 1930's.
Westfacade with balconies.

Its completion in 1934 was the result of a long quest after functional and affordable dwellings for workers, the 'leitmotiv' in housing projects that were being developed by the architects of the Modern Movement all over the world.

The building is emblematic for the architecture of 'het Nieuwe Bouwen', the Modern Movement in the Netherlands, particularly with respect to the integral approach.

Also, by developing highrises and thereby cutting down expenses, 'modern' architects were trying to find an answer to the immense problem of the general housing shortage.

Since already quite a lot has been written about the building in general, this paper rather centers on the problems concerning its renovation/restoration. Yet, without going into too many details, some thing has to be said about the building and its designers.

Wim van Tijen was one of the great theorist's of social housing in Holland. He was so much preoccupied by this subject, that in 1929 he even co-founded a housing corporation.

After some less successful experimental housing projects for workers in light concrete and a first experiment in the assemblage of dry prefabricated elements in the luxurious Parklaanflats of 1932, Van Tijen developed Bergpolderflats to house young, working-class singles or couples with a maximum of two children, in those years a very limited part of the population.

He explicitly stated on many occasions to consider highrise an unsuitable solution for most other categories of people.

Since Van Tijen did not have a studio himself, he involved the architect's practice of Brinkman and Van der Vlugt, designers of the Van Nelle factories (1926-29), for technical elaboration, detailing and drafting. The combination of the profound theoretical knowledge of Van Tijen and the technological experience of Van der Vlugt, will surely have contributed to the result.

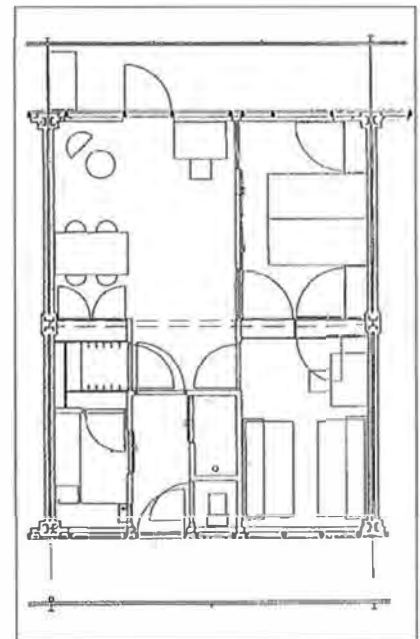
Affordable dwellings through an integral approach

Instead of the closed city blocks that make up the rest of the quarter, Van Tijen designed a 28 m high slab, containing 72 flats on 9 floors on top of a souterrain.

The solution with galleries, so far only used for buildings less than four storeys high, was used for such a tall building for the first time, in combination with an elevator.

More collective services like laundry rooms and central heating enabled Van Tijen to provide rather small flats, that do not exceed 48 m².

In the many clever solutions for these extremely compact flats, Van Tijen proved his genius and through the intelli



The original floorplan by Van Tijen: an ingenious 'machine à habiter' on a mere 48 m² floorarea.

gent arrangement of rooms, with sliding walls and folding beds, the flats offered all that was needed.

The efforts to built affordable dwellings also profoundly affected the actual construction. By applying a prefabricated steelframe, developed in close cooperation with a construction firm and the contractor right from the start, and that could be assembled on site in only five weeks, construction time and costs were reduced considerably.

The infill of the steelframe did not fully come up to the standards of the ideal of 'dry assemblage' of components: the inner wall of the facades and the partitions are laid in Rhenish brick. The outer part of the facades consists of a timber frame with either glass, wired glass or steel panels, depending on what's behind it. Larger window sashes and doors are made of wood, while smaller sashes are in steel.

After Hannes Meyer's galleried flats in Dessau of 1930, the Bergpolderflats was -as far as I know- the first galleried

highrise for workers that was equipped with collective services such as an elevator, laundry facilities etc and constructed by use of industrial building methods: a model that became successful on a large scale only after World War II.

As such, the building enjoys an international reputation.

Yet, the extreme importance of Bergpolderflats is not only due to the progressive technology, the clever plans, the original solution of the galleries, the brilliant architectonic concept, the surprising urban setting or its pioneering role in the history of social housing alone. Its essence is the interweaving of all these factors, that, for the first time in the Netherlands, resulted in a successful highrise scheme for social housing. Thus the building has been included in a concept for a top-hit list of the Netherlands DOCOMOMO Working party. This meant, that we were willing to do anything within our means to avoid the building being demolished, disfigured or neglected. And, to our surprise, last year we needed to do so, by taking legal proceedings in the 'Raad van State', the highest court of appeal in administrative jurisdiction in Holland, to prevent the execution of a renovation plan for the building.

Floorplans

The restoration plan has been designed by ONB architects from Utrecht. Architect Casper van den Thillart explained at the First International DOCOMOMO Conference in Eindhoven in 1990, how carefully they compared the pros and cons of the many available solutions, both in floorplans and with respect to building physics. For this process of balancing and selecting, a method has been used that had been developed at the Eindhoven University of Technology by professor Henket and myself.¹

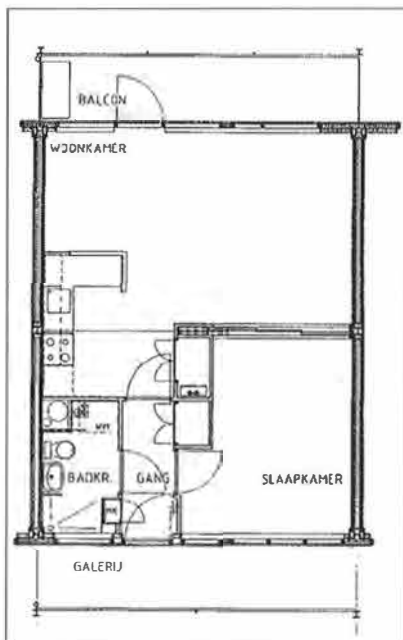
Despite it being officially listed as a national monument of architecture, the restoration of Bergpolderflats had been included in the ordinary process of social housing renovation. This implied that, in principle, the requirements for social housing had to be met. The housing corporation wanted the flats to be

made suitable for people over 55 instead of the young population aimed at originally, which made the demands even more complex. These factors proved to be predominant in the selection of solutions that had been so carefully studied by the architect.

An initial idea to create larger new flats by horizontal combination of two old



New floorplan developed by ONB architects, that is relatively close to the original. Yet, all original interior partitions and features have to be demolished to allow this new arrangement.



New floorplan developed by ONB architects, that fundamentally departs from the original; 87% of the flats will be re-arranged according to this plan.

ones proved technically impossible; except on the top floor, the windbraces of the steelframe had been inserted in the walls between dwellings and now obstructed a functional connection between two former flats.

Thereby, a chance to create a fundamentally new floorplan for the flats to accommodate elderly people according to contemporary standards, was impossible. There was no other choice than to accept a floor area of 48 m² for each flat, an area that does not come up to the social housing standards of today. Yet, the housing authorities abandoned these requirements relatively easily. If not, renovation for social housing would have been impossible straight away.

But since many other requirements with respect to the minimum measures of the various rooms still had to be met, there was no alternative for the planning-team but to develop new plans for the same little floor area. This, of course, in unfair competition with Van Tijen's original and ingenious 'machine à habiter'.

Architect William Stijger, of the same firm ONB architects, developed two alternative schemes. One of the schemes is somewhat similar to the original, leaving the kitchen where it was and providing its undisputedly necessary enlargement by adding a part of the former storage room. So far, the enlargement of the kitchen to me seems a rather legitimate intervention.

But moving the partition between hall and kitchen a mere 10 cm to meet the regulations for the minimum width of the kitchen is another story.

The bathroom more or less remains where it was, but has been enlarged.

The sliding wall between living room and main bedroom had been removed by almost all inhabitants. Apparently, this facility was not functional anymore, so that the decision to leave it out again seems rather legitimate to me.

To allow a functional connection between the new main bedroom and the living room, required for dwellings for elderly people, a sliding partition has been provided. To give more room for other functions, the living area had to

be reduced a little.

One could say that this scheme has been developed in the spirit of Van Tijen and I would agree to a certain extent.

But if the renovated dwellings would have been meant for younger people, as it originally was, probably young working people or students, for whom also a housing shortage still exists, the arrangement of rooms could have been kept. And if not for the requirements for social housing subsidies, the partition between kitchen and hall could have been kept, only enlarging the kitchen with the old storage room.

This way the demolition of the interior would have been unnecessary for functional reasons.

The other floorplan fundamentally departs from the original through the introduction of a kitchen in open connection with the living room. The bathroom is located in the area of the former kitchen and many other changes have been introduced. However, 87% of the flats will be fitted with this radically changed layout.

My conclusion about these floorplans is that the new plans are not better than, if not less than, yet only different from the original ones, in coming up to the standards required for social housing subsidies.

Listing documents

Of course our objection was that an essential element of the flat's entity would be lost if the interiors were to be demolished and replaced.

Quite unusually, the floorplans of the dwellings had been explicitly mentioned in the listing documents of the National Department for Conservation. Normally, these documents are either extremely brief or contain lengthy descriptions of applied materials and measurements, rather than explaining the essence of such a building, e.g. the integral character of Bergpolderflats. Also, we strongly objected to the idea that the new floorplans would not improve the original.

For both reasons, we thought it unacceptable to 'restore' this national monu-

ment of social housing history by destroying the original plans: a decision more inspired by financial than by historical awareness, as I will point out later.

The proposal to keep one flat in the original state could not alter our point of view, since it was not the intention of the owner and the authorities to make it open to the public as a museum dwelling, as is the case in another housing estate in Rotterdam: the Kiefthoek by J.J.P. Oud. It is intended to be rented on an almost standard basis, only adding the condition to have it open to the public one day a year.

This whole matter is the more worrying if one considers the large amount of social housing projects and estates that need to be restored or renovated, and not only in our country.

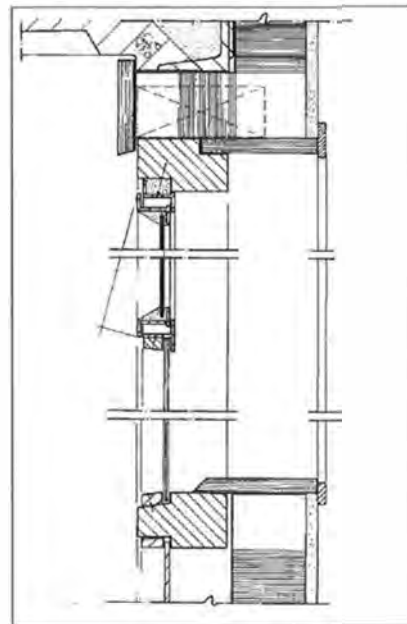
Facades

The renovation plan for Bergpolderflats of course also included a complete repair of the building's envelope. Among the elements of the steelframe that were part of the envelope, a lot of damage had been found. These girders and columns had to be laid bare and will be partially repaired. Others will be replaced, as will be the steel constructions of the balconies and the galleries, of which also the prefabricated concrete cassette-elements will be renewed.

For the facades it was proposed to keep and repair the timber frames and the windows, including the steel sashes. The galvanized steel panels in the parapets of facades and galleries were still in good condition. After cleaning, they will simply be reinstalled. The southern end facade, constructed of Rhenish brick on the inside and sand-lime stone on the outside, had suffered enormously from poor detailing and will be completely replaced.

So far, no problems for the Netherlands DOCOMOMO Working party.

However, a matter of serious disagreement with the 'planning-team'² arose from the method with which they wanted to provide double glazing, a strict demand in the field of social housing. Cutting out the glass rebates to accommodate the glass panels according to

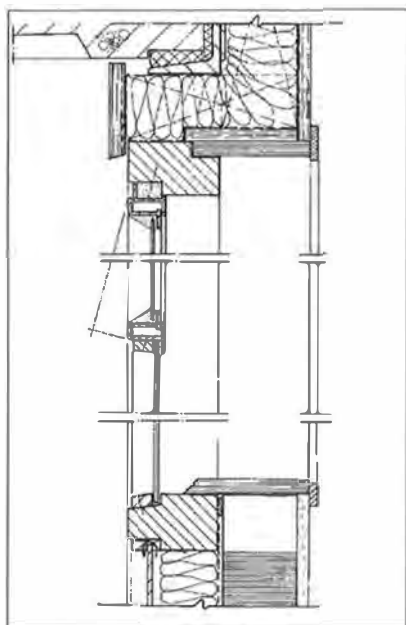


A. Section of westfacade (windowdetail) in the original state: wooden windowframes with small steel-framed sashes and a parapet without isolation.

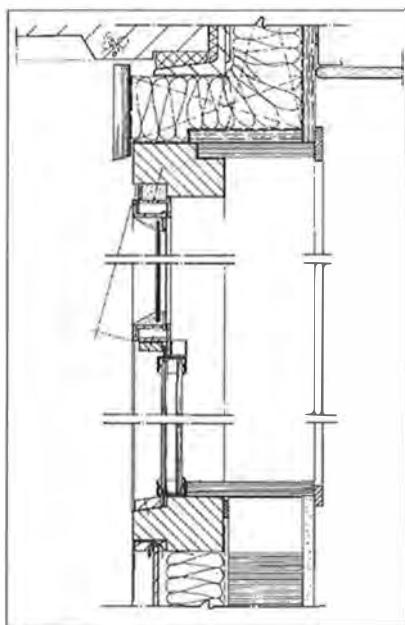
the requirements set by the industry was impossible due to the mortise and tenon joints of the frames. Therefore, double glazed panels in a slim PVC frame, produced under the name Conforglace in France, were selected for the fixed parts.

More serious was the idea to replace the original wooden and steel sashes by thermally isolated aluminium windows, inserted as additional elements in the wooden frames. This was a compromise within the 'planning-team', that was absolutely not favoured by the architect. But the democratic mechanism of social housing renovation in our country apparently sometimes overrules even the most elementary responsibilities of a restoration architect. Without hesitation I would refer to this proposal as incredibly insensitive. The Municipal Commission for Monuments and Architectural Merit fortunately thought so too and rejected the proposal right away.

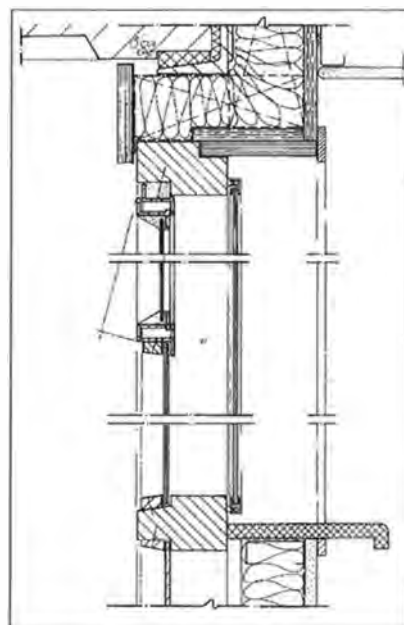
The 'planning-team' came up with another compromise, also developed by the architect but rejected in an earlier stage, by proposing to add extra glass panels at the backside of the frames. These panels were to be framed in a rather modest aluminium strip, the whole panel horizontally sliding in a



B. The same section as 7 according to our restrained model II. The parapets are isolated, but the windows are not changed principally.



C. The same detail according to our model III: to increase thermal comfort, double glazing in a special p.v.c. frame (Confortglace) has been introduced for the lower sections. The upper parts remain single glazed. Condensation will occur first on the single glass, alarming inhabitants to increase ventilation. This solution comes up to the requirements for social housing subsidies sufficiently.



D. The facade detail as finally proposed by ONB architects. This solution has been adopted for the actual restoration of Bergpolderflats. The use of window sashes is hampered by the inner glazing. Also, the restoration as being executed is expected to be at least 18% more expensive than our model III.

second aluminium frame. Although rather slim, these aluminium frames appeared to be very clearly visible from the outside when a part of the facade had been altered in this way as an experiment.

Together with the strong reflections in the inner and outer glasspanels, due to the wide cavity of about 90 mm between them, these aluminium strips also strongly disturbed the transparent character of the original facade. To this must be added that of course from the inside, the character of the facade had changed to an even greater extent.

Like the Commission, some experts of the Netherlands DOCOMOMO group also had their doubts about this last proposal for the facades.

Alternatives

Another, more sensitive proposal had been developed by the architect much earlier, including double glazing units in special PVC strips for the lower parts³, leaving the higher windows with single glazing.

This model A8 would have meant a more modest intervention, retain the

interior almost like the original, that would have fitted into the category of 'large scale maintenance'⁴.

This model had been rejected by the 'planning team'. Yet, this option was not given a second chance, although the Commission had expressed its sympathy for this solution.

This solution for the facades certainly looked a lot better, was more simple and in that respect more in harmony with the design approach of the original architects; it was as easily reversible as the final proposal and seemed a lot cheaper.

The argument for the 'planning-team' not to choose this model, mainly seemed to arise from the idea, that this would not be in the interest of the inhabitants.

Yet, during a discussion, organized on the matter by the Netherlands Union of Architects BNA, it appeared that it had not been all that clear, that the inhabitants favoured the complete renovation of their building over thorough maintenance. The housing corporation never had their preferences seriously surveyed.

At this point we decided to do some

brainwork and calculations ourselves. On the basis of the research previously mentioned, also used by ONB architects, as well as their original model A8, we developed two other models: II and III.

In short, model II sticks almost to the original, retaining the original interior just like model A8, but keeping the facade almost like the original as well. Model III takes the restrained intervention in the facades of model A8 as a starting point and adds a similar approach for the interior.

For both options we accepted the enlargement of the kitchen by adding the storage room and the elimination of the sliding wall between living room and main bedroom, which seemed legitimate demands of the inhabitants and would not disturb the historic character of the building too much.

For both models II and III we tried to define the effect on the building's historic value, we assessed the building's performance with respect to building physics and we determined the required initial investment, following the methodology of our 1990 research.

With respect to the effect on the historic

character, I won't go much into detail here. It is easy to see from these drawings that model II looks almost like the original, while in the solution for model III only the PVC framed double glass panels in the lower part of the facade will be visible. I think that it will not be too difficult to 'overlook' these PVC strips and to imagine how it looked before. At least it is better than the proposal of the 'planning-team' to place aluminium windows in the timber frames.

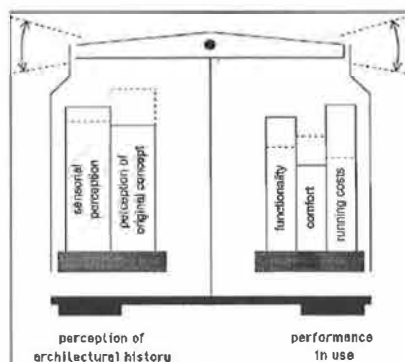
Concerning the performance with respect to building physics, here was the hour of truth for model II. We discussed both models with the experts of the municipality of Rotterdam, the same people who review the plans that are submitted for subsidies for social housing renovation. As could be expected, model II proved to be too poor, both thermally as with respect to acoustical isolation between dwellings.

But with model III an increase of performance was obvious. Although Bergpolderflats in the event of its being restored according to this model will not fully meet all requirements set for renovated dwellings, the differences were found in minor paragraphs only. A national monument of architecture like this could be exempted from these by law. The experts of the municipality expected the renovation proposal as under model III to result in an 'acceptable' situation, so that this would not have been an obstacle in obtaining renovation subsidies.

Investments and subsidies

With respect to investments, our calculations resulted in a saving of about 3,5 million guilders, about 25 %, in the event of Bergpolderflats being restored according to model II. For model III this still would be 2,5 million or 18 %. So you might ask: why spend more, if a better result can be expected from a solution that requires less money?

According to our information, the proposed renovation as a whole was extremely expensive: more than twice the average renovation-budget per dwelling.⁵ This extra money had been provided by the municipality, the hou-



Balancing the various aspects of diverse restoration options, according to the working method developed by the Eindhoven University of Technology

sing corporation and the Department for Conservation.

On the other hand, these immense investments were mentioned as an argument to prove how much attention was given to the historic character of the flats.

We had the idea that this could only be partly true, since we found out that the solutions we favoured and that respected the original building to a greater extent, would be cheaper. The architect's calculations for his rejected model A8 appeared to be even 3,6 million guilders lower, when we inquired about that.

The real reason for sticking to the ultimately selected renovation model seemed, that the deficit between the subsidies and costs for 'large scale maintenance', in which category the architect's model A8 and our model III would fit, was about 3 million guilders more than the deficit in the case of 'high level renovation'. This is caused by the fact that the subsidies for maintenance and for renovation differ more than the actual investments needed for these options.

This somewhat complicated calculation taught us that the decision on Bergpolderflats was not determined by its historic value; since the Department for Conservation only provided about 10 % of the costs, that could perhaps not even be expected. Yet, it was neither determined by technical necessity nor by legitimate demands of the inhabitants.

The determining factor proved to be the bureaucracy of the subsidy-system for

social housing renovations. In my view, the building has been sacrificed to this, since the court of appeal rejected our request.⁶

Bergpolderflats had been designed so strictly according to the regulations of the 1930's, so fit to fulfill the requirements of the 'Existenzminimum' of those days, that these same regulations, more refined and extended over the years, prompted the building's death penalty. It couldn't be adapted according to today's standards for renovation without irreversible damage to the original. The building was designed 'too fit' to survive today's requirements.

The only way to prevent a revolution eating its own children, is to take the children away.

I think it would have been better, not to have tried to include the restoration of the flats in the normal routine of social housing renovation, with additional subsidies from other sources. As a nationally recognized monument of architecture and social housing history, another financial structure should have been more appropriate, as is quite usual for other buildings. So let's learn from this for the future!

Notes:

1. See literature: 'Het Nieuwe Bouwen en restaureren'.
2. Planning-teams play a vital part in the managing of social housing renovation programmes in Rotterdam, offering a direct possibility for representatives of the housing corporation, the inhabitants, the municipal authorities, the architect and others concerned, to discuss the project and develop a plan in close cooperation. All are officially taking part in the team and have far-reaching mandates.
3. A French product: Confortglace.
4. In the Netherlands the subsidy system for social housing renovations makes a distinction between 'large scale maintenance' and 'high level renovation'.
5. Average renovation budgets per dwelling with two bedrooms are around dfl. 90.000,— to dfl. 95.000,—. Bergpolderflats requires approx. dfl. 200.000,— for each one bedroom flat.
6. The 'Raad van State' turned down our appeal in a preliminary judgement. This

short proceedings is offered by law to enable parties involved to get a quick judgement whenever they feel their interest is disproportionately damaged by the length of the official proceedings, that usually take more than a year.

This preliminary judgement indicates that the practical interest of the other party (financial loss, inhabitants already moved to temporary dwellings etc.) prevailed over our arguments (loss of irreplaceable element in our social and cultural past). However the final judgement is expected

to indicate on a more principled basis how these conflicts should be dealt with. In that final decision, we expect to find support for future cases.

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Hubert-Jan Henket and Wessel de Jonge,
Het Nieuwe Bouwen en restaureren (English summary), Den Haag, 1990.

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ARCHITECTURAL HISTORY



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Robert Mallet-Stevens, the Cavois house (1931-1932) and the Modern Movement in the North of France

At the Exhibition of Art Déco held in Paris in 1925, the towns of Roubaix and Tourcoing showed their textile products inside an austere brick-built exhibition pavilion¹ based on the Roubaix 'industrial style' and incorporating various interpretations of the Flemish tradition. To the right of this pavilion



The towns of Roubaix and Tourcoing at the Decorative Arts Exhibition, Paris 1925, De Fleur, Coulomb et Courrèges architects.

were the infamous and provocative cubist-style Concrete Trees; these were created by the Martel brothers and designed by Robert Mallet-Stevens - a perfect illustration of the gulf between a member of the Parisian avant-garde movement and the regional architecture of Lille. It was, however, an industrialist from Roubaix who was unexpectedly to bridge that gap. In 1929, Paul Cavois commissioned Robert Mallet-Stevens to design a large family residence which was to be built in the Beaumont à Crois

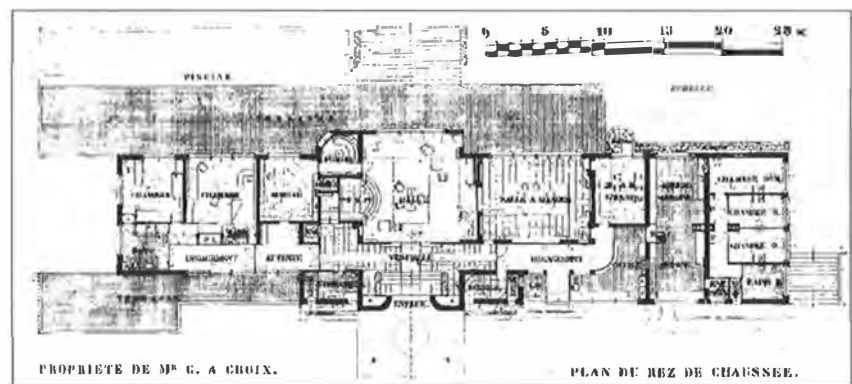
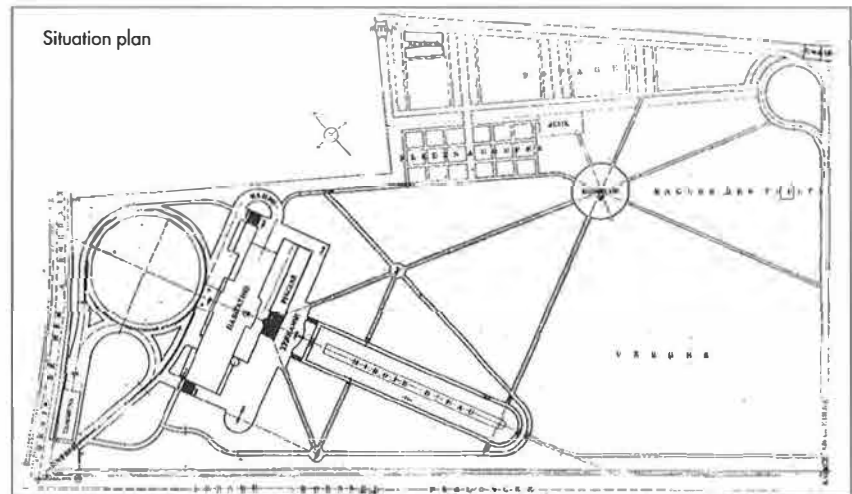
district, a quiet residential area in the outskirts of Roubaix.

A modern residence

The brief was as follows: a residence suitable for a large family in 1934 with the emphasis on light, air, work, sport, cleanliness, comfort and economy.²

The villa, inaugurated in 1932, was like an enormous modern château set within gardens which dominated the surrounding countryside.

After being occupied by the German army during the Second World War, it underwent considerable renovation from 1947 onwards under the architect



First level plan



The Cavois house, the south facade, view from the park, 1989.

Pierre Barbe³. He was commissioned by the Cavois family to lower the ceiling of the grand hall and to carry out a series of internal modifications over a period of ten years or so in accordance with the requirements of the family at the time. The building was then sold to a real estate company in 1987, fell into disuse and was consequently allowed to deteriorate badly.

Despite being classed as a Historical Monument in 1990, the villa has still

not been restored to its rightful condition.

The villa is an architectural project that is often considered to have been born from the synthesis of several contradictory architectural styles. The drawing on the cover of the introductory brochure, produced in 1934, depicts the symmetrical composition of the layout of



Cover drawing of 'Une demeure 1934', éditions de l'Architecture d'Aujourd'hui, Paris 1934.

apertures on the north facade. The rooms are located around the grand hall, which is the central compositional point, and the design of the gardens echoes the axial line leading from the centre of the circular pathway of the north facade, continuing through the house via the main entrance, the entrance hall and then extending through the mirrored water reflections in the gardens. Mallet-Stevens also used volumetric techniques to break up the appearance of symmetry in the elevations, and he incorporated specific stylistic features by the modernist movement such as angled bay windows and the intersection of planes and open spaces.

This synthetics is frequently associated with three major influences: the Stocklet Palace in Brussels built by Joseph Hoffmann from 1905 to 1911, Town Hall at Hilversum by W.M. Dudok (1930⁵) and the architectural style of Frank Lloyd Wright⁶. But the Cavois project transcends the idea of a synthetical modernism in several respects and can be viewed more as an illustration of a specific point in the architectural development of Robert Mallet-Stevens.

Architecture and decor

The furnishings were, to a large extent, designed by Robert Mallet-Stevens him-

self and have very different moods depending on the purpose of the room in which they are found. For example, the relatively simple and functional domestic furnishings contrast strongly with the sophisticated furnishing found in the master rooms of the house. This hierarchical aspect of furnishing is also accompanied by considerable differences in style. Amongst the furnishings associated with family unity (the dining room of the parents, for example), or with an efficient functionalism (the office), worldly frivolity (the boudoir), cleanliness or sporting pursuits (the bathroom), the project demonstrates a whole range of variations in style from the luxurious trappings of Art Deco to the more avant-garde style of the De Stijl movement.

The relationship between the furnishings and the architecture can perhaps be compared to the role attributed by Robert Mallet-Stevens to the film set. Just as on a film set, furnishings and architecture should set the scene for the protagonists and reveal their true characters. The newly-created Union des Artistes Modernes (Union of Modern Artists), founded by Robert Mallet-Stevens with its objectives and its discussions revolving primarily around the relationships between architecture, industry and decor, can to a degree explain the uniqueness of the villa project. At a time when the Modern Movement was embracing a doctrine which excluded all decorative artifice, Robert Mallet-Stevens was trying to define a unique relationship between decor and architecture by using the qualities of decor to balance and to enhance architectural objectives.

The two angled mirrors placed at either end of the entrance hall are fine illustrations of how artifice (here, the reflection and absence of reflected material in the mirror) can be used to reproduce the different angled bays of the exterior apertures at the same time as developing the concept of dematerialisation by careful use of decor. Similarly, on entering the hall, the layout and its 'boxes of light' lead towards the main room, with the same directional encouragement echoed in the inflection of the brick wall of the north façade. The mir-



One of the angle mirrors, 1986.



The 'light boxes', 1986.

rors, flecked glass and artificial light all serve to accompany the architecture and to be at one with it. This domestic scene-setting is accentuated by the internal polychromy. Colour is introduced with textures and materials positioned at angles or laid flat against a wall and, in some rooms, this changes the concrete appearance of reality. Homogenous volume, enclosed by continuous walls, is transformed by the intersection of a series of coloured plans.

Illusion caused by colour is used extensively in many different ways and does not seem to have been suppressed by any of the dogmas of the era, rigidly dictating the relationships between structure, architecture and colour. In place of these dogmas, Robert Mallet-Stevens substitutes a unique use of polychromy composed of nuances and of subtle variations based on the expression of the use of a room and the scene which needs to be set.

The Cavois villa is therefore not, as

one still reads far too often, 'a masterpiece of Art Deco'; it is an expression of malaise and, above all, it is an attempt to reconcile the art of the interior decorator with that of the architect. And this, at the very time that the modernist movement in France was starting to meet with considerable demand and commissions for major works.

The use of brick

During the journey to Hilversum that Jean Cavois undertook with his father and Robert Mallet-Stevens, Cavois stole onto the site of the Town Hall, which was under construction at the time, and chose the brick that was to serve as a model for the construction of the villa. Although the colour was very similar, the actual module size and the use it was put to were to be very different. The masonry at the Town Hall at Hilversum suggest the presence of brick across the facing and, moreover, Dudok also made use of varnished and coloured brick in several places. For the Villa Cavois, Robert Mallet-Stevens decided upon a small brick three centimetres thick and had it laid in such a way that the joints accentuate the horizontal lines. Twenty-six moulds of the basic module were made to cater for constructional requirements (such as angles, lintels, returns, curves etc.) and hall surfaces were systematically covered, including the cylindrical columns. Whereas the technical and industrial qualities of terracotta were usually applied to the region's architecture in order to create varying effects of texture, colour and surface facings, Mallet-Stevens used those same qualities to create a surface which was totally devoid of variation in surface or colour. His use of the material was completely the opposite to its generally-accepted use in the region and, in addition to this, he created an important alternative to the use of such a material, which had been suggested by his client and was considered to be regional. The purpose of using brick was primarily to preserve the initial homogeneity of the project, which had been designed in white, and the complicated creation of the modules enabled Robert Mallet-Stevens to produce a uniform surface

and colour by reversing the accepted use of the material. The Villa Cavois project was therefore rooted in contemporary questions and in the subtle adaptation of a local product. If on the one hand the finished work seems far removed from the more conservative preoccupations typical of the regional clientele, it was on the other hand a reflection of the trend affecting private architecture and later the public domain of architecture in Lille. From the end of the 19th Century, architectural eclecticism as embraced by local practices had called for an original interpretation of the larger international architectural movements. As a result, the use of yellow facing bricks became more common during the 1930's. In the north of France, however, that led to concerns about the reconciliation of modernity with regional points of reference. The trends of the modernist movement which were applied to the Cavois site were to cause an aesthetic split⁷, but they would also allow for the existence of a regional variation of modernity.

This attitude was particularly pronounced amongst the younger architects: from his first creation in 1928, Pierre Neveu started out on the path that he was to follow after the War; in 1938 Marcel Spender benefited from publicity in the review called 'l'Architecture d'Aujourd'hui' (Architecture Today) and built a school block at Roubaix; Jean Levebvre moved on from designs similar to the models of small modern houses popularised by Pol Abraham towards more radical versions of the modern residence; Alphonse Stevens was able to adapt his style of architecture to the circumstances, clientele or situation⁸; from the borderlands of Belgium, Géo Bontinck illustrated a more spontaneous modern attitude and, amongst the local architects, Marcel Boudin was most able to use the stereotypes of the modern style in an elegant fashion. This trend in regional architecture was strong enough to have a bearing on the work produced by the most established of practices. Thanks to innovative programmes⁹, these would develop an architectural style that flew the flag for modernity during a period

when town and city centres, particularly in Lille, would be the privileged recipients of the adaption of rational architecture to property speculation.

A teaching project

There can be little doubt that the real influence left by Robert Mallet-Stevens was as head of the Ecole Regionale des Beaux-Arts (Regional School of Art) in Lille, a post which he occupied from 1935 to 1939¹⁰. Even before he had introduced any changes to the teaching itinerary, his nomination as head of a regional institution caused a lively controversy. Supported by some local architects, such as Gabriel Pagnerra, and decried in the name of regionalism by others, his nomination was to accentuate and to bring into opposition the major elements of the architectural debate (with a situation of economic crisis and outdated teaching at the Beaux-Arts) in the face of important cultural changes of the period. Robert Mallet-Stevens introduced considerable changes in the running of the Ecole Régionale des Beaux-Arts with an emphasis on the teaching of applied art. He introduced courses on building and the study of materials, film sets, dioramas, furnishings and shop layouts. In the teaching programme, he placed greater emphasis on the titles of courses and workshops than on the names of the teaching staff. The list of teaching staff itself was also changed and his colleagues from the Union des Artistes Modernes were invited to participate at conferences¹¹.



MAQUETTE POUR UN GROUPE DE MAISONS OUVRIÈRES
par Mallet-Stevens

Robert Mallet-Stevens, 1931.
Scale model for worker houses at Roubaix.

The Villa Cavois, the press pavilion built for the exhibition of Social Progress in Lille (1939) and the abortive project of a workers' city for

Lainière de Robaix (1931) were the architectural legacies left by Robert Mallet-Stevens in the Lille region. His educational project, however, left an even greater impression on the generation of architects who received their training under his influence. These were the architects who would practise after the Second World War.

Notes:

1. De Fleure, Coulomb and Courrèges architects
2. Robert Mallet-Stevens in 'Une demeure 1934'. Ed. de l'Architecture d'Aujourd'hui, Paris, 1934.
3. Pierre Barbe, born in 1900 was a friend of Robert Mallet-Stevens and also a member of the UAM (Union des Artistes Modernes) of which he was secretary from 1932 to 1933.
4. The size and nature of the project, the surface of the site and the urban layout of a residential district which was situated in the outskirts of a large town, are almost identical points of reference. The overall aspect, the scale of construction and the composition of the architectural plan, the strict construction in terms of volume and homogenous surfaces have all been quoted as inspirational sources for Robert Mallet-Stevens, who was incidentally, M. Stocklet's nephew.
5. The work in terms of overall volume, the treatment of mass and some interior ambiances in particular illustrate considerable similarities. The relationship of the building with water and other details could almost be taken as a literal interpretation of the work of Dudok. This is so with the manner in which certain parts of the garden are used, along one of the sides of the swimming pool at the Villa Cavrois. A type of guarding rail is created which leads underneath the terrace. This mass of bricks, raised above the ground through the use of columns, permits an emptiness to be glimpsed. The effect is similar to that created by the use of the low wall alongside the waters at the Town Hall at Hilversum which forms part of the main entrance.
6. The west facade, and its different focal points such as the pergola and the play of horizontal planes covering the terrace are the best illustrations of possible connections. Robert Mallet-Stevens decided upon the west facade to illustrate the cover of a small monograph dedicated to him in 1931 at a time when the villa was not quite finished.
7. The 'Blanc Pignon' villa is the best example of another building using a site which was very similar to that of the Villa Cavrois. It was built by the architect Charles Bourgeois who specialized in the dwellings of Northern industrialists and in whose writings the aesthetics of the dwelling are placed in direct opposition to those of the place of work. The construction of the Villa Cavrois gave an aesthetic shock to this social milieu which was far more at home with particularly conservative architectural values.
8. Alphonse Stevens designed two semi-detached houses at Roubaix (1929-1930) which for some reason he acknowledged as 'Stevens' and not 'A. Stevens' as his previous work had been. This has resulted in some confusion over the houses with regard to the work of his namesake, Robert Mallet-Stevens.
9. The Lemay practice built several Citroën garages during the period and Marcel Desmet, along with René Doutrelong and Jules Jourdain, conceived the idea of an automatic bar called 'Le Presto' which caused considerable comment in the international specialist press.
10. Robert Mallet-Stevens replaced Emile Gavelle who had been head of the school since 1905. The post did not only offer the opportunity to introduce educational change, it also offered an architectural project - that of building the new school and the Music Conservatory. Robert Mallet-Stevens was approached with regard to this but it was never followed up.
11. The list includes Le Corbusier, amongst others, who was to contribute on the theme of urban planning.

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Conserving groups of modernist buildings from the 1930's

Permit me to digress somewhat from our topic of how to restore individual buildings erected during the period between the two World Wars. My presentation will deal with a problem which is of increasing importance in our time, namely what to do with the small and intimate squares that were built particularly in the suburbs of cities toward the end of the 1930's.

Under the threat of war, and also because of a shortage of money, these squares never attained the beauty which the architects had intended for them. My example is concerned with the image design and planning for Pasareti tér, a square in the 2nd Municipal District of Budapest. It is, in fact, the most original and beautiful square of its kind in Buda, and an understanding of the problems involved calls for a description of its wider surroundings and the role it has played in this part of the city.

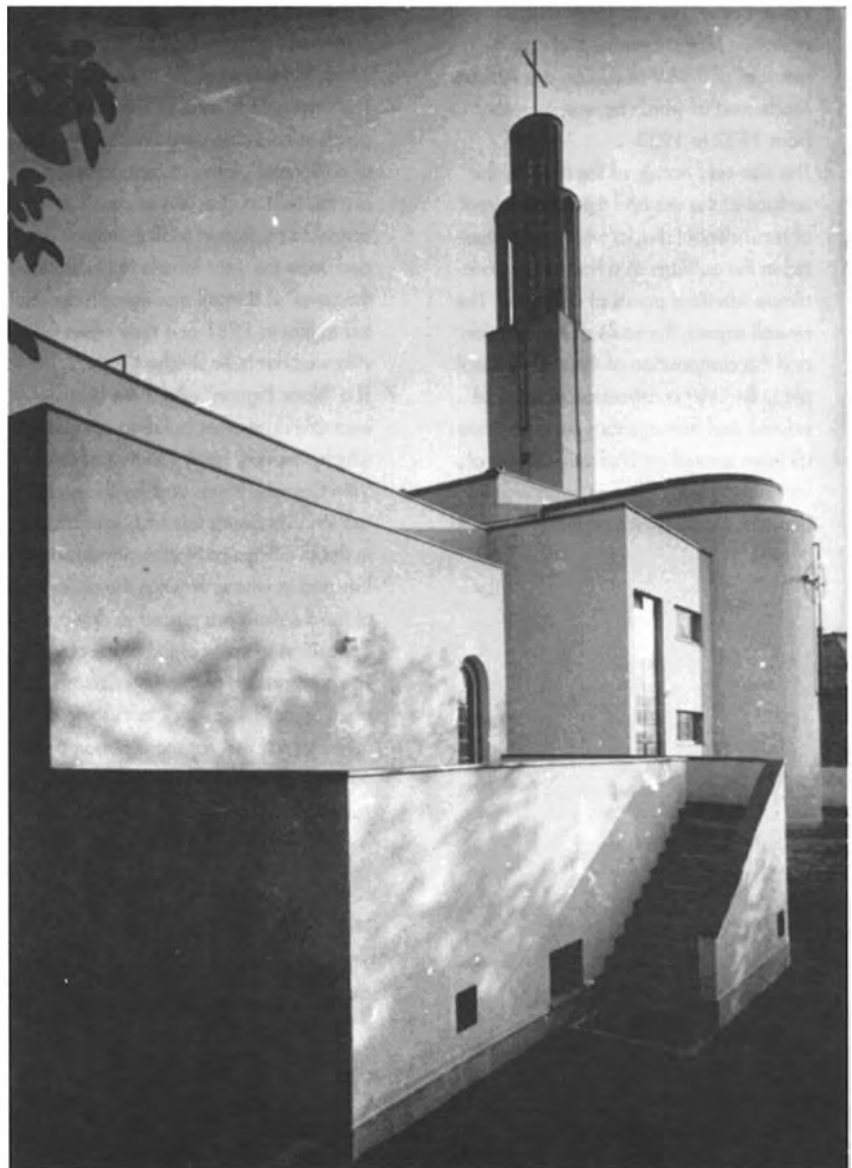
Up until the beginning of the century, only the valleys between the Buda hills were built up, with the main streets ending either in small squares or conspicuous structures. In the years thereafter, the slopes of the hills were also developed and roads had to be built between residential quarters. Through traffic along these roads grew rapidly, heavily congesting the squares which had been designed as architectural landmarks and turning them into subcentres requiring facilities for the local

people such as shops etc. To meet these needs, new buildings were added but growth was often chaotic and of a makeshift nature.

To describe the main features of the square, let me start with the first structures erected there in 1934 and designed by Gyula Rimanoczy.

smaller stands upright, and the horizontal and vertical lines are very clear. We find here a reduction to basic geometrical forms, without any ornamental details.

A few years later, the bus station followed, and its straightforward design in the shape of a collecting lens was the



They are a church and building for the Franciscan order consisting of two blocks arranged at right angles. The larger of these lies on its side while the

first attempt made to give the square a character of its own. The architect again was Rimanoczy. Let me add a personal remark at this juncture: my



grandfather Jozsef Botha, an outstanding architect during the period between the World Wars, spent a period of practical training in Rimanoczy's office.

On the vacant plot opposite, the ABC chain built a department store in the 1970's whose esthetic appearance is above average, but with stylistic features which do not exactly create a pleasant atmosphere. The fourth side really is a sad sight, with kiosks, street vendors and car boot sales.

Our present understanding of image planning is to create a particular identity for a new product, project or company aimed at persuading the public of its worth. Pasareti Square obviously does not come in this category because it already has a character of its own despite its short history. This character may be described as an extract of the architectural styles one finds in the surrounding borough of Pasaret. These are largely homogeneous, even though individual buildings may display quite different stylistic features. The common nature derives from the mentality against which they were erected, mostly at the same time, a proud middle-class outlook with well-ordered solid values. And the square was the essence and focus of that mentality.

Image planning in this case can only mean giving the square a balanced and orderly character and, if this is successful, trying the same for the surrounding borough. Apart from chronological studies this calls for examining the dimensions and proportions of buildings and spaces, which we have done

at two levels. We first looked at the structure of buildings and, in four stages, determined the following:

- the location of buildings around the square,
- as above but including decorative and other architectural features of esthetic importance for the square (such as canopies, loggias, etc.)
- as above but including the height of buildings, and
- as above but including characteristic fences and walls.

We eventually found that Pasareti tér is not a square in the structural sense, as it is bounded by buildings which do not provide the clear demarcation needed for such a classification. In this connection, let me remind you of Rob Krier's work and the pictures with which he illustrates our conventional understanding of typical urban squares.

The second part of our analysis concerned the spaces which make up the square and the areas taken up by



pedestrian and vehicle traffic, and greenery.

We again found that this is not a square but rather an intersection because the areas typically required for pedestrian use are not there.

Only in some places in front of the church, the pharmacy, etc. do the sidewalks bulge out to provide more space for foot traffic but not enough to qualify as a square.

Our next step was to draw conclusions from these chronological, spatial, theoretical and practical studies which gave us the following features:

- elements of disorder and disarray (following immediately from the analysis of material circumstances)
- unpretentiousness (indirectly felt when comparing present with past conditions)
- a lack of demarcations required for a square in the conventional sense (found as a result of structural analysis)
- a lack of areas for pedestrians and sidewalk extensions so that the site does not qualify as a square (found from space analysis)

The site can be made to qualify as a square in a number of ways, the essential elements always being the church and the bus station, the two most valuable buildings. Their interaction and geometry make several approaches possible.

One is to add a single new element to the existing structures which would interact with the latter to create a square of irregular shape (because the buildings were not erected on a regular

pattern). This approach has few advantages and many drawbacks. First of all, parts of two plots which are now privately owned would have to be acquired. One of the permanent elements in the plan is the ABC department store which, in the words of its architect, was designed only as a temporary structure. One advantage would be to give the church the room it deserves.

In the second and third approach, the bus station is seen as the principal element, and the architect attempts to follow its lines to obtain a square of regular geometry. The result is an orderly pattern, the only handicap being that the church has no place in it.

The fourth proposal seeks to combine the advantages of the previous solutions while eliminating their drawbacks. It hinges on the bus station as a landmark in the southern part of the square, and the church in its northern section. This creates a square of composite geometry and has the advantage of looking upon the ABC building as a temporary structure (the only element of order on this side being the alignment of canopies). Only a small part of a privately owned plot would be needed, and an adequate forecourt could be provided for the church.

This is the shape on which we have based our proposals. The square is now dominated by single-storey buildings, which we believe to be vital in any planning work. Canopies and pergolas are important not only as traditional features (on the bus station) but also as simple, economical and esthetic demarcations for a square. In our project the square is characterized by single-storey buildings, canopies and pergolas, the only exception being the

church as the central building. As a second element, we make allowance for the higher buildings.

Having set out our basic principles and the situation as we found it, let me now describe the image planning for the four quadrants into which we have divided the square. These are

- the section in front of the church,
- the area of the bus station,
- the area around the ABC department store, and
- the new section of the square.

For the first two sections, we propose no new construction or alterations, but rather an ordering of the functions which these buildings will perform.

The area around the ABC department store

Our basic suggestion here is to replace the canopy on the building by one that better matches the layout of the square. It is to resemble the canopy on the bus station both in colour and dimensions, and the two will be arranged at equal height.

This will create an arched shape throughout the southern part of the square. Replacement of the canopy will have to be accompanied by alterations to the upward-leading ramp and stairs because of the structure supporting the canopy and the side walls of the ramp and stairs, can be made to reinforce the arched pattern that serves as a demarcation for the square. This effect will, however, be possible only if the concrete flower boxes are demolished, about which no-one will be sorry as they hardly deserve that name.

The new section

This will eventually create an orderly pattern as regards the boundaries of the square, and its different sections

and functions which are now in complete disarray. Our plan provides both for new demarcations and an extension of the square itself. A wall would be erected between the private plot at 135 Pasareti street and the new section of the square to separate their different functions.



Finally, a word on the Maria fountain which now stands amid a run-down piece of lawn.

It could be a beautiful adornment for the square but is hardly noticeable. We therefore propose an alteration which would upgrade not only this important section of the square but also the statue. It consists of replacing the lower part of the foundation as shown in the plan.

Architect Erkki Huttunen and the Modern Movement in Finland

In my discourse I describe some first indications and the main character of the Modern Movement in the early works of the Finnish architect Erkki Huttunen (1901-1956).¹

The most remarkable part of his works belongs to the architectural period which in Finnish art history is named 'functionalism' the first realizations of which took place at the very end of the 1920's. After having graduated in architecture at the Helsinki University of Technology in 1927, Erkki Huttunen was employed in the construction department of the Finnish central cooperative SOK. The department was a kind of working-team, where 5 to 10 architects and building constructors together designed industrial buildings for the central cooperative as well as cooperative stores in the countryside all over Finland. Since 1931 Huttunen had his own office, where stores and industrial buildings as well as churches and residential buildings were designed. Besides Alvar Aalto (1898-1976), Erik Bryggman (1891-1955) and Pauli E. Blomstedt (1900-1935), Huttunen represents one of the first 'avant-gardists' in Finnish architecture.

The early buildings designed by Huttunen were based on classicism - just like the general building environment of that time in Finland. The classicist tendencies were similar in every nordic country; that is why this period is often called 'Nordic classicism'.² Classicism appeared in Huttunen's (like

also e.g. in Aalto's) early works in well measured, proportioned volumes, which were decorated with few classicist ornaments and covered usually with a low saddle roof.



Erkki. Huttunen, store in Haapajärvi, 1928.

At the end of 1929 Huttunen travelled through Sweden and Norway to England, France, Italy, Austria, Czechoslovakia and Germany. He visited, among others, buildings like Walter Gropius's Bauhaus School and Dessau-Törten housing area. This journey, together with the latest architectu-



Erkki Huttunen, commercial and office building in Rauma, 1930-31.



Erkki Huttunen, mill in Viipuri, 1930-32.

ral publications, obviously offered him some new impulses for design.

Huttunen henceforth left behind the classicist language of architecture. His commercial and office building for SOK in Rauma (designed in Spring 1930, completed in 1931) as well as his mill in Viipuri (designed in Autumn 1930, completed in 1932) were both representative of the Modern Movement and one of the first realizations of modernism in Finland. The office-building in Rauma can be compared with Alvar Aalto's for the Turun Sanomat newspaper, which was completed in Spring 1930. Both buildings - even if more explicit in the work of Aalto - are interpretations of Le Corbusier's 'les cinq points d'une architecture nouvelle'. The plan and the facade of the office in Rauma were not totally 'free' because of the supporting outer walls. On the ground floor of the store, Huttunen accentuated the impression of free plan and the new kind of 'tectonical' building-structure with an odd, optical method: he covered the pillars with mirrors. The roof garden was meant to be the private terrace belonging to the apartment of the head of the office.

In the mill at Viipuri, Huttunen had better possibilities to use reinforced-concrete constructions. It was the first time, that such kind of concrete silos were built in Finland. The construction of silos based on an American method (patented by MacDonald), where the moulds were constantly glided upwards during the cast. The construction of the mill beside the silos was made of iron, and the store of reinforced-concrete 'in the authentic way of modernism' par excellence.

Before we take a look at Huttunen's concept of modernism, there is one specific type of building, which we should pay more attention to, namely the rural cooperative store. Huttunen also intended to create a 'modern' variant of that type of store, but what ways and means were available to do this?

Even if those stores at that time were decorated more or less in the classicist way, activities inside the shops as well as their plans were already developed and arranged in a very 'functional' way. That current type of shop architecture initiated a new period for Huttunen. With his new type of store he eliminated all visible references to former styles, had the walls painted white and replaced the saddle roof with a flat roof.



Erkki Huttunen, rural cooperative store in Sauvo, 1931-33.

If we look at his new cubic creation in more detail, its functional image is questionable. The construction of the store is still based on a traditional supporting brickwall, this time only painted white, and the roof is actually a low desk-form roof, which, because of the horizontal supplement of the gable walls, only appears like a flat roof.

This roof construction without eaves is already hardly functional in the Finnish climate. Even in more modest shops Huttunen wanted their exteriors to look as if they were due to new architectural ideology. Sometimes the form of the roof and the placing and designs of the windows in tiny shops seem to be arbitrary - considering that the construction of shops was often based on traditional timber construction.



Erkki Huttunen, rural cooperative store in Hailuoto, 1932.

What did the architect intend to say with this way of playing with forms?

Modern architecture was expressive - even the first representatives of modernism wanted to explain their design, it was not a problem of form, but more a problem of building - and even its expression was said to be neutral or insignificant.³ Huttunen, through his studies, was conscious of meanings in architecture, of potential means of expression in architecture. The problem, however, was how to use the concise register of the new style. In 1932 he wrote an article about the styles of store buildings.⁴ In this article Huttunen revealed that the latest phase of the development in architecture was called functionalism, that it was a style in which functional solutions of the plan and the exterior of the building were concordant. What made it look so different compared to earlier styles, was the new building material, which was concrete. Huttunen explained that the facades of commercial buildings should show the internal entities of the building, i.e. brightness, cleanliness and order. That is why the windows had to be large and the walls had to be straight and undecorated. The wooden houses, Huttunen said, could be also designed that way, so that their forms would reflect the new style. The difficulty in functionalism was to find the right proportions, because, in Huttunen's opinion the beauty of architecture depended only on the measured proportions and lines.

The idea that the building material (concrete) creates a new style, Huttunen obviously learned from Le Corbusier's publications. It is remarkable, that Huttunen wanted all buildings to look as if they were modern concrete buildings - regardless of their difference in construction and scale - by using geometrical forms and white plaster on the walls, if possible. White, pure ('clean') forms were very suitable to characterize the modern store building and point out the hygienic order inside. Huttunen emphasized the importance of right proportions and harmony in architecture, too.⁵

In the article mentioned above Huttunen regarded former styles (in the 19th Century) as a plagiarism period of bad

taste. Functionalism, he said, was much more 'honest', because it reflected the character of the building and the time. This point of view, that architecture develops from eclectic plagiarism to correspond to the needs of the time, had its natural roots in the determinism of Hegelian idealism and its concept of *Zeitgeist*.

To summarize: as Huttunen explained, the new form of functionalism was created by using concrete as the building material, and on the other hand determined by the new needs of the time, which altered the principles of design. Finally, the whole should be in a harmonic balance and aesthetically polished. This explanation seems to be logical, if we look at buildings like the mill at Viipuri, where the newest building technique was applied, and whose form was mostly (even if not necessarily) determined by its functions. Opposed to this, in smaller buildings, like cooperative stores, stylistic forms were more clearly worked out, mainly for another purpose, to express the character of the shop.

When commenting on Huttunen's architecture, it is of course not a question of how 'faithful' he was to a style, or how orthodox his interpretation of 'the International Style' was - presupposing that a coherent 'modern' style ideologically or formally even existed. For Huttunen both the functional values as well as the expressive and aesthetic character of buildings were important. It is also possible, that Huttunen used and exaggerated the new vocabulary of functionalism to differ from other Finnish architects in the pure artistic sense. The possibilities of these new forms serving as symbols of the purpose of the building were, however, often more accidental. E.g. the office building in Rauma included - besides offices - a shop, storage space and also apartments. Its cubic volume, arrangement of windows and staircases appear very similar to the waterworks at Lovön in Sweden, designed by Paul Hedqvist (completed in 1933).⁶

In spite of exterior similarities, the purpose of these buildings is totally different. Huttunen's church in Nakkila

(completed in 1937) clearly shows new forms and styles, where as the character of a sacred building becomes more evident through the shape, which was traditionally used for building churches.⁷

In generally, modernism had a many-sided character in Finland. The first works of Erik Bryggman were classicist, like those of Huttunen. After a so called 'break of functionalism' he designed buildings in the sense of dogmatic modernism, but during the 1930's his design became looser - without losing its intensity.⁸ After the Paimio Sanatorium Alvar Aalto's interpretation of the Modern Movement soon changed to an individual course. Besides these more or less individual interpretations of 'the New Style of Time' more traditional tendencies also influenced in Finland. During this architectural discourse, the works of Huttunen spread out and provided one kind of figure of the Modern Movement, which had a remarkable influence on the building environment in Finland.

Notes:

1. Knowledge of Erkki Huttunen's architecture is based on my unpublished Graduate thesis on Huttunen (Department of Art History of the University of Jyväskylä, Finland).
2. About the classicist tendencies in Norden, see e.g.: *Nordic Classicism 1910-1930*, ed. Simo Paavilainen. Helsinki, 1982.
3. For example J.P. Bonta relates that the new architecture, to make room for itself, had to differ from the earlier architectural tradition. 'But rather than a particular architectural language, it was the idea itself of linguistic communication in architecture that came under assault.' (J.P. Bonta, *Architecture and its interpretation*. London, 1979, p. 31.)⁴ Erkki Huttunen, *Myymälärakennusten tyylistä* [About the style of stores]. Yhteishyvä 19.2. 1932, Helsinki, p.3.
5. I have not found out any principal system of proportions in his architectural design. But in many cases, however, in the composition and in the forms of the facades and volumes, Huttunen has most likely utilized the principle of the golden section. E.g. in the rural store Sauvo (near Turku) the height of the building (which is approximately the depth of building, when the staircase at the backside is included) is in proportion to the half of the length of the building like 13:21. In similar stores the eave of the shop-window is usually at the level which divides the facade into the relation of 5:8.
6. About Lovön's waterworks see: Per G. Råberg, *Funktionalistiskt genombrott*. Stockholm 1972, p. 254-255, 358 (note 56); *Trettiötalets byggnadskonst i Sverige*. Utgiven av SAR. Stockholm 1943, p 133.
7. Already designed in 1933, the church built at the same time by Paili E. Blomstedt at Kannonkoski arouses more 'fashionable' association with the world of traffic and ships. These are the most remarkable churches in Finland built in the manner of functionalism.
8. About E. Bryggman's architecture see the latest research about him: Erik Bryggman 1891-1955 architect. Monographs of the Museum of Finnish Architecture, ed. Riitta Nikula. Helsinki, 1991.

The Palace of Young Pioneers in Tver

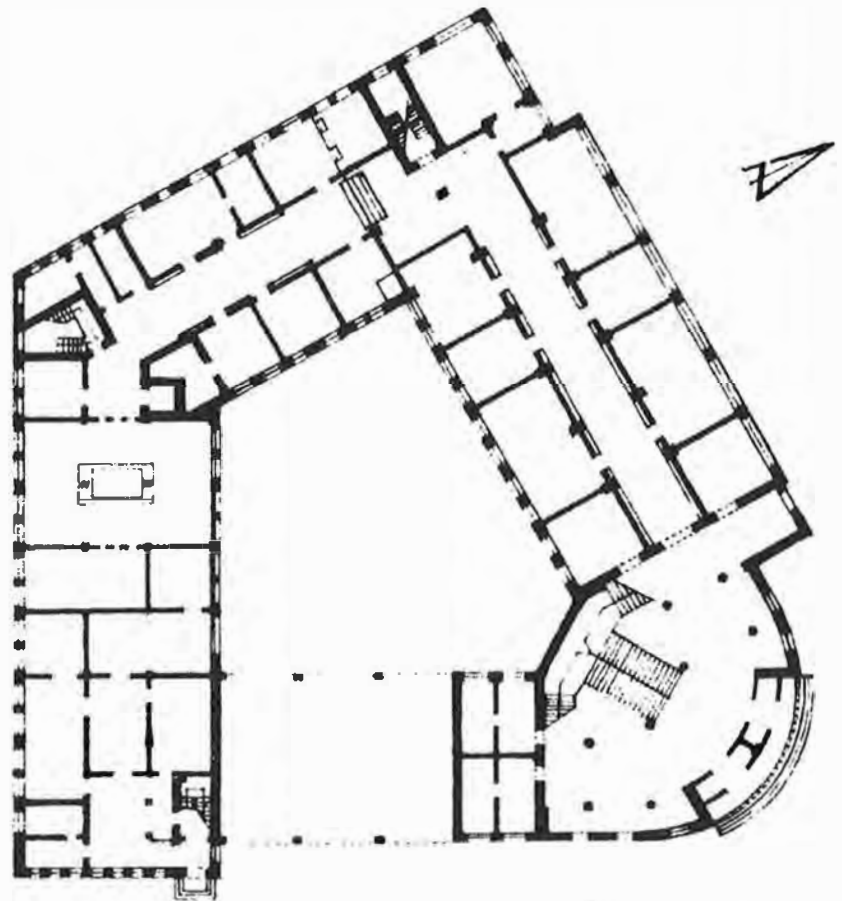
The fame of constructivism

When we are dealing with Russian monuments of the modern movement we think of Melnikov, Vesnin, Ginzburg, Golosov and others, who realized quite a number of famous buildings during the period of early Soviet architecture. At first we think of the striking 'tower of the third international' and the well known 'Wolkenbügel', designs which were not executed, the one by a painter and the other by an architect, who worked predominantly as a painter.

And then finally we remember the outstanding designs of the Vkhutemas-trained architect Ivan Leonidov, whom we know as a pure theorist. His famous diploma work of the Lenin-Institute (1927), various clubs, the Tsentrosoyuz (1928), the imposing towers of the people's commissariat for heavy industry, facing the Kremlin, all this and many more designs remained paper-architecture.

This youngest representative (1902-1959) among the constructivists (beside Kyrill Afansev) is said never to have realized a building except the landscaped staircase and theatre of the Narkomtiazhprom Sanatorium at Kislovodsk (1938).¹

This is why we should draw our attention to a less famous, but existing building in a smaller town: the House of Pioneers in Tver (formerly Kalinin²). This badly damaged building seems to be a forgotten milestone between the heroic constructivism and the beginning of Socialist Realism.



House of Young Pioneers in Tver,
1937-39/41, Ivan Leonidov and others.
Ground Plan.

Constructivist theorist - stalinist architect?

In the years from 1937 to 1939 Ivan Leonidov was commissioned head of an architects collective, which built the House of Pioneers in the town of Tver on the river Volga, which at that time was named after the communist politician Mikhail Kalinin. What were the reasons for this very commission in the time of declining constructivism³, or in other words, in the hard political climate of the second Five Year Plan under the rule of Socialist Realism? This question of course does not seem to be unimportant as the constructivist teacher at the VKHUTEIN had already been heavily criticized since 1930.⁴

We know that Leonidov was born in Vlasikh, which belongs to the district of Tver, and that he had studied at the Free School of Art (SVOMAS) in Tver. So we can say that he was acquainted with the regional circumstances. On the other hand he had worked since 1931 in the planning office of the state GIPROGOR and since 1934 in the architectural department of the Ministry of Heavy Industry, which was headed by Moisei Ginzburg, the famous constructivist architect. Working in these state offices of no little influence may have helped him to achieve some reputation. Contrary to this practical work of his, it is an open secret that in the Soviet system his international reputati-

on based on his revolutionary constructivist ideas did not help in getting building commissions from the state. For this system no longer liked revolutionary experiments in art after having established its own revolutionary ideas of politics.

Correcting a 'deviated conception' by the Bolsheviks

Probably because of economic reasons, a completely new building was not to be realized for the youth organization. So officials tried to find an existing building in the town, which could be adapted to the needs of the youth organization with little effort. Before the communal Conference of Pioneers made its decision for the building, the regional newspaper 'Stalinist Youth' had organized a competition in Kalinin asking 'What should we have in the Palace of Young Pioneers?'

The first decision to rebuild an old neoclassical building was quite typical for the official taste of the time, but nevertheless finally was rejected. It would be very interesting to have more details about the proceedings of this decision: so far, however, we don't know them. Most probably the architects supported the final decision to use the unfinished building from the 1920's for a factory-kitchen ('fabrika kukhnia') and convert it into a house for the youth organization (This great eating-house traces back to a standard design, fathered by Ginzburg.) By rebuilding this avant-garde building there was the chance to 'rectify' this 'box-like' architecture.⁵ In 1941 Michail Iljin in, a Soviet critic who had become well known abroad ten years ago by publishing Melnikov's club ⁶, stigmatised the original structure as a 'ridiculously crude 'composition' with mindlessly stupid construction of the roofs' ⁷; he thereby rendered the official Soviet perception of this disliked architecture in those days. It is, by the way, not unusual to commission knowingly a constructivist architect to rectify a constructivist 'viciousness': the party demonstrates 'infallibility' and 'magnanimity' ⁸. In nazi-Germany a similar phenomenon occurred: The so called 'building-sins' of the 'cultural Bolsheviks' should be corrected by the

'sinners' themselves. ⁹

In Kalinin the 'deviated' architectural reasoner is given a chance to prove his loyalty to the Bolshevik state and its view of art.

From factory kitchen to the palace of Young Pioneers

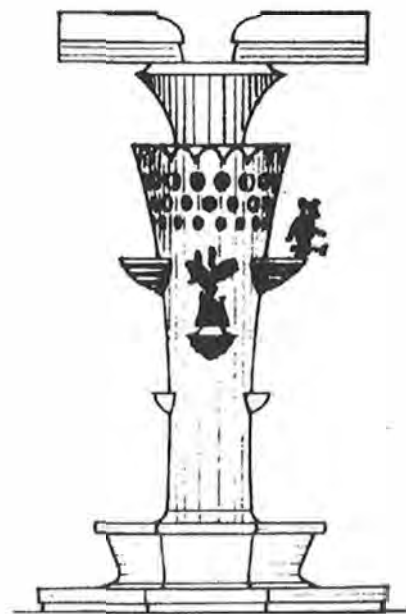
A special 'Commission for the Building of the Palace of Young Pioneers' was set up and headed by F.A. Ustinov. Financial aid came from different firms. The group of architects, lead by Leonidov, included less renowned men like T. Rappaport, Victor Valerianovich Kalinin and M. Mamulov, but also the constructivist Ignaty Frantsevitch Milinis, who together with Ginzburg had realized the famous 'Narkofim'-building in Moscow (1928-30) and the palace of culture 'Serp i Molo' (=hammer and sickle) in the years 1929-33.

The rich interior design of the Palace of Young Pioneers was done in 1940-41 by several artists headed by V.A. Favorsky (1886-1964), rector of the VChUTEMAS between 1923 and 1925 ¹⁰. These artists were I.K. Bezin, L. Bruni, N.P. Ephymenko, G.A. Kravtsov, S.A. Pavlovsky, Mrs. Favorsky, N.V. Favorsky, A.K. Shyriaeva, K.V. Edelshtine, V.B. Elkonin.

The former factory kitchen was erected on a polygonal plan with a perimetrical middle corridor system, surrounding an irregular five-cornered courtyard. The large entrance hall (by Milinis) at the western corner has the characteristic semicircular curve; inside the central staircase the first landing leads off in two broad flights. Here in this relatively unpretentious part of the house one can still feel the cool elegance of modern architecture. Large horizontal and vertical windows without framing, the flat roof and the smooth and plain surface of the walls without any decoration indicate still today the originally constructivist character of the building.

The interior design was not only changed regarding the needs of children, but also regarding the new aesthetic rules, caused by the wish to ingratiate the popular demand for naturalistic and figured decoration. On the ground floor are rooms of different size for

work and activities are on each side of the corridor in the middle. This corridor receives its light from large broad windows on each side and ends in a winter garden or conservatory, the centre of which was a small swimming pool. The rooms in the upper floor (designed



House of Young Pioneers in Tver, 1937-39/41
Ivan Leonidov and others. Column

by Ivan Leonidov himself) were devoted to leisure and entertainment; beyond the winter garden, with a special vestibule, was the hall of the October Revolution. Among the various rooms there were those for story-telling, embroidery and different activities for children. The dancing room, also designed by Leonidov, had semicircular recesses with soft sofas, separated by pedestals with little columns, a decorative detail that was also used by Leonidov elsewhere in the house. The ceiling was decorated with a relief of snowflakes executed in plaster with an electric light in the centre of each. An auditorium and the sports hall on the top of the building were not finished when the Second World War broke out in 1941.

The interior of the other rooms, executed in 1940-41, showed the same abundant decoration in the taste of social realism: loadbearing columns, faced in a pinkish artificial marble resemble those in the Moscow metro stations. There were rich wooden

inlays, oak panels framing the wall, the black decorative columns of wood with gilded bases were used as a *leitmotiv* throughout the whole building. The brilliant skyblue ceiling was adorned with gilded stars in relief. It was this ample decoration Michail Iljin praised with detailed account in the magazine *Architecture USSR* of 1941.

As Tatjana S. Kuyukina from the State Museum of Fine Arts in Tver says, the Palace of Young Pioneers was opened, already before the work was finished, on March 12th, 1939. Up to the first days of the War decoration work was going on. During the short time of German occupation the building was used as a horse stables, then as a military hospital.

In 1948 it was given back to the Young Pioneers. Today a sports school is accommodated in the decayed building. The furniture is lost, paintings and the window panes of the ground floor are demolished. Not before the 1970's were Leonidov's decorative wooden columns taken away, the ceiling and the loadbearing columns were covered with paint, even in 1985 wooden details disappeared. Not long ago, however, the building was officially put under protection as a preserved landmark.

Retouching the work of a constructivist idol

On the one hand the eventful history of the building proves the changing ideals of architecture in the young Soviet Union from the considerate and clear elegance of constructivism up to the gorgeous and showy pomp of decoration art¹¹; on the other hand it allows us to draw conclusions about the reception of Leonidov's oeuvre: thus it seems that it is not by accident that this building can hardly be found in the literature or is said to be 'destroyed'. Research work on constructivism so far may not have looked at the building in Tver from the end of the 1930's, because its original constructivist forms from the early 1920's today are hardly to be seen. Another reason may be that the design is not original. Actually, regarding its forms it is a constructivist-stalinist half-breed. P.A. Aleksandrov

and S.O. Khan-Magomedov remark aptly that prevailing traditional tendencies in Leonidov's late works have led to a 'self-denial' of the constructivist theorist, that 'he had lost his most precious qualities as an architect'¹².

The Palace of Young Pioneers in Tver, however, they do not even mention. The latest book by Andrei Gozak and Leonidov's son, Andrei Ivanovitch, falsely denotes the building as 'destroyed'¹³. It is easy to understand that this book cannot avoid apologetic tendencies, so it transfers the heavy destructions of Leonidov's interior fittings to the whole building, which is wrong. It even dares to oppose the above mentioned opinion of Aleksandrov and Khan-Magomedov from 1971 about the decline in Leonidov's late work; this unfriendly opinion, however, is - comparing the earlier constructivist work with the building - easy to understand. The clear image of the avant-garde idol cannot endure pollution by the stylistic tendencies of his Tver building, which deny so evidently the constructivist credo.

The conflict between preservation and politics

Like almost all other buildings of the Modern Movement in Russia, (which was the disliked period of communism), this building is in very bad shape if not a ruin. We know most of the workers' clubs had to endure substantial changes of their construction, though they are recognized officially as landmarks of culture. The so-called communal houses, seen from the standpoint of the history of culture, are not less important, nevertheless they seem to be delivered up to rack and ruin. Most striking examples are those of Ginzburg on the Tchaikovsky Street and on the Mira Prospect in Moscow. Authorities presently can care about the heritage of the Modern Movement very little.

Seen from the present political development, buildings from the time before communism seem to have a better chance of being saved. Conservation work would cost millions of roubles and the bad shape of the facades makes it still more difficult to draw public attention to this part of the history of culture.

Notes:

1. cf. Andrei Gozak & Andrei Leonidov, Ivan Leonidov, the complete works, London 1988; P.A. Aleksandrov & S.O. Khan-Magomedov, Ivan Leonidov, Moskva, 1971 (russian).
2. Named in 1930 after Mikhail I. Kalinin (1865-1946), chairman of the central committee, renamed 'Tver' on July 18th 1990.
3. In 1937 the last constructivist building, the palace of culture of the Proletarsky district in Moscow was completed by the Vesnin brothers and the Tsentrosoyus building by Le Corbusier was finished in 1936.
4. cf. Arkady Mordvinov, Leonidovshchina i ee vred, *Iskustvo v Massi* Nr. 12 (20), 1930
5. c.f. Iljin Michail, The House of Pioneers in Kalinin, from: *Architecture USSR*, 1941, no. 2, p.10.
6. Illjine, Michail., L'Expressionisme en architecture, from *L'Architecture d'aujourd'hui* 1, no 2, 1930, p. 237; Illjine, Michail A., L'Architecture du club ouvrier en U.R.S.S., from *L'Architecture d'aujourd'hui*, no.8, 1931, p. 17-19.
7. *Architecture USSR*, no.2, 1941, p.10.
8. cf. B.P. Michailov, Architecture of the Nations of the Soviet Union, from *Große Sowjet-Enzyklopädie*, Berlin 1953, p.60: 'While Soviet architecture developed, some architects (...) were influenced badly by bourgeois formalistic tendencies of the West (constructivism). The Bolshevik Party criticised the mistakes (...) and gave guide-lines for the principle questions of architecture. Thus the party helped the Soviet architects...' [English translation by the author]
9. cf. the Stuttgart competition of 1983 for a military complex on the Weissenhof.
10. studied in Munich (1905-1908) and Moscow; 1919-1921 soldier in the Red Army, 1921-1929 professor at the VChUTEMAS
11. cf. the significant formal changes of the palace of culture 'Serp i Molot' by Milinis during the period of construction.
12. Aleksandrov & Chan-Magomedov, Ivan Leonidov, Moscow 1971, p.99 (russian)
13. A. Gozak & A. Leonidov, Ivan Leonidov, the complete works, London, 1988, p.166 (edited by C. Cooke).

The architect Alexander Dmitriev and his contribution to the development of the Modern Movement in Russia and the USSR

The Russian architect Alexander Ivanovich Dmitriev (1878-1959) deserves to be better known.¹ His professional activities ranged over an unusually broad field, as he made significant contributions to urban development and the design of engineering structures, to civil and industrial architecture, as well as to criticism, teaching and research.

Though living most of his life in St. Petersburg-Leningrad, his built works were mainly located elsewhere: in Tallinn, Taganrog, Kharkov, the Donbass and various other small towns and regional centres. Indeed, it is precisely the diversity and geographical dispersion of his work which has made it difficult for architectural historians to build up an integrated picture of his oeuvre.

His long career, spanning half a century, was marked by two periods of particularly fruitful and successful work. The first, interrupted by the First World War, was associated simultaneously with a broad retrospectivism and with the creation of large industrial complexes and extensive housing developments.

The second peak of his activity, from 1925 to 1930, coincided with the innovative years of early Soviet architecture. Indeed his work of the 1910's on industrial building and low-cost hou-

sing served as a vital connecting link between these two main stages of his career.

Here Dmitriev's work is interesting in relation to a larger question, of the contribution which Russian architects of the older generation made to development of the new architecture in the post-Revolutionary, Soviet, years.

Dmitriev created no new style of his own. Nor did he consistently follow any one stylistic direction. His own work evolved in response to changes in the architectural atmosphere around him. This seeming inconstancy of aesthetic preferences reflected a keen sensitivity to new imperatives, a genuine aspiration to the up-to-date, that is to reflect current social and cultural concerns. The consistent theme through all his work was his conviction of the validity of rationalist principles: the primacy of the functional plan solution, and the active role of construction and technology as generators of building form. Even in his early period, Dmitriev regarded utilitarian and engineering structures as a legitimate and integral part of architectural territory.

Dmitriev was a pure product of the Petersburg architectural milieu, having a rich all-round education that started with four years in the Institute of Civil Engineers, from 1896 to 1900, and followed it with two more, from 1901-03, in the Imperial Academy of Arts. In the years up to 1905, he involved himself intensively in artistic criticism. In his articles from this period, the young architect shows himself a convinced supporter of the *stil moderne* and staunch opponent of historicism.

The Dmitriev of this period was clearly a follower of the ideas of Otto Wagner, of aesthetic innovations of the Vienna Secession and of Belgian Art Nouveau. His own rationalist convictions had been much influenced by his research

into bridge building and iron-framed building structures.

His adherence to the *moderne* was shortlived, however. The majority of his early work bears the stamp of eclecticism. Already about 1905, he was responding to the call of Alexander Benois and Ivan Fomin for a new retrospectivism. Not that his new attention to the traditions of Petersburg classicism and baroque turned Dmitriev into an orthodox historicist.



A.I. Dmitriev, Factory and settlement of the Russo-Baltic Company in Tallinn, 1911-16.
Aerial photograph from the 1910's



A.I. Dmitriev, Administration Building for the Russo-Baltic Company Complex, Tallinn, 1913-14.
Perspective drawing by the architect

The Peter the Great College building in Petersburg, his best-known pre-Revolutionary work, designed 1905-08 and built 1909-11, was indicative in this respect. The refined stylisation of Petersburg baroque motifs is combined with an asymmetrical plan and volumetric structure, organised around a clear functional zoning. His next two large buildings, by contrast, were neoclassical: the College of Medical Assistants in Nikolaev, 1912, and the administrative

building of the Southern Railway Company in Kharkov, 1912-14. But when he faced the entirely new building tasks of large industrial and housing complexes, he abandoned historicist stylisation in favour of rationalism.

In 1907 he began a reconstruction of the Admiralty Shipbuilding Yard in Petersburg, and for the same authorities designed a complex of low-cost apartment housing. Cheap housing was a theme he continued to explore in a series of schemes designed with N. V. Vasiliev during 1910-12. The most interesting of these is perhaps that on Kievskaya Street, a classic example of the laconic 'northern' *moderne* which already displays the fundamental features of functionalism.

His rationalist approach and breadth of engineering understanding were well displayed in Dmitriev's factory and housing development for the Russo-Baltic Company in Reval (Tallinn).² In essence this was a complete new industrial town, erected on a virgin site on the Ziegelkoppel peninsular (Kopli), and comprising shipbuilding and gun-making workshops as well as administrative buildings, a workers' housing colony and a garden-village for managerial staff.

The production area was located on a narrow promontory where the deep sea was permanently ice-free. In planning the plant Dmitriev insisted on the importance of 'an overall guiding principle' and on a plan organisation which allowed future extension without the disruption of activities. Proceeding from a very careful study of the technological processes involved, he transformed the industrial enterprise into a highly resolved architectural ensemble. The main plant shops had their origins in the traditional 'basilica' form. The clarity of their compositional treatment was achieved through juxtapositions of powerful masonry masses against the vast surfaces of glazing. Inside, the combination of steel-framed construction and technical elements of the production equipment created an integrated engineering and architectural environment. Dmitriev's drawings show

clearly his aspiration to raise the industrial landscape to the level of an aesthetic statement.

The administrative building crowned with a ferroconcrete water-tower dominates the peninsula. This dates from 1913-14. New features are evident here: the geometrical simplification of the volumes, the stepped progression of increasingly large masses, the simplified treatment of the classical order. These features prefigure various of Dmitriev's works from the period of constructivism. The administrative building serves as an organising element for the area in front of the factory, thus becoming the prototype of a town planning solution for a problem that would attract enormous attention during the 1920's and 30's. It also serves as a visual link between industrial and residential zones, which are physically separated by a zone of greenery.

The garden village for administrative staff consisted of two-storied masonry housing surrounded by greenery. The workers' colony contained various types of timber buildings, differentiated by demographic composition of the population, which by 1917 had reached fifteen thousand people. The majority of this housing consisted of small units with one habitable room each, in two-storied buildings. Their unassumingly astylar architectural treatment was appropriate to their role as low-cost mass housing. By developing a series of standard plans, Dmitriev achieved an impression of diversity through varying the combinations of them within the planning of each district. He also used perimeter development forms with internal gardens, various linear types and patterns of parallel blocks. The colony also included police and fire stations, a church cinema, hospital, public baths, canteens and shops.

Thus Dmitriev created a vast integrated housing development with a fully developed hierarchy of public services, all closely linked with the production area. In so doing he was already broaching the central themes of town planning debate in the 1920's, and many aspects

of what seemed at the time a far-sighted experiment would later be recognised as highly relevant to the new concerns.

His plan for New Taganrog was conceived on an even bolder vision. Dmitriev's first work here, in 1915-16, was construction of a gun-making factory for the Russo-Baltic Company. This involved a cluster of housing accommodation for workers and administrative staff as well as the main blocks erected in monolithic reinforced concrete. In 1917 he completed the masterplan for extension of the whole town, which envisaged the creation of an extensive new district of workers' housing units, squares and public gardens. This stage of the Taganrog project was never executed thanks to the Revolution.

Building came to an obligatory halt on all fronts in Russia in the years immediately following the 1917 Revolution. During this time Dmitriev concentrated his energies on teaching and research work. Amongst those who studied under him in the Institute of Civil Engineers, for example, at various dates just before and after the Revolution, were Victor Vesnin, Alexander Nikolskii, Georgy Simonov and P.P. Rotert. On the research front, he did extensive work to develop the most rational possible forms of urban and rural housing. In this connection he made a study tour to France, England and Germany in 1923, to examine the latest European approaches.

Both his own work of the 1910's, and his knowledge of contemporary foreign experience, would seem to lead Dmitriev logically to a sympathy with the new architecture. In those years when the young Soviet avant-garde was emerging in architecture, however, he maintained a fairly withdrawn position from it. He certainly sympathised with the innovative aspirations, but did not become absorbed in the sharp polemics. This position is clearly manifest in his brief article of 1926 in *Wasmuth's Monatshefte für Baukunst*. He criticises in particular the extreme obsession with glazed surfaces that were totally unsuited to the Russian cli-

mate. Far more 'healthy', in his view, were such buildings as Rerberg's Central Telegraph in Moscow, or Serafimov's House of Industry in Kharkov, which represented 'genuinely contemporary' answers to 'the climatic and technical requirements'.¹³

Dmitriev's judgement on Soviet architecture and especially his incautious praise for Rerberg's eclectic though superficially 'rational' edifice, provoked sharp reaction from the Moscow constructivists.

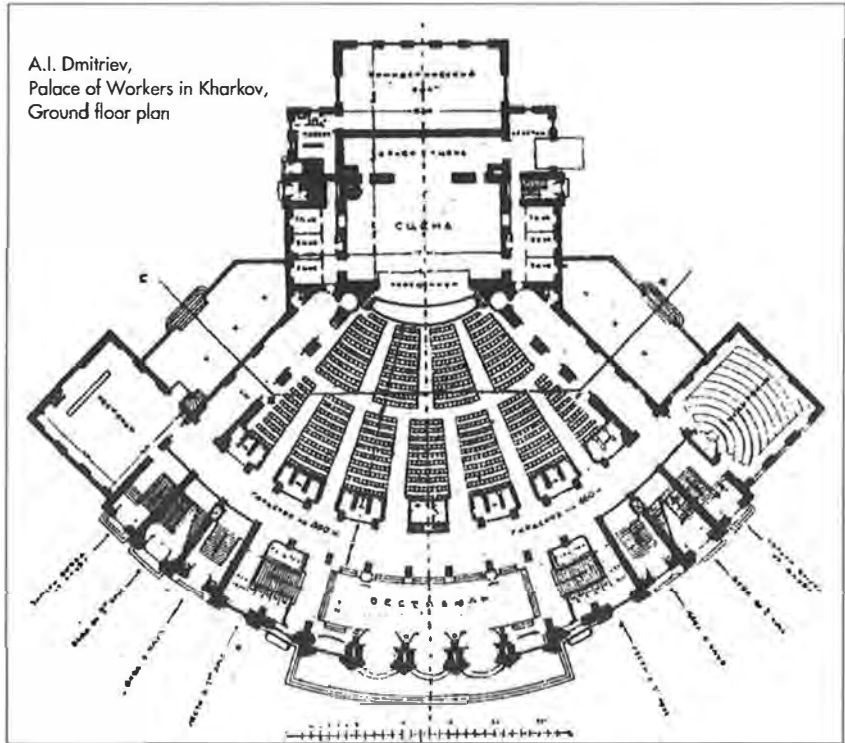
They considered him to be expressing 'the Leningrad opposition to modern architecture', and criticised the 'indecisiveness and architectural weakness' of his own design work.⁴

Dmitriev's change of direction to something akin to constructivism took place during 1925 to 1927. His competition project for the Moscow-Narva District House of Culture in Leningrad, of spring 1925 is still a transitional work. The simple geometrical volumes, contrasts between the vertical strips of glazing and the clean surfaces of the walls are combined with a symmetrical composition which contains covert memories of classicism.

The configuration of the plan is determined by the amphitheatre-shaped auditorium, and the bowed curve of the main elevation with its tall rectangular windows illuminates the main foyer. The building that stands today, known as the Gorky Palace of Culture, was erected in 1925-27 by other architects, Gegello and Krichevskii, who borrowed Dmitriev's central idea and treatment of the main space and elevation. Thus it was actually Dmitriev who should have credit for devising this compact type of workers' club building whose organisational core is the sectoral amphitheatre.

This type was used again by Dmitriev in building the Kharkov Palace of Workers' in 1927-32. This was one of the most sparkingly original works of early Soviet architecture. It was a product of Dmitriev's period of closest sympathy with constructivism whilst at the same time reflecting a considerable influence from expressionism. Its broad

A.I. Dmitriev,
Palace of Workers in Kharkov,
Ground floor plan



A.I. Dmitriev,
Palace of Workers
in Kharkov,
Architect's perspective
drawing of one design
variant.



A.I. Dmitriev,
Palace of Workers
in Kharkov, 1927-32.

sectoral plan gave an auditorium of two thousand seats. The Palace's external appearance has a tense dynamism and rich plastic expression. The build up of rising volumes from edge to centre has the effect of compressing the central arc, converting it into a form of folded surface that seems to be part

of some vast fluted column. This undulating wall is intersected by continuous ribbon windows made possible by use of load-bearing internal concrete columns.

The fully glazed, coffered wall of the foyer creates a constantly changing effect of airiness, transparency and

continuity between the interior and the outside environment.



A.I. Dmitriev, Theatre and Club in Kramatorsk, 1928-30.

In the theatre and club building in Kramatorsk of 1928-30, which no longer survives, Dmitriev abandoned this compact plan type and developed a free flowing plan divided into distinct zones for the theatrical and club activities. This solution derived from the logic of the functional method but was not new for Dmitriev: it already featured in his neobaroque college building in Petersburg at the turn of the century. The pavilion plan of the Kramatorsk building was built up from a series of clearly defined geometrical volumes. For all his invective against 'glass mania' a couple of years earlier, we see him here creating a vast glazed screen to illuminate the foyer, and visually expanding the space still further by the fully glazed cylindrical stair towers to each side of it.

In conjunction with various Leningrad colleagues Dmitriev took part in designing the famous Dzerzhinsky Square in Kharkov, first capital of the Soviet Ukraine.⁵ He was the only architect to participate in designing all three of the main elements of the ensemble, the House of State Industry (Gosprom), the House of Government of the Ukraine, and the House of Cooperation.

Dmitriev's scheme for the Gosprom building won second prize in the competition of Summer 1925. Its powerful and laconic forms clearly responded to the concrete frame to mark his decisive about-turn towards the pure modernism of constructivism. Still, though, certain features of the design recall his pre-Revolutionary work, in this case the administrative building in Tallinn. The Gosprom complex was eventually erec-

ted to a design by S.S. Serafimov in conjunction with S. M. Kravets and M.

D. Felger, and became the main focus of the Dzerzhinsky Square ensemble.

In 1927 it was proposed to enclose this Square further with the Ukrainian House of Government, and Dmitriev's competition project for this building was amongst the most refined and expressive works of modernism in his oeuvre. At the same time he embodied the building for representative government in a symmetrical and formal, even monumental, structure. His composition was constructed upon the contrast between repetitive horizontal ribbon windows and the strong verticals of the central eighteen-storeyed tower. The *Leitmotiv* of the stepped rising volumes growing towards the central tower, once again forcibly recalls his administrative building in Tallinn.

The Ukrainian House of Government was never built, but Dmitriev's scheme was used in modified form for the House of Cooperation built on the same Square in 1929-34, with O. R. Munts as his co-designer. Unfortunately the client organisation here rejected reinforced concrete in favour of brick. As a result the architectural solution lost its constructivist purity and clarity.⁶ The House of Government site was filled in 1930-33 by the House of Design Organisations, erected by Serafimov and M. O. Zandblat-Serafimova to match the House of Cooperation which faces it across the square. The overall result was a modernist ensemble of grandiose scale which occupies a central place in the history of Soviet urban development.

During those years Dmitriev continued to work in the field of industrial archi-

ture. Under his leadership, in 1926-28, the scheme was prepared for reconstruction of the machine building plant in Kramatorsk, in the Donbass region. Here various ideas first explored in Tallinn were reused and reworked. The most significant features of the Kramatorsk venture were the full servicing and landscaping of the site and the scheme of applied colour, in light tones of various hues, designed for the finishing of the building. The architectural handling of the main machine shops produced a bold, clear statement that was both monumental and airily light.

The principles of the modernists' functional method were even more consis-



A.I. Dmitriev, Regional Electric Generating Station for the Donbass, 1928-29.
Architect's perspective drawing.

tently reflected in Dmitriev's Regional Electric Generating Station for the Donbass of 1928-29, which does not survive. This asymmetrical structure of diverse volumes had a steel frame with extensive glazing and a light brick infill dictated by functions and available technologies. The very open metal constructional frame and elements of equipment such as lifts and gas-pipes demonstratively reinforced the building's technicist aesthetic. In Dmitriev's conception the building could be extended by the simple addition of adjoining elements, and this open structure manifested a new understanding of architectural morphology.

One of the latest works of Dmitriev's modernist period was a scheme for a dockyard and workers' settlement complex in Tiumen, in Western Siberia, done in 1929-31. Here he once again tackled the task of combining production areas with an administrative and

public zone, as well as residential accommodation. This scheme brought full circle his whole series of experiments in the planning of industrial settlements from the two decades 1910 to 1930.

As is well known, Soviet architecture found itself redirected in the 1930's onto the path of an assimilation of the classical and traditional heritage, dictated by the totalitarian regime.

Constructivism and all modernism was ideologically ostracised. It was a period of sharp decline in Dmitriev's work, as of many others. Despite his past as a retroscopist, he could not fully adapt to the changed situation. He found a safe way out in the sphere of bridge-building, which had always been close to his interests. For the rationalist Dmitriev, the pursuit of an architecturally constructive resolution of engineering structures offered an alternative to the monumentalism then dominating all civil architecture. During his last decades however, he created nothing to rival his achievements of the 1920's and the pre-Revolutionary years.

Notes:

1. There are only a few brief publications on Dmitriev. The following comprise the principal literature on his work: N. Ia. Leiboshits, 'Pamiati A. I. Dmitrieva' (In memoriam A. I. Dmitriev), *Izvestiia Akademii stroitel'stva i arkhitektury SSSR*, 1960, No.1, p.125; B. M. Kirikov, 'Arkhtektor A. I. Dmitriev' (The architect A. I. Dmitriev), *Arkhtektura SSSR*, 1979, No.2, pp.31-34; B. M. Kirikov, 'Poiski novogo v tvorchestve arkhtektora A. I. Dmitrieva: period 1900-1917gg' (The pursuit of the new in the work of A. I. Dmitriev, 1900-1917), *Arkhtekturnoe nasledstvo*, 1979, No.27, pp.180-189; B. M. Kirikov, 'Arkhtekt A. Dmitrijev - Kopli hooneansambli autor', *Ehitus ja Arkhtektuur* (Tallinn), 1982, No.2, pp.60-62. A number of Dmitriev's works were published in *Wasmuth's Monatshefte für Baukunst*, 1926, No.8.
2. The initial project was drawn up in collaboration with the engineer I. A. Gavrilov. See: I. A. Gavrilov, A. I. Dmitriev, 'Predvaritel'nyi proekt. Opisanie ...' (Preliminary project. Description of the shipbuilding yard at Reval for the Russo-Baltic Company for the manufacture of shells and ammunition), St. Petersburg 1912. The whole complex suffered severely in the Second World War and as a result of the later reconstruction.
3. A. Dmitriev, 'Zeitgenossische Bestrebungen in der Russischen Baukunst', *Wasmuth's Monatshefte für Baukunst* 1926, No.8, p.336.
4. I. Sobolev, 'Sovremennaiia arkhtektura i Wasmuth's Monatshefte, *Sovremennaiia arkhtektura*, 1926, No.5-6, pp.125-126; 'Russkaia arkhtektura v germanskoi osveshchenii', *Stroitel'naia promyshlennost'*, 1926, No.9, p.658.
5. For more detail here see: G. Gorvits, 'Iz istorii tvorcheskikh svyazei arkhtektorov Leningrada i pervoi stolitsy Ukraina' (From the history of links between Leningrad architects and the Ukraine's first capital), *Voprosy sovetskogo izobrazitel'nogo iskusstva i arkhtektury*, Moscow, 1976, pp.315-332.
6. The House of Cooperation (later the Military Engineering Academy), suffered war damage and acquired a pseudo-classical treatment in its postWar restoration.

The 'Red Banner' factory in Leningrad - the work of E. Mendelsohn

The 'Red banner' ('Krasnoe Znamia') Factory was built in 1926-1928 and is now one of the most significant monuments of Modern Movement architecture in Leningrad. The project for this major industrial complex was made by E. Mendelsohn in 1925-26. Repeated publications of the factory design contributed to its wide recognition. Regrettably, the story of the construction, associated with a partial and largely simplified execution of the architect's design, has long remained in the background. Among the reasons was also the position of Mendelsohn, who was known for his striving for perfection and could not be happy with the quality of execution. Nonetheless, the impact of both the project and the building on constructivist architecture in Leningrad was so great that to a large extent it served as a guideline for the growth of architecture in Leningrad in the late 1920's-1930's.

The idea of reconstructing the old knitwear factory, built as far back as in the mid-19th Century, was the creation of the NEP. In 1925 the Leningrad Textile Trust established a special board for the construction of new textile enterprises. Its working programme also contained a project for a textile-and-dye section at the 'Krasnoe Znamia'.

The first development projects for the factory were made in Leningrad. Although many architects were assigned to the project the outcome was not satisfactory. So in 1925 several repre-

sentatives of the board went to Germany. The particular object of their attention was the hat factory in Luckenwalde, built after the design of E. Mendelsohn in 1921-23. It was Mendelsohn whom the professionals from Leningrad invited for an expert examination of the project submitted by the Board of Leningrad Textile Trust. The contract signed in Berlin for a counterproject stipulated development

tion of construction processes), Mendelsohn made three project versions. In the spring of 1926 the first - the 'ideal' - version, the one in maximal keeping with the model, was approved for execution.

Since construction requirements included tearing down a number of residential buildings on the site, it was decided to divide the construction process in two stages.



'Red Banner' Factory. Power Plant. Recent photograph.

of architectural, building and engineering designs, as well as all issues of construction organization, power supply, etc. Particular attention was to be drawn to the problem of removing harmful steams and gases, using the unique ventilation that was so impressive an innovation in Luckenwalde.

In October 1925 Mendelsohn and his assistant E. Laaser brought to Leningrad the initial project (site plan, several versions and plaster model). The project was screened and approved as a foundation. Further developments took several months to complete. In cooperation with a civil engineer Salomonsen (building structures) and a mechanical engineer Laaser (organiza-

The model and drawings presented a complex of factory buildings for 8.000 workers. On two sides, there are similar four-storeyed buildings, with staircases repeated in a marked rhythmical pattern.

The horizontal elongated buildings are dominated by a ten-storeyed vertical line of the Board Building, resembling the tower of medieval town halls. It was a component both functional and symbolic, demonstrating the special role of administration in production organization and control over the whole factory territory. In the overall arrangement, the tower creates the play of asymmetric geometrical dimensions, so very characteristic of the new architecture of Germany.

The sense of motion, introduced into the quiet arrangement of rational shapes running along the square court perimeter by the impetuous upward flight of the Board tower, is strengthened by the oblique, low (one-storeyed) Workshop Building, meeting, at an acute angle, the heavy building of the Power Plant. The two buildings enclose the second, inner court of the factory, triangular shaped in plan. The image dynamics and the highly expressive molding of the Power Plant building, a metaphor of boat contours, demonstrate the features of expressionism, characteristic of Mendelsohn's early work (the Einstein Tower, the Luckenwalde Factory). The architectural image was a visual embodiment of the buildings' place and role in the factory complex. Unlike the Luckenwald factory, where the power plant was the focus of a balanced composition, the 'Krasnoe Znamia' displayed the dynamism that permitted Mendelsohn to compare the Power Plant building with 'a ship leading the whole enterprise'. The planning idea of the 'Krasnoe Znamia' project, of two blocks enclosing a triangular area and joined at a rounded angle, provided the architectural arrangement with the sense of motion the desire for which was expressed in the postulate 'function plus dynamics'. In his later work, the architect would often repeat it in various versions (the *Berliner Tageblatt* building in Berlin, 1921-23; Metal Workers Union building in Berlin, 1929; Berlin Transit Company Building Competition, 1931 etc.).

The interior court behind the Power Plant building is crossed by the parallel low elongated buildings of three shops (two dye-works and one bleaching-house). Each is crowned with a trapeziform additional storey for ventilation shafts. The similarity with the Luckenwalde shop and dye-house is the most vivid in this section of the complex, conforming to the conditions specified by the client. Reproducing the structures of long shops with their ferroconcrete vaults, starting at the floor, the architect added a second tier of reinforced concrete with double timber facing and cork insulation. Having rejected the

extravagant unnatural plans of the Luckenwald dye-house for more composed ratio shapes, Mendelsohn preserved the dominance of functional components. In 1931 he used the same device in an unbuilt project for a large zinc factory in Magdeburg.

In the Soviet Union the response to the 'Krasnoe Znamia' project was not at all simple. Even the fact of commissioning a foreign architect with so important a project gave rise to numerous protests. And, while a certain degree of the protest depended on institutional interests and injuries, the reason for the open hostility to the factory project, shown by many of the Soviet, and particularly Leningrad architects, lay in the strong opposition to the principles of new architecture.

Debates on the factory project crossed the borders of Leningrad into the central press. And the manner was not always appropriate. Opponents to the project not only did their utmost to discredit it in the press, they also made a complaint to V. Kuibyshev, the VSNKh Chairman about some non-existent engineering faults. In April 1926 some Leningrad building professionals expressed their opinion on Mendelsohn's project. The numerous reproaches it contained on minor issues (like, 'there is a striking amount of stairs and lavatories') resulted from the simple fact that the ideas of new architecture implemented in the project, were totally alien to the majority of its critics. And Mendelsohn took the attacks on his project as evidence of radical artistic incompatibility with traditionally-oriented architects.

That Mendelsohn could begin realization of his project was due to the consi-



'Red Banner' Factory. Main building. Recent photograph.

stent support from 'Lenigradtekstil' trust Board. Construction work started in July 1926. By the Autumn of that year - only four months after, a very short term, - the main units of the first stage were completed in the rough. Among them was the main knitwear shop, the dye- and bleaching works.

The main four-storeyed block with a semi-basement was only 127m long, much less than designed. Its seven bays were impossible to complete, because of the residential blocks that were only removed during the second construction stage in 1934-37. This was when the block was completed. A lift fitted in one of the staircases necessitated an additional structure on the roof, which certainly altered the building's outline.

The most important changes in the course of construction concerned the dye- and bleaching houses. The ventilation shaft design of Mendelsohn made Leningrad engineers hesitate a great deal. While installations of the type were estimated as cheaper and more efficient than mechanical devices, their worth was still debated, even after the project was approved and construction work began. Test construction of a ventilating shaft in a dye-house only started in 1927 and proved a failure. The superstructure, considerably shortened (from 42 to 28 m) and resembling an ordinary chimney, could not meet the requirements and was soon demolished. And the shop buildings were, as in Luckenwald, crowned with two sloping surfaces and a skylight. Mendelsohn was again attracted by the idea of a tall trapeziform with reinforcements standing-out, as if soaring over the building, only after the War. It was expressed in a project version for St. Paul's Church, in a Jewish community centre - Mount Zion (Minnesota, USA)- but seemed to be unlucky. Just like in Leningrad, there is no trapezoidal shape in the built version of the project.

It should be noted here, that Leningrad rejected all the engineering innovations of the project, although they were among the reasons why the 'Leningrad' trust commissioned Mendelsohn with

the project. Neither did they ever implement the unique control system against the frequent Leningrad floods. Mendelsohn suggested a 3 m court elevation and a waterproof coffer-dam basement built over the foundation slab.

The power plant, with the foundations laid simultaneously with all other buildings, was completed in the rough a year later in the Autumn of 1928. It was the only unit of the complex built in complete conformity with the initial design. Paradoxically, it was the building demonstrating maximal resemblance to the Luckenwald factory (except for the shop structures), which was stipulated in the commission. This was particularly evident in combining, without any attempt at unification, the two building materials - brick and concrete, giving the building a certain for-



The interior production court.
Recent photograph.

ce of expression.

Interior and exterior decoration of the factory buildings went on till 1928. In the Autumn of that year they began equipment installation. In the Spring of 1929 the power plant started feeding electrical energy to the factory. In the Summer-Autumn of 1929 shops were moved to the new buildings.

The second construction stage began after a considerable delay - only in 1934, and was completed in 1937. At the time of a sharp turn to tradition-guided architecture, it was decided not to complete the Mendelsohn project. Only the main building was completed, and the third dye-house built. The rest of the factory complex (the production block and the club), were built in the 1930's

with no regard to the Mendelsohn project, although the location conformed to his site plan. At the same time, they added a covered gallery on the second-floor level of the main building, to connect it with a new Sales Department building. However, that was the end of the story of the factory construction. The built project was done in fragments and in a simplified form, with a number of outside additions.

We have already mentioned the fact that in 1925-26 the 'Krasnoe Znamia' project was violently opposed by conservative architects in Leningrad unable to understand new architectural forms. The first construction stage was completed in 1928, when there was a shift towards constructivism in Leningrad. New times gave birth to new opinions. Out of the boat of the 'Krasnoe Znamia' power station plant 'flowed' not only knitwear production but, to a certain extent, the architecture of Leningrad as well. This is evident both in individual buildings, and in the art of some architects who were acquainted with the built project and with Mendelsohn's general design.

An appropriate example is the community-house for political convicts (1931-'33, architects G.A. Simonov, P.V. Abrosimov, A.F. Khriakov), demonstrating a strong resemblance to the 'Krasnoe Znamia' project.

The source of the three-block triangular interior court arrangement leaps to the eye. The building section facing the Neva is elevated on a tall ground-floor. There can hardly be any doubt about the project being based on the Mendelsohn flood control system. The rounded angle of the block facing the square brings to mind certain associations with the 'Krasnoe Znamia' power plant building. At present, the house is actually overshadowed by a 1950's building. A constructivist boat heading for a neoclassical wall. Is it meant as a symbol?

Among the Leningrad architects influenced by the 'Krasnoe Znamia' Factory project was the outstanding architect

N.A. Trotskii. His works of the constructivist period were often guided by E. Mendelsohn's arrangements and techniques (the Kirov District Council House in Leningrad, 1930; Culture Centre on Vasil'evskii Island, 1930). Not without reason, it was Trotskii who in 1935 rather ambiguously referred to 'Krasnoe Znamia' as 'a classical example' of new architecture. It would be wrong, however, to think that Trotskii regarded the work of the German architect as an object for imitation. The attraction for the Leningrad architect was mainly in the new, highly emotional interpretation, the expression and dynamics, to a certain degree also characteristic of Petrograd neoclassics in 1917-25. It was Mendelsohn who introduced strong repercussion of expressionism to the Leningrad constructivism, enriching its overall design.

The star of the 'Krasnoe Znamia' complex seems to be rather lucky, although like many modernist architectural monuments in Leningrad, it is not protected by the state, its condition and safety wholly depending on the will of the user. To date, the factory buildings exist in the same state they were in the 1930's, when construction work was completed, with no significant reconstructions or additions. Perhaps, only the power plant building court facade looks different now, with its terrace destroyed and some ugly extensions added. Regrettably, the buildings can only be seen from the outside now. The interior production court has been cluttered up and blocked, the entrance there closed. The main building street facade has been hidden by new factory extensions. Of the whole complex, only the expressive power plant building facade is known to the public. Some simple measures - cleaning the court, eliminating later additions from the power plant building court facade, opening the factory for visiting tours on certain days - could bring this undeservingly little known monument of the Modern Movement back into the history of world architecture.

The core of matter. Van den Broek & Bakema's 'Katterug' building in Tilburg

Some preliminary remarks:

At the end of the 1950's CIAM was dissolved. It did not seem useful or even possible at the time to continue the organization, since the objectives for architecture and urbanism had changed too much. Jacob Berend (Jaap) Bakema played an important role in this process.

In the same period the firm of Van den Broek & Bakema presented itself as a true heir of the Modern Movement, boasting an unbroken line extending from the founder, Michiel Brinkman (well known for his housing complex at Spangen, Rotterdam), via J.A. Brinkman and L.C. van der Vlugt (Van Nelle factory) up to J.H. van den Broek and J.B. Bakema. The fact that the firm kept its archives despite growing costs and used it for new designs and verbal explanations is instructive in this respect.

It is against this background that the following remarks about one of Van den Broek & Bakema's projects from the early 1960's should be seen.

The city plan for Tilburg is not the best known work by Van den Broek & Bakema. Better known and often reproduced projects associated with their urbanistic work are the Lijnbaan shopping mall in Rotterdam, studies for Pendrecht and Alexanderpolder (new neighbourhoods on the outskirts of Rotterdam), the regional plan for Noord Kennemerland, competition entries for Berlin Hauptstadt, Frankfurt Nordweststadt and Tel Aviv, the Pampus plan near Amsterdam and the

city plan for Eindhoven. Tilburg is rarely included among these. In the second monograph on Van den Broek & Bakema (1975) Tilburg is reproduced in part, but without context or background.¹

This is remarkable, considering that here for the first time Van den Broek & Bakema had a real chance to realize at least partly their views on a city centre in direct confrontation with historical fabric shaped by the industrial revolution. The 19th Century city had been one of the main targets of the MoMo but it never became quite clear what the right strategy for victory should be: whether the radiant city was to be created *ex nihilo*, destroying the existing city simply by its existence, or to be imposed upon the existing city in a direct attack. Although its scope is limited, fundamental points are at stake in the Tilburg plan, such as the character of the modern urban space, the relation between the old and the new fabric and the role of the architect-urbanist in town planning.

In the postWar discussions in CIAM emphasis has shifted from quantitative aspects of architecture and urbanism to more qualitative aspects such as social, psychological and even regionalistic ones. Concepts as 'core', 'habitat', 'identity and place' and 'growth and change' were introduced to come to grips with this kind of approach.

The Dutch made a specific contribution, largely determined by the task of postWar reconstruction in the Netherlands. Models and designs were largely geared to the specific problems of the new quarters on the fringes of the city, the living quarters in the polder.

It is particularly with the experiences with the first rather schematic postWar living quarters in mind that Bakema gradually developed his vision of architecture and urbanism with highrise as an essential component.

Bakema is convinced that only a three-dimensional urbanism can create a

human environment in which an interaction between the individual and the collective is possible. In the various designs for Pendrecht and Alexanderpolder by the Dutch CIAM group 'Opbouw' the attention shifts from the 'unit C, d'habitation' (the residential unit) as the smallest urbanistic element towards the 'visual group' as unit, from the shaping of statistic average figures as means of identification to the individual experience of place and space in a community.

Bakema contributed considerably to this development. As already said the residential highrise plays a crucial role in this concept. For Bakema the residential highrise building was not in the first place the inevitable outcome of economic conditions in society, or solely an aesthetic element in the urban composition, but a natural dwelling variant, one of the ways 'to build one's own nest'. For him it is a building type with just as much right to exist as the cottage in the fields. As an urbanistic element the (residential) highrise has for Bakema primarily a social, a psychological and even a cosmic function. Employed in the right way highrise enables a person to orientate himself to cosmic space and at the same time determine his place in the environment. Urbanism considered in this way is mainly occupied with deciding on the right sizes and relationships; beauty is subordinate.

The investigation into and development of various elements that make possible the interrelating of different parts and scales 'from doorstep to city' has been a principal theme, a speciality of Van den Broek & Bakema. In the early 1960's the firm had at its disposal an elaborate 'story', a verbal construction, both as guideline for and explanation of its own designs. Parallel to this the firm had a complete set of elements hand to handle their architectonic and urbanistic assignments in a coherent, yet differentiated way. In the mid

1950' however this set was still incomplete and to a large extent geared towards the building task in the polder. One of the results of the research done during those years was Bakema's so called 'battleship'.² This was a large scale element, a very long building that would mediate between cosmic and individual space, between the speed and scale of the highway and the pedestrian speed and scale, between living at the horizon (above the trees) and living below the trees. These mega-structures were to appear in the work of Van den Broek & Bakema in some form or another for more than fifteen years.

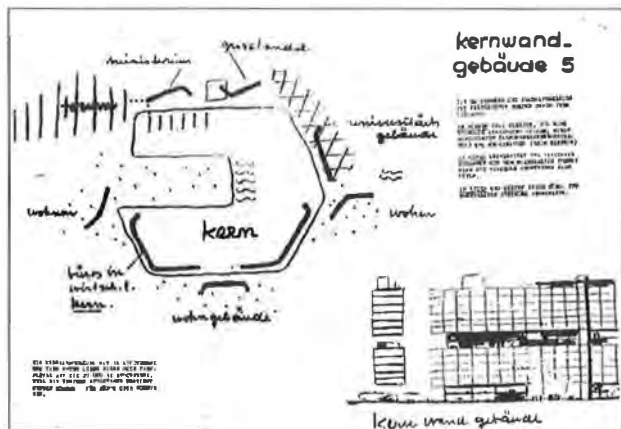
tion of the various scales at hand in the centre is combined with visualization of the centre as a room in the city: centre and periphery are mutually related. It is a relation by separation. The issue is not the core-wall building itself but its function in space and its identification potential. Form is here used mainly to localize.

The wish to reconcile the different scales and speeds in the city touches on another theme that became ever more important for Van den Broek & Bakema during the 1950's and 1960's. This concerns the desire to reunite what had been separated by the analytical urban theory of CIAM, without however going

ched.

Bakema's world is fundamentally harmonic and he tried to intensify life experience by providing a maximum of 'interrelations'. For example the firm of Van den Broek & Bakema was particularly proud of the extension to the Lijnbaan, where it had succeeded in realizing three differently programmed levels one above the other (an arts centre bridging the shopping mall and a cinema and theatre below ground level). This idea is called 'overlap' by Van den Broek & Bakema.

By now we have indicated the main ingredients of the Tilburg plan. What the new mayor had in mind was to



Competition entry 'Berlin Hauptstadt' (1958), showing the city centre surrounded by core-wall buildings.



Model of the new city centre of Tilburg (1965). The old centre is on the right, the 'Katterug' at the centre stepping up towards the new market square.

In the competition entry for Berlin Hauptstadt (1957) Van den Broek & Bakema introduced another element, the core-wall building. With these linear highrise elements, placed along the city ring road, the city centre is both indicated and defined. Here the highrise becomes a symbolic form: the limit of the city centre.

It has been said that this plan marks a break with the CIAM realm of thought, especially the indifference of the core-wall buildings to the functions they contain (apartments or offices, a university or even ministries). Situation and form of these buildings are supposed to be of a formalistic and aesthetic nature. That does not seem to be an adequate description of Bakema's preoccupations at the time.

The design looks more like a struggle with the application of the experiences of the Lijnbaan and Alexanderpolder to a metropolitan city centre. The integra-

back on the functional optimization of each element. The separation in space of the four functions had been one of the main points of attack for Team 10, it should be remembered. In Bakema's view presumably the four functions and the Charter of Athens had been a necessary phase in the development of a new urban theory, but not its conclusion. The next step was to reunite and intertwine these functions again in order to do justice to the multiplicity and richness of human life.

The solution to this problem Bakema sought in the layered city, the piling of levels, facilitating the experience of different aspects of life simultaneously. In the late 1970's this idea was brought to its conclusion by Rem Koolhaas, using the concept of congestion, challenging the presupposition that the urbanist can handle it all and harmonize city life in one model. But in the early 1960's that point had yet to be rea-

reshape the conglomerate of 11 villages into a modern town, fully equipped to function as the centre of the region. As a start, a new townhall was built along the new ring road around the inner city and a new theatre was added. Van den Broek & Bakema were to design public facilities (library, cultural centre), shops, an underground parking garage, a large amount of housing and most important of all, to shape the new public square as the main public space of the city.³

In the analysis of the situation and the brief two points come to the fore. In the first place the square, the main public space, had to have an urban quality and scale, a place where city life can and will concentrate and it had to shape the new identity of the city. In the second place, and this is vital for the success of the whole operation, the square had to be linked effectively to the space around the town hall at the

opposite side of the ring road and to the existing shopping streets. These two demands were met by the architect with one forceful gesture, the introduction of the 'Katterug' (cat's

Bakema: the backbone building, an invention extensively used in several projects such as those for Zürich, Tel Aviv and the Pampus plan. One can reproach Bakema for doing



The 'Katterug' as seen from the square; the new town hall on the left.

back). The Katterug leads the way to the square from the inner city and creates a well defined space that has the potential of becoming a room in the city. The other building masses continue this gesture and further define the newly created space and differentiate it into interrelated spaces. But the Katterug does another thing. It hides the fact that the new centre is really outside the existing one and even outside the boundary defined by the ring road. The Katterug suggests by its city-gate effect that the 'Paleisring' (as that part of the road is called) is not part of a ring road system, but the central axis of the city, with various central spaces and public functions along its sides. The Katterug criticizes the ringroad itself by indicating where the boundary should have been situated.

By doing so, the Katterug has become a multicoded element (to use the terminology of Charles Jencks). It is an exclamation mark for the city's main public space and the boundary and main entrance to the city centre. It has become a line of force *through* the city and a border *in* the city. Therefore it combines the idea of the core-wall building with another urban element in the vocabulary of Van den Broek &

nothing other than recreating the medieval town on a larger scale, falling back, so to speak, on a closed and therefore *anti-modern* conception of space. Strangely he did not receive this kind of criticism. His credentials as 'modernist' (a difficult and even dangerous word in those days) and position within CIAM and later Team 10 were evidently convincing enough to avoid such opposition. But it must have been a concern. As far as I can see, the open conception of space of the Modern Movement had not been abolished by Bakema but amended. The essentially two-dimensional continuity of the preWar 'Zeilenbau', was replaced by Bakema with a three-dimensional one, making 'closedness' as a human need possible again in two dimensions without losing the continuity principle. As a matter of fact he is careful not to close off completely. The Tilburg plan shows that too; with a non symmetrical layout of buildings, by creating 'holes' in the 'walls' surrounding the space's and by differentiating heights and rhythms, the space continuity is assured.

In regard to the existing city the question arises as to whether Bakema tried to save the existing city with brave sur-

gery or to hasten its collapse. Despite Bakema's membership of a Dutch conservationist federation (Bond Heemschut) the second option is more likely. In 1964 Bakema-city did not consist of highrise dispersed in an ever-green park landscape. But he did not accept the nineteenth century industrial town either. The Katterug therefore can hardly be seen as a confirmation of the existing fabric (as far as intentions are concerned) but at best as a confirmation of an existing scale. The space continuity that could be in the old area too is suggested by the grid pattern in the pavement.

Since DOCOMOMO is concerned with DOcumentation and CONservation, a little information on the project's fate is appropriate. As a housing project it worked rather well; the apartments are popular among tenants. Nevertheless the municipality had to develop the project by itself to a large extent. As an image for the city it has been, and still is, rather effective, though appreciation of that image is not all that high among citizens. The rich social life that was to develop here did not come about, nor did the concentration of shops around the square and along the ring road. The acceptance and integration of the ring road as an artery and an urban reality right through the new centre proved to be a misjudgement. It was and still is a barrier (despite all kinds of traffic reducing measures). This could not be undone by the urban gesture of the Katterug or the underground passage for pedestrians.

Van den Broek & Bakema must have been aware of this danger, because in



The 'Katterug' as seen when coming from the main shopping streets.

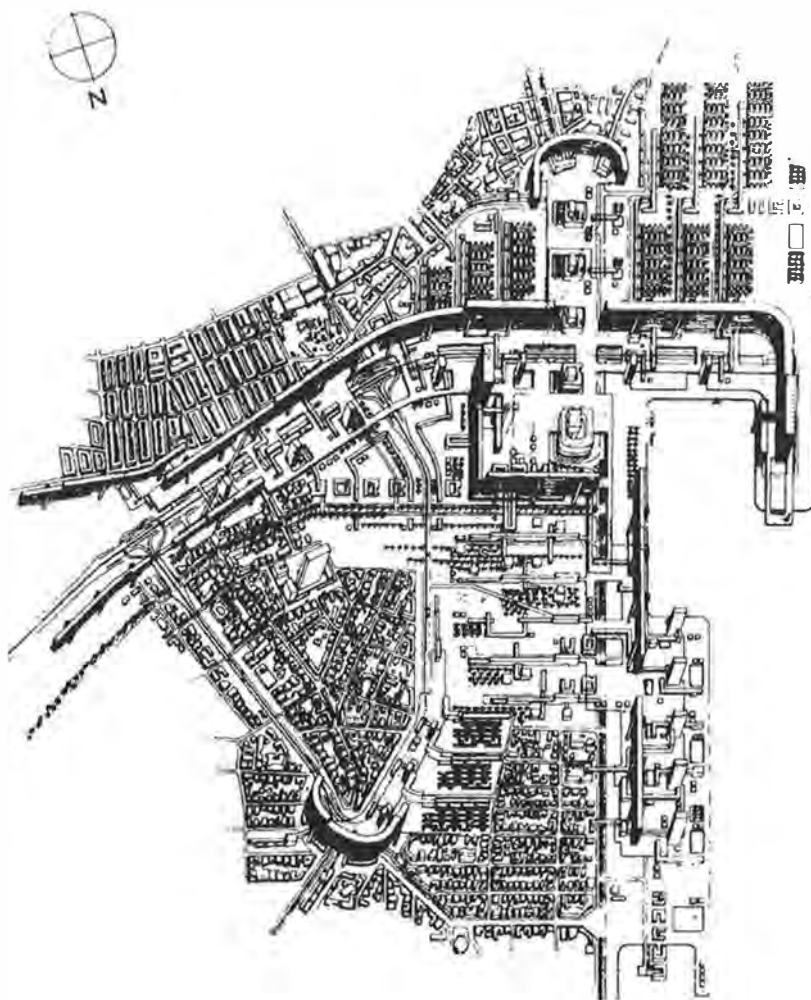
their first drawings they propose a tunnel for the ring road where it passes the square. The importance of the

square as a large, open public space has been reduced since by the building into it of a large block (the new library) and will diminish even further with the introduction of an additional block. The meaning of the Katterug as a 'counter-form of life', to use a phrase by Aldo van Eyck, is diminishing to the same degree. It has proved to be more a barrier than a link. The entertainment district developed in another direction crossing and assimilating another part of the ring road. The Katterug stands like a wall between the main shopping streets and the cafe district, the reason why a gallery with shops on either side has been broken right through the Katterug to link the two again. Instead of seeing this as a final proof of its failure it can also be seen as a quality of the building. Although the Katterug never established the rich economic and social life that its client and

its designer had envisaged, it still is one of the few 'permanent' features of Tilburg, one of the few identity-giving elements and one of the few provoking structures in the city. It does not simply harmonize with or withdraw from its surroundings (like the town hall), but imposes itself and invites change. This may have been one of the 'hidden' goals of the architects. Like the Tel Aviv plan from 1963, Van den Broek & Bakema's bold competition entry integrating backbone buildings, core-wall buildings, traffic arteries and large public spaces into one beautiful model. It became a true piece of 'architecturbanism' and a demonstration of Bakema's hopes to save architecture and urbanism from splitting up definitively and falling prey to the technocratic and economic forces that threatened to take over.

Notes:

1. Architectengemeenschap Van den Broek en Bakema, *Architektur-Urbanismus*, Stuttgart 1975.
2. Some inventions and contributions can be ascribed to individual architects of the firm, in which case that person's name is used in the text. For most of the designs by Van den Broek & Bakema it is difficult to tell who was actually responsible for specific ideas and solutions. In those cases the designation Van den Broek & Bakema is used.
3. The project was known as 'Koningswei' (King's meadow), referring to the grounds around King Willem III's small hunting palace, now part of the town hall. 'Project architect' for Van den Broek & Bakema was W.J. van der Jagt. The scheme was designed in 1964-1965 and executed (with modifications) in the following fifteen years. The underground parking garage for example was finished in 1971, the Katterug in 1975 and an apartment block next to it in 1979.



The Tel Aviv plan (1963).

Modern architecture in Southern Italy

Among the realizations of Italian architecture between the two World Wars, the activity of the Southern regions has been without doubt the most neglected.

Among the many publications concerning architecture during the fascist period there are actually very few works dealing with Southern Italy's architecture and the same is true also for the most important reviews of that time. In these reviews we find almost exclusively either projects and realizations of Northern regions or of traditional cultural centres: Milan, Turin and Rome; and more, provinces and areas that are more peripheral from the cultural and geographical point of view seem to be - on the contrary - neglected.

Despite this lack of bibliographical documentation there is in these regions an architecture, rich in interesting elements, even if less striking in comparison to the famous monuments of the Northern rationalism or the great public works of the 'Fascist regime' carried out in Rome.

This architecture is still - in the first decades of the 20th Century - in stylistic pattern of an historical and eclectic kind; and this may be because it was far from the main centres of renewal and discussion.

In Sicily and Calabria a lively tradition of *liberty* still survives, often associated with a moderate eclecticism, often plain and, in some cases, inclining to *Novecento*; therefore we are able to find an architecture in line with the official fascist style only in the 1930's.

Therefore until the end of the 1920's, architecture in these regions is still drifting

between eclectic historicism and secessionist taste.

The whole rebuilding of the Messina and Reggio Calabria cities, both razed by 1908's earthquake, was mainly carried out during the 1920's and was mostly inspired by this kind of stylistic sensibility, that is, a prevailing taste for *liberty* with references to eclecticism.

Villa Zerbi, is a perfect neo-gothic example.

Most public buildings were constructed in Reggio and Messina during the early 1920's according to a middle-class notion of decorum, with poor materials, generally plaster finishes, and decoration of the same material. It would be useful to carry out a restoration-oriented study on the implementation techniques of these buildings and of the low cost and public housing during those years. These buildings were constructed on the basis of earthquake-proof regulations limiting the number of floors and overhangs, cornices and balconies.

During the 1920's some local Palermo-educated professionals, students of Ernesto Basile, worked in areas of Calabria and Eastern Sicily.

This is the case for Francesco Fichera, predominantly working in Catania and Syracuse, whose works are deeply influenced by Viennese experience and highly appreciated by Marcello Piacentini who wrote a large monograph about him.

Camillo Autore was a student of Ernesto Basile and Enrico Calandra and although born in Palermo, worked mainly in Messina and Reggio Calabria. His cultural experience starts from *liberty* (1912's proposal for Reggio Calabria's promenade) and after 1930 through some designs for Reggio's diocese churches in a historicist and traditionalist manner, it passes to *Novecento* architecture in some projects in collaboration with Giuseppe Samonà.

While in Palermo, Samonà was a stu-

dent of Ernesto Basile, and before 1930 his work still had a provincial and regional character. In his architecture we find an attempt to reconcile some Sicilian traditional Norman elements with European architecture examples, mainly from German romanticism of the 1920's.

Many and contrasting components are present in architecture built or designed for the South by northern and central Italian architects, often jaded by populist cultural attitudes or trying to pursue a not well-defined idea of 'Mediterranean architecture'.

An essay on Sicilian architecture entitled *Risveglio architettonico in Sicilia* [Sicily's Architectural Rebirth] published in a 1932 issue of 'Architettura', the 'Sindacato Nazionale Fascista Architetti' [National Fascist Union of Architects] magazine, wishes that the mature development of contemporary architecture be found in Mediterranean countries.

In the whole discussion on the architectural 'style' of the fascist regime dealing with the Italian route to modern architecture, the concept appears of a reference to classical and Mediterranean character. This same reference is even clearer with respect to southern architecture.

Sometimes we find designs carried out by northern architects which are not very different from those for Italian colonies in Africa.

In this and in other provincial areas, the presence of a class of non-resident professionals, is typical, such as Bazzini, Piacentini, Ridolfi, Libera and Mazzoni, either put in charge by the government or winner of a public competition who collaborates with local firms.

Some of these competitions during the 1930's, are also relevant to understanding the cultural and professional panorama. An example of such a situation was the competition for the new 'Palazzata' of Messina, a more

than a thousand metre long complex facing the port and replacing the buildings razed by 1908's earthquake. This competition was held between 1929 and 1931, and had a particular importance at a national level.

Well-differentiated groups coming from local and other Italian regions participated in it.

The guidelines requested a monumental solution with separate buildings linked through connecting elements evoking the old 18th and 19th Centuries 'Palazzata' consisting of a single and continuous building. Besides that, a set of rules regarding earthquakes was included concerning the number of floors and reinforced structures.

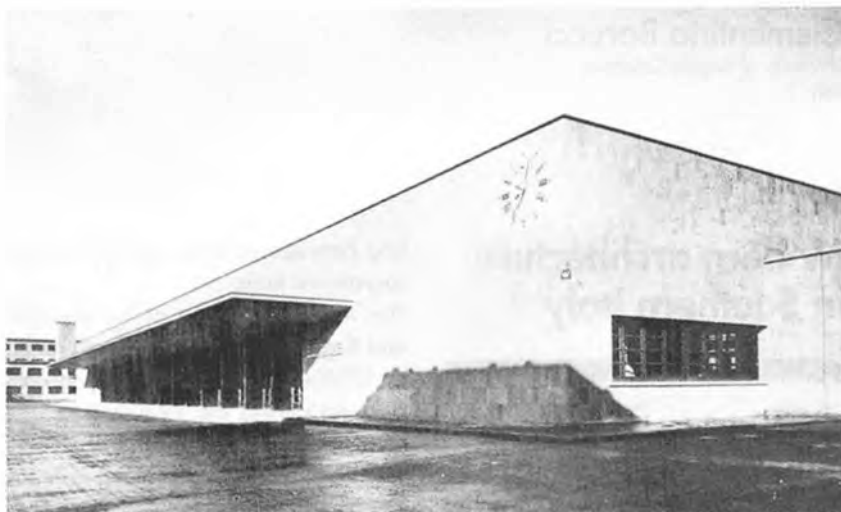
Young Roman rationalist architects Adalberto Libera and Mario Ridolfi also took part in this competition by presenting a 'Mediterranean' solution. The winner of the competition was Giuseppe Samona's team formed by Camillo Autore, Raffaele Leone and Giulio Viola.

It took approximately thirty years to build these works. As a matter of fact, only some blocks were finished before the War; others were completed during the 1950's under Giuseppe Samona's advice who used the language of exposed reinforced concrete.

Another important competition was for Messina's diocese churches.

The theme of our study concerns then the large series of public works accomplished during the fascist period in the southern Italian provinces, with special regard to Sicily and Calabria: from the 'case del fascio' to the postoffices and the railway stations.

One of the most interesting railway stations is Messina's train and ferry terminal designed by Angiolo Mazzoni. For this complex building, Mazzoni designed all furnishings in detail and also incorporated valuable decorative mosaic works. Between 1937 and 1938 the same author also designed Reggio Calabria's central railway station. The choice of building materials was very careful: gray *peperino* and white travertine slabs for the outside finishes of Reggio Calabria, masonite for the interior of the hall, and glazed tiles for ceilings. These stations are now in a considerable state of deterioration.



Angiolo Mazzoni, Railway station, Reggio Calabria, 1937-38.



Angiolo Mazzoni, Post office, Syracuse 1937-38.

Mazzoni also designed other post office buildings of remarkable interest, such as the one in Agrigento known for its round plan, and another in Ragusa. In the cities of the Strait of Messina we also find two important works by Marcello Piacentini: the first, belonging to his earlier years, is Messina's Law Court planned right after the War and built in a neo-doric style, inspired by Sicilian classical architecture; the second, Reggio Calabria's Magna Grecia Museum, was designed between 1932 and 1939, and instead follows the rules of a classicist modernism, typical of the architecture of the fascist regime of those years.

Also of great interest but of which little is known are the villages built where previously there were swamps. The Southern areas underwent a usual experimentation of the fascist ideology towards the country. Besides the well known towns of the Agro Pontino and the new towns born in Sardinia, such as the industrial centre of Carbonia, in Sicily there are villages built following drainage of large estates at the beginning of the 40's, nowadays completely abandoned, which present interesting problems concerning recovery and reuse. In this case it is quite difficult to talk about 'modern' architecture. We find

offices. Such villages were made for each of the eight Sicilian provinces in the middle of the largest farming area.

Almost all of these structures were either completely abandoned, or reused for different purposes, in some cases accommodating tourist and leisure facilities.

A cataloguing of all of these works consisting of a photographic survey of the present situation of every building, the gathering of information on their planning and execution, and the finding of original drawings when still available, is now being carried out. Obviously the objective is to compile an



Swimming structure, Noto Marina.



Rural village, Sicily, 1941.

There are also many industrial buildings, some of which are connected with fishing, such as the 'tonnare' (for tuna fishing) and, finally, structures associated with swimming, built along the coast: all of them constitute a heritage to be studied and protected almost in its entirety.

a kind of architecture which imitates the spontaneous rural building fitting perfectly the same 'rural' ideology used by the fascists as one of their political and town-planning principals. These villages are often small town-planning units with all kinds of public and utility buildings, schools, city halls, and post-

inventory of the buildings of greatest interest which would be worth saving and submitting this to the different local authorities and to the competent organizations in charge of taking necessary conservation measures.

Ireland and the new architecture 1900-1940

The architecture of the first half of the 20th Century in Ireland has received little close attention. Some early individual buildings have been listed and described but no general study has been done. This period is particularly important since it saw the culmination of many of the avant-garde design movements, and in Ireland, as elsewhere, an examination of the architecture can establish the effects of these international influences.

It has generally been assumed that Ireland was a backwater, unaffected by, and unaware of, the great and often revolutionary design movements in other countries. Emmanuel's encyclopedia, *Contemporary Architects* (1980), has only one entry on an Irish architect (Michael Scott) and refers to Ireland's 'relative isolation'.

Little effective dialogue with European mainland influences was possible. It is doubtful that Corbusier's *Towards a New Architecture* of 1927 would have reached Ireland, or Pevsner's *Pioneers of Modern Design* of 1936, not to mention the *Architectural Review* and its famous essays of Morton Shand or Wells Coates.

In fact Irish architects were very much aware of the new movements in design between 1900 and 1940. All of the principal architectural journals and most of the pioneer works on modern architecture were available and discussed. More importantly, the visible pro-

ducts of the new architecture - the revolutionary buildings, and those now recognised as milestones of modern architecture - were enthusiastically sought out and visited by Irish architects. Of the works suggested in *Contemporary Architects* as not reaching Ireland, Le Corbusier's book was reviewed in the long established Irish architectural journal the *Irish Builder* in 1928, just after the first English translation was published. As a further demonstration of the inaccuracy of the entry in *Contemporary Architects* the essays of Morton Shand in the 1930's were widely commented on and the famous *Architectural Review* was in Irish architect's libraries since it was first published in 1896.

Ireland in this period was, on several fronts, in touch with continental developments in the arts and literature. There were important scholarly links with France and Germany, for instance, from the end of the 19th Century, particularly in the study of languages. Other connections with European countries were established through Irish literary figures on the continent. Synge travelled and studied in France, Germany and Italy. George Moore and James Stephens lived in Paris, and James Joyce worked in France, Switzerland and Trieste. Paris and Antwerp were hosts to Irish painters who included Walter Osborne, Paul Henry, Roderick O'Connor, Nathaniel Hone, Maine Jellet, William Leech and Dermot O'Brien.

With the development of political nationalism in the late 19th Century, Irish figures returned to the problem of breaking the tie with Britain; an example is Arthur Griffith's *The Resurrection of Hungary, A Parallel for Ireland*. After an Irish Free State was achieved in 1922 there was a stronger desire to move away from the influence of the British Empire. A major example of this

was in 1925 when the fledgling Irish state went beyond Britain to examine models for a new national electricity supply. The result of this was the commissioning of the German firm of Siemens Schuckert to harness the waters of the River Shannon with a power station and dam which was the greatest engineering project the country had ever seen.

By the beginning of the 20th Century a 'new' or 'modern' architecture had emerged in the American work of the Chicago School and of Henry Hobson Richardson. The bold new structures with multi-storey steel frames, in particular, caught the imaginations of architects in Europe. During the early years of the century the influence of America, especially Chicago, became apparent even in relatively modest buildings in Ireland.

If a single building in Ireland could be said to epitomize the influence of the Chicago School and also H.H. Richardson, it must be the great Market Street Store House in the Guinness Brewery in Dublin. Completed in 1904 it housed the fermentation process in the brewery. The Store House is a very large structure by Irish standards, and although the outer walls are of brick the structural framing is steel. The deep plan form, using central light wells, is close to that of Richardson's Marshall Field Store in Chicago. The building is almost forty metres high in 9 storeys and the structural frame is exposed in the interior. The first steel framed building in London is generally assumed to be the Ritz Hotel, begun in 1904. The Guinness Store House just pre-dates this and is therefore the first major steel-framed, multi-storey, building not alone in Ireland but in these islands.

Pioneering work in reinforcing concrete with iron and steel was done in Ireland at the early date of 1850 with fireproof

floors in the National Gallery of Ireland. In 1870 Bindon Stoney, the 'father of Irish concrete', was using giant blocks of pre-cast concrete in the Dublin quays and this was of international interest at the time. The Hennebique system came early to Ireland, just 7 years after the first Hennebique framed reinforced structure in Britain. In 1904 the Somerset linen factory in Belfast pioneered the use of thin panel walls and structural framing. The 9 storey Granary in Waterford was a simple cubic structure with a vertical expression of reinforced concrete columns and horizontal steel windows which anticipated, as early as 1905, the rational modern architecture of the 1920's.

The architect W.A. Scott worked for the innovative London County Council in the Fire Brigade Section in the early years of the century and his experience with this adventurous group had a strong influence on his later work. St Mary's College in Galway of 1912 by Scott is a highly original design which seems to anticipate, by more than 10 years, the Art Deco pavilions of the 1925 Paris Exhibition. Above all, the abstract cubic forms, seemingly hanging above the entrance, are unique and the building must have a strong claim to be the first modern building in Ireland.

Despite its revolutionary birth the new Irish Free State of 1922 did not espouse a 'National' Style of architecture but from the very beginning seemed, not overtly, but quietly and positively, to support a move to an international image for Ireland. One of the new Irish Government ministers, Darrell Figgis, gave an address to the Architectural Association of Ireland in 1922 and condemned the idea of an 'Irish Style' as an architectural falsehood. With the pleas for 'simplicity and truth', the abandonment of 'antique manners' and the 'cleansing' from minds of imitations, the Figgis address could have come from an Internationalist manifesto. It was understandable, given its birth in revolution, that the new Irish state would go beyond Britain in seeking models for national systems. Its

earliest decision was a far seeing one in the proposal to commission Siemens Schuckert for the huge expansion of electricity production for the country.

The Irish state adopted the same approach in seeking information and models for the programme of new hospital building in the early 1930's. The architect Vincent Kelly was employed to make a study tour of the new hospitals of Switzerland, Sweden, Germany, France, Austria, Holland, Italy and Czechoslovakia and over 3 months visited 65 hospitals. The result of his studies was that a number of new hospital buildings were quickly commenced. An image of clean and modern efficiency was clearly achieved with these large, horizontal, white structures, most with flat roofs and many sporting sun balconies and projecting concrete canopies. The language of modern architecture was spread throughout the country by this highly necessary new building type.

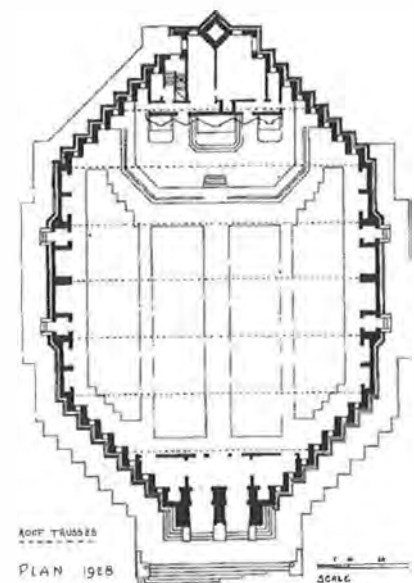
There was one other important building programme carried out in the early years of the state under the patronage of a state agency. This was the provision of large-scale urban housing in the form of apartment blocks in Dublin. Early in 1923 the clearances of slum tenements in the city prompted a huge municipal rehousing effort which continued the policy of looking abroad for appropriate models. From 1925, when Herbert Simms was appointed Dublin Housing Architect, until 1941, a total of 16,000 housing units were built in the city.

The influence of the Amsterdam School is evident in these brick, flat-roofed blocks even though the more idiosyncratic details of Kramer and De Klerk are missing. The more important features of the Amsterdam housing - the brick buildings aligned along and forming the street facades, and the expressionist definitions of the corners, entrances and balcony features - were all followed faithfully in the Dublin schemes. The architecture of J.J.P. Oud was also influential in this Dublin housing and the two streams of modern Dutch architecture were happily mixed with strong horizontality, rounded cor-

ners and reinforced concrete cantilevers.

The plain brick architecture of Dudok provided the main influence for the large building programme of schools in Belfast. The architect to the Belfast Corporation Education Committee was R.S. Wilshire and his work, particularly the Avoniel, Finiston and McQuiston schools of the mid-1930's have a strong Dudok feel. A further Dutch connection with Ireland in the 1930s was the appointment of J. D. Postma to design a series of factories for the production of industrial alcohol. Factories were built at Carrickmacross, Ballina, the Cooley peninsula, Labbodish, Carndo-nagh and Convoy. The Irish firm of Buckley and O'Gorman built houses for the excise officers serving these factories and the designs were all in an early International Style, flat roofs, white walls and horizontal steel windows. The vertical Retort Houses built by the Dublin Gas Company from 1925 to the 1950s were constructed of H shaped steel framing with thin infill panels of Accrington engineering bricks and glass bricks, with open brickwork in some panels for ventilation. The influence of Hans Poelzig's industrial architecture is evident and indeed the designs could be claimed to resemble early Mies van der Rohe.

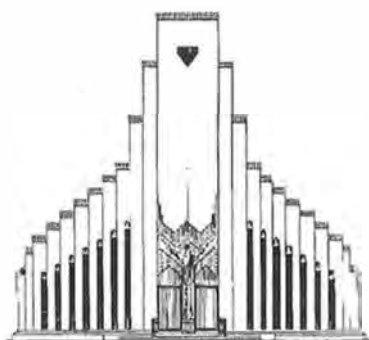
Whereas the role of the Irish state was



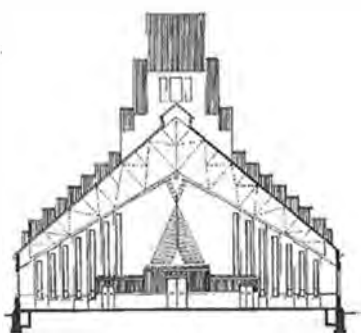
Church of Christ the King, Turner's Cross, Cork, 1927-31; architect Barry Byrne. Floor plan.

positive in terms of its widespread patronage of modern architecture, the attitude of the Catholic Church, the next single most important patron of architecture in Ireland, was in total contrast. For more than the entire first half of the 20th Century the new churches which it commissioned were traditional in plan and all followed historical styles.

One very important exception was the



Church of Christ the King, cross-section.



Church of Christ the King, front elevation.

Church of Christ the King at Turner's Cross, Cork (1927-31), by Barry Byrne of Chicago. This building was a pioneer work, not alone in Ireland but in the context of European modern architecture. It was at the time, in fact, the most advanced of all of Byrne's churches. Barry Byrne began his career in the Oak Park studio of Frank Lloyd Wright and trained and worked there from 1902 until 1908. In the early 1920's Byrne built three Roman Catholic churches in the American mid-west, which were original in their functional planning and notable for their economy of cost and modern appearance.

Byrne made a trip to Europe in 1926 where he saw many of the new modern

buildings of Germany, Holland and France. He met Dominikus Bohm whose modern churches excited great interest from visiting architects and the influence of these buildings is clearly evident in his design for the Cork church. Oval in plan, with serrated walls allowing light into the interior by long slit windows, the church is free from internal columns and the effect of a vast interior space is created. The church is built of concrete with cranked steel trusses spanning the wide nave. The sculpture by John Storrs on the front facade shows an interesting integration of ornament with structure; indeed the elevation is a striking expression of the plan. This front facade can be compared with the expressionist Grundtvig church in Copenhagen (1921-26) by Jensen Klint.

The first modern house in Britain was New Ways at Northampton (1925) by Peter Behrens but the first modern house by a British architect was by Thomas Tait of Burnet, Tait and Lorne.

It was built at Silver End, the garden village in Essex for the Crittall Casement Company, and most of the other houses on the estate were the work of the Irish architect Frederick MacManus (1903-85) who was Tait's assistant. MacManus designed two modern houses in Ireland in the mid-1930's, both in the suburbs of Dublin and both demonstrated the language of the new architecture, white walls, flat roofs and horizontal steel windows. Most Irish modern houses of the 1930's were small and the opportunities for an interesting design were limited.

However, most Irish designers used the limited vocabulary of international modern to enliven the simple forms of their houses. Projecting porches, balconies and cantilevers were all used to produce shadow effects with the white walls.

The most innovative modern house of the 1930's was Michael Scott's own house, Geragh, at Sandycove, Co. Dublin. Scott (1905-89) was one of the small group of young architects who enthusiastically embraced the Modern Movement in the early 1930's and who went on to lead one of the largest architectural firms in the country and

the one most associated with the development of modern design.

In England many of the patrons of modern architecture for house design were either intellectuals of a left-wing disposition or eccentric rich businessmen. In Ireland the patrons of modern house design cannot be placed in similar categories. The only conclusion which can possibly be drawn is that none of the Irish patrons was rich, if the sizes of the houses can be taken as an indicator. The 'modern' houses of the 1930's were either in Art Deco modern or the International Style and all were relatively small, no bigger than the average Irish villa. A great many of the houses were, moreover, built for the architect's own use or for a relative. The number of private houses in Ireland built in the International Style was extremely small but these white, cubist designs with their flat roofs, large windows, sun balconies and steel railings were very much part of the 1930's dream of an exciting and promising future.

The Dublin Airport Terminal (1936-41) was the most important new Irish building in the International Style. The architect Desmond Fitzgerald (1910-87) was employed as Airport Architect for the project which was to be carried out in the Office of Public Works. Fitzgerald was only 26 years of age at the time and just graduated from the University College Dublin, School of Architecture. The team of young architects who worked under his direction included the talented Dermot O'Toole who played a major part in the innovative design of the new airport building. The contract for the new airport was placed in November 1938 which would imply that the preliminary design drawings for this building, large and complex by Irish standards, must have been carried out by 1937. The design date, therefore, for the Dublin airport, a mature and elegant exercise in the International Style, is early even by European standards, and it was certainly in advance of most work in the style done in Britain at the time. The building was completed before the end of 1940 but, since the Second World

War was then in progress, it was forbidden to publish any details, for state security reasons. Because of the delay in publicity for this building it never received proper recognition as a pioneer design in the International Style in Europe.

ding which is lacking in the Hamburg design, which looks as if the ends were simply chopped off. Modern architecture in its international form had finally arrived in Ireland with this airport by Fitzgerald and his talented team. The Irish pavilion at the New York



Dublin-Airport, 1936-1940

Although the Dublin Airport building is in many ways an original exercise and is not derivative of any other single modern building in Europe or America, there are several possible sources for its forms and details. The influence of some of the more famous and widely illustrated modern buildings of Holland can be clearly detected. The strongly curved form is reminiscent of the Van Nelle factory in Rotterdam and in plan the semi-circular ends are a reminder of the Oud housing at the Hook of Holland. The general massing and the open-air feeling of the balconies and railings evoke the Sanatorium Zonnestraat in Hilversum. The influence of German airports such as Tempelhof in Berlin and the early one at Hamburg must also be considered. The curved plan of the latter is an early use of the form which was used so effectively at Dublin.

Although these possible sources must be recognized, the final design of the Dublin Airport, which may have been finished in 1937, is more assured and advanced than any of the earlier airports. In addition the elegant cantilevered balconies and ends of the Dublin design give a completeness to the build-

World's Fair of 1939 was commissioned by the Irish government in 1937 and the architect was the committed modernist Michael Scott. The Irish authorities were determined to create a separate and modern image for Ireland at the Fair and went to some lengths to secure a site as far removed from the British compound as possible. The final design of the Ireland Pavilion was a frank expression of the International Style with an all-glass curved wall and was a mature and important work in the style. The major contribution of the firm of Michael Scott was to come with the Dublin Bus Station of 1944-51. With this advanced and startling manifestation of the International Style the link with historical revivals was finally broken and modern architecture took over as the dominant architectural expression.

At the end of the 1930's one other notable and enthusiastic Irish exponent of international modernism emerged. Noel Moffett (born 1912), who had worked for Chermayeff in the mid-1930's, was one of the most brilliantly inventive young modern architects of the immediate post-war years. Two important pioneers of the modern

movement had connections with Ireland but did no work there up to 1939. Paradoxically, an Irishwoman was one of the pioneers of modern French architecture. Eileen Gray, 1879-1976, was born in Ireland and went to France in 1902 and was a friend and neighbour of Le Corbusier.

In 1926 she designed, in collaboration with Jean Badovici, an International-Style house at Roquebrune.

Raymond McGrath, 1903-77, was born in Australia and came to Britain in the late 1920's. With his designs for the British Broadcasting Corporation and his unique house, Chertsey, McGrath was a pioneer of the International Style in Britain. The outbreak of the Second World War in 1939 put most architects in Britain out of work and in the same year Raymond McGrath came to live in Ireland where he was to have a major influence on art and architecture until his death aged 74.

The small corpus of early International-Style work in Ireland, generally dating from the 1930's, remains almost intact. The best building of the period, the first Dublin Airport terminal, is perfectly preserved, and, although dwarfed by later development, remains the most significant and original piece of architecture there. These geometrical, white-painted, flat-roofed cubes of the 1930's may have promised far more than was delivered but they are integral to our architectural history and may yet be invested with nostalgia.

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Lubomir Mrna

Slovak Institute for Protection of Monuments,
Piešťany;
Czechoslovakia

Three examples of functionalist architecture in Spa towns in Slovakia

The favourable social climate of the period after the overcoming of the trauma of World War I, the relief and new hope formed the framework of the forthcoming functionalist architecture into the specific environment of the numerous spa towns in my native country. In the newly established state the Slovak spas opened up to investment activities and the Czech functionalist school offered well prepared specialists, and together predetermined the growth of first-class avant-garde architecture.

There were many circumstances that contributed simultaneously to the proliferation of the style. The inspiration of the time period, as well as of the milieu - the fluidity of the situation - were, for sure, much more than pure coincidence. It was a fulfilment of destiny, I think. Though I am going to speak about three examples only, we must point out that top-class architecture of the interWar period was not rare in this country. It has been a phenomenon expressed by the term: Czechoslovak Functionalism.

I am not going to speak on purpose about the works of such architects as Bohuslav Fuchs, Emil Bellus, Josef Marek, Artur Slatinsky, Jindrich Merganc, Milan M. Harminc and others, who also worked for the spas and which earned their reputation. The works I have chosen are by four architects, Jaromír Krejcar, Rudolf Stockar,

Frantisek Libra and Jirí Kan, and they illustrate quite convincingly the level of the interWar architecture of young Czechoslovakia. This choice was not made by chance. There are many common features in the works by these authors, but any other combination of the above mentioned names would enable me to present an illustration of works of the same high quality.

During the interWar years in the spa town of Trenčianske Teplice almost at one and the same time several excellent examples of functionalist architecture were built. One of the most impressive ones is undoubtedly the Machnač health spa house from the years 1931 - 1932. Architect Jaromír Krejcar [1895 - 1950], one of the tragic personalities of our modern architecture incidentally, created a 'textbook' example of a mature functionalist work bearing all characteristics of the style: a garden on the roof terrace, ribbon windows on the overhanging facade, struc-

situated on a site between the spa park and the built-up area of the spa town. The higher accommodation block makes the height difference more expressive. 109 beds in single and double rooms, full board, high capacity community rooms, solaria and a number of interesting details that provide the noble look - all this is almost fully functional even after sixty years of full time service. Some of the technical solutions - e.g. the technique used to open the large glazed partitions between the interior and the covered terrace, and the sanitary facilities designed with wit and consideration - still remain unique, attempts at replicas being rare.

The left-orientated Jaromír Krejcar died in exile in England, paradoxically, at the time when the communist party was in power in his country. His destiny was intertwined with most of his work. The social motivation (the Machnač sanatorium was brought to



tural columns, variable disposition. The composition of six- and three-storey blocks on a T-shaped floor plan is

fruition by the Health Insurance of the Office Workers) and even its qualities were not a protection for functionalist

architecture against ignorance and even condemnation. It was classified as an example of cosmopolitanism, which was considered to be one of the worst defects. But anyway, despite all the kinds of problems originating mostly from the point of view of the official architectural 'criticism' of the 1950's - 1980's, and the physical neglect of this architecture, the functional values of Krejcar's work helped to preserve its essence almost untouched. Anyhow it is easily possible to put the damage straight.

The construction of the Palace sanatorium in the spa town of Sliač took too long for that time - from the preliminary design in 1926 up to the year 1938. The disposition of the 300 bed high standard sanatorium for patients with cardio-vascular diseases enlarged to a composition of blocks adapted to the sloped site. To the composition with a large accommodation, capacity restaurant and social facilities were added a monumental passage-type staircase and colonnades. The functionally conditioned supremacy of horizontality is balanced by the carefully pointed out tower-like object composed from a series of roofed platforms from where there is a lovely view of the country side.

Architect Rudolf Stockar (1886 - 1957) took the chance offered by the local situation, including the specialization of the spa treatment. His building was dominating and looked good on the forested slope even from a distance. In spite of its large size it did not lose its human features. The sensitive distribution of different blocks in size and composition took advantage of the changing numbers of floors, optical ceasure and plasticity of the facades thus eliminated successfully the problematic negative of the stereotype of the long building. The system of colonnades and loggias along the front facades made the spa more attractive and enabled the patients to breathe fresh air despite the many changes in the weather. Until the present no further investment activity in Sliač has compromised Stockar's realization either from the originality of its idea, or from its

architectural quality and urban importance.

Several superlatives can be applied to the sanatorium in Vysné Hágy in the High Tatras: most highly situated, the largest, the most complex, till now the most modern sanatorium for tbc treatment in Czechoslovakia. Expressed in numbers: it is 202000 m³ distributed into 13 facilities situated on a 62 ha site more than 1100 m above sea level. The size can be illustrated by the following data: 1820 rooms, 3227 meters of corridors, 2197 doors. The original records fix the number of workers at the time of most intensive construction work as 1600.

The project was made in 1933 (more exactly 1932 - 1934) by two Prague architects: Frantisek Libra (1891 - 1958) and Jirí Kan (1895 - 1942). The construction started in 1934, the completion was planned for 1938. The War in Europe was the reason why the sanatorium was opened only in the middle of 1941.

In the first stage of construction (1934 - 1935) the site was prepared with the infrastructure, including the collection of water from springs into a reservoir; 9 km of mountain road and 1,5 km of train lines were built.

In the second stage (1935 - 1937) the health treatment, the service and accommodation facilities were built: also the main building, the contagious diseases pavilion, the central heating and power station, workshops, garages, greenhouse, gatehouse and four residential buildings for employees. It is important that the main monoblock with a layout reminding one of an airplane is formed symmetrically according to the axis perpendicular to the contours of the slopes. The number of the floors ranges from one to nine and the length of the south accommodation wing reaches 270 m. The central monoblock has 500 beds and includes high standard treatment facilities, has complete equipment for food service both for the patients and the staff, shops, post office, telephone exchange, barber's shop, a theatre hall with 600

seats and large community rooms. The monoblock itself is a sort of small town. The whole complex of the sanatorium is for the most part an independent organism.

The constructional solution, similar to the two preceding examples, was based on the advantages of the reinforced concrete frame. For the walls special bricks were developed, produced and used. The whole main building was insulated with cork and the facades covered with high quality tiles, so the complex had extremely good waterproofing and thermoinsulating characteristics.

The localization in the landscape, the purity of the functionalist style resounding in the usefulness of the functional scheme, the quality of the materials used, and the quality of the craft work contributed to the high level of this complex, completed by the end of the second stage of construction. The third time period (1938 - 1941) did not contribute anything to the concept and was occupied mostly with waiting to put the completed sanatorium into use. The political changes did not only cause this delay but also the death of two of the creators of this exceptional work: architect Jirí Kan and the specialized advisor and first physician director of the sanatorium, Soběslav Sobek, died in 1942 in concentration camps.

There was silence about functionalist architecture behind the iron curtain for nearly 50 years. Not only just one value was destroyed without being understood and documentation made during those years of silence. Whole typological groups disappeared, above all seemingly insignificant architecture, e.g. gas stations and a range of kiosks. The three projects introduced not only did not vanish but did not even change their purpose. With the exception of some understandable interference with the interiors, time did not leave any substantial trace on them, most felt is the loss of furniture. The ability of the authors and investors to foresee was admirable - i.e. the original kitchens, the boiler-rooms and transformer station survived changes in fuel usage

without the customary unfavourable consequences. In Vysné Hágý the original elevators and lights are still used and even after 50 years of use the cork floors are not worn out.

The common features of the three pre-

sented examples are the obligation to treat the patients, large dimensions of the buildings, the time of erection, the location on the sloping sites, the high level both of the project ideas and of their realization, the characteristics of the ripe functionalist style. The sanato-

ria in Vysné Hágý, Trenčianske Teplice and Sliac deserve the status of cultural monuments. However, they are not the only avant-garde works which deserve to be referred to as such. This statement would be confirmed convincingly by visiting these places.

Sverdlovsk - a city unique in its heritage of constructivist architecture

Sverdlovsk is a Russian city situated on the borderline between Europe and Asia. It is remarkable for monuments of functionalist architecture, which developed here interacting with the city's 200-year old architectural heritage. Founded by Peter the Great's companions at the beginning of the 18th Century the city rapidly grew into a major centre of mining industry in the Ural. During a period of economic decline in the second half of the 19th Century it became a major commercial and industrial centre in the country. Successful commercial activities brought money, which was used for intensive residential construction, first in the eclectic style and later in the modern style.

The 1920's-1930's were a new stage in the development of Ural architecture, Sverdlovsk being its centre. As a result of radical changes in the country's political and socio-economic life huge industrial enterprises were built here. The old towns and cities were reconstructed and new towns and cities were rapidly growing. This process was accompanied by the introduction of buildings of new types and new styles related to the Modern Movement. Being interested in the fastest revival of the Ural industry, the Soviet government granted Sverdlovsk the status of a political, economic and cultural centre in the vast Ural region. This brought about a considerable increase in building construction accompanied by the immigration of architects and the establishment of a local architectural school. The architecture of Sverdlovsk produced at that time does not differ from that of the other regions of Russia in both chronology and general characteristics, conceptual and aesthetic ones inclusive. This may be explained by the influence of architectural life in Moscow, Leningrad, and other large

cities, which manifested itself in the redistribution of architects, numerous competitions, and various creative artistic movements and groups.

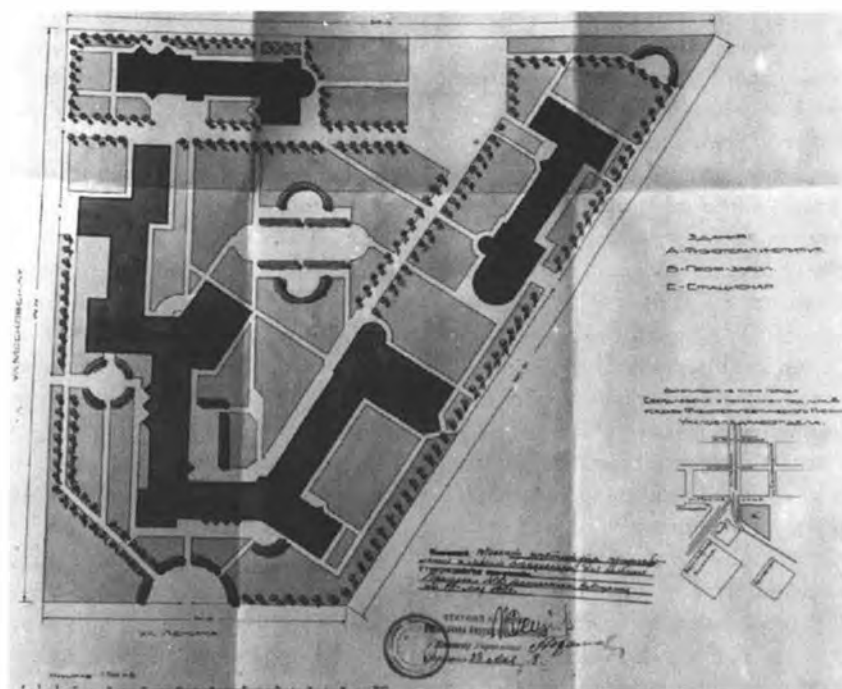
The architecture of Sverdlovsk had its own specific features, however, determined primarily by the regional historical and architectural peculiarities. Thus, for instance, historically the Ural cities and towns had a regular planning



structure and displayed deep-seated traditions of architectural classicism, which had been established earlier. The town-planning and building processes in Sverdlovsk were strongly influenced by the ideas of building 'garden-cities' and 'socialist townships', establishing new functional zones and community centres, using larger town-planning scales, and working towards a new world. These ideas brought about buildings of new types and new styles.

As a result, the city was surrounded with industrial plants and housing developments and was turning into a large industrial centre. The earliest of these developments - the northern - features a planning unity between the plant and the residential part. Its rational, regular plan, which is traditional for the city, is combined with a radiating grid of three thoroughfares leading to the square in front of the plant.

The scale of construction was largest in the late 1920's - early 1930's, which was a period of the dominance of constructivism modified by the local architectural traditions. Though adopted by the locally established style, constructivism here was dominated by content



rather than form. As for the functional method, it was adopted in full and received a considerable impetus as a result of sweeping social changes. The constructivist buildings in Sverdlovsk are somewhat heavy and static. They hardly exhibit any dynamic play of spaces for multi-aspectual perception. The majority of them are placed frontally within the perimeter of a central housing estate or, in the best case, on the corner of a street crossing.

Exceptions are some of the industrial buildings, the water-supply tower, for instance. Typically, constructivist buildings in Sverdlovsk do not feature geometric purity of forms, which is a result of hasty construction, low-quality building materials and backward technology. Many of them have wooden floors and low-quality brick bearing walls. As often as not the main facades of these buildings are treated in colour, mainly combinations of white with ochre, to emphasize the tectonic features of the buildings. Natural stone is used in both the exterior and interior.



In the late 1920's - early 1930's Sverdlovsk became one of the All-Union centres where new types of building were devised and new lifestyle ideas introduced, predominantly in the constructivist style. This period is characterized by mass construction of public, administrative, educational, and cultural buildings, hospitals, sports halls, and other buildings, which were on a large scale and asserted the new socio-political structure of the state. The most interesting and numerous of them are, undoubtedly, clubs, which were to promote new forms of communal life. They all have large halls for public meetings and smaller rooms to provide for privacy and personal interests. Rooms for rest and private meetings, such as 'Red Corners', radio halls, small museums,

and children's rooms were envisaged also in residential and industrial buildings, hotels, and offices. Remarkable for its architectural treatment and town-planning position is the sports hall 'The House of Physical Culture', which is shaped like a ship and is located on a cape on the city pond. Another example of architectural symbolism is the club 'The House of Defence' with an airplane on the flat roof of its ground floor projection.

One of the projects provided for simultaneous construction of a medical complex, which was to comprise two research institutions, a clinic, and a medical school. The Research Institute for Physical Therapy features an excellent spatial composition, functional wholeness, emotionally effective facades, and swell-detailed interior. The medical complex is located to the west of the main city thoroughfare. Its east end is terminated by the grandiose complex of the Ural Polytechnic. It has an original spatial design. The buildings are arranged on a hillside surrounding a spacious square with huge flower beds on three sides. Being essentially constructivist in design the Polytechnic is given a classicist decor characteristic of the 1930's. Its buildings are interesting also for their interior spaces, provided with double-height halls and located on varying levels.

The evolution of constructivist housing construction in Sverdlovsk went from detached houses to large-scale residential blocks with spacious cosy green yards and public services. These buildings served as prototypes for the modern housing developments of the city. One of them is the 'Gorodok Chekistov' ('The Township of Security Servicemen'), the best example of the Soviet architecture of that period, which features an original spatial composition and flexibility in using local forms. It comprises blocks of flats (one of which is shaped like a semi-cylinder) a club, a department store, and a cafe along the perimeter; a hospital, and a kindergarten in a yard which abounds in greenery. Another complex was built by Ginzburg according to the image of Narkomfin Flats. It is interesting for the

treatment of its internal spaces, based on the requirements of economy and variety of types of flats.



The history of housing construction in Sverdlovsk is a vivid illustration of the experiment to radically change a lifestyle by architectural means, which ended in failure for both the people and architecture. Now these residential buildings pose an acute question of preservation and contemporary use.

Designed to meet the socio-cultural programme of the young Soviet state they did not take reality into account, economic reality in particular. Even standardization and type construction, which were developing rapidly during that time, were unable to soften the housing crisis caused by the immigration of workers to the local industrial enterprises. For this reason architects' designs suffered severe changes during construction. Thus, for instance, a community building was adapted to accommodate tenants. Flats were overcrowded, because they were shared by different families. There was a great demand for housing, which led to its abuse. It was not given to the people for whom it was intended, which in the long run discredited the communal housing policy altogether.

Sverdlovsk's rich architectural heritage briefly described above has exhausted its physical resources. Some of the buildings are on the verge of complete destruction. Some time ago we lost one of the best monuments of constructivism, the 'Style' cinema. Despite its noticeable role in the aesthetic appearance of the city it was reconstructed in a barbarous way. Its original design and the architect's concept were grossly distorted, the stylistic details were lost, the engineering systems were ignored or lost altogether (subways

especially), and the interiors were reconstructed.

The building itself was hidden behind numerous additions. Some of the buildings are fortunate to have been granted the status of a monument protected by law and can count on some attention during repair. However, these buildings do not have zones around them protected by law. There is no method for their rehabilitation.

The situation is complicated by the recent disintegration of the USSR, as a result of which the organisations that were in charge of architectural monuments disappeared. Moreover, there is a prejudice against the entire cultural heritage of the former USSR, which provokes neglect to this layer of material culture.

In order to provide well-grounded arguments in favour of this heritage it must be promptly studied and evaluated. This is largely impossible due to limited access to the archives, many of which were destroyed or are scattered among archives, museums, and private collections. Many of these materials are in poor condition and need to be restored urgently. A lot of documents were stolen. To overcome this situation we need a regional information centre that would deal with the architectural heritage of the Modern Movement, primarily in Sverdlovsk. This is hardly possible today, because copying machines and computers are very expensive. For the same reason the search for new architectural objects that require legal protection carried on by a group of enthusiasts from the Ural Institute of Architecture and Arts had to be stopped.

Thus, the architectural heritage of the Modern Movement in Sverdlovsk is doomed to further destruction. Our main problem is to stop it. In addition to practical problems, this heritage needs to be studied theoretically, which is no less important. However, this is also impossible without an information centre. Recently we were given an opportunity to study some archives, which showed that the architectural thought in the Urals in the 1920's-1934's considerably surpassed the possibilities of its implementation. This is evidenced by the number of unrealized (a synthetic theatre) and partially realized (the House of Industry) projects. Original compositions, an amusing flight of fantasy, a romantic perception of the world, a heroic, humanistic position are characteristic of these projects, most of which remained only on paper.

Recent restorations of works by the architect Giuseppe Terragni (1904-1943): Casa del Fascio in Como; Casa Rustici in Milan

General problems

The great wealth of the Italian artistic inheritance should not let us forget about the importance of its architectural production during the years 1920-1940, a most difficult period for Italian history due to its identification with the fascist dictatorship. Many of these works, even though they represent the highest expression of architecture produced in Italy this century both in terms of quality and for the distinction of its authors, have not yet been acquired as cultural property nor recognised with the same dignity and respect reserved for historical architecture. In fact, one mustn't forget that Italian architecture, a model for centuries, had been written off by European culture from the end of the 1800's to the beginning of the 1900's; the eclecticism here was more of a tired and rhetorical imitation of past styles than a critical and intelligent historical interpretation, as had occurred in England. Nor did liberty, which came in Italy much later, have the revolutionary and provocative charge that it did in Belgium and in Austria; it was rather a formal and critical movement. Only rationalist architecture, also born in the northern countries, would be interpreted with originality and manage to impose its autonomy, holding a dialogue at par with the European

artistic avantgarde culture.

Buildings erected at this time in Italy, despite their historical and artistic importance, do not benefit from much consideration and are often modified, altered, abandoned and even destroyed. The problems which afflict modern architecture, I believe, can be summed up in four categories:

a) difficulty, as we have already said, in being considered 'monuments' and the subsequent negligence regarding their destiny, on behalf of managers, owners, those responsible for tutelage.

b) structural fragility and therefore limited resistance to the test of time because of typological characteristics (e.g.: flat roofs, absence of layers and gutters, sharp corners); technological characteristics (e.g.: use of new, hardly tested materials) and ideological characteristics (e.g.: machinist-functionalist ideology that considered the building a 'product' thought out and projected to be worn out by use).

c) difficulty during the restoration phase in finding original materials that are either no longer in production or cannot be reproduced.

d) insufficient scholarship regarding the specific question of restoring the 'modern' due to incomplete study and experience and to the poor circulation of data (until now) that permit the acquisition of experience regarding applied methodologies and materials used in this particular sector.

Giuseppe Terragni, architect

Giuseppe Terragni was born on April 18th, 1904 in Meda, a small town near Milan. As a child he moved to Como where he attended elementary school followed by studies at the Technical Institute. In 1921, after having received his diploma, he enrolled at the Higher School of Architecture at the Politecnico di Milano where he received his degree in architecture on the 16th of November, 1926.

In the same year 'Gruppo 7' was formed (made up of six young architects besides Terragni), and which can safely be considered the first appearance of Italian rationalism; this cultural guild wished to solicit Italian architectural culture into regaining a prestigious role within the international panorama of which Le Corbusier, Mies and Gropius were the most esteemed exponents. In 1927 Terragni began his professional activity, opening a studio with his brother, an engineer; later on in 1933, he opened a studio in Milan as well, with the architect Pietro Lingeri; five apartment buildings were the result of this profitable collaboration. In 1939 Terragni was called up by the Armed Forces as an Artillery Officer; despite this rigorous commitment in military service, he continued to direct his attention to his professional activity. After having received a commission for the Universal Exhibition expected to take place in Rome in 1942, he attempted, without success, to be discharged in order to dedicate himself to this project. But in 1940, Italy entered the War and Terragni was transferred first to the Balkans and then to the Russian Front in 1941.

At the beginning of 1943 he was repatriated due to a bad nervous breakdown; he was seriously disturbed by the drama of the War and was admitted into a psychiatric hospital in Pavia for a brief period; he died suddenly on the 19th July, 1943.

His brief but intense activity as an architect was tested in all areas of the profession; apartment buildings, family villas, shops, hotels, public buildings, restoration, town-planning, commemorative monuments, buildings pertaining to funerals, project competitions; this activity took place mainly in Milan and in Como, two centres where the rationalist ideal, while developing principles and realizing important works, gained strength.

This is understandable for Milan, being

the Italian city closest to Europe at that time as well as being the capital of publishing (the magazines 'Domus' and 'La Casa Bella' were the most highly esteemed architectural magazines here), whereas for Como it is surprising to see how it managed to become a centre for the cultural avantgarde through the works that were produced and the distinguished figures that were formed there.

Despite its being poorly connected, even physically, to the European intellectual tide, some great artists operated and were formed in this city and it is here that modern Italian architecture was born: it was Antonio Sant'Elia who elevated Italian architecture to the level of its European peers, unfortunately only with theoretical projects, but around the 1930's the city undoubtedly became a fundamental pole for contemporary art with architects such as Giuseppe Terragni, the leading figure, as well as Cesare Cattaneo, Pietro Lingeri and the abstract painters Manlio Rho, Mario Radice and Carla Badiali. It is because of the presence of important modern monuments in Como and Milan that the Soprintendenza per i Beni Architettonici, a tutelary structure of the state, has in recent years often intervened directly in the restoration and supervision of works undertaken, particularing regarding the works of Giuseppe Terragni.

The Casa del Fascio in Como

The Casa del Fascio, designed and

built from 1932 to 36, is the work of the architect Giuseppe Terragni who had already designed the Como block of apartments called 'Novocomum', the first rationalist Italian architecture.

The Casa del Fascio represented the nucleus of the physical ideological centre of fascism, and these buildings housed the party and the social and assistance activities connected with them for the aims of the regime, such as the 'dopolavoro' (workers or employees clubs), ex-servicemen's association and youth groups.

The recent restoration was necessarily limited to some special aspects, as a complete intervention required a full disposability of the building, actually impossible to obtain since it houses military headquarters. However, three very interesting and significant disputes regarding problems of modern restoration were discussed.

Marble facades

The building has a covering of 'Botticino' marble slabs; before the intervention, the general conditions were quite good even though there was a process of sulphatation and microfracturation and some slabs had fallen off, others were swelling and no more adhered to the wall. This condition later on became worse due to a recent intervention when they tried to seal the various gaps with transparent silicone which, however, after a short time, took on a black colour leaving blackish marks on the facade.



Casa del Fascio, detail of principal facade before the restoration.



Casa del Fascio, detail of principal facade after the restoration.



Casa del Fascio, detail of side facade before the restoration.

The restoration work consisted mainly of three types:

1. The removal of the old sealing materials and recovering them with mortar consisting of slack lime and marble powder.
2. Fixations with stainless steel screws.
3. Consolidation with silicone resin and replacement of fallen blocks which are not recoverable.

Sanitary facilities

Terragni had complete control of the building, managing to design every little detail as well as the furniture. Therefore the sanitary facilities were taken into consideration not only as an operating space but as qualified typological features.

The sanitary facilities are divided into



Casa del Fascio, detail of side facade before the restoration.

two rooms: the bathroom where wash-basins and bath tubs are installed. For the walls of the bathroom, a 'fontanit' covering was used, a coloured glass produced by the firm Fontana, material often used in the rationalist build-



Casa del Fascio, detail of principal facade after the restoration

ings for its 'pure' and essential character, while for the floor, mosaic tesserae were used.

A great deal of the original material remained on the spot which, together with the photographic documentation taken at the time, permitted having a full picture of the original situation. On

some crystal 3cm thick slabs, a pale blue layer of paint was used for the first floor and a grey-green for the second floor, after they were cut to obtain the various tiles according to the size required.

To colour the glass, a car paint was used and then enameled in a furnace.

Concrete and glass walls

In the Casa del Fascio, other than the skylight which closed the large meeting room, there are numerous vertical walls in concrete and glass frames all of which, with the passing of time, gave such problems that suggest their complete substitution.

This work was rather complex due to the impossibility of finding glass blocks with the same features as those used, since the models actually in production are completely different both in size and patterns.

It was therefore necessary to reconstruct the walls in concrete and glass frame as they showed a state of extreme deterioration, an unfavourable condition also for the living conditions of

the building. Among the glass blocks actually in production at the moment, the ones which conformed most with the original model were adopted.

Regarding the skylight which, since it was first carried out, has always been a subject of infiltration by rain water, a replacement was created for glass blocks with another actually in production of an 8cm thickness with conditioned air inside.

This method would guarantee a perfect waterproofing and avoid a condensation effect, but causes an overloading of approximately 100 Kg/sq.m, which makes it necessary to first verify the statics of the structures.

Casa Rustici in Milan

The building, created during the years 1933-35, was designed by the architects Giuseppe Terragni and Pietro Lingeri, who had already worked together in planning other projects and would later design four dwelling-houses in Milan.

In the project of Casa Rustici they had to conform and adapt their first idea to



Casa Rustici, 1936.



Casa Rustici, after the restoration.

the space available, limited and having the form of a trapezium, and to the rigorous Milan building code: in fact, the Building Committee rejected their projects nine times. The building consists of two sections connected by aerial footbridges, thus interrupting the main front; this was necessary in order to allow the back blocks to preserve a view on the street.

Both sections are independent: two staircases, one on each side, are lit by a continuous band of glass-concrete and serve two flats on each floor.

On the top floor, according to the client's request, a roof villa was built, carried by both sections connected by the covered aerial footbridge.

On all the facades, the structure is marked out by the structural network in slight relief, enclosing areas of plastered wall; on the side facade a protruding volume is completely covered with Carrara marble. The access to the building is served by a double stairway leading to a hall, strongly lit by the covering in glass-concrete.

The restoration

As the restoration work concerned some of the most significant elements, to get a correct comprehension of the architectural work, such as the marble

covering, the plastered surfaces, the shelter in glass-concrete, it was necessary to act with great attention. Casa Rustici was found in a precarious condition, both in its whole image and of the materials, which were in some cases so much damaged, that they had become a danger to public safety and for the future preservation of the building itself. Originally, the surface covering had been a salmon-rose and, in some areas of the top floor, a light-Havana 'Duralbo' plaster, as could be confirmed by magazines of the times and by carrying out analyses.

In a previous restoration, the plaster had been covered with a plastic paint of different colour; this difference increased the more aged the material became.

The new paint was tending to peel off on several parts; moreover, the different colouring distorted the image given by the designers, who had wanted to mark out the structural network, putting it in slight relief and in contrast with the background: white marble on salmon-rose background.

The facades covered with marble slabs were the most damaged: besides a diffused sulphatation, several slabs presented serious structural problems, as

they were fractured in many parts, while some, on the top, were even broken. Moreover, several slabs did not adhere enough to the background any more, because of their deformation and the deterioration of the connecting mortar. Therefore, it was necessary to clean the marble covering with atomized-water spraying, which allowed removal of all impurities and dissolved the salts; then, after consolidation of the most damaged parts with silicone resins in order to recover the original compactness, the slabs were fixed using a row of stainless dowels.

Unfortunately, there were areas where the degrading had damaged too much to be not recoverable; it was therefore necessary to place new slabs of the same quality and chromatic characteristics as the old ones.

As the last treatment, an inorganic protective product was brushed on the surface, in order to limit, or at least to delay, future aggressive actions.

For the plastered surfaces, it was necessary to remove the recent plastic paint that would have hindered the correct application of the new colours. It was possible to recover the original ones, as they were found on other parts of the building.

REGISTER

**Summarizing report on discussion
'DOCOMOMO' Register**

**Proposal on the
DOCOMOMO register**

**Report on Session
'National Registers'**

Summarizing report on discussion 'DOCOMOMO' Register

Bauhaus Dessau, Germany
17 September 1992, evening

Chairman Henket opens by repeating why the DOCOMOMO register is important:

- no other organisation has any comprehensive idea of MoMo architecture; hence Icomos proposed cooperation.
- it could be an effective way to get examples of MoMo architecture on the world heritage list.

Both these aspects are important for the preservation of MoMo architecture in general. Main question is then: which buildings do we include?

Preliminary conclusions

After one and a half hours Henket concludes the discussion for the time being, since it can be continued in the next day's session on national registers.

Period: The various countries are culturally too different to agree on a strict period. There seems to be a certain consensus on the start (around 1900-1910), but the knowledge of the Modern Movement continues to be explored after WWII all over the world.

Criteria: These offer a more practical key to the problem. Social, technical and aesthetical qualities should be distinguished. It seems typical for Modern Movement architecture that these qualities are strongly interrelated.

Categories: Historical significance as well as urgency should be starting points for the register, and can be used next to each other. It has not yet been agreed if also priorities should be introduced, although not many objected the idea.

General: A specialist committee on registers will be established.

The conclusions are summarized and elaborated in the 'Proposal on the DOCOMOMO register' dated 18 September 1992, that is to be discussed and adjusted next day during the session on national registers before being approved by the DOCOMOMO Council in the afternoon of 18 September, 1992.

Eindhoven, 22 September 1992
Wessel de Jonge,
Secretary DOCOMOMO International

Proposal on the DOCOMOMO register

- 1 Love for the MoMo spirit and its buildings brings us together in DOCOMOMO. This makes us different from official institutions.
- 2 We establish that:
 - a. every country is specific, so each will treat the matter as fits its culture, however some mutual starting points are as follows:
 - b. We are talking about buildings, sites and neighbourhoods.
 - c. These should fit the following qualitative criteria: they should be historically innovative as regards the social and/or technical and/or esthetical context.
 - d. Within the social context typologies should be identified which are characteristic for the culture of the era.
 - e. Priorities have to be introduced on a national level (and after the next conference at an international level)
 - f. The register should have two sections- 'monuments'
 - buildings, sites and neighbourhoods under threat.
 - g. The period for MoMo architecture cannot be clearly defined as it is related to national histories. It can stretch from the end of the 19th Century till today. The period 'open ended' to allow national interpretation.
 - h. A first part for the national register, covering a defined period, must be available by January 1st, 1994; these documents must be comprehensive for that period and should be approved by the working party concerned.
 - i. The specialist committee will inform all countries before June 1st, 1993, on the methodology of inventory to be used (type of files, fiches, etc). (Full report available from the International Secretariat)

Dessau, 18 September 1992

Report on Session 'National Registers'

18 September 1992, morning

The session on national registers was scheduled to give the various working parties, that produced a MoMo register for their country, an opportunity to present their work briefly. By centering on the criteria for inclusion in such a register, rather than presenting the included objects themselves, the session was aimed at providing a basis for discussion on the principles for an international DOCOMOMO register. Many speakers refer to the three dimensions of modernity (social, technical and aesthetic) as criteria for the registers that were put forward in the discussion in the previous evening.

Scarone (Argentina) explains the technical problems in making a register in her country, partly due to its vastness. The lack of a continuous cultural policy in Argentina complicates the use of cultural criteria. A limitation to a certain period as a criterium, as *Strappa* proposed yesterday, is not suitable on an international level due to the delay in the development of MoMo architecture in South America. She strongly favours inclusion of lesser known works as well as ensembles (appendix 1)

Celis (Belgium) briefly presents a variety of examples as an illustration of the development of MoMo in Belgium. The criteria for inclusion in a register remain rather unclear.

Galvão (Brazil) explains in short the practical problems of making a register in such a large country, where the institutions concerned in the various regions hardly cooperate. She makes a strong point to define 'modernity' rather than the Modern Movement, which can be defined more specifically related to national/regional culture. In Brazil 'modernity' is more a matter of aesthetics than technology; she pleads for inclusion of an aesthetic dimension as a criterium. *Galvão* agrees with *Scarone* with respect to avoiding a strict limitation to a period and concerning the inclusion of objects of an urban scale (ensembles). In the concluding discussion, her interesting proposal to include unbuilt and demolished objects

appears to have support only from the UK.

Van Laethem (Canada) also refers to the practical problems in a large country. She indicates to represent only Quebec. There, European-like stereotypes of MoMo are not found. Also the social dimension in Quebec architecture is limited, since most objects were commercially initiated. She proposes to take theoretical aspects into account as criteria, that can be learned from the well known authors such as *Banham*.

Nikula (Finland) states that the Finnish group is rather sceptical about MoMo registers (see also *Tuominen's* lecture). The group is particularly worried about the limitation of interest to the works of well known architects (*Saarin*, *Aalto*), since that implies a threat to the lesser known works. She thereby indicates agreeing with *Scarone* on the importance of including lesser known architecture. The Finnish group agrees with the three criteria as mentioned by *Henket* yesterday. A draft list plus introduction to the used criteria is submitted (appendix 2).

Monnier (France) agrees with the main tendencies in the contributions so far, but adds a few remarks. A criterium for inclusion in a register should not only be what should be done, but rather what could be done. The inclusion of endangered buildings should be related to financial circumstances. There should be a possibility to reflect 'academism' in a register (conflict *Beaux Arts* vs. *Polytechnique*). The French group asks particular attention for the 'ordinary' (social housing, industrial buildings) and for postWar buildings. A sample of a register fiche is submitted (appendix 3).

Schultz (Germany) mainly centers on the technical aspects of the method already adopted for East Germany in the past and shows examples of software and fiches (not submitted, available from the author). With respect to the criteria he agrees with a broad approach, including postWar architecture, industrial buildings such as petrol

stations and buildings that are historically significant rather than strict MoMo.

Powers (United Kingdom) is already working on a register in Britain. Although a bit hesitant about very strict criteria, he generally agrees with the three criteria mentioned by *Henket*. In the UK register, technology is also used as a criterium (see also *Giacumacatos*, Greece). *Powers* made use of periodicals to compose the register. The British group would like to include the 1960's in the working period. He shows a remarkably brief example of a register fiche (not submitted, available from the author).

O'Toole (Ireland) continues the debate on the working period (Argentina, Brazil, UK) by indicating that 1953 marks the first real MoMo work in Ireland, so that that seems an appropriate limit for the time being. With respect to practical issues, the Irish group agrees the necessity of such a list since documentation should go before restoration. The group followed a pragmatic method: a first list of 20 buildings was derived from short lists composed by individual members of the group, while the register will be extended to 50 or 100 later (see also *Baalman*, the Netherlands). *O'Toole* shows a sample fiche that has been based on the Netherlands MIP methodology (sample not submitted, available from the author). A possible solution to the Brazilian proposal to include unbuilt objects might be to include these in an appendix of the register itself.

Giacumacatos (Greece) briefly refers to the issues mentioned by *Henket* yesterday. [*Giacumacatos* on the occasion mentioned the necessity to include the issue of typology as a criterium, but accepted *Henket's* interpretation that that is regarded as being included in the social dimension]. A draft for a national list is submitted (appendix 4).

Sauge (Norway) defines the period 1927-39 and its historic, symbolic and aesthetic values as criteria when the Norwegian circumstances are concer-

ned. She agrees with the idea to give special attention to the lesser known works.

Baalman (the Netherlands) explains the open ended and pragmatic approach of the Netherlands group, where individual members produced a personal top-30. Items with a high consensus were included in the national DOCOMOMO list without discussion so that, at least for these, activities can already start. A next step will be to discuss the inclusion of the objects, on which there is no consensus. From these discussions, criteria will emerge. Sources are the members' own experience, the MIP national registration campaign 1850-1940 and previous research. *Baalman* warns of the negative side effects of a DOCOMOMO register, where buildings could be demolished to prevent official listing or because they haven't been included. A positive effect is the obtained status of the object.

Olszewski (Poland) shows examples of registration fiches as used in Poland (sample not submitted, available from the author). He indicates negative side effects of the introduction of categories that represent priorities, being the risk of destruction of 'lower-ranked' objects. *Febre* (Spain) mentions the absence of a working party in his country as a reason for not submitting a register. He hopes to work on it in the years to come within the framework of an Iberian working party that is to be established.

Rudberg (Sweden) explains the approach of the Swedish group, that generally follows the method of Ireland and the Netherlands. The national DOCOMOMO list is being compared with the official list, produced within the framework of the national Act on Monuments. The Swedish group therefore attaches great value to the inclusion of less known works. The group prefers to limit activities to 1920-1940, which is a homogeneous period in the national context, due to the lack of capacity within the working party.

Losinger (Switzerland) describes an efficient national registering and selection campaign, carried out in Switzerland. Some examples of fiches are shown (not submitted, available from the author).

A question is put forward by *Carroll* with respect to details of the adopted methods, in how far the shown computer aided systems are made compatible. *Schultz* answered that that will have to be dealt with by the Specialist Committee on Registers, that is to be established.

The following discussion is introduced by *Henket*, who reads a proposal on the DOCOMOMO register (appendix 5). Some participants oppose the introduction of priorities within the registers and a confusion arises between the notions 'category' and 'priority'. The necessity of priorities on a national level is generally accepted, a decision for the

international register will have to be made at the next conference, after proposal of the Specialist Committee on Registers.

Verpoest and some others question the use of the word monument in the draft text, since one of the main particularities of the Modern Movement is that it emphatically deals with ordinary buildings as well (see *Monnier*, *Schultz*). On the other hand, the word monument is widely accepted for significant historic buildings. It is decided to put 'monuments' between inverted commas.

Monnier indicates that, apart from a function for watchdog activities, the register also represents a communicative value. *Monnier* asks if the international register will be the sum total of the national ones. *Henket* states that this has to be sorted out by the Specialist Committee. *Monier* offers to make a concept for this.

A final decision on an adjusted text for a proposal for the register will be made in the DOCOMOMO Council in the afternoon.

Vienna, 5 October 1992

Wessel de Jonge,
Secretary DOCOMOMO International

Appendices available from the International Secretariat.

ADDITIONAL ESSAYS



Alessandra Montenero,
Jan Sedláč,
Rainer Bullhorst,

Edwin S. Brierley,
Maristella Casciato,
Vladimir Rezvin,

Jan Molema,
Louise Campbell,
Maria Nashchokina,

Rome: setting up of a workshop for the maintenance of the public residential building stock

Introduction

My communication 'Building maintenance: architectural, legislative and financial aspects' transmitted to the First International DOCOMOMO Conference, held at Eindhoven in September 1990, concluded with the hope that the ever greater attention that was being paid to the problems inherent in the conservation of significant buildings of modern architecture would eventually have its counterpart in new operational approaches, not least in the form of direct collaboration between scholars and public institutions that were - in one way or another - involved in the maintenance or transformation of buildings.

Although in Italy there is now coming to the fore a new social and cultural interest for the 'history' of our country, there persist very striking lacunae that go to the detriment of modern architectural testimony, and this even in cases where the value of buildings and urban layouts dating to the 19th Century are officially recognized; what is lacking is the prime mover to get the necessary safeguarding processes under way, processes that are generally set in motion, at least in large parts of the territory, when the buildings involved date to the premodern era.

The tangible result of this situation is the rapid impoverishment of the testimonial values that form part of the image of the history of the city. A loss of values

caused both by the owner, and often also by incongruous maintenance or restructuring interventions undertaken by the owner, public or private as he may be.

Indeed, as one observes the reality that surrounds us, one notes that even maintenance interventions can produce irreversibly destructive effects as regards the recognizability of the architectural and structural characteristics of the buildings, and that adaptations to new uses and functions are often no less devastating.

This damage is produced notwithstanding the fact that the projects for the work have obtained the necessary 'nihil obstat', 'authorization' or 'building licence' from the institutions responsible for the control and management of the territory.

One may therefore say that - as far as modern constructions are concerned - the concern for conservation has not yet found any systematic reflection in either the theoretical approach or in the methodologico-operational praxis of the public administrations.

The situation in Rome

Though this preoccupying and widespread insensitivity and lack of appropriate operational structures is common to the greater part of Italian cities, it becomes of particular gravity in Rome on account of the large number of buildings put up after 1870, i.e. in the period immediately following the unification of Italy, both in the public service sector and in the very extensive urbanist and building interventions that aimed at the creation of popular low-cost housing. It is therefore becoming more urgent to establish valid intervention criteria capable of satisfying the city's ever growing desire for requalifying and safeguarding its cultural patrimony and particularly its buildings:

archeological areas, monuments, residential environments of historical and architectural value.

As far as the Rome area is concerned, a further opportunity for substantial interventions will be offered by the implementation of the recently passed Special Law for Rome Capital City (Law No. 396 of December 1990), with which the State propose to facilitate - and in some cases even to finance directly - numerous new buildings and requalification projects for entire quarters of the city. It is important to note that this law also introduces accelerated procedures for issuing the necessary authorizations or building licences.

Nevertheless, the aforementioned lack of valid selection criteria and implementation modalities for building rehabilitation works makes it practically impossible to evaluate the possible short and long-term results of the numerous interventions envisaged by the Rome Capital programme.

Another reason for concern regarding the possible fate of buildings occupying an important place in modern architecture derives from the proposed sale of thousands of apartments of the housing stock owned by public agencies and insurance companies. The central location of the greater part of these dwellings makes them particularly attractive for tertiary activities, and this throws into sharp relief their great vulnerability to extensive changes in use destination triggered by condominium administration that will prove difficult to control.

In this connection, it is as well to recall that in the case of the IACP-owned buildings comprised in Lot No.24 at the Garbatella quarter, a timely initiative taken by DOCOMOMO technicians, teaching staff of the Faculty of Architecture and other interested scho-

lars brought to life an opinion movement that eventually caused the Superintendency of Architectural and Environmental Assets of Rome (*Sovrintendenza ai Beni Architettonici e Ambientali*) to request application of the safeguards envisaged by Law No.1089/1939 regarding the protection of assets of historical and artistic interest.

The importance of the architectural quality of this particular section made it necessary also to apply the constraints to prevent sale in accordance with the provisions of Article 28 of Law No.412/1991 for protected buildings. At the Garbatella quarter, the 'innovative houses' of Lot No.24 were the outcome of a competition involving both design and modification of existing buildings that had attracted some of the best young architects and a like number of contracting firms; the resulting group of buildings, designed by Aschieri, De Renzi, Cangelotti, Manchi, Marconi and Vietti, has remained a homogeneous model of modern architecture to this very day.

It is rather easier to feel protected by the generic conservation brought about by a single public agency than by a myriad of uncoordinated restructuring and maintenance interventions undertaken by the future owners with altogether unforeseeable effects.

The I.A.C.P. building stock

In Italy, the problem of popular housing was raised for the first time at the legislative level by the so-called Luzzatti Law of 1903, which set out to promote, coordinate and encourage the various fragmentary initiatives for the construction of low-cost housing, which up to that time had been taken only by private parties or public authorities not forming part of the state apparatus.

The same law envisaged the formation of 'Institutes' that were to have the sole scope of constructing popular housing. They were not to engage in speculation with the savings they administered, but were intended to construct dwellings and let them at modest rents to people who earned their living 'through their own work'.

The subsequent implementation regula-

tions, which date from 1908, established the elements of distinction between popular (*popolare*) housing and low-cost (*economico*) housing; these terms subsequently found their way into other legislative texts.

However, the early years of the century saw the Popular Housing Institute (*Istituto Autonomo Case Popolari - IACP*) set up also in Rome, where it immediately commenced a significant activity - albeit with alternate phases - as regards the number of realized dwellings. In 1910 the Institute already owned a stock of 800 dwellings, a figure that rose to 3,900 by 1929. To date the Institute has produced more than 120,000 housing units.

A considerable portion of this very substantial stock has been sold to sitting tenants at conditions and modalities that varied over the course of the years. As things stand today, the building stock actually administered by the Institute consist of about seventy-five thousand dwelling and numerous premises employed for commercial activities, most of the latter situated on the ground floor of the buildings.

This vast and complex building stock, which is distributed over the entire urban territory and can be found both in the central areas and those of the extreme periphery, comprises all the expressions of 19th Century architecture, ranging from the 'block' types of the Testaccio quarter to the first Roman garden-city experiences - the Garbatella complex realized in the 'twenties being a case in point - and some very recent experiences, still in course of realization, but already extremely well known on account of the intense cultural debate to which they gave rise, the Corviale 'complex' first and foremost among them.

Even though one notes a considerable diffusion of quality in the various buildings of the 'low-cost type' put up in the early decades of the 20th Century, the dominant approach was 'monumental' and intensely schematic; indeed, one can say that - on account of Fascism - the regime's official culture

generally looked with suspicion upon other European experiences.

The monumentalism characteristic of the interventions in the more central parts of the city has its counterpoint in the realization of numerous *borgate* (or boroughs) of an essentially 'rural' character, situated in the extreme periphery and put up in extra quick time to provide accommodation for the inhabitants of the houses demolished to permit the 'urbanist opening' of the historic city centre that was then being pushed ahead.

Though always within a cultural and political framework dominated by the figure of Piacentini, important schemes of popular and low-cost housing were being realized in Rome at that time, and many of these merit being safeguarded by means of careful maintenance works, because they are still capable of fully discharging their erstwhile residential function.

We are here concerned with buildings that are significant on account of the originality of their layout, their typological consistency, with decorative features on both the external facades and the internal spaces. The top floors are often dedicated to common services (laundry rooms, drying rooms, technological plant, covered terraces, roof terraces, etc.) and present architectural solutions that, given their originality, merit conservation.

Another aspect that confers 'diffused quality' upon the buildings realized by IACP is the absolute integration into the surrounding environment, because both the design and the execution always extended over the entire area or lot, and therefore included the external arrangements, the secondary access roads and the green areas (landscaping); on some occasions, indeed, even services of primary public interest (schools, markets, churches, cinemas, etc.) were comprised within the ambit of these residential building interventions.

Collaboration with IACP

The operational initiatives taken by

some architects (including members of DOCOMOMO) aimed at promoting active and direct collaboration with the public institutions who own a substantial stock of residential buildings, especially the Popular Housing Institute (IACP) and the Municipality of Rome, as also with such entrepreneurial organizations as ISVEUR and the Rome Superintendency of Architectural and Environmental Assets, must be seen against the background of this complex situation in Rome.

With a view to facilitating relations with the above interlocutors, a document has now been drawn up to set out the cultural purposes of the initiative and the foreseeable advantages that will derive, not least for the public administrations, from the setting up of applied research 'laboratories' would concern themselves specifically with building conservation

The present collaboration proposal, which has been received by the *Istituto Autonomo* with considerable attention, should contribute to getting the Institute to assume a promotional role in residential building rehabilitation policy by exercising an active function of protection and conservation: the definition of propaedeutic, methodological and operational criteria for the necessary maintenance or restructuring interventions is an obligatory stage if the desired ends are to be attained.

The group that has made the various collaboration proposals is made up of technicians and experts in various disciplines whose commitment in this field, both in Rome and in Italy in general, dates from long ago. For the purposes of the present initiative, however, a small subgroup has been formed. Consisting of A. Montenero, G. Muratore, R. Panella, F. Panzini, F. Perego and C. Saggiaro, this group will collaborate directly with the I.A.C.P. departments responsible for the city and province of Rome.

The laboratory

The operational support we propose to offer IACP is the setting up of a laboratory to concern itself with methodologi-

cal and operational aspects. In this connection, the Board of Management of IACP has already resolved to stipulate with our group a convention regarding the activities that are to be performed. Close collaboration with the Institute's responsible executives will permit further elaboration of the following work phases:

Identification of appropriate operational methods for the documentation and the survey of modern buildings.

Theoretical verifications of the effects of the foreseeable building interventions (maintenance, restructuring, refunctionalization) both on the building as a whole and its individual parts.

Simulation of technical implementation specifications deemed suitable for ensuring that the interventions will prove compatible with the architectural qualities to be safeguarded and excluding incongruous works.

Identification of the range of the possible interventions, adumbrating also the various project approaches.

Definition of the executive modalities for conserving the building structures and the decorative features of modern buildings.

Over and above this, the laboratory is to make an in-depth examination of some sample cases to be chosen from among those that call for protective action with particular urgency.

The definition of the above intervention criteria should facilitate and render as objectively as possible the wide range of interventions that are undertaken each year and can be summarized as follows: ordinary maintenance, which does not readily lend itself to planning, being episodic and often a consequence of breakages or failures, especially of technological equipment; extraordinary maintenance or periodic ordinary maintenance, generally provided for in specific annual programmes; special restructuring interventions forming part of rehabilitation projects drawn up in conformity with Law No.475/1978;

structural consolidations that affect only a few buildings.

The intervention modalities governing the works listed above have undergone continuous modifications over the course of the years, but the presence of the laboratory and its work of widespread verification should make it possible to keep on optimizing the use of the scarce financial resources made available by the State by gradual improvement of the 'operational techniques' currently in use.

Over and above the work programme, the convention between IACP and our group also delineates the utility of the periodic and final publication of the results attained.

Operational objectives

The very magnitude of the residential housing stock owned by the Institute, formed over a long period of years and comprising a great variety of buildings, should guarantee that attainment of valid results not only as regards the definition of the intervention methodologies, but also to put forward useful suggestions of a normative or procedural nature that, if appropriately diffused, could make a valid contribution to the maintenance of modern Italian architecture

The execution techniques to be proposed for rehabilitation works will take due account of the vast range of architectural and structural typologies, as also of the existing materials and technologies: from brickwork or composite masonry, with ceilings in small brick vaults spanning between steel joists, right through to the structures with wall panels and prefabricated floor slabs of the 'seventies and 'eighties.

The IACP building stock also provides an extensive sample of the various factors of obsolescence, recurring failures, features or components that have to be replaced or modernized, as also of the various maintenance modalities to be applied in case of functional updating (merging of dwelling units with a floor area of less than 30-40 sq.m., construction of elevators in stairwells, reutilization of rooms originally set aside for

general services, stores, etc.

Precisely on account of its vastness, the building patrimony under consideration is permanently subject - though obviously a part at a time - to cycles of various maintenance interventions that must and should differ widely from each other, since each has to be tailor-made for a specific case.

Preparation - in collaboration with IACP technicians - of operational programmes based on the 'objectives' of the laboratory, and which would therefore render systematic the knowledge of the various problems to be tackled, as also the verification of the solutions most suitable in each particular case, should eventually permit the drawing up of a

reference guide designed to optimize the interventions not only from the economic point of view, but also as regards the safeguarding of architectural and environmental values that a considerable part of the public residential building stock, precisely on account of its quality, can reflect not only on the direct users, but on the entire city.

J.L.M. Lauweriks' influence upon the development of the Modern Movement

J.L.M. Lauweriks (1864-1932) was a contemporary of Berlage whose approach to design had both rationalist and symbolic facets. His main influence was that of a theoretician and educator at the turn of the century in Holland and Germany. An understanding of Lauweriks involvement at that time is essential for a clear understanding of the reaction to historicism which ultimately led to the New Objectivity in architecture and design.

It is highly probable that the influence of Lauweriks on the Modern Movement as a whole and on rationalists such as Adolph Meyer (Gropius' partner) and J.J.P. Oud in particular has been underestimated.

Direct influence from Lauweriks' design motifs can be found incorporated in the site office of Oud Mathenesse of 1922 and the De Unie cafe of 1924. Lauweriks' value in didactic terms is readily apparent in the thinking behind and the use made of what are known as his structure sheets. The sheets indicate systems or patterns of design some of which could literally be applied as constructive systems and often were by his students.

Undoubtedly aspects of his work were in some way a forerunner of Le Corbusier's Modular and the full extent of his influence on Oud and Mondrian remains speculative. An awareness of the general theoretical position of Lauweriks is essential in order to understand the contextual relationship of his work, which seemed to acknowledge contemporary developments in theory

which were preparatory for the modern movements.

Throughout all ages there have been underlying principles of design, rules which have been sensitively evolved over time which in some way reflect the cultural aspirations of the people. Lauweriks wrote in 1895, that it was an important fact 'that the great, monumental, architectural periods are past and that nowhere at this moment would be found architecture that is a development from previous periods'¹. This was clearly a reaction to the then prevalent historicism in design. Yet, this in no way was meant to imply that the principles of history should not be studied. In his introduction to the article 'Proportion' or 'Order' (Verhouding) of 1898 he noted that the artist may learn the method his predecessors used in attempting to achieve their goal so that he might understand the 'complicated organism of our modern culture.

Modern development and artistic education necessitates the study of archaeology and aesthetics².

Lauweriks' ideas were at that time perceptive, if not complex, he felt the process of design was of 1. the control of the principle of production or working the material not subjected to external influences, 2. the conscious will of the designer whose actions were a fulfilment of the controlling principle, 3. the formal result obtained. Whilst the first concept may appear to have affinities with the Arts and Crafts, the most notable is that concerning the conscious or unconscious will of the designer. This latter notion is the most significant change in emphasis from the way in which Semper, who was particularly influential upon Berlage, would express his rational approach central to which were (a) the notion of an archetypal form theory, (b) the historical development of prototypes and (c) technical and material influences³. The idea of the conscious or unconscious will to

design, that Lauweriks included can be traced to the work of the Art Historian Riegl from 1893. No doubt Lauweriks' writings made a contribution but the originality of the concept of the will to design, 'Kunstwollen' or artistic volition lies with Riegl⁴. This notion also gained acceptance amongst German designers, particularly Peter Behrens, with whom Lauweriks worked in Düsseldorf from 1904 to 1909.

Although several aspects of Lauweriks' thinking can be identified with the abstractionist's viewpoint, throughout his work there remains a lingering attribute which is probably a reflection of notions of empathy. Lauweriks was also careful to set the conscious values of system or structures for design against that of the unconscious will. This is illustrated in the preface to 'From Seed to Fruit' (1895), where he suggested that by introspection the impression of beauty would be discovered to be one aspect of truth but he warned the 'essence of beauty' lies hidden within the plastic expression. An aspect that was to be fundamental to his way of thought. Later in 1908 in the magazine Ring article 'Leitmotive', he contrasts 'inner values' of the human spirit which we have treasured against the product of 'external method'; the values involved could however lead to an inquiry of the human soul. In these two papers of 1895 and 1908 we might detect a change in Lauweriks' attitude from an influence of English Arts and Crafts values represented by Ruskin and Morris to a concern more with spiritual values of Germanic origin: Kandinsky's 'Concerning the Spiritual in Art' of 1912 contains similarities with aspects of Lauweriks' writings.

The facade of the Beurs or Stock Exchange at Amsterdam (final design 1898), the most significant building of its time, by Berlage could be triangulated according to proportions resulting

from the Egyptian triangle. The space of the Exchange is built up from a stereometric body which is a rectangular block on a square base. (The square was based on a unit of 8, the height 5). De Bazel's designs of 1895 and the work of Viollet le Duc are accepted as being influences on Berlage, who is often quoted in this context of stating he was influenced by De Bazel, Lauweriks and De Groot⁵.

In his analysis of the proportional system of the Beurs, Lauweriks observed the interdependence of the form of an object and the proportions of the object. The form of the plan had a great influence on the proportional system, and thus upon the module of the design. Lauweriks, in this context quoted from the writings of Schopenhauer, who surely was not incorrect when he said, 'the forms of architecture should... firstly be defined by the immediate constructive aim of each part'⁶.

Although Berlage and Lauweriks were responsible for the dissemination of the knowledge of design based upon geometric and proportional systems outside Holland, Jan Hessel de Groot (1865-1932) is frequently given the credit as the founder and probably the most important theoretician of aesthetics based upon these systems. Fanelli, who has been responsible for a detailed documentation of the period, places the emphasis upon De Groot, however Tummers⁷ notes that Lauweriks had a particularly strong influence on his contemporaries including De Groot.

Possibly the best analysis of the Architectura group's involvement in system design is that of Reinink who states that 'It was mainly before 1900 that Lauweriks published his writings on this material (system design) whilst De Groot made his most important publications immediately after that date'. Further, 'Lauweriks has not published a comprehensive text on design by systems; but he has stated in many lectures and articles the principle of the need to use geometry for architectural design'⁸. On the other hand De Groot published several books on this form of design, the first together with J.M. de

Groot was based upon ornamental design in the decorative arts (1896)⁹. Later in 1900 he published a book on design in architecture in which he referred to the writings of Viollet le Duc and A. Thiersch. The influence of Thiersch is of some importance for he was not concerned with design by triangulation, quadrature or the golden section rather his proposition was founded on the notion of similar figures. Harmony stems from the repetition of the work's principal figure in its subdivisions. In this respect a cogent argument is presented by Jaques Paul that indicates a basis for the planning of Mies van der Rohe's Barcelona pavilion of 1929 to be founded upon Thiersch's ideas on planning according to the 'geometrical similarity between rectangles of different sizes in a given building'¹⁰.

Lauweriks' structure sheets were geometrical drawings of repetitions of basic rectilinear and curvilinear patterns which by incremental growth and increase in scale produced diagrammatic structures which revealed numerous patterns. Although the diagrams were conceived as abstract design, they were often used by Lauweriks' students as the basis for their architectural solutions.

A good example would be Lauweriks' analysis. 'A contribution to the design of systematic principles in architecture' which appeared in Ring (April 1909). The article is about the systematic way in which a pupil of Lauweriks, Christian Bayer, designed a church. The key figure of the system chosen for the symbolic plan of the church was a cross contained within a square, whose centre was that of a circle also contained within the square. The parts of the system were founded on a six part division of a semi-circle which produced a four part subdivision on the diameter which formed the square encompassing the cross. To complete the system the diameter is extended by a module either side of the circle, thus the six part subdivision of the semi-circle is represented in a straight line. Two squares are formed one based upon the four part subdivision the other upon a six part square. The inner square is thus

formed of 16 square modules, surrounded by a peripheral group of 20, in all forming 36 modules, forming the series 4:5:6 a key relation to the entire planning of the church.

Using that form of a modular analysis Lauweriks was able to conceive the entire complex system of the church in terms of the smallest particle or module. From this Lauweriks drew the analogy with the rhythmic principle of the method of repeated division found in nature, such as the formation of cells. 'These units or cellular system, on which the building was built, from which it built the architectural organism, is the general rhythmic basis, which must always exist, and without which the design of a building is impossible, in the same manner that the cell is unsuperfluous in a natural organism, so it is for this building'.

In that analysis Lauweriks stressed that, 'A SYSTEM does not deserve the name, if a definite organisation was not existing, and if the parts of this system did not satisfy different kinds of building'¹¹.

The modular basis for the design by Lauweriks of the Thorn-Prikker house at Am Stirnband, Hohenhagen was to prove to be of some consequence, for it is highly likely that this is the design referred to by Le Corbusier in the Modular. The question that Le Corbusier was faced with was 'What is the rule that orders, that connects all things? I am faced with a problem that is geometrical in nature...'¹² in this context Le Corbusier remembered the modern villa based upon curves, angles, calculations. The location and date recorded by Le Corbusier are incorrect, however if the villa he had in mind was the Thorn-Prikker house, but a correspondence exists at the time of the completion of the Am Stirnband scheme between Le Corbusier and Karl Ernst Osthaus and Le Corbusier refers to the villa to be owned by 'someone called Thorn Brick (?), a Dutchman'. The coincidence appears to lead to the conclusion that the villa was in fact Lauweriks' design. An intriguing question arises for Le Corbusier wrote that 'the gardener' had described the complexities of the 'Thorn-Prikker' villa and

at that time Lauweriks was living in the gardener's house of Osthuis' Hohenhagen complex. It is interesting to speculate that Le Corbusier's 'gardener' was in fact Lauweriks.

Mathematical order formed much of the basis for Lauweriks' approach to his structure sheets. At the core of his thinking was the idea of cellular division. The notion of cellular morphology which can be found in Lauweriks' work has a parallel in England at the time in the writing of Lethaby:

'Some day we shall get a morphology of art by some architectural Linnaeus or Darwin, who will start with the simple cell and relate it to the most complex structure', 1911¹³. (Linnaeus was the founder of botanical classification). At that time Lutyens also had thoughts on a structuralist approach to the spaces of his buildings; an, 'armature of plans... the whole being like a glass cube made up of countless smaller glass cubes'¹⁴. In the context of Lauweriks, Lethaby's note is particularly apposite for central to Lauweriks' belief were the ideas of evolution and of the cellular structure of nature.

A scientific content in Lauweriks' thinking had been apparent as early as 1897, in that analysis he noted the idea of the ability to relate the extremities of form to a single point, at the same time the point was the basis for the analysis of each revelation of form. This process he likened to that of physics, 'for also the physicist relates in his investigations to an atom, a molecule or something similar'¹⁵. The extent of Lauweriks' influence on the first phase of the Bauhaus is not entirely clear, probably it has been underestimated. Stressing and Tummers have indicated the significance that should be given to Lauweriks in two quotations. The first was by Harry Scheibe, Van Doesburg's friend at Weimer, who noted Lauweriks in the same context with Adolf Meyer as 'the theoretical founder of the new European Architecture'¹⁶.

That statement was made in 1926, earlier at the occasion of the 1923 Bauhaus exhibition, Marcel Breuer was quite definite that at that time Lauweriks' ideas were widespread at

the Bauhaus. Adolf Meyer, Gropius' partner, and a former student of Lauweriks at Düsseldorf was no doubt instrumental in this.

If to any extent a continuity of thought can be traced from the reaction to historicism to the New Objectivity then in part the key clearly must lie to a considerable degree in the work of Lauweriks. Of some interest to the thread of continuity of theories at the turn of the century was the fact that Schoenmaekers, a mathematic based thinker who influenced members of De Stijl, and indeed Mondrian himself, were members of the Theosophical society. Tummers notes that Mondrian became a member of the Theosophical society of Amsterdam in 1909 and that Schoenmaekers' was a Theosophy philosopher. Schoenmaekers and Lauweriks' former partner De Bazel were in fact good friends. Probably on account of their friendship De Bazel subscribed to the De Stijl magazine, but it is unlikely that De Bazel agreed with the abstractionist ideas of De Stijl. He may however have found a common cause in ideas based upon a universal or the cosmic-mathematical vision of life. De Bazel had on the other hand written a complimentary article on the leading Amsterdam school expressionist, Michael de Klerk, who De Bazel found to be both a talented designer and source of inspiration¹⁷.

Schoenmaekers had published two books concerning 'positive mysticism', 'The new image of the world' in 1915 and 'Plastic mathematics' in 1916. At that time, Jaffé writes, Schoenmaekers was 'in close contact with both Mondriaan and Van der Leek' who 'were under the spell of Dr. Schoenmaekers' theories'¹⁸.

In the examination of De Stijl's philosophical origins, Jaffé establishes the influence of Schoenmaekers, 'Plastic mathematics mean true and methodical thinking from the point of view of the creator' and on the definition of truth, 'Truth is: to reduce the relativity of natural facts to the absolute, in order to recover the absolute in natural facts'. Van Doesburg from 1912 based some of his articles on axioms formulated by

Kandinsky in his book 'Concerning the spiritual in art', which may well have been influenced by Lauweriks' paper of 1908 'Leitmotive'.

Van Doesburg also shows sympathy with Lauweriks' interest in Egyptian art. Jaffé (without referring to the work of Lauweriks) records 'Van Doesburg quotes Egyptian art as an example of the expression of a spiritual attitude of a people', further 'the abstract, the mathematical qualities of Egyptian art have always appealed to the artists of De Stijl and to Van Doesburg above all'. Some of Lauweriks' theories were at times close to those of Schoenmaekers and Kandinsky and it is highly likely either directly or indirectly he influenced each of the founding members of De Stijl.

Lauweriks' work may possibly have revealed an understanding of values which in De Stijl terms could be thought of as universal or monumental. Aaron Scharf has recorded the obvious visual and structural influence of Lauweriks on Vilmos Husar's design for the De Stijl magazine cover and suggests that Lauweriks had some influence on Rietveld's furniture¹⁹. Indeed it would be fair to state that Lauweriks' influence encompassed the abstractionist of De Stijl, the opposing decorative group Wendingen, whose magazine is considered to be based in part upon Lauweriks' magazine Ring, and indeed a functionalist such as Van Loghem would also acknowledge an influence in design terms. If Berlage held the social conscience of the time, then Lauweriks was arguably a theoretical fount for a whole generation of creative designers. Oud was directly influenced by Lauweriks in the decorative features of the De Unie Cafe (1925) and the site office at Oud Mathenesse (1922). Probably it would be fair to say that Oud ought to have been the logical heir of Lauweriks.

If in Holland his work on geometric systems and of a reappraisal of the emphasis to be placed upon historical studies ultimately were of value to both the decorative designers and those concerned with a new objectivity in design,

then equally strong arguments can be developed for his influence in Germany. His pupils from Düsseldorf, Kaldenbach, Christian Bayer and Adolph Meyer were each of some significance. Kaldenbach and Bayer were associated with Lauweriks at Hagen, particularly at the Am Stirnband housing group. Bayer worked on the Thorn-Prikker house. His student scheme at Düsseldorf had been the one analysed by Lauweriks in Ring. Fritz Kaldenbach's design appeared in the publication of the Berlin Expressionist group, 'Arbeitsrat für Kunst' (edited by Gropius, Taut and Behne) and in Bruno Taut's 'Frühlicht' of 1920. No doubt Kaldenbach's reputation would have been greater, but he died in 1918 at the age of thirty one. Adolph Meyer's reputation is clearly established in his work with Gropius from 1912 to the first phase of the Bauhaus at Weimar.

Clearly Lauwerik's role at the turn of the century has similarities with Muthesius. Each in some way links the Arts and Crafts with the Werkbund. Yet, Lauweriks' role was more subtle, he was concerned with the structure, the morphology, which formed the underlying principle for a design.

Lauweriks' value was that of the theoretician who whilst understanding the structure of a design did not attempt to distil the originality of the designers will to design.

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Ir. Albert Boeken (1891-1951)

The Foundation Analysis of Buildings has investigated into the works of J. Duiker and J.G. Wiebenga. Both joined in 1928 the group of architects 'De 8' together with a third one: Ir. Albert Boeken. For this reason it was obvious that the next object of research should be the work of this architect.

While making an inventory of Boeken's works it turned out that he did not only write for various architectural magazines, but also kept architectural diaries through the years. He kept these, with sometimes a gap of years, in the period from 1908 to 1948. The idea arose to publish these diaries, as they form a personal document of the time of 'het Nieuwe Bouwen' in the Netherlands, of the architect's problems in wartime and of the construction-time after the War. Recently the diaries were typed out: at the moment their publishing is being prepared.

Only a small number of works by Albert Boeken (1891-1951) were actually carried out. He can be seen as an architect who at the height of his skills had little opportunity to see his plans realised. From that time dates his greatest work actually built: the 'Apollahal' in Amsterdam, built in 1934. This building, a covered tennis court with restaurant and dwelling, met international approval at the time. In the magazine 'De 8 en Opbouw' (nr. 24, November 1934) van Loghem writes about it: 'Boeken... has put himself at the service of what was asked. And this attitude has made his work a good work. He ...not only had to maintain the openness of this new part of town, but ...to reinforce it by way of his build-

ing. And he succeeded.' Boeken writes about it (Architectuur, Amsterdam 1936): 'For me this building has made clear the meaning of unity (oneness) of all building'.

In 1945 he notes in his diary: 'Perhaps it may be called a miracle that the hall has survived the war, that there has been no air-attack on it... It was much too delicate for that.' The Apollahal may not have suffered much during the War, the attack of speculation did really affect it. It deserved to be restored in its spatial qualities: now it is annexed by its surroundings and has lost its transparency.

About Boeken's work and ideas in short: After his study in Delft Boeken did have a few commissions for country-houses, some of them in Bilthoven. These are built in the style of the Amsterdamse School. From 1919 until 1926 he worked with 'Publieke Werken' in Amsterdam, where he designed telephone-station buildings, electricity-station buildings, schools, a bathing establishment. For the new Schiphol airport he designed the first control tower, which was destroyed in 1940. However he found little satisfaction in making designs that afterwards were executed by others. Consequently he resigned at the end of 1926 to set up his own office. One of his first acts as an independent architect was to attend the opening of the Bauhaus in Dessau, December 1926. He had interviews with Gropius, Moholy Nagy and others. With Gropius he felt a kinship in ideas: the architect as an engineer. After he came back from Dessau he noted in his diary: 'What a pity I wasted seven years at Publieke Werken.' In the newspaper *Algemeen Handelsblad* (13-12-'26) he reported enthusiastically: 'It is nothing less than the first self-confident start of the style of the new age that is appearing. ...In the work of the Bauhaus ...industrial engineering on the one side, and build-

ing and industrial arts on the other side come together ...as a whole that is indissoluble.'

The visit to Dessau strengthened Boeken's feelings of discontent; feelings he had already put down in an article in *Architectura* in 1925. In this article he pleaded for *Architectura et Amicitia* to have an open mind to new developments in architecture; to get rid of all 'pathetic formdoings'; to make the connection with the technical industry by way of normalization and production in series.

When in 1927 the manifesto of 'De 8' appeared Boeken found in it many of his own ideas. He tried in vain to have the manifesto published in 'het Bouwkundig Weekblad'. In 1928 he actually joined 'De 8', but he left as soon as 1930: some members were too rigidly dogmatic in his view. He kept contact with C.I.A.M. though, as an individual member. This was one of the reasons why, in 1932, he was asked as a senior member of a group of young architects - among them Arthur Staal, Elte, Elzas, Holt, Sijmons, Komter, Limperg, Van Woerden - This group came together at Albert Boeken's place and called itself 'Groep '32'. Their main idea was that architecture should be more than just fulfilling the technical and functional demands of a building.

In 1934 the "Groep '32" fused with "De 8", a fusion which was not accomplished without difficulties about the formulation of the aims of the new association. Boeken tried to act as a mediator. The co-operation remained difficult, and in 1938 most members of the old 'Groep '32' left again. So did Boeken, who protested against the rigid attitude in 'De 8' which he thought would bring about a new formalism.

He published his protest in a series of articles in the newspaper 'De Tele-

graaf', early 1939. In these articles he expressed his wish to investigate the 'undeveloped area', as he called it, of form. In his later work he tried to find what for him made architecture more than just building: he was not satisfied with clean functional 'inhuman' buildings and wanted to add something 'higher'. It brought him on the verge

of what he had protested against in 1925, the 'pathetic form-doings'. During the War, Boeken worked together with Zanstra, Giessen, Sijmons and with Komter and Arthur Staal at a commission for housing in Amsterdam. Their plans were never executed, but after the War they published them in 'Bouwen, van Woning tot Stad',

Amsterdam 1946. Between 1946 and 1950 he built a few cottages in Bergen (Noord Holland) and he did church-restorations. He also designed a part of an extension of Amsterdam-Noord. In 1951 he died quite suddenly at the age of sixty; he never finished his plan for an office-building for BUMA in Amsterdam.

Jirí Kroha and the Inter-War flat architecture in Czechoslovakia

The work of Jirí Kroha (1893-1974) takes a permanent place in the history of modern Czechoslovak architecture. Although Kroha's creations shared the basic trends in the development of both Czech and foreign architecture, his work was marked from the very beginning by a high degree of originality and independence. So, it is not possible to find a similar dramatically engaged and exceptional person among Czechoslovak architects who deserves the right of being called the 'enfant terrible'.



Street, a lino-cut, 1918.

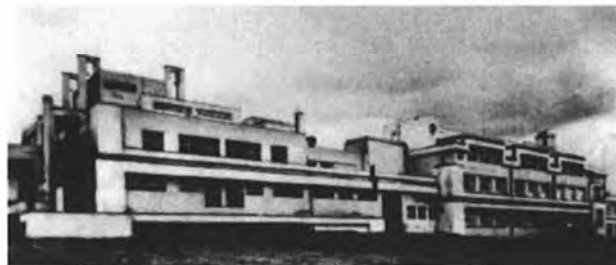
Due to World War I Kroha completed his architectural studies at the Czech technical university in Prague as late as 1918. In his school work and the following creations, Kroha joined the style of cubism - the movement through which the Czech architecture of that time reached the European peak and which in the postWar period was coming to its close in a modified form of 'rondocubism'. At that time Kroha designed public buildings, sacral and funeral structures, residential houses and interiors which were not for the main part realized. Besides architecture, he was equally engaged in sculptu-



The study of a crematorium, 1920

re, painting, design, set design and directing. In Kroha's conception, Czech cubism gained its characteristic face, in works of architecture called cubodynamism or cuboexpressionism and in works of art cubofuturism. The identification with cubism resulted first of all from Kroha's effort to spiritualize and humanize architecture which responded in a critical way to the rationalistic trends of the preWar development preferring one-tracked purpose to which the structure and the form of a building had to be subjected. The spiritual and humanistic aspects became permanent constituents of Kroha's entire work in architecture in the years to follow. All his later designs and structures also maintained the forms of expression and dynamism revealing, besides others, the artist's temperament. He also applied permanently his many-sided graphic and theatrical talent in his architectural conception.

Within the years 1921 to 1928 Kroha was on the board of construction at Mladá Boleslav. In that period he designed the largest number of structures built at Mladá Boleslav and its environs.



The regional technical high school at Mladá Boleslav, 1923-26.

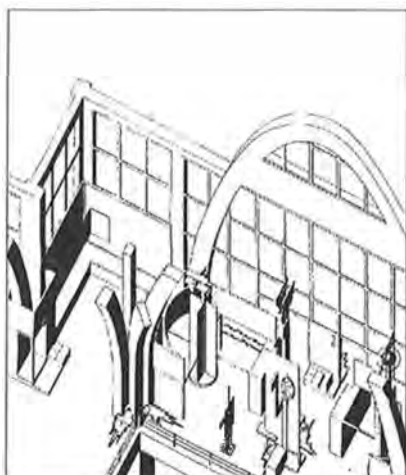
Those were residential, civic, school and public buildings, dominated by the Regional high school at Mladá Boleslav (designed in 1922, constructed in 1923 - 1926). At that time it was the largest modern school building in Czechoslovakia and one of the largest throughout Europe. This building could not disguise Kroha's cubism, although in its conception it looked already like a pre-constructionalist one. From the point of view of its operation and the semantic facet of architecture, the school building manifested itself in a very convincing way. After the Bauhaus models Kroha created an educational establishment where the studio design theory was combined with an actual workshop operation. The appearance of both the exterior and interior resembled a machine mechanism and thus the building revealed its mission.

Formally, this structure gave the impression of an unquiet, complicated and romanticised building which raised strong criticism by the defenders of orthodox functionalism. It also gave the impression as if Kroha tried to accommodate the dynamic diagonals of his cubism in the orthogonal constructivist order. It is not possible to disregard certain enlightenment taken from the Dutch neoplasticism. The artist enhanced his architectural studies of the so-called 'first plans' which he created as early as 1917 based upon the principle of 'structurally self-supporting spaciousness'.

Those looked like El Lissitzky's 'Prouns' and the suprematic 'Architectons' by K. Malevich. A comparison with the pictures of the Mechanical Cycle of the

later period and the mechanistic general subject by Frantisek Kupka may also have occurred to an observer.

In the year 1925 Kroha was promoted to a professorship at the department of architecture of the Czech Technical College in Brno where he worked with short breaks until 1953. In 1927 Kroha completed his task as a general designer of the Exhibition of North Bohemia where he presented himself both as



A design of the exposition of the railway and air transport..
Exhibition of Contemporary Culture in Czechoslovakia, Brno, 1927.

an architect, set designer and graphic artist. He launched a number of pavilions, expositions, gates and eye catchers made of provisorial materials, and in this way he created a new 'artificial' town in the centre of the old conurbation, a modern setting set against tradition. For the first time he had an opportunity to realize his idea of architecture as a reconstruction of life in all its aspects in a more comprehensive way and prevailingly by means of exhibition, which may be traced in all his work. A similar task was set Kroha in the solution of the Exhibition of Science, Spiritual and Technical Culture and University Education in the main palace of the regional fair grounds in Brno for the Exhibition of Contemporary Culture in Czechoslovakia in the year 1928. Since the set scenario assumed a traditional presentation in the way of museums and rooms, he replaced this scenario by his own schedule and conception. He tried to evoke a setting of a

somehow spiritual workshop whose axis is Man who by certain means and tools masters and controls life's rhythm and harmonizes the technical, natural and humanistic parts of the environment.

Towards the end of the 1920's Kroha also reacted upon Le Corbusier's stimuli. In 1927 he visited the exhibition *Die Wohnung* at Weissenhof in Stuttgart. His preoccupation with Le Corbusier's



Kroha's own villa in Brno, 1928-30.

house found its reflexion in a villa that he designed for the exhibition of modern housing the New House whose colony of houses was a part of the Exhibition of Contemporary Culture. His own villa in Brno (1928-1930) and Patocka's villa (1934-1935) also built there, show similar features.

Le Corbusier's example was, however, transformed by Kroha in all instances through an expressive architectural detail or colour. Thus, the number of his designs materialized during the inter-war period was closed, irrespective of the culmination of his creative activity in the 1930s. Due to a number of external and personal circumstances, Kroha passed his interest to the field of architectural science.

The year 1930 symbolizes an important dividing line in the history of modern Czechoslovak architecture. The whole avantgarde conformed basically at that time to the international style of functionalism and its members created

a numerous collection of mature works of architecture. Therefore, a natural need of a critical recapitulation of the results obtained and a programme for the future resulting from these came out. The necessity of evaluating and marking out further orientation was, however, caused - first of all - by the catastrophic consequences of the economic crisis, especially in the field of problem of housing. This reality contributed to the left-wing political orientation of the majority of progressive architects, and in many instances led to joining the communist party and aimed at a revolutionary change of the existing social order. From purely architectural points of view, it was quite evident that functionalism was also threatened by the danger of formal welding and style dogma. In spite of the fact that one of the main postulates of functionalism was a scientific preparation, the real change of the architectural creation into a science was in substance never reached. Most of the avantgarde pioneer acts were realized on the periphery of universal efforts, and moreover from the funds of the wealthy strata of the society, while the basic question - habitation for the poorest - remained the main problem whose crisis still deepened. This was in close connection with the problem of insufficient industrialization of the building industry, the absence of unity in economic planning, the obsolete legislation, speculations in building activities and professional problems of architects.

A cultural association, Left Front, was founded in 1929 and its architectural section was established soon after.

In 1931 the section edited Engels' Flat Question and the 'Socgorod' (the Socialist City) by N.A. Milyutin. Kroha was among the first Czech architects who made a journey to the Soviet Union in 1930. The biggest collective event of the Left Front architects was the Exhibition of the Proletarian Housing in Prague in 1931 which a year later was opened in Brno. This exhibition excited the intervention of the authorities. In 1930 the left-wing weekly *Tvorba* (Creation) prepared a public inquiry on problems of housing. Some architects responded by making theoretical state-

ments, the others by designing collective houses. In the year 1932 Karel Teige - the main theoretical spokesman of the Czechoslovak avantgarde, published an ample book 'The Smallest Flat' where he proclaimed the struggle of modern architecture as a political one, which 'means passing from illusions and dreams to reality, from abstraction to concrete, from academism to practical social and revolutionary work'. Initiated by the Left Front a Congress of Left-Wing Architects was held towards the close of 1932 and through its appeal a Union of Socialist Architects was appointed at the beginning of the following year. The congress elected Kroha its president. The period, when for example progressive architects emigrated from Germany and when the Bauhaus ceased to exist, meant for Czechoslovak architecture the springboard of socialist ideas which were a basis for the programme and activities of the architectural Left, and which also formed a new theoretical conception of Czechoslovak architecture as a whole.

Kroha led the initiators of the political, theoretical and creative efforts of the early 1930's. His propagandistic and organizational activities, especially after his return from the Soviet Union, were incomparable among Czech architects. He wrote several comprehensive studies and publications describing his experience and knowledge acquired in the Soviet Union, and he also held a series of lectures for the public. He was also engaged in all important events of the Czech working class and made politically conscious his disciples at the architectural institute of the technical college in Brno. In 1934 Kroha was sentenced to imprisonment under the law of the protection of the Republic, and suspended from his professorship, so he had to leave the college. These circumstance contributed a great deal to the loss of interest of Kroha's designs among building contractors. His sentence raised protests even from the side of foreign architects and intellectuals (Le Corbusier, A. Perret, W. Gropius, A. Einstein). The sentence was reduced and later Kroha was given an amnesty through the

intervention of President Masaryk and could return to the technical college. At the beginning of the Nazi occupation, Kroha was dismissed from the school again for political reasons, and soon imprisoned, first in castle Spilberk in Brno, later in the concentration camps of Dachau and Buchenwald. After being released (in 1940) and until the end of World War II Kroha devoted most of his activities to painting.

In the year 1930 Kroha commenced a systematic and concentrated scientific research of the problems of architecture where he gradually gained, under Czechoslovak conditions, preeminence and became, in fact, the founder of the science of architecture and the science of housing. He also engaged his disciples to this work. Kroha also published the results of his research, but he made them publicly known especially through the panels of a format 70 cm x 100 cm arranged in cycles. Here, he documented the state and the proposal of solving the problem of housing by means of photomontage, graphs, statistics, slogans and descriptions in a very vivid manner. A huge scheme called 'The Technique of Constructing a Socialist Flat' Kroha divided into three cycles: 'The Sociological Fragment of Housing', 'The Economic Fragment of Housing', and 'The Humanistic Fragment of Housing'. He worked on this gigantic scheme during the 1930's and finished it as late as 1965. In the years 1968 to 1970 Kroha published the 'Sociological Fragment of Housing' as a book. The publication was edited by the Institute in charge of historical monuments of Brno in 1973. At that time the institute organized numerous events in the field of theory and practice concerning the protection of monuments of modern architecture anticipating present efforts of the international organization DOCOMOMO.

The introduction 'The Sociological Fragment of Housing' (1930 - 1932) was given publicity by Kroha in 1933 at the Exhibition of the building industry and housing in Brno. His attention was focused here on the scientific analysis of the Czechoslovak housing problem in the years of the economic cri-

sis. In his analyses Kroha consistently applied Marx's method of dialectic materialism which he had become acquainted with as early as during his study at grammar school. He stressed the fact that in the class differentiated capitalist society the social space is unevenly inequitably distributed among three basic social classes. The working proletarian class sells its physical force for the production, the class of the intelligentsia sells its intellectual energy, while the capitalist class either governs or is in possession of the production. The different social space of those who are governed and those who govern results in their different habitation space, forms of housing and standard. In spite of the fact that all people have their basic activities essentially identical, their standard of housing and equipment are diametrically different. In the class antagonistic society occurs a paradoxical situation when on the one hand a number of people without flats increases due to the crisis, and on the other hand there are empty flats. The direct proportionality between housing possibilities and housing needs is still increasing. The housing question is not therefore only a problem of architecture but entirely a social matter whose satisfactory solution will be made possible by the revolutionary change of the social economic order for the benefit of socialism. That is why the architect should join those forces which attempt at the elimination of the class consequences of capitalism.

Kroha emphasized that housing is a basic motive of architecture from its first steps. The science of housing is a presupposition of modern successful design work in architecture without which any proposal of a new housing type becomes illusory for realization and unserviceable, impossible for a longer time. The architectural scientific preparation should have a character of an interdisciplinary study and there should exist a collaboration with a number of fields of activity: with history, sociology, geology, physiology, economy and typology, engineering, technology, physiognomy, town-planning, landscape architecture, aesthetics, organization, social distribution,

theory and criticism. Kroha, however, repeatedly suggested that the scientific knowledge is only a means, not the goal of architecture. This remains socially a subjective work of graphic culture. Its highest goal will be to life's libido, which means in fact the experience of freedom. Thus he polemized with Teig's conception, who in the early 1930's enlarged his purely technocratic approach of functionalism by sociological and political views, but persistently excluded psychological and aesthetic elements from architecture.

In his Sociological Fragment of Housing Kroha criticized and analysed the Czechoslovak housing problem on 89 panels under conditions of the capitalist society of the period of the crisis. He tackled the problem from various aspects with the help of a wide spectrum of auxiliary fields of science. He was also concerned with the problems of family, population, sexual and biological functions of man, children's education, living, hygiene, dressing, jobs, income, physiognomy and physiology of the flat, power problems of housing, time aspects of using a flat, art and amusement in a flat, privacy, etc. Most panels were vertically divided into four identical fields, while the first is filled with a graphic demonstration of certain problems in an abstract concept. In other fields the matter in question is presented in its existing form within the working class (the proletarian class), petty bourgeoisie capitalist class and middle class which consists of the commercial class, clerks, the haute bourgeoisie capitalist class (wholesalers, monopolies). The monumentality of the photomontages was stressed by original entries. Proletarian flats seemed to be like 'whitewashed graves' for Kroha, and the flats for the petty bourgeoisie like the 'prestigious tombs of humanistic symbiosis', for example, a kitchen range in flats of the two first categories are supposed to be the 'saddest altar where the woman's cultural uplift is sacrificed', etc.

As early as in the conclusion of the 'Sociological Fragment of Housing' Kroha was concerned with the solution of a new type of housing in the socialist

society where the builder will be a socially free working man. The two following fragments are fully devoted to the conception of future housing. The Economic Fragment of Housing (1930-1935) was exhibited by Kroha at the International congress of housing in Prague in 1935. This consists of 137 tables where the author analysed the housing problem from the point of view of standard - he looked for a standard for the planary and spatial typologies of flats, investigated its dependence upon operational, functional and humanistic aspects of housing. By emphasizing the human aspect in forming the housing, he surmounted the technicist conception of purpose and functions dominating among the majority of functionalist theoreticians and designers. The closing Humanistic Fragment of Housing with its 54 design panels (from 1935) applied pronouncedly the anthropological conception of housing resulting from spiritual and not only biological needs of man. Here, Kroha attained four degrees of the so-called 'socially family flat' and the so-called socialist house. The 'cabinet' type of a flat represents the highest degree where a 'cabinet' room may either be attached to the flat service core or detached, depending on the change of the size of the family. This dynamic generation-type of housing with variable standards of small flats was considered by Kroha as a type which was appurtenant to the planned system of housing in the socialist society. Through its anthropological conception this type of housing represented a higher degree compared to a limited and static anthropometric solution, respected the right of occupiers of privacy, and steered clear of the architectural and urbanistic monotony. Kroha assumed that the claims of a free privacy will still increase in the socialist society, and therefore he was critical of the anthropometric conception of Soviet constructivism which excessively enforced the collectivism, and vulgarized, schematized and practically liquidated the humanistically valuable aspects of privacy. Teige, in contrast to Kroha, shared identical views with Soviet constructivism. For him the only real form of proletarian housing was a

collective house with a bee-hive of dwelling cells and with a centralized house economy and collective spaces for cultural life. He even demanded the cancelling of the conjugal bedroom which he described as a 'scene of Stringbergian dramas, a hen-battery, a phenomenon of erotic banality and decadence'.

The political, economical and cultural development after World War II in Czechoslovakia reflected a sharp contrast between the revolutionary theory and practice. The communist coup in 1948 provided on the one hand the access to socialism but instead of a new humane society introduced a repressive regime using Stalinist methods, and in architecture brought about a historizing style of socialist realism. The communist government assessed Kroha's interWar political and constructive merits by the highest state honours and degrees, and by political and pedagogical functions. Kroha became an official representative of Czechoslovak architecture and was charged with design tasks of nation-wide importance. Immediately after World War II Kroha followed up with the functionalist tradition for a short period. From 1950, however, his work shaped and followed the architectural style of socialist realism. It should be admitted that thanks to his invention and fantasy, Kroha's realizations belong to those which were the best in Czechoslovakia of that time. As a publicist Kroha praised and promoted Soviet architecture in spite of the fact that in the 1930's he refused its orientation to historizing classicism. The consequential large-scale construction of monstrous concrete panel housing estates in Czechoslovakia was a degradation of the heritage of the interWar avantgarde in the field of housing. Kroha's conception of a dynamic, generation and anthropologically drafted family flat was not utilized at all. From the end of the 1950's Kroha did not design. He subedited and published some of his older scientific and political studies and was engaged as an adviser at the ministry of culture in the field of care of historical monuments.

Is restoration fashionable, also of modern movements? The urgent need for a register

Conditions and categories for selecting the headings of the register files; the gathering and elaboration of these files; cross referencing of the data to determine the priorities and the definition of the intervention; cost analysis of the maintenance and conservation/restoration projects; evaluation of the cost-benefits relationship; and last but not least the overall analysis (historical, archival, documentary, technical, photographic) of the monument, as a whole and in its urban context.

Keeping in mind the procedures and the objectives, this is one of the many possible ways of beginning a campaign to catalogue the historical and modern monuments.

According to these criteria, a handful of architects and historians involved with DOCOMOMO in Italy have worked on the elaboration of a master file already distributed to the employees of several Superintendents, local authorities, and to various collaborators. The results are still few in number but significant if taken as case studies.

It is possible that the representative of each of the countries participating in this conference, or even the speakers or some of the specialized public, will have interesting suggestions to help us begin the initial research phase of the cataloguing of the modern patrimony and to later introduce a strategy to protect it.

However, bearing in mind the individual characteristics of each country or geographic territory, our priority is not to define a common strategy, but a broad selection of options.

I do believe that the most positive result of this conference will be indeed this selection of options which for the first time we will be able to identify in relationship to the surrounding site before proceeding with the operational stage.

I do not think that the objective of this conference is to outline a 'charter' of rules for the register, but indeed the preliminary aim will be to gather the greatest number of possible conditions. In the experimental phase, a large number of variables is more than desirable to allow us to apply the method to later examination.

I am contributing to the debate some ideas on the operative use of the register, with the certainty that this will inspire a working process directed at creating the best possible national register. The ideal in this case does not exist since the 'risks' to which these monuments are exposed - and also the modern ones - is not a variable of the process protection-maintenance-conservation-restoration, but a condition of time. I would like to add to the already vast number of possible options identified during the Second international DOCOMOMO Conference some considerations gleaned from the recent introduction in Italy of the 'charter of risk', a project of intervention for the historical monuments which, I believe, will provide those involved in this area within a reasonably brief period of time (two to three years) an ideal operative instrument for indicating the priorities and methodologies for conservation and restoration.

I believe furthermore that this document will amply identify an increasingly

widespread operational procedure, for use not only in Italy. Indeed, the 'charter of risk' at least in its initial stage will parallel the register and will later become its motivation.

The 'charter of risk' will help to compile the catalogue as a prescriptive rather than merely a descriptive instrument.

The 'charter of risk' is the result of a strategy of attack for the programmed maintenance of historical monuments. The criteria used are those of preventive medicine, or the maintenance of airplanes which after a certain number of flight hours must be carefully overhauled after a rigorous inspection process. The real problem for the Italian patrimony, even more so when applied to modern monuments which are not recognized as such or indeed completely unknown, is to begin a periodic process of maintenance.

I will now outline the 'risks' to the patrimony in three points:

1. Danger from the environment together with structural static. A modern Italian example already known to the DOCOMOMO are the colonies built along the Italian coastline during the two decades of fascism.
2. The intrinsic value of the building, often ignored because of its omission from the register file. Dangerously, it is very serious that the economic value is often ignored.
3. The vulnerability of the monument, closely tied to its state of preservation and its improper use. For example, the former Fencing Academy (Casa della Scherma) designed by Luigi Moretti at the Foro Italico, already a topic of examination during the conference in Eindhoven.

The central institute responsible for restoration, which produced the 'charter of risk' for the Italian Ministry of

Culture and Environment, intends to proceed by surveying four areas, and by mobilizing the employees of the Superintendents most directly involved. It is estimated that in this experimental stage, the index already elaborated with cross referenced data, and the field monitoring will apply to a sample number of about 800 monuments for each area. Characteristically, not more than 1% of this patrimony will include modern monuments, or optimistically an estimate of not more than eight buildings or complexes for each sample area. However, this small number should neither surprise nor worry.

I am personally convinced that the process of acquiring knowledge on the territory must be widespread and the amount of data must cover many sectors. The inventory must cover many steps in order to understand examples which could seem marginal when considering the better known monuments. But in an inversely proportional progression, it is necessary to create a catalogue of 'monuments' together with the inventory of 'documents'.

The operational hypothesis of the 'charter of risk' is to trace a map which will enable us to identify the key elements in order to plan a more widespread intervention of maintenance and restoration, giving priority to the monuments.

Although this instrument is undoubtedly innovative for the maintenance and preservation of monuments, there remain several legislative uncertainties which cause the greatest damage.

It does not seem necessary to further consider the legislative rules that greatly 'restrict' in Italy the number of buildings which are protected by law as modern monuments. Nor will I dwell on the bitter disagreements between the Ministries and the local officials, or comment on the apparent disparity of behavior and activity among the various Superintendents. And, finally, I will not bother you with the muddled delegation of responsibilities of the state, the various Regions and the City.

One could rightly ask: Who actively protects the Italian patrimony? However, I will strongly stress the need for a 'single register', demanding and promoting decentralization as the necessary measure for a true defensive action. I wish to cite two extreme cases regarding this point, one the result of 'good government' and the second much less so. In the first case, the Superintendent of Monuments of Lombardy finally imposed 'constraint' on several modern buildings to protect them, and in the second, the decision of the Ministry of Culture and Environment to revoke the 'constraint' on the Fascist Youth Movement Building (GIL) in Campobasso, already under 'constraint' of the authority of the Superintendent, in order to tear it down. This latter example reveals the inconsistency in the decision process as a further risk factor, even before evaluating the quality of the architecture.

Even more for the modern than for the ancient monuments, the absence of a register (and therefore of public awareness) increases the 'risks'; the 'constraint' is necessary but not sufficient to safeguard the monument.

In conclusion I will discuss the methods and timing of restoration, which still remain undefined. The financial obligations of the intervention of restoration and the inactivity - at times imposed - of the public administrators, has in fact created in Italy a rather unique phenomenon: the private sector has gradually removed from the Superintendents (not to speak of museums) the responsibility of restoring the monuments or works of art under their jurisdiction.

We are living in times of rulers with absolute power, or better, of restorers who pretend to perform miracles.

We are living in times of great enterprises which have taken absolute control of one of the largest businesses of the last ten years, and perhaps the largest in the years to come: the restoration of monuments, at this point primarily the ancient ones. But in my view it will not

be too long before we concern ourselves with modern buildings, especially with some interesting return for some very farsighted sponsors.

This phenomenon suggests two final considerations: the first regarding the sponsor and the second a consideration on the idea of restoration.

The sponsors, perhaps because they have never been directed and because of the absence of an updated register or of the map that the 'charter of risk' will certainly provide, are always ready to intervene on the masterpieces, while they seem scarcely interested in considering the environment or the reality of the cultural territory as a whole.

This type of shortsightedness affects even more strongly the modern patrimony, which seems to be in a secondary category, and already so badly neglected as to have lost its luster.

And this is an alibi that does not hold up against the evidence. We would also ask ourselves why restoration is so fashionable. I think that behind the myth of restoration to original state, as the recovery of a condition which we all know is long lost because of the 'time' (50 or 500 years make little difference; in many cases the last ten years have been far more destructive than the previous 490) lies a human dream, a progressively more senile ambition of returning to the original state of youth.

The fact that youth for modern monuments is much closer, almost within human reach, does not make the task easier for the technician, while it has scarcely interested the miracle-worker restorers.

Indeed, the conceptual distance between the theory of restoration and its practice, between modern and ancient, is extremely reduced, while the type of intervention required represents the gap that we are urgently discussing. And this is the issue that must remain a priority when we work with increasing urgency on the register.

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Gropius in London: modernism and tradition

In 1935-'36 Walter Gropius carried out the first commission to materialise during his British exile: a house for the playwright Benn Levy and actress Constance Cummings in Old Church Street, Chelsea, London. The house - brick-built, smoothly rendered and painted white - together with the adjacent house designed by Mendelsohn and Chermayeff for the publisher Denis Cohen - assumed a symbolic importance for modernist architects and critics in England in the 1930's. It represented successful assimilation of modern architecture into the city, and specifically (according to J.M. Richards of the *Architectural Review*) into a tradition of English urban design. It also represented the emigre architect sufficiently integrated into English society to secure commissions from prominent figures, and to execute them in conjunction with members of the British architectural profession - Gropius with Maxwell Fry, Mendelsohn with Serge Chermayeff.¹

But, in retrospect, the commission appears rather differently. For Gropius, the house was clearly a work of transition, and also one which necessitated a compromise between his own ideas and those of the client and landowner. The result was a house which he was later reluctant to include in exhibitions of his work. Research shows that important determinants for the design of the Levy and Cohen houses were two ostentatious neo-Georgian houses which lay behind! These houses, and his clients requirements, encouraged Gropius to design an elaborate, luxu-

rious 'white house' which contrasts markedly with the sober, functionalist reputation which preceded him to England.² The choice of materials also contrasts with those he was to use in other English projects (eg. the cedar-clad Donaldson house in Kent, 1937, and the brick-walled Impington Village College, 1936-39). Rather than producing a modern interpretation of a modest 18th/19th Century town house, Gropius created a glamorous house orientated towards the garden rather than the street.

Gropius' English experience.

Gropius was invited to England in 1934 to design a block of flats in

take refuge from the stormy ocean of a great city. The direct communication with the garden, the greater seclusion, the delicious sense of complete possession...⁴. For Gropius, the failure of the Windsor scheme helped to confirm the importance of the house and of the relationship between house and its setting for an English clientele (Fry, then living in a pretty Georgian house in Hammersmith, probably served as his guide to London's domestic architecture).

Gropius' transition to England was made difficult by his unfamiliarity with the language, and by leaving behind in Germany his office staff of assistants



Levi House (left) and Cohen House (right), Old Church Street, 1936.

Manchester; he was granted a work permit by the Home Office and offered a partnership by Maxwell Fry. Although this project did not materialise, he and Fry then produced a design for a scheme for luxury flats in Windsor Great Park. Failure to secure finance for these flats encouraged a tactical shift. Gropius had already resolved, for the sake of his own economic survival, to establish a client base among wealthy Britons.³ Although considering flats more appropriate to contemporary needs, Gropius nevertheless acknowledged that for the town-dweller, the individual house had great appeal as 'the most tempting haven in which to

and draughtsmen. Although Albrecht Proskauer came to his assistance in November 1934, Gropius could not apparently call upon the range of expertise which Mendelsohn had at his disposal.⁵

The Levy-Cummings house

Levy had recently returned from Hollywood with his new wife, Cummings, and jointly bought with Cohen a plot of land containing fine old trees. The friends decided to build a house on the perimeter of the site, sharing the garden, in order to make the most of it. The Cohen house was arranged parallel with the street, a range of service

rooms shielding the principal rooms from traffic noise. The Levy house was set at right-angles to it. Gropius placed the main bedroom, study and the



Garden elevation of Levy house, 1936

ground-floor reception rooms - as the clients requested - facing south over the garden; the narrow end of the house - a recessed 'wing' containing garage, service rooms, and accommodation for children and servants - faced the street. This wing was articulated as a series of graceful curves - the curved wall of the first-floor nursery, the terrace deck outside it, and the fragile steel canopy cantilevered out from the wall of the maids' room above the nursery. Another terrace running along the first floor widened outside the main bedroom to create a sleeping balcony. From the garden, the rectangular volume of the house was held between two curved wings which simultaneously shielded it from surrounding buildings and linked it to the shared garden and its trees. The terraces offered a variety of perspectives of both garden and street. Because the Levys wished to use their own antique furniture in the house, Gropius was not asked to design the interior (apart from the entrance hall, staircase and a heated 'flower window'); he therefore concentrated on giving the exterior a powerfully sculptural form. This contrasts with the Cohen house whose exterior - although simpler and more restrained - formed part of a well-integrated whole, with furniture and fittings designed by the architects.

The urban context

Gropius had originally proposed to build the Levy house in un-rendered brick. Old Church Street contained both stuccoed houses and brick faced houses, and either material could be said to be appropriate to the locale. However, the Cadogan Estate which sold the site to Levy and Cohen, retained the 'freehold' of the land⁶ and

could control what was built on it. It insisted that white houses be built. This was not apparently to ensure continuity with the historic architecture in Old Church Street, but with two new houses just completed on Estate land to the rear! These houses, designed by the fashionable architect Oliver Hill, were of brick rendered with 'Snowcrete', a patent render containing particles of mica which sparkled like marble in the sun. The estate presumably feared that Gropius and Mendelsohn would lower the value of this ostentatious pair of houses by building house of a completely different character. The exterior of the two new houses were accordingly covered with a similar material. The Hill house had also been commissioned by clients who were friends and agreed to buy a plot jointly and use the same architect and building materials. The first house, built in 1931 for Lord Vernon, was a symmetrically planned mansion in the style of Nash, flanked by curved service wings. The second, built for Lady Forres in 1934, was placed at right-angles to the street, and joined by a wall to its neighbour; although (because of the client's demand for sleeping balconies) less formally composed, it was designed as a foil to the first house, its garden facade echoing the Vernon house's street elevation.

Similarly, the Levy and Cohen houses were designed to complement each other.

Their street facades were connected by the Levys' garden wall. Each house had a long low block of service rooms fronting the street. The main part of each house was set back, the roof heights were correlated, and they were visually linked by a continuous strip of brick at the base of the rendered street elevations. This, and the exposed brick piers framing the garage door of the Levy house reveal Gropius' interest in contextualism. But although the wall connecting the houses echoes that of the Chelsea Arts Club opposite, there are actually fewer points of similarity between the new houses and their neighbours than J.M. Richards claimed when he wrote 'the two houses... serve as a practical demonstration of the affi-

nities between the Georgian and the modern house', suggesting that by the use of similar elements and a disciplined approach to design, comparable effects of restrained elegance were achieved.⁷

The Levy house, after all, was individually commissioned and designed, and its complex spatial effects had little in common with the neat small houses of the late 18th Century.

In fact, the stipulation that Gropius and Mendelsohn build white houses seems to have encouraged them to take less notice of the streetscape and more of the relationship between house, garden and the Hill houses behind. Rather than relating to the houses in Old Church Street, the recessed, curved wing of the Levy house echoes, perhaps ironically, the curved side wings of the Vernon house visible across the garden!



Levy House under construction, early 1936.



View from terrace of Levy house, 1936.



Levy House, present state.

The specification of wall finishes did not just affect the appearance of the Levy house, but also its upkeep. Combined with an elaborate design, possibly inexperienced assistants, and war-time damage, this had serious results for the house and its owners.

'A perfect example of the failure of 30's architecture'?

Structurally, the Levy house was a hybrid, with brick walls, concrete balconies and lintels, and steel joists carrying the wide window spans on the garden elevation.

The fragile steel parapet to the top balcony proved difficult to maintain; at the wall junction it allowed water to penetrate both render and brickwork beneath. After six years of minimal maintenance during the Second World War, and structural damage from bomb-blast, the house was re-rendered, and the top balcony filled in 1946 in order to provide an extra room, thereby destroying the effect of delicate spatial enclosure. (This was compounded by the enlarging of terrace to the south-east, and the replacement of its supporting column with a thicker one during the 1970's.)

In 1952, additional rooms were added, forming a complete second storey. In 1969, the architect Theo Crosby, terming the house 'a perfect example of the failure of early 30's architecture'⁸, advised that the best way to make the house weatherproof was to clad it with black slates and rough-cast stucco - a remarkably ill-judged and unsympathetic solution. Recognizing the unique character of the house, planners listed it (Grade II) in 1970, although it was by then a ghost of its original self!

The Cohen house, though constructed by the same building firm, proved more robust; contributing factors were its simpler design, the expertise of the

team which detailed it, and its structural steel frame.

Conclusion

Gropius was probably surprised to discover in designing the Levy house that pressure to fit in with the small-scale, pre-modern surroundings of Old Church Street was less than the pressures from the Cadogan Estate to build a substantial, glittering white house. It is ironic that Gropius's encounter with London's idiosyncratic leasehold system forced him back to the white architecture of the 1920's at a time when he was becoming interested in the simple architecture of Georgian London, a city whose 'native building material was brick'.⁹

Although the commission gave Gropius the chance to demonstrate his sensitivity to the landscape, and his ability to create a glamorous house for prominent clients, it also demonstrated how building opportunities in England were compromised by their context - by the presence of recent but historicist buildings as well as old ones - and by vested financial interests.

Reflecting in 1965 upon the diaspora of modernist architects prompted by Hitler's rise to power, Sibyl Moholy-Nagy referred to 'the comedy of errors played out by the alien mind anxiously disguised in native costume'.¹⁰ The phrase eloquently conveys the sense of dislocation characteristic of the emigre experience. It also serves as an appropriate epitaph for Gropius' experience in London, where the 'native costume' which he was encouraged to adopt was not Georgian, but a fashionable modern pastiche of it.

Notes:

1. Chermayeff was born in the Caucasus in 1900, resided in England from 1910 and was educated at Harrow School.
2. Gropius was caricatured as Professor

Otto Silenus, a gloomy functionalist architect, in Evelyn Waugh's novel *Decline and Fall* (1928). P.M. Shand wrote of 'Gropius' architectural morality... based on ...the need to purge architecture' in 'Scenario for a Human Drama', *Architectural Review*, August 1934.

3. 'I have decided to stay in the background, concentrate entirely on practical work and, if possible, not start with social housing for workers but first make my way into the group of wealthy people...' he wrote to S. Giedion on 27 December 1934, quoted W. Nerdinger *Walter Gropius; the architect Walter Gropius, Drawings, Prints, Photographs, complete Project Catalogue*. (Busch-Reisinger Museum/Bauhaus Archive, Berlin, 1985)
4. 'The formal and technical problems of Modern architecture and planning', *RIBA Journal*, 19 May 1934.
5. Mendelsohn brought his chief draughtsman Hannes Shreiner with him from Berlin, used Felix Samuely as consultant engineer and had at least eight assistants in 1934-35. See Erich Mendelsohn 1887-1953 (*Modern British Architecture*, 1987), p.71.
6. The Cadogan Estate sold a lease on the land for 99 years, and charged a small annual ground rent to the buyer. At the end of this time, both the land and the houses built on it became the property of the Estate.
7. *Architectural Review*, December 1936, p.249. The frontispiece shows a view of the Georgian houses opposite the Levy house, photographed from the terrace.
8. Quoted in 'Goodbye Gropius again - or how to come unstucco'd', *Building Design*, July 27, 1973, p. 13.
9. J. Summerson *Georgian London* (1978), p.79
10. 'The Diaspora', *Journal of Society of Architectural Historians (USA)*, March 1965, p.24.

Rainer Bullhorst

architect, Den Haag:
the Netherlands

Nirwana 1929-1992

Since it was completed in 1929, the Nirwana building in the Hague has had a neglected and dirty appearance, almost like someone with a chronic skin disorder, with scars, scabs, acne and eczema. One would have to know the full background to the building's history or be professionally involved in architecture to fully recognise the intellectual achievement of the creation by Jan Duiker and Jan Gerko Wiebenga. Most residents and neighbours feel indifference or even intense dislike for the eight-storey building. Back in the planning phase, the mood was very different. During a student trip across America in the early 1920's, Wiebenga had become familiar with the highrise building methods used there and with the high standard of (rented) apartments. He financed his stay by taking various jobs in architects' offices, often short-term jobs. He learned a completely different approach to the relationship between cost and use from the one he was used to in Holland.

Although he was more used to working alone, he initiated rather theoretical studies into the potential of high-rise buildings with Duiker, who ran an architects' office in Zandvoort with his colleague Bernhard Bijvoet. Duiker and Bijvoet summarised the results in their competition design for the Chicago Tribune. Bijvoet did not actually work on the Nirwana project, since he was at that time working with Pierre Chareau on the Maison de Verre in Paris for Doctor Alsace.

The first sketches for Nirwana were ready at the end of 1925. The initial plan was for a real high-rise building, a sixty meter high skyscraper. However, the town planning authorities in The Hague had a rule that limited building heights to 21 meters. The only thing which could go higher than this was the roof. This was a bitter disappointment to the architects. Another project was also shelved, a configuration of five housing blocks laid out like a chess board. After the building had to be changed yet again, the building work finally began in Spring 1928. By the end of 1929, only one and a half years later, the complex was completed except for a few minor details.

Bouw in Rotterdam and Jan Gerko Wiebenga, *Apostel van het Nieuwe Bouwen*, by Jan Molema and Peter Bak, published by O10 Publishers in Rotterdam.

Shortly before the building was completed, relatively serious faults became apparent, especially on the outer skin. Photographs taken at the time clearly show signs of damp and dirt. This state of affairs continued until about 1980, when a decision was taken to repaint the front of the building. However, this only helped externally and in aesthetic terms, and even then only in the short term. Although the architectural critic in a leading newspaper wrote 'Nirwana is once again a brilliant white', the effect was deceptive.

Firstly, Nirwana had never been a brilliant white. The paint that was applied looked more like a once-white sheet that had been put through the washing machine with a pair of red socks. The original texture of the stucco could hardly be seen any more, the paint having a smoothing effect like a spatula used for icing a cake. And finally, all of the problems that had occurred were merely concealed, and not eliminated.



He returned highly impressed, talked to Duiker about his impressions and undertook to blend his new knowledge with local requirements.

Other historical information can be found in the following books: Jan Duiker, *bouwkundig ingenieur*, 1982 by the TH Delft, published by Stichting

Invisible to the eye, this merely accelerated the decline of this high-rise testament to the late 1920's.

In 1984, the various owners decided to

renovate the building properly. Two energy crises had left their mark on attitudes to heating costs and the living climate. Also, the crossroads that the Nirwana building is located on had grown into a motorway-style intersection. The residents' legitimate and understandable concerns revolved around the lowest possible investment costs to give good sound and heat insulation. A report by an insulation expert immediately showed the discrepancy between the measures now available and the solutions that Duiker and Wiebenga had come up with almost 70 years earlier.

Another question that arose was the extent to which concessions should be made in the interests of comfort. From an architectural viewpoint, the question can be answered quickly and simply, but this would immediately lead to conflict with the residents. Whilst many of them had bought their apartments relatively cheaply, they now had to dig deep into their wallets, despite the various grants that were available. None of the 27 residents were willing to accept the financial consequences of a thorough, architecturally correct renovation.

Good advice does not come cheap, especially considering that all the details relating to the facade, the materials, textures, windows, colours and so on were still not finalised shortly before the work began. The technical and physical reports costed so much money that the architects had no funds left for such considerations anyway.

It was at this point that the town authorities responsible for historical monuments stepped in and employed me as a consultant. There was not much time for philosophical and theoretical considerations - we had to act fast. That may have been what saved Nirwana. The builders had already started to repair the damage to the concrete, to remove the old stucco and to improve

the brickwork, and the necessary documents were drawn up on site in a perfect example of cooperation between the town authorities responsible for historical monuments and the state planning authorities. These took account of the specific physical and technical requirements on the one hand, and of the spirit of Duiker and Wiebenga on the other. I never saw my role as that of a designer, wanting to impose my will on the design of the two original architects, but saw myself rather as a judge, ensuring that the inheritance from my forebears was properly respected.

Given this level of conviction, it was not hard to reanimate Nirwana, to give it new life. The atmosphere amongst the team was always optimistic. The design of the new windows was quickly finalised, the few small differences from the original windows visible only to the trained eye. It was possible to preserve the hierarchy in the composition of the frame details, although controversial given the current guarantee standards and on account of their large size, and despite the much thicker window panes. There were modifications to the wall cladding and the window sills. Originally, these did not project far, resulting in water running down the walls, initially making the walls damp and later resulting in permanent dirt marks. My concern was to ensure that Nirwana would remain clean, even given high levels of air pollution. This was also a consideration when selecting colours and deciding on the stucco, the grain and the paint. Fortunately, there was still enough time to carry out some research and for experimentation. Six months before the stucco was applied to the heat insulation, I had samples made with differing grain sizes, paints and colours. With the colours, we looked mainly at the saturation levels. I had learned from earlier projects involving stucco facades that the strength and brightness of the

paint decrease slightly when exposed to the elements. For the Nirwana samples, we therefore applied not just the required mixture, but also a further three coats, each a little darker. Once all the samples had been exposed for a few months on the roof to the wind and the weather, the test piece with the most pigment and the finest grain proved to be the best option. Later, when the first facade sections were cleaned up, various specialists claimed that this experiment was not valid and stated that the effect was far too colourful. Gradually, however, their criticism died down, and it has now died off altogether.

There have been various changes with respect to the original building. Due to the heat insulation, the building is now some eight centimeters wider on all sides. For the same reason, the windows and the strips at the top are all four centimeters narrower and lower. The metal frames on the original turning windows have been replaced by wooden frames with profiled aluminium cladding on the outside, made to the same width as the metal frames. The iron balustrades on the balconies, previously all different, are all now of a uniform design and made of stainless steel, partly painted with modifications that are invisible externally to meet safety regulations.

Everyone will have their own views about these changes. In my opinion, they do not detract from the essence of the original design. On the contrary, the design of the first high-rise building in the Netherlands has, thanks to its independent steel-reinforced concrete frame, had its life extended indefinitely. For the first time since it was completed 73 years ago, it no longer looks like it has a skin disease.

Vladimir A. Rezvin

Director of the State Museum of
Architecture, Moscow;
Russia

Problems of reconstruction and usage of the NARCOMFIN apartment house in Moscow

The dwelling house on Novinski Boulevard in Moscow (architect M. Ginzburg, I. Milinis and S. Prokhorov) was built in the thirties. It was a result of a very serious work of the authors, who had searched for ways to the new type of dwelling. Numerous projects of communal housing with an absolutely collectivized life turned out to be utopian. There was a need for a new compromise type of dwelling. The dwelling house on Novinski Boulevard, built under the commission of the People's Financial Commissariat of RSFSR (later called the NARCOMFIN apartment house), became the forerunner of the buildings of this type.

The authors strove after the most economic solution of the layout. Thus appeared corridors-communications in two levels, service area in the apartments was reduced; especially in those intended for one family. The whole block of flats was to comprise 50 families.

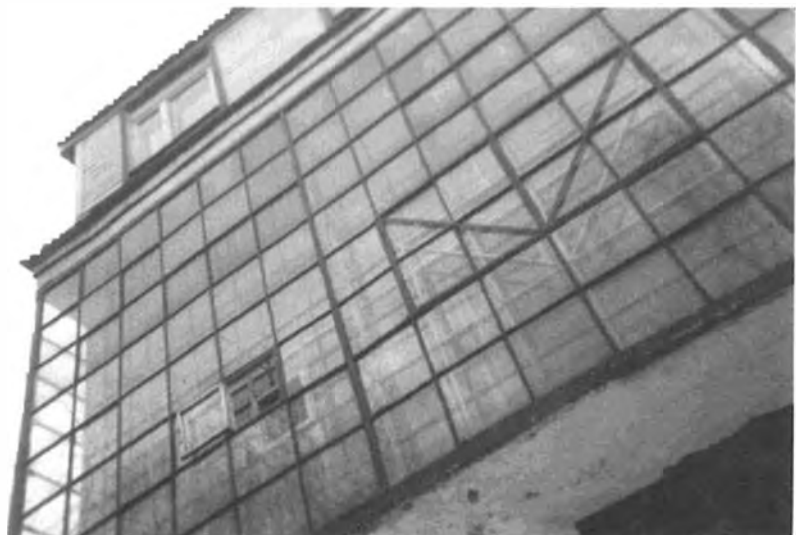
The building was divided in two vertical zones. The upper levels were occupied with small-area flats for 1-2 persons. Flats in the lower levels were bigger, as they had been planned for larger families and had small kitchens. All flats were of maisonette - type. For the purpose of economy the height of some rooms was reduced to 230 cm. There are only three types of flats in the build-

ding. Small-sized flats have an area of 30 sqm. and consist of sitting-room, bedroom and have draught ventilation. Instead of kitchens there was a kitchen-element, resembling a closet. These flats are entered from the lighted corridor, which runs along the whole dwelling part of the building. This corridor appeared because of the difference in heights inside the building. Flats in lower levels have an area of 60

sqm. The layout of each flat is more complicated and comprises lobby, kitchen, bedroom, lavatory and sitting room, the ceiling of which is 5 m high. The bearing elements as well as non-bearing constructions were experimental. Most of the inventions have survived the test of time. But unfortunately, some elements and walls made of slag-blocks are destroyed. Today the monument needs emergency repairs.



NARCOMFIN apartment house, fragment of the side elevation.



NARCOMFIN apartment house, communal block with the upper flat, built later.

There have been attempts to examine all buildings of the complex, but they remained unfinished. In Spring 1990, under the initiative of the Union of Architects, who had sponsored this programme, the Museum of Architecture and the Soviet DOCOMOMO group, a special brigade had been organized. It was the first time the building had been examined according to the most complete programme. The restoration project had been worked out and was approved. Authors that participated in this research are: V.M. Ginzburg - research leader, V.A. Rezin - consultant; L.D. Studenikin, M.YU. Chegodaev, A.P. Melnikov, engineer P.G. Rafaelson, art-critic R.E. Krupnova.

The foundations of the dwelling house are of monolytic ferro-concrete. They are located under the bearing columns of the framework. They had been examined in the beginning of the 1960's. The repeated selective examination had assured the satisfactory condition of the building. There is no deformation of the basis, so the whole volume of the building has constructive stamina. The opened space of the ground floor later was closed. The basis under these later walls was made of crushed brick stiffened with cement.

The ferro-concrete framework is a system of posts and beams. Posts are circular in plan (25 cm in diameter). They form three rows: two exterior and an interior one. The exterior columns bear console beams with the exterior walls working as heat-isolation. They are produced of slag-blocks. Main beams (30x34 and 30x25) are supported by smaller beams (30x10) laid with 0,6 m pace. Unusual planning system and the height difference caused the complicated multi-elemented structure of the building. All ferro-concrete elements are in satisfactory condition, so

the whole 6-storeyed volume is still solid.

Ferro-concrete ceilings of each floor are comprised in the framework of the whole building. Some places are filled with slag-blocks and which are destroyed now and need repair. Exterior and interior walls are produced of slag-blocks which are empty inside (type 'peasant') with flexible armouring in between covered with crushed slag. All walls are covered with stucco. Inner walls consist of the same blocks and covered with fibrolythe panels (5 cm).

Walls need emergency repairs, slag-blocks are being destroyed and are to be replaced. It is a very expensive work, so it is difficult to find somebody to invest money in it.

Windowposts are of a very original design. They are of massive oak, so window-panels can slid back and forth in them. Weatherproofing is designed from thick felt and tarpaulin. Partly, windowposts are of ferro-concrete. Many original windowposts were replaced by the inhabitants, but the existing fragments are in satisfactory condition and might be reconstructed.

The bad condition of all service systems influenced most the catastrophic condition of the building. Today, all service systems are out of use, because they were not repaired for years. The basement is suffering from water, because all water-pipes out of an ill condition. It causes the destruction of the foundations. All service systems must be replaced.

The NARCOMFIN apartment house is known from the solarium on its roof. Authors considered it as recreation area, decorated with flower-beds and good panorama to be seen from. The roof is flat, much is lost. The holes are

occupied with plants. This adds to the destruction of the roof. Metal elements are eaten away with rust. The spiral stairs leading to the second level of the solarium are lost.

The communal building has been reconstructed many times. There were a double-lighted dining room and sports-hall according to the project, but they were lost because of the changes. Particularly all inner rooms had been rebuilt. Instead of the opened verandah of the summer cafe, there had been added a wooden storey, which had spoiled the exterior of the building. Now there is a huge basement floor under the building. The framework, posts, beams and panels are in satisfactory condition. The building might acquire its original look after the removal of all additions.

The restoration project is based on complete renewal of all load-bearing constructions of walls and ceilings according to measurement drawings and research work. Indoor and outdoor walls are to be replaced by new ones. After reconstruction the building might be used as a high-quality hotel for people involved in different arts. The communal building might be used for all service needed. Its central location in the city, sufficient transport, the status of the building as a monument of architecture are to attract architects, artists and businessmen to this unusual hotel.

The NARCOMFIN apartment house, standing in the center of Moscow, produces now a bad impression. All attempts to involve Soviet organizations in investments of reconstructive work failed. It is clear, that we need international efforts to save this outstanding monument of constructivism. It seems that DOCOMOMO might initiate this work.

Forming of the functionalist 'principles in Moscow's architecture at the beginning of the 20th Century

The style 'modern' in Russia is a complex conglomerate of traditions of the preceding stage of architectural development (2nd half of the 19th Century), of new aesthetic priorities in decorative and applied arts, painting, design, which originated in amateur art circles (Abramtsevo, Talashkino). It is a child of philosophical, aesthetic (W. Morris, J. Ruskin) and formal impact of centers of artistic life in Western Europe (Brussels, Paris, Vienna, Glasgow, etc.), creative individualities of Russian architects and architectural thought. The inseparable intertwining of these elements, their changing value with the crystallization of the style, shaped the specific features of the Russian modification of the phenomenon. Although the Russian architects sought to establish a style within Central Europe and Art Nouveau and this trend dominated at the beginning of the 20th Century, it should be noted, that these years witnessed, together with the formation of the modern, the development of a national romantic trend (neo-Russian style, neoclassicism), which used at times the same aesthetic and formal devices. It is this trend that gained priority by the end of the 1900's in terms of contextual (environmental) approach to the environment of Russian cities later to win during World War I a powerful support of national patriotic sentiments. When discriminating between these

two style forming trends in the Russian architecture of the early 20th Century, it should be noted, that, although their aspirations coincided at times, they failed to form an integral synthetic trend in style like, for instance, the Finnish modern. Only in some works of Russian architects do the modern and neo-Russian styles exist as an indissoluble integrity but they are so few in number, that buildings constructed in national romantic style cannot be included rightfully in Russian modern. Hence, the author will discuss only constructions built in Moscow, which follow formal and aesthetic experiments of the Central European Art Nouveau.

The apology of simple, surism

One of the most important and basic elements of ideology of architecture in Russia in the 2nd half of the 19th Century to the beginning of the 20th Century was rationalism which had half a century of history in local architecture by the time the modern appeared.

Expediency and logic of forms, spaces and structures distinguishes many constructions of the Moscow modern, which follow the original credo of rational modern.

At the same time the modern in Russia, while being inherently democratic, became the first style to be oriented to the tastes of the so-called 'third class', i.e. it sought to meet aesthetic and functional needs of the general public.

Bent for simplicity, directly linked with rationalism as one of the philosophical and aesthetic postulates of the modern, finds its implementation throughout the whole period of its development in Moscow architecture. (With sufficient accuracy the period of the modern can be restricted from 10 to 15 years; from 1898 to 1907 the development of the modern dominated Moscow architecture; from 1908 to 1912 the modern receded and can be traced only in some buildings). With rather scanty

finances architect A. Ivanov constructed the facade surfaces of some office buildings (rent house in B. Cherkassky St, 1898-1899, Guskov's rent house, same street, 1902), the lapidary of which is softened only by few 'signs' of architectural decor.

Purism, deliberate ascetism of formal language, trend towards 'erosion' of contrast between architectural treatment of street and yard facades distinguish constructions in later versions of the style in the 1910's (e.g. I. Purishev's and I. Katsman's rent house in Sergiev St., 1912, by architect O. Shishkovsky; V. Panishev's rent houses, 1911-12, by architect A. Ivanov-Terentyev and many other buildings). This group of buildings is characteristic specifically of Moscow and similar modification cannot be found in St. Petersburg. Later seems to have significantly influenced this the substantial difference between Moscow and St. Petersburg versions of constructivism and functionalism. Purism found its most brilliant implementation in the buildings designed by F. Shekhtel (P. Ryabushinsky & Sons Bank, 1903; print shop of 'Utro Rossii' newspaper, 1909; the building of Moscow Merchants Society, 1909).

The above list shows, that formal devices of compositional and decorative purism varied. One can find here facades made as figurative outlines of structure frames with partitions between windows almost similar in magnitude to the height of floors and thickness of columns, emphasis on wall surface with only undecorated windows on it, scarcity of expressive means, use of cheap standard facing materials (e.g. ceramic tiles). The apology of simple in its turn logically lead the architects to simple geometric volumes.

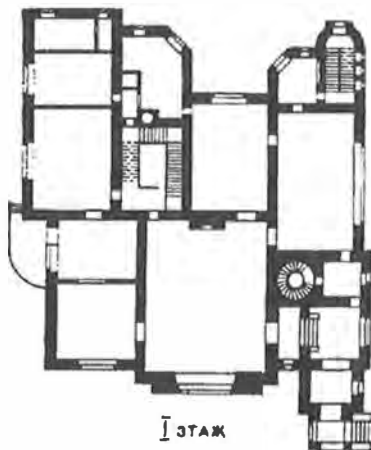
Geometrization of forms

Houses constructed in the Moscow modern style most vividly demonstrate

a shift to simplification of volumes, their reduction to simplest geometric bodies: cube, cylinder, cone, sphere. Already in early works of architects L. Kekushev and F. Shekhtel one can trace a trend towards volumetric design of all rooms on plan which are different in size. This is clearly revealed by one of the earliest of L. Kekushev's projects in the modern style - an unconstructed building for the St. Petersburg Insurance Company in Tverskoy Boulevard (1899). All rooms on the ground floor (four rectangular, one square, one diamond shaped, one oval and a space for inner an stairway) are designed as a volumetric spatial composition. Even more geometrized were the house of Ryabushinsky and Derozhinskaya designed by F. Shekhtel in 1900-1. The composition of these



F. Shekhtel,
Plan of Ryabushinsky's house 1900-1903.



F. Shekhtel,
Plan of Derozhinskaya's house 1901-1902.

buildings can be schematically illustrated with cubes different in size. This helps to demonstrate, that the principle of dynamic equilibrium of intersecting

volumes, later to become an important element of Moscow constructivism, forms the basis of these structures.

Other types of buildings of the modern tended to volumetric geometrization. This trend did not always manifest itself solely in complex volumetric differentiation. On the contrary, a trend towards an integral volume-block is evident in such structures as rent houses and office buildings, banks, hospitals, educational establishments and industrial buildings.

Geometrization involved not only volumetric spatial composition, but facade vocabulary as well. Quite characteristic of the Moscow modern are round-shaped and semicircular windows and doors, keyhole-shaped windows (the simplest composition formed by a combination of a circle and rectangle), big rectangular stained glass windows with, specific to that time, purely geometric checked window patterns. Linear geometric compositions of window cross casements in the modern often become the only means of dividing ever increasing glazed areas.



F. Shekhtel,
Facade of Moscow Merchants Society, 1909

The arrangement of facade planes in the modern increasingly features 'opposition' of geometric forms, i.e. intentional disturbance of facade rhythm, introduction of formally expressed 'pause' so characteristic of functionalism and constructivism of the 1920's. In this respect quite illustrative is a comparison between the facades of the Moscow Merchants Society designed by F. Shekhtel in 1909, if viewed from Novaya Ploshchad and the 'Izvestiya' newspaper building designed by G.



F. Shekhtel,
Facade of the printing office "Izvestiya".

Barkhin (with contribution of M. Barkhin, 1925-27). In both cases the major motif of the facades is to show the interior structures of the building, which are frame structures. The facades are thus treated as intersections of vertical and horizontal lines, the rhythm of which changes only on the top crowning floor. Austere, divided only with thin casements, the entirely glazed vertical of the stairway is the counterpoint of the even rhythm of the two buildings. Both demonstrate similarity of the approaches based on formal geometric counterpoint, which testifies to their genetic relationship.

Free plan

In many respects this thesis is close to volumetric geometrization of forms, as most often it is a free plan that forms its basis. Indeed, the unrestricted imagination of an architect, which in private houses allowed the creation of complex volumetric spatial compositions, was triggered by the work on plan, which is fundamental in an architectural process. Still, a free plan implies not only a free arrangement of main rooms, but, if required, a free transformation of room layout as well, with a minimum significance of load-bearing structures in design. In the age of the modern a free plan is an attribute of many industrial, trade or office buildings. Free plans were generally altered by owners, who divided a building to their needs with light wooden, glass, metal or gypsum partitions. The trend towards transformation of spaces, their 'flow' and integration is closely associated with the concept of a free plan. The possibility

of such programmed changeability emerges in the modern of the 1900's.

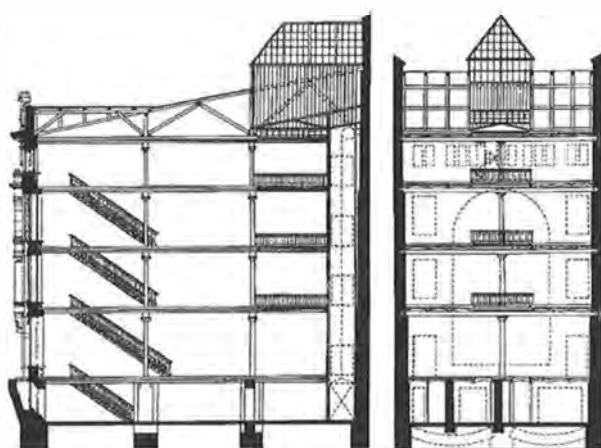
Frame and long bay structures

Although these types of structures appeared before the modern, it was this style that developed them significantly. It was the modern that fully understood skeleton structure as art and used it not only in such functionally unique constructions as greenhouses, winter gardens, skating-rinks and passages, but extended its application to apartment houses, offices and educational establishments. Most often multi-tier iron frames were used (e.g. Arshinov's shop designed by F. Shekhtel in 1899), but the 1900's saw

que long bay glass and iron structure.

Volumetric and band glazing

A change in the role of glazing in creating the image of a construction logically resulted from the application of skeleton structures, which required less building materials for fences and improved illumination through bigger window openings. A clear trend towards changing customary elongated window proportions can be traced in such constructions as a rent house in B. Cherkassky St. (designed by architect A. Ivanov, 1898-1899), the design of V. Rekk's house in Skatertny St. (by architect I. Fomin, 1900) with its vast 'lying' window.



F. Shekhtel,
The iron frames
of Arshinov's trade house,
1899

an increasing popularity of a reinforced concrete frame, the potential of which in terms of form plasticity was being gradually developed. One of the apologists of the reinforced concrete frame early in this century was a young Moscow architect A. Kuznetsov, who in 1914 designed the north building of Stroganov College of Arts and Industry.

Long bay structures also preceded the age of the modern, but it was in its time that their application considerably expanded and they were introduced into everyday life. In addition to vast areas of ceiling structures of tram terminals, factory shops, railroad landing stages, arcades, which were technically needed, glass and iron roofs over hotel atriums, restaurant halls, new sports facilities began to emerge. A dome over the restaurant hall of the Metropol hotel (1901, by architects P. Vishnevsky and S. Galenzovsky with contribution by A. Erikhson) is an example of a uni-

Glass or the 'glazed' surface was the object of the modern's affections. Glittering in the sun the buildings stood with their facades faced with ceramic tiles, offices and shops with their vast windows. Mirror cutting of glass with faceted edge was a favourite technique. On a broader scale this effect was reproduced by faceted volumetric shop windows, an original sign of the Moscow modern. Quite popular was 'blown' salient glass. Pieces of this glass were usually small and were fixed in small squares in the upper part of window frames, which produced similar 'diamond' glittering. A combination of almost all these devices can be found in R. Levisson's rent house designed by architect A. Erikhson in 1901. Its tiled wall surfaces combined with vast windows of the ground floor and glitter of salient glass pieces in the upper part of window frames of the first and second floors.

The modern's enthusiasm about volu-

metric glazing is demonstrated by the windows of the Metropol hotel, unique in their kind with their rounded corners (by architect V. Valkot, 1899) and numerous volumes (most often round and half-round) of winter gardens in Moscow houses. Another type of volumetric glass structures were skylights over inner stairways and glass roofs over cafe and restaurant atriums. These elements were often included in the general structure of the exterior of buildings together with band glazing, thus anticipating discoveries of Moscow functionalism and constructivism in this field.

Utilized flat roof terrace

The appearance in Moscow in the 1910's of a number of flat roofs prompted the thought of how to use them. One of the first roofs to be adapted for a garden cafe was the roof of a house in Tverscoy Boulevard, which later accommodated The Chamber Theatre. But one of the most famous examples of utilized roofs in Moscow is the roof of a house for low-income tenants designed by architect E. Nirnsee (1912). It was the highest building in Moscow before the October Revolution. The roof of this 'Moscow sky-scraper' accommodated a cafe and a cinema. The area of the roof was enormous and it commanded a complete panorama of Moscow.

Polifunctional complexes

Although a brief period of the modern did not expand the typology of constructions, significant changes occurred in the field of function. Combination of functions in one building is observed increasingly often. In constructional engineering complexes emerge which provide services. Most often they are intended for workers and low-income employees. One of such complexes was the house with free apartments built by the Bakhrushin brothers and designed by architect K. Gippius (1900-3). It had rooms for work, halls for children to play, two schools and the church of Nikolas Miracle Man. Besides, the yard of the house had an equipped sports ground and children's playground.

Polifunctionalism early in this century is

also characteristic of many entertainment constructions. Conference rooms, rooms for various clubs combined with theatre and concert halls in the so-called people's houses, a prototype of the worker's clubs of the 1920's (e.g. Vvedensky people's House by architect I. Ivanov-Shits in 1903). Hotels were also often polifunctional. Hotel Marseilles located in Grachev's house (by architect E. Rosen, 1901) had shops and exhibition halls on the first two floors. The Metropol Hotel can be regarded as a protoidea of a cultural center. In addition to rooms it had apartments for employees, restaurants, a cinema, exhibition hall, a tea room and shops. It was originally planned to have a giant theatre. (The idea was not implemented).

When talking about a typical combination of functions in buildings constructed early in this century it should be noted that this period saw an intensive crystallization of the principle of vertical zoning, which found its rather consistent implementation in the appearance of the central most busy streets of the city. The ground floor or several lower floors usually accommodated shops, which were followed by offices (1st-2nd floors) and apartments on the upper floors. The top floor was considered less comfortable and was generally rented to low-income tenants. Of course, it would be wrong to state that such zoning was discovered by the modern. Such complexes had been built since the 1850's. But it was the modern with its original 'cult of trade' that emphasized shops, visually exposed vast glass windows, which gave a qualitative difference from brick walls of the apartment floor.

Natural morphology

Interest in the world of nature is specific to stylistic experiments of the modern. This logically comes both from the philosophy of positivism, one of the ideological sources of the modern, and its neoromantic nature. The author will not illustrate this thesis with typical ornament patterns and decor of the modern. Let us confine ourselves to Tarkhova's rent house designed by architect G. Makaev (1903). Its roundshaped cor-

ner bay window is decorated with horrifying bent stems of giant plants, which make the whole construction look unstable. They produce an effect of vibration, kinetic motion. Still, biologism, imitation of organic structures is peculiar not only to details, but to whole constructions built in the style of Moscow modern. In this respect the works of two very interesting Moscow architects V. Dubovsky and A. Zelenko are the leaders. The facades of V. Dubovsky's buildings are usually inhabited with various creatures, both human beings and animals. Some parts of the composition 'grow' making the facade surface, which does not readily 'yield' to dynamics, look dynamic and produce an impression of unstable equilibrium (e.g. Meletin's rent house, 1911). These features distinguish a stylishly unique Kindergarten, which belonged to the Settlement Society (by architect A. Zelenko, 1908). A real wonder of Moscow bioarchitecture was Pfeffer's dacha in Sokolniki, which unfortunately has not survived. Mostly made from wood this house demonstrated a free plan. Its main rooms of different irregular forms grouped around a big hall illuminated with light coming from above. The interior featured load-bearing structures of ceiling and inner balcony made from unworked trunks with knots, which formed the balcony's fence. Located under it the fire-place looked like a cave in rocks. All furniture specially designed for the dacha was spiritualized and resembled fairytale forest creatures.

Buildings designed by A. Zelenko can definitely be attributed to emerging expressionism. Remaining primarily a German cultural phenomenon expressionism did not develop in Russia into a distinct stylistic trend, but its aesthetics seems to have been used indirectly by architects in the 1920's.

Garden cities and settlements

The very end of the 19th Century was marked by the emergence in Great Britain of new city planning ideas, the garden cities. It seems to be a major contribution of the age of the modern to city planning linked in many ways with aesthetic, philosophic, artistic and

social ideas of the period in question.

By 1910 garden cities and settlements began to emerge in Russia. 'Czarsky Les' near the city of Riga, 'Novaya Warshawa', 'Tavrido' and 'Favorito' near St. Petersburg, Prozorovka and Nikolskoe near Moscow, and the garden settlement 'Khodynka' in Moscow are the best known.

The ideas of garden cities considerably in Russia early in this century influenced the emergence of city planning architects. The projects of such famous masters of architecture as V. Semenov, I. Fomin, V. Vesnin, A. Tamanyan, L. Ilyin gradually ousted the works of unknown land surveyors. At the same time the idea of garden cities drew the attention of the Russian public to the necessity of the development of uniform population distribution systems in the suburbs of big cities. Initiated in the 1910's the idea of an integrated system of Moscow suburbs was further implemented in the 1919 project, which suggested a number of garden cities around Moscow.

Summing up the discussion of major innovations in architecture which originated and spread widely within Moscow modern, we should emphasize once again its importance for further development of architecture. As was illustrated it engendered all major principles of functionalism (e.g. Le Corbusier's five famous principles of modern architecture: 1. supporting columns; 2. garden roofs; 3. free planning; 4. band windows; 5. free facade; a trend towards expressionism surfaced, which is vividly demonstrated by the natural morphology of some Moscow buildings. One cannot ignore a social aspect, which was gaining prominence in architectural practice. It manifested itself in polifunctional complexes for low-income tenants and had a different planning and volumetric spatial design anticipating the planning of microdistricts in the 1920-30's. It can be traced in garden city and settlement designs aimed to ease the life of low-income population by providing it with comfortable and cheap housing. A broad scope and variety of relations

between architecture of the age of the modern and of the period that followed in the development of the current trend in architecture, which have been discussed in this paper within the Moscow context, prove that the emergence of many basic principles of new architecture had taken place within the framework of the modern and, hence, one has all grounds to define it as the initial stage of the current architectural process.

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2. A.K. Krasovsky. *Grazhdanskaya arkhitektura*. SPb., 1851 S. 5 (A. Krasovsky, Civil Architecture. Published in 1851 in St.Petersburg p.5).

3. Maria Nashchokina. Prototypicalism in Moscow's Architecture. *DOCOMOMO Conference Proceedings* (First International Conference, Sept. 12-15, 1990), Eindhoven, 1991 pp. 149-151.
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DOCOMOMO Council

Excerpts of the Minutes of the second meeting
18 September 1992

Present: Mabel Scarone (Argentina),
Luc Verpoest (Belgium),
Anna Beatriz Galvão (Brazil),
Penio Stolaru (Bulgaria),
Dalibor Cizek (Croatia),
France Vanlaethem (Canada/Quebec),
Vladimir Slapeta and Elena
Szolgayova (Czecho-Slovakia),
Nils Ole Lund (Denmark),
Karin Hallas (Estonia),
Maija Kaijramo (Finland),
Gérard Monnier (France),
Wolfgang Paul (Germany),
Andrea Giacomacatos (Greece),
Andras Hadi (Hungary),
Shane O'Toole (Ireland),
Maristella Casciato (Italy),
Janis Krastins (Latvia),
Morta Bauziene (Lithuania),
Birgitte Sauge (Norway),
Andrzej Olszewski (Poland),
Boris Kirikov (C.I.S.),
Stane Bernik (Slovenia),
Lluis Hortet (Spain),
Eva Rudberg (Sweden),
Dirk Baalman (the Netherlands),
Christopher Dean (United Kingdom),
Hubert-Jan Henket (chairman
DOCOMOMO International),
Wessel de Jonge (secretary
DOCOMOMO International)
Absent: Representative from Switzer-
land.

Welcome

Henket welcomes everybody in the Council Meeting and expresses his enthusiasm that so many countries are present again at this second meeting of the DOCOMOMO Council. After the somewhat open-ended discussions at the first meeting, in Eindhoven, now a larger number of countries show their commitment by being represented in this second gathering.

Also, some important decisions will have to be made with respect to the organisational and financial structure of DOCOMOMO as well as its working plan for the next two years.

Council members

The council members are registered as stated above. The members are either the national representatives themselves or have been appointed by their national working party to take their place for the occasion. Cizek takes the place of Laslo in his unexpected absence.

In view of the division of the Czecho-Slovakian state from January 1st, 1993, Slapeta asks permission to admit Szolgayova as a voting member to the Council, representing Slovakia, which is accepted

1. Third International DOCOMOMO Conference

- 1.1 Three countries express their interest in organising the next international conference in September 1994: Italy, the United Kingdom, and Spain.
- 1.2 Casciato again confirms the great interest of the Italian group in organising the conference. Italy therefore withdraws its candidacy for 1994, but proposes to have the 1996 conference in Rome with technology as a main theme but states that organizational problems appear to be complicated to be solved in time.
- 1.3 The UK stated its interest in organising the next conference. Dean indicates that the financing of the event remains unclear. The UK working party would like to dedicate the conference to education.
- 1.4 Spain announces its interest in organising a Third DOCOMOMO Conference on current architecture and the concepts of modernity in the past, in Barcelona. Hortet apologizes for being late with his proposal. The Mies van der Rohe Foundation is prepared to take principle responsibility for the event. Henket proposes to accept Spain's candidacy on the condition that more details will become availa-

ble soon and will be agreed by the Executive Committee.

- 1.5 The Council votes for Spain, with 19 votes for Spain and 8 votes for the UK, as the host country for the Third International DOCOMOMO Conference in September 1994.

2. Future location International Secretariat

Henket informs the Council that no country has announced its interest in hosting the International Secretariat of DOCOMOMO, except the Netherlands. Again the chairman invites any country interested to say so, but no other countries announce their candidacy.

The Eindhoven University of Technology will therefore remain the location for the International Secretariat for the next two years.

3. Executive Committee

Henket and De Jonge have announced their candidacy as chairman and secretary of the Executive Committee; no other members have done so.

Henket (chairman) and De Jonge (secretary) are unanimously re-elected in the Committee.

Provisionally, Hortet will be the third member of the Committee as a representative of the country that organises the next conference.

4. Financing

The financing of DOCOMOMO International has been discussed during an extra meeting in the evening of September 16, 1992, where most national representatives have been present. Henket repeats the main principles of a proposal how to deal with finance that resulted from that meeting. In short it is proposed to individuals and institutions, that could be reduced for certain countries. Additional financing for the Newsletter will be sought through sponsoring.

It has been decided to form a smaller group to prepare a proposal for this, including the ideas put forward.

O'Toole, Dean, Lund, Casciato and Henket will participate in that group. Quick action is necessary. The group (see 5.10) will develop a proposal to be sent to the national representatives before November 1st, 1992. National representatives are requested to sound opinions on the matter in their country and react within one month. All countries are explicitly requested to answer the International Secretariat, whether agreed or not, since otherwise it will be unclear if the message has been received at all (we still face mail problems with some countries).

5. International Specialist Committees

- 5.1 In the future, more activities of DOCOMOMO International will be carried by its members, while the International Secretariat will remain responsible for communications and Newsletters as before. This is being done to make a better use of the available expertise amongst our members, but also to reduce the workload of the International Secretariat. The International Specialist Committees (I.S.C.'s) are to be established to deal with specific issues within the field of DOCOMOMO.
- 5.2 The I.S.C.'s are requested to develop proposals concerning the issue for which they are in charge. No decisions can be made by them, since this remains the responsibility of the Council.
- 5.3 The expenses of the I.S.C.'s will not be financed by DOCOMOMO International, but by the I.S.C. itself.
- 5.4 The chairperson of an I.S.C. will be responsible for all matters concerning the I.S.C., including financing, contents, timekeeping and communications through our Newsletters.
- 5.5 Not all countries will have to be represented in an I.S.C. Its members are expected to be experts in the issue concerned and are expected to take the various

points of view in other member countries into account.

- 5.6 All member countries are requested to appoint before November 1st, 1992, one corresponding member for each of the I.S.C.'s that will be established. This way, communications of national opinions to the experts in the I.S.C.'s will be guaranteed.

6. International Specialist Committee on register

Henket reads the "proposal on the DOCOMOMO register", Dessau, 18 September 1992. With respect to the period, the criteria for modernity, categories and the I.S.C. on Registers, the document as mentioned is unanimously accepted.

- 6.1 As members of the I.S.C. on Registers the candidacy of Febre (Spain), Baalman (the Netherlands), Verpoest (Belgium), a representative from Italy [for which Clementina Barucci has been nominated by the Italian working party; letter [15.10.1992], Powers and Dean (both United Kingdom) and Monnier (France) has been announced. Dean steps back in favour of Powers. All others are unanimously accepted by the Council. Monnier is voted chairman.
- 6.2 All working parties not represented on the Committee are requested to appoint a corresponding member on Registers before November 1st, 1992 (see 6.5 & 6.6).
- 6.3 The I.S.C. on Registers will propose a technical elaboration of register fiches in June 1993. The member countries are requested to edit their national register according to this proposal.
- 6.4 A first chapter of national Modern Movement register should be available from all countries before January 1994. The I.S.C. on Registers will compose a preliminary proposal for an international Modern Movement register on the basis of these, to be available at the next international conference.

7. International Specialist Committee on Technology

- 7.1 De Jonge briefly introduces the concepts for an international research program on Modern Movement technology and restoration techniques, based on a CIAM inquiry of the late 1930's. It will be too early to establish an I.S.C. on Technology already.
- 7.2 Urbanik from Poland and Brenne from Germany already expressed their interest. Delegates from France, Italy and the United Kingdom announce membership of experts from their country. Names will be given as soon as possible.
- 7.3 Henket proposes to establish a preliminary I.S.C. on Technology, chaired by De Jonge, which is unanimously accepted. A definite I.S.C. on Technology will be installed at the next International DOCOMOMO Conference.

8. International Specialist Committee on Education

- 8.1 Henket invites Cooke to explain her ideas for this group. Referring to her lecture, this is briefly done. Cooke indicates that it will be too early to establish an I.S.C. on Education now.
- 8.2 So far, experts from Argentina, Brazil, the Netherlands, Switzerland and the United Kingdom announced their intention to join a preliminary group. Names will be given as soon as possible.
- 8.3 Henket proposes to establish a preliminary I.S.C. on Education, chaired by Cooke, which is unanimously accepted. A definite I.S.C. on Education will be installed at the next International DOCOMOMO Conference.

9. International Initiative for the WUWA Estate

- 9.1 Monnier introduces the Council to the proposal of Bernfeld to establish an International Initiative for the WUWA Estate in Wroclaw, Poland. The aim will be to survey possibilities for restoration of the estate as an international effort.

- 9.2 Delegates from Italy, Hungary, Czecho-Slovakia, Poland and France announce the involvement of experts from their country. Names will be given as soon as possible.
- 9.3 Olszewski points out that much expertise is already available in Wroclaw. He suggests to involve Urbanik and Kononowicz of the Wroclaw University of Technology.
- 9.4 Verpoest would like to get more information, since this initiative could be linked to a similar activity in Belgium (Cité Moderne, Victor Bourgeois).
- 9.5 De Jonge says that the work of the I.S.C. on Technology might contribute to the initiative, since the CIAM inquiry was strongly based on Modern Movement technology in Poland.
- 9.6 Henket proposes to accept the proposal for such an initiative, to be coordinated by Bernfeld and taking into account the remarks made, which is unanimously approved by the Council.

10. Cooperation with Icomos

- 10.1 Icomos has made a proposal for cooperation with DOCOMOMO, dated 18 september 1992, that has been explained by Van Nispen during his address.
- 10.2 Henket discussed the matter with Scarone, who has been closely involved in Icomos activities, and formulated a 'proposal for cooperation between DOCOMOMO and Icomos', dated September 18, 1992, that he reads to the Council. The proposal suggests a limited cooperation between Icomos and DOCOMOMO International. In practice, the cooperation will concentrate on the MoMo register for the time being. National working parties will not be involved in the agreement.
- 10.3 Henket proposes that the new Executive Committee will compose a draft agreement, after consultation with Scarone. This draft will be sent to the national

representatives. These are requested to sound opinions on the matter in their country and react within one month. All countries are explicitly requested to answer. This way the working parties will have the opportunity to discuss the draft on a national level.

- 10.4 Due to the importance of the matter a two-third majority will be requested

11. DOCOMOMO Award

- 11.1 Monnier proposes to award accomplishments achieved in the field of DOCOMOMO activities, particularly with respect to positive results in actual conservation of parts of the Modern Movement heritage. This could be done with an exhibit like the one produced by the UK group and by publications.
- 11.2 Hortet suggests to involve the EEC for funding. Scarone warns for centering too much on a European context.
- 11.3 Henket proposes to develop a concept together with Monnier. This proposal is unanimously accepted.

12. War in former Yugoslavia

After proposal of Slovenian delegate Bernik, the Council votes unanimously to send a letter of its gravest concern about the loss of lives and damage to the cultural monuments in the countries of former Yugoslavia, to the Secretary General of the Council of Europe and the Director General of UNESCO.

13. Final remarks

All delegates express their appreciation of the Second International DOCOMOMO Conference and particularly thank the German organisers. The Executive Committee is thanked for its work of the last two years and the constructive proposals which have been prepared for this Council Meeting. Many delegates mention specific aspects of the conference as being highly appreciated: quality and diversity of the presented information (Sweden, Canada), its stimulating and inspiring atmosphere (Belgium, Latvia, Norway), the experience of the interna-

tional context (Brazil, Bulgaria, Estonia, Latvia, Lithuania). Lund says that the disadvantage of having so many lectures was fully compensated by the great discussion on Thursday evening.

Hortet expresses his enthusiasm for organising the next conference. German delegate Paul says that now he knows that job is difficult and wishes the Spanish group all success. Kirikov hopes to have the conference once in the C.I.S. All are looking forward to the next meeting.

With respect to the work of DOCOMOMO International, O'Toole says he's happy that the organisation will remain simple.

Scarone hopes that the amount of active working parties in South America will increase over the next two years.

Delegates from Estonia, Croatia, Bulgaria, Latvia and Lithuania hope to achieve some results over the next two years, to establish a working party and to contribute to the next conference.

Van Laethem intends to increase activities in Canada and to cooperate with possible future groups in other parts of Canada and the USA.

Casciato expects that the commitment of Italy will increase and that her country will be a candidate for the 1996 conference.

Kaijramo says that, two years after the founding of DOCOMOMO and so many drastic changes in the world and despite the failure of Modern Movement architecture in so many respects, the concept of the Modern Movement must live on. As all other delegates, she's looking forward to the next time.

New York, 19 October 1992

Wessel de Jonge,
Secretary DOCOMOMO International

APPENDICES

Exhibitions

'Modern architecture restored'

'A chair making history'

'Buildings of the Modern Movement in Slovakia'

The new movement;
progressive architecture in the
Netherlands, 1924-1936'

'baudenkmal bundesschule bernau'

Excursion

Dessau
Magdeburg

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Press release

Dennis Sharp

Royal Institute of British Architects, London;
United Kingdom

Modern architecture restored

This exhibition has been devised as both a celebratory and a didactic one. Created as part of the Building Centre's 60th Anniversary celebrations, it is also the first documentary exhibition compiled by the British working group of DOCOMOMO.

The exhibition's purpose is threefold: to feature modern buildings in need of conservation, to examine examples of buildings where conservation work has begun or is proposed, and to highlight good examples of conservation work as models for others to emulate.

The organisers have drawn upon well-known examples of Modern Movement architecture - from early pioneer buildings such as the TB Sanatorium, Paimio, Finland (1929-33) by Alvar Aalto, and the Bauhaus, Dessau (1925-26) by Walter Gropius, to the more recent and controversial work of architects such as the late Ernő Goldfinger and the original LCC's Architect's Department. Each building selected for the exhibition is featured on a panel, which includes familiar images as well as more recent documentary photographs and general data together with details relating to the technical aspects of restoration programmes undertaken or proposed.

This ambitious exhibition reflects a new attitude to the major monuments of modern architecture - one which places them alongside other acknowledged listed buildings and historical examples from other epochs. Indeed, many of the examples shown are now incorporated in listed buildings programmes and their architectural worth is widely recognised. This assimilation and evaluation process began in the mid-1980s.



'A chair making history'

Exhibition in the
Dessau Bauhaus,
22.8. to 25.10. 1992

The first designers of tubular steel furniture were also architects: Mart Stam, Gerrit Rietveld, the brothers Heinz and Bodo Rasch, Ludwig Mies van der Rohe and Marcel Breuer. Their different concepts of the function of building and the role of architecture in the process of social change are reflected in their furniture designs. As early as the 'Die Wohnung' exhibition in Stuttgart, the contrast was visible between the aesthetically expressed material economy of Ludwig Mies van der Rohe, which with the rounded curves of his pendent chairs expressed a dance-like form in space, and the material asceticism of Mart Stam, who tended towards minimal social existence.

There were five distinct types of chairs, where the protagonists of the modern history of chairs and their earlier rivals are clearly contrasted. Many exponents do not shine in museum-like sterility, but are visibly used: the signs of people sitting in them are a confirmation of the

trust in the quality of their seating comfort. Slides of town plans, sketches and buildings by the architects provide a network of visual connection lines and internal links. And just as in the foyer, reconstructions of the classical furniture invite the visitor to sit on them. A group of Gerrit Rietveld's low 'beugelstoelen' (1927/29) have the same effect as a children's carousel, showing the struggle between tubular steel and conventional frame chairs with sculptural origins: four-legged tubular frames with soft, organic lines bearing bent, coloured wooden plates forming the seat and the back.

His 'zig-zag-stoel' resembles a lightning flash made up of four trapezoidal surfaces. A chair structure comprising right-angled surfaces that enfold the seated person conforms to the design principles of the de Stijl artist group. When tipped to a horizontal position, a side support acts as a table. Despite the simplicity of its materials, the seat claims its own space, carves itself a private niche in the room.

This expression of emphasised individuality is in contrast to Stam's pendent chairs, a strict, minimalist parade headed by a rediscovered prototype that featured at the 'Der Stuhl' exhibition in Frankfurt in 1929 along with a series of Rietveld's 'beugelstoel', a pendent chair by Mies van der Rohe and the

four-legged B5 tubular steel chair by Marcel Breuer.

A group of chairs comprising varied elements is dedicated to the Rasch brothers, who in their 1928 book entitled 'Der Stuhl' characterised their work through their research into anatomy and the implications for their designs based on the organic movement of the human body. This group is all about variety, rather than principles. A simple chair demonstrates the stability of convex and concave wooden plates. The noble 'Sitzgeiststuhl' is made of black wood with anthropomorphic forms to mould to the back and to the backs of the knees. Next to it is a veteran slatted folding chair, the angles of the seat and back more comfortable than today's upholstered chairs.

The nine chairs by Mies van der Rohe are particularly tempting, the exclusivity of their open design emphasised in a glass model. Upholstered in leather or cowhide, with the misical form of the double runners that form the seat and the armrests or a coloured version of the narrow steel strips that replace the tubing, the chairs cannot deny their connection to the classical lines of beauty. Sitting becomes a human luxury.

A number of tipped-up chairs form a Wassily wall, reflecting the scale and space dividing features of Bauhaus architecture.



Stefan Slachta

Bratislava;
Czechoslovakia

Buildings of the Modern Movement in Slovakia

At the beginning of our preparations for the exhibition the most important question appeared - is it possible to speak of Slovak functionalist architecture at all? This question arose from the surviving knowledge of the only existence of Czech functionalism within the First Republic, which has up to now been publicized both by exhibitions and publications as well. First of all, the works of the Czech architects B. Fuchs, J. Krejcar, J. Visek, J. Polásek and others started to be well-known also in Slovakia. Within the postWar period the names and works of the Slovak architects, at that time the graduates of various foreign schools, disappeared from the history of our architecture. The first postWar generation of Slovak architects, theoreticians and historians disregarded their own personalities of the period between two wars due to the ecstasies of socialist construction. Apart from several exceptions, those left from the preWar generations were forgotten or shifted out of sight into the area of reconstruction. We started to bring the names of the architects F. Weinwurm, A. Balán, A. Szalatnai-Slatinsk'y, J. Tvarozek, D. Quastler and others back to the memory only very slowly. The lots of F. Silberstein-Silván, J. Konrád, L. Becher, E. Spitzer, A. Pinkas, J. Nowotn'y, A. Skuteck'y, I. Geyduschek, V. Holes, A. Kohút, Ch. Ludwig, O. Singer, T. Lukovich, E. Steiner and others are up to now unknown and lost. They have left a lot of interesting works in Slovakia, many of them being now forgotten and destroyed. The democratic process of November 1989 has removed all the

obstacles in connection with the research and learning of this important chapter of Slovak architecture. The exhibition has not yet given all the answers and does not reveal what has

been hidden until now. Nevertheless, the exhibition is the answer to our introductory question claiming that we can and we must speak also of Slovak functionalist architecture.



The new movement; progressive architecture in the Netherlands, 1924-1936

Johannes Duiker (1890-1935) was one of the outstanding and leading figures in the New Movement and exemplary for the other aficionados of the 'Nieuwe Bouwen'. It is therefore a strange fact that no major study had been done on his work. This exhibition focusses on him and his closest colleagues Bernard Bijvoet and Jan Gerko Wiebenga.

Johannes (Jan) Duiker did not live long enough to leave behind an extensive body of works. Barely forty-five years old, he was taken from the society for which he as an architect had striven so hard. His early death may be taken as one of the reasons for his comparative obscurity on an international level. But there his modesty played a part too. Duiker did little campaigning for his own work.

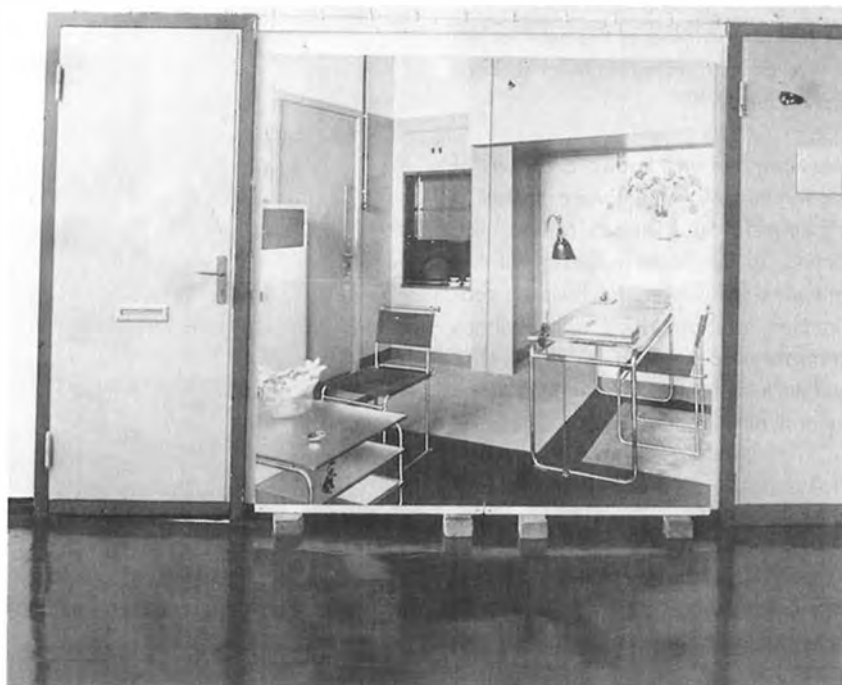
Jan Duiker was first and foremost a socially-minded person, who deployed his architectural talent in writings and designs for a better and above all a healthier world. His design welled from a desire for hygiene, light and air - and form simplicity. With these he took up a stance against aesthetic movements, whether modern like 'De Stijl' or historicist like the 'Delft School', or - and most particularly - the 'Amsterdam School'.

From the moment when he and Bernard Bijvoet won a competition for an old age home in Alkmaar (1917) Jan Duiker was involved in the hygiene movement campaigning for healthier housing for those 'at the bottom of the social ladder'. It was more health than

wealth which Duiker saw as his objective - that and a functional society (the 'machine age'). Like many other modern architects of his day it was the packet steamer and the aeroplane that to him exemplified Modern Architecture: objectivity, speed and change as well as light, air and openness; crystal-line clarity, a society founded on sense, intelligence, rationality and solidarity. If I describe Duiker as one of the leading representatives in his day of a non-aesthetic movement, I should add this was deliberate on his part, and was backed with the necessary knowledge. For indeed, Johannes Duiker had, together with future partner B. Bijvoet, studied architecture at Delft Polytechnic, where they enjoyed a thorough, historically enlightened education, firmly founded on a knowledge of modern technique, in the sense too of design technique. The study of proportions, relationships between volumes, masses, planes and lines was paralleled by knowledge of products. The relationship between details and the totality - symmetry, so essential in (striving after good) architecture - was established

not by instinct but rationally. A true link was provided between the proportions of the bricks and the wall to be built with them.

Although during his architectural training Duiker held Hoffman in higher regard than Berlage and Wright, these two giants were later to exert an influence on the initial works by Bijvoet and Duiker. In their first major design - the State Academy in Amsterdam - Wright's Unity Church is very literally present in the interior. The plastic quality of the first design for a technical training school at Scheveningen still exhibits the powerful influence of Wright's work, while the Kijkduin house in The Hague would fit admirably in Chicago's Oak Park. But with the designs for the market gardener's house in Aalsmeer and the laundry at Diemen, Duiker and Bijvoet struck off unequivocally along new paths, having first assimilated in their work the developments of the new 'De Stijl' group. As a major adherent to the 'non-aesthetic' ideas of Modern Architecture, however, Jan Duiker was perhaps also De Stijl's principal antagonist.



Klaus-Jürgen Winkler

School of Architecture Weimar;
Germany

'baudenkmal bundesschule bernau' Hannes Meyer, Hans Witter 1928-30

Construction monument - Trade union School Bernau - Renunciation of the legitimate heir and new cultural struggle for protection of the 'classic building of the early Modern Movement'.

The building of the former trade union school of ADGB Bernau is a main monument of the Modern Movement in Germany. Today the demand for restoration of the building according to the preservation of monuments exists mainly after the political turn of events.

The trade union school of ADGB Bernau was a work of the German Labour movement of the Weimar Republic. This first boarding school was used for the education of trade union officials. The building should be a demonstration for the feeling for living of the new society of workers and an example for modern architecture.

Therefore five well-known architects of the Modern Movement were invited to a competition. Hannes Meyer, the director of the Bauhaus Dessau at that time was the winner. He built the construction in cooperation with Bauhaus members from 1928 to 1930. The architectural form can be related to the rational functionalism.

The society 'Verein Baudenkmal Bundesschule Bernau e.V.' founded in 1990 assumed the function of getting tangible results for the building. The hope exists for a discussion by DOCOMOMO on the problems of restoration and general support.



Gewerkschaftsschule Bernau 1928-1930



Excursion

Saturday September 19th, 1992
Post Conference Tour

Visits to the Bauhaus buildings in Dessau

Bauhaus building: Built by Walter Gropius in 1926. Construction of concrete and brickwork. Transparency by wide glass walls.

Combination of workshop wing, flat building with aula, stage and dining hall, bridge with administration and architectural office, boarding school for students as well as the vocational school. Comprehensive restoration in 1976.

Master houses: Housing estate for the Bauhaus masters according to design of Gropius. One detached house for the director, three semi-detached houses for the other masters. The construction work was started in 1925.

Labour office: Semicircular steel skeleton flat construction with two storey office building. Constructed 1928/29 according to design of Gropius after internal competition with B. Taut, H. Häring and W. Gropius.

Housing development in Törten: From the design of W. Gropius 1926/28. In total 3 basic types of two-storey houses with different variations were built. Rationalization of the construction process and experiment with industrial construction methods.

The centre is formed by the Konsum-building consisting of a shop and five storeys of flats above. Near by the house of Muche and Paulick as well as the house of Carl Fieger. All houses have changed considerably.

Gallery flats: 5 gallery flats were built according to design of H. Meyer in

1930. 10 blocks were planned within a housing development with different buildings. 18 flats are in three-storey brick construction. Each flat has three

rooms, a kitchen and bath. The houses were not altered fundamentally up to now. The tenants have been living in their flats for decades.



Excursion

Saturday September 19th, 1992
Post Conference Tour

Visits to Modern Movements neighbourhoods in Magdeburg

Garden city Reform: of Bruno Taut
1912 and 1921

Garden city settlement 'Reform' in
Magdeburg South-East, built in two
periods 1913/14 and 1921 by Bruno
Taut for the workers building society.
The settlement consists of two-storey
row houses with bright colours emitting
elemental freshness. The rigid rows of
houses were dispersed by back placed
houses, while the front buildings were
colored.



Hermann Beims Settlement: built by K.
Rühl, C. Gauger and Göderitz between
1924 and 1929. Different influences
can be seen by architects of this time.
Multiple dwelling units were arranged
in long and straight lines. The facades
were designed simply. In the back
living yards were provided and facing
the yard balconies and loggias. The
streets were arranged staggered and
were projected; shops were provided.



Schedule of the Conference Programme

Wednesday September 16th, 1992

Plenary Session

Opening Session	morning
Keynote Lectures	morning
plenary session	afternoon
Dinner in the Bauhausmensa	evening

Thursday September 17th, 1992

Parallel Working Session

Session 1 Neighbourhoods	Session 3 Documentation and Registration	morning
Session 2 Complex of buildings	Session 4 Technology	afternoon
Presentation of the Exhibitions Bauhaus stage		evening

Friday September 18th, 1992

Parallel Working Sessions

Session 5 Architectural history	Continuation of Session 4	round table discussion National Register	morning
	DOCOMOMO Council Meeting		afternoon
Closing Session in the Bauhausaula			afternoon
Cultural Program in the Bauhausaula			evening
Informal gathering and dinner in the Bauhausmensa			evening

Schedule of the Conference Programme

Wednesday September 16th, 1992

08:30 Bauhausfoyer
Reception and registration

Bauhausaula
Opening Session
(Chairman Wolfgang Paul)

09:30 **Opening and welcome**
Dr. Wolfgang Paul,
Chairman DOCOMOM Germany
Prof. ir. Hubert-Jan Henket,
Chairman DOCOMOMO International
Dr. Michael Pletsch,
Ministry of Fed. German and Europea Affairs,
Sachsen-Anhalt
Dr. Jürgen Neubert,
Lord Mayor of Dessau
Nic Tummers,
representative Council of Europe
Prof. Dan Bernfeld,
consultant for Urban Affairs
to the Council of Europe
Leo van Nispen tot Sevenaer,
director ICOMOS

10:30 **Coffee Break**

11:00 **Memories of the Modern Movement**
Prof. Hubert Hoffmann, architect; Austria
Jan-Piet Kloos, architect; the Netherlands

11:30 **Keynote Lectures**
DOCOMOMO: some ideas about the future
Hubert-Jan Henket,
Chairman DOCOMOMO International
Dessau-Törten:
A study about its cultural development
Rolf Kuhn, Bauhausdirector

12:30 **Luncheon**

14:00 **Plenary session**
(Chairman Hubert-Jan Henket)

The Functionalist dwelling; successes and failures
(Model Werkbund estates, case study)

Jadwiga Urbanik,
Wroclaw University of Technology; Poland

Concepts and conflicts relating to the renewal
of the Reform settlement in Magdeburg
Winfried Brenne architect, Berlin; Germany

The phenomenon of 'Modernity'
in domestic architecture
Erhard Schütz, ETH Zürich; Switzerland

The essence of the Modern Movement
Ben Rebel, University of Amsterdam;
the Netherlands

Conserving the 20th Century architectural heritage
Laura Tuominen, consultant researcher
Ministry of Environment Helsinki; Finland

Swedish Modern Movement architecture from
the 1930's; its characteristics and how to
protect and take care of it.
Eva Rudberg, Museum of Architecture Stockholm;
Sweden

Modern Movement documentation as a central
resource for architectural education
Ivor Richards, Catherine Cooke,
University of Wales and the Open University;
United Kingdom

18:00 **Reception**

19:00 **Dinner in the Bauhausmensa**

Thursday September 17th, 1992

Bauhausfoyer

08:30 **Reception and registration**

Bauhausaula

Session 1 Neighbourhoods

(Chairman D. Baalman)

09:00 **Rotterdam 1920-1940, case studies on urban conservation**

Rob Docter Ministry of Culture, Den Haag; the Netherlands

The Carl-Legien estate by Bruno Taut in Berlin-Prenzlauer Berg: the relevance of a large scale city-planning concept in the inner area of Berlin

Viola Beil architect, Berlin; Germany

The Urban activities of Ernst May in Breslau after the First World War

Wanda Kononowicz,
Wroclaw University of Technology; Poland

The Canadian experiment in the modern neighbourhood; Don Mills, Ontario 1952-1955

Jay Carroll architect, Toronto; Canada

10:45 **Coffee break**

11:15 **The city of the future, the future of the city and functional building in Rotterdam between the World Wars**

R. Dettingmeijer, University of Utrecht; the Netherlands

Hilversum a new city of the twenties

Peter van Dun, Department for Conservation, Zeist; the Netherlands

Friedrich Weinwurm; the search for an answer

Elena Szolgayova Slovak Association of Architects, Bratislava; Czechoslovakia

12:45 **Luncheon**

Session 2 Complex of buildings

(Chairwoman Maristella Casciato)

14:00 **Functionalist sports buildings: an unexpected DOCOMOMO theme**

Marieke Kuipers
Department for Conservation, Zeist; the Netherlands

The Sanatorium, the evolution of a new functional type in the early 20th Century

Quintus Miller architect, Basel; Switzerland

Trade Union School in Bernau by Hannes Meyer

Klaus-Jürgen Winkler,
School of Architecture Weimar; Germany

15:30 **Tea break**

16:00 **Utopian living in Brazilian life; projects of Reidy and Costa**

Paul Meurs architect, Utrecht; the Netherlands

The cultural environment project Bandung (West-Java/Indonesia)

Cor Passchier,
Architectenburo 'Noord' Den Bosch; the Netherlands

Kurt Jonas and a project for 'Native Housing' in South Africa, 1938-1939

Eitan Karol architect, London; United Kingdom

Room 235-first floor

Session 3

Documentation and Registration

(Chairman Wessel de Jonge)

09:00 **Modern architecture in the Latium region: classification and safeguard issues**

Giuseppe Strappa,
University of Rome 'La Sapienza'; Italy

The Polish Modern Movement and its international relations

Andrzej Olszewski
Academy of Catholic Theology, Institute of History, Warsaw; Poland

Critical analysis and computer reconstructions of three unbuilt projects by G. Terragni

Antonino Saggio, ETH Zürich; Switzerland

10:30 **Coffee break**

11:00 **Hot sun and cold steel: the Neutra, Soriano and Ellwood Collections at Cal Poly Pomona**

Neil Jackson, University of Nottingham; United Kingdom

Sources for a study of Modern Movement architecture

Klára Kubicková Slovak Association of Architects,
Bratislava; Czechoslovakia

Architectural periodicals in Belgium, 1928-40, modernism published

Luc Verpoest,
Catholic University of Leuven; Belgium

12:30 **Luncheon**

Session 4 Technology

(Chairman Jos Tomlow)

14:00 **The Marie von Boschan Aschrott old people's home in Kassel, 1930-31**

Berthold Burkhardt,
University of Braunschweig; Germany

Three buildings from the 1930's : Analysis and the maintenance problem

Rinaldo Capomolla, Stefania Mornati,
Rosalia Vittorini,
University of Rome Tor Vergata; Italy

Restoration of the Villa Noailles (R. Mallet-Stevens, 1923)

Cécile Briolle Jaques Repiquet architects,
Hyères; France

15:45 **Tea break**

16:15 **Lawn Road Flats and the development of 'minimum' living**

Christopher Dean architect, London; United Kingdom

Marble facings in Italian architecture from the 1930's

Sergio Poretti,
University of Rome Tor Vergata; Italy

A restoration project in Brazil and its theoretical considerations

Anna Beatriz Galvão
Federal University of Bahia, Salvador; Brazil

20:00 **Presentation of the Exhibitions**

(Bauhaus Aula)

Modern Architecture Restored

Second floor;
presentation by Christopher Dean

Buildings of the Modern Movement in Slovakia

Room 335, Second floor;
presentation by Stefan Slachta

The New Movement Progressive architecture in the Netherlands 1924-1936

Exhibition area, right side;
presentation by Jan Molema

A chair making history - ein Stuhl macht Geschichte

Exhibition area, left side and installations throughout the Bauhaus;
presentation by Werner Möller

Friday September 18th, 1992

Bauhausaula

Session 5 Architectural History

(Chairman Berthold Burkhardt)

09:00 **Robert Mallet-Stevens, the Cavois house (1931-1932) and the Modern Movement in the North of France**

Richard Klein,
School of Architecture Lille; France

Conserving groups of modernist buildings from the 1930's

Katalin Kiss,
Budapest Department of Conservation; Hungary

Architect Erkki Huttunen and the Modern Movement in Finland

Teppo Jokinen,
Alvar Aalto Museum, Jyväskylä; Finland

10:30 **Coffee break**

- 11:00 **The palace of young pioneers in Tver**
Dietrich Schmidt,
University of Stuttgart; Germany
Leningrad architect A.I. Dmitriev
and his contribution to the development of
the Modern Movement architecture
Boris Kirikov,
Museum of History of St. Petersburg; Russia
The core of the matter: The 'Katterug' estate
in Tilburg Van den Broek en Bakema 1960-63
Arjen Oosterman architectural critic,
Bussum; the Netherlands
The 'Red Banner' factory in Leningrad - the work
of E. Mendelsohn
Maria L. Makagonova,
Museum of History of St. Petersburg; Russia

12:30 **Luncheon**

Continuation of Session 5
Architectural History
(Chairman Rob Docter)

- 14:00 **Modern architecture in Southern Italy**
Clementina Barucci,
University of Reggio Calabria; Italy
Ireland and the new architecture: 1900-1940
Sean Rothery,
Dublin Institute of Technology; Ireland
Three examples of functionalist architecture
in Spa towns in Slovakia
Lubomir Mrna,
Slovak Institute for Protection of Monuments,
Piestany; Czechoslovakia
Sverdlovsk - a city unique in its heritage
of constructivist architecture
Tokmeninova Ludmila
The Ural Institute of Architecture and Arts,
Ekaterinburg; Russia

16:30 **Tea break**

Room 235, first floor

Round table discussion on Registers
(Chairman Andrzej Olszewski)

- 09:00 **The following national working parties have**
announced their intention to present a (preliminary)
register:
Argentina, Belgium, Brazil, Canada, Finland, France,
Germany, Great Britain, Greece, Ireland, Italy,
Norway, the Netherlands, Poland, Spain, Sweden,
Switzerland.

10:30 **Coffee break**

- 11:00 **Discussion**
Criteria for selection of buildings, date range and
standard format for register, etc.

12:30 **Luncheon**

- 14:30 **DOCOMOMO-Council**
of national representatives
(Chairman Hubert-Jan Henket)

16:30 **Tea break**

- 17:00 **Closing Session in the Bauhausaula**
(Chairman Hubert-Jan Henket)

- 19.15 **Cultural Program in the Bauhausaula**
Presentation of the silent movie
'Die Symphonie der Großstadt'
By Walter Ruttmann, Switzerland, 1927
Live music composed and performed by:
Christoph Baumann, piano
Martin Schlumpf, bassclarinet
Jacques Sivon, bass
Speakers: Walter Kung, Hans-Rudolf Twerenbold

20.30 **Informal gathering and dinner**

Participants at the Second International DOCOMOMO Conference

Mabel	Scarone	University of Buenos Aires	Argentina
Hubert	Hoffmann	Prof. Architecture, Graz	Austria
Marcel	Celis	Flemish Board of Monuments and Sites, Brüssel	Belgium
Herman	Stynen	Heritage Foundation Koning Koudewijn, Brüssel	Belgium
Luc	Verpoest	Catholic University of Leuven	Belgium
Anna Beatriz	Galvao	Federal University of Bahia, Salvador	Brazil
Penio	Stolarov	FH Stuttgart	Bulgaria
Jean Francoi	Bedard	Canadian Center for Architecture, Montréal	Canada
Jay	Carroll	Diamond+Schmitt & Company	Canada
France	Van Laethem	University of Quebec	Canada
Dalibor	Cizek	Architect, Toronto	Canada
Rejean	Legault	Student	Canada
Jan	Gehri	Slovak Association of Architects, Bratislava	Czechoslovakia
Klara	Kubickova	Slovak Association of Architects, Bratislava	Czechoslovakia
Lubomir	Mrna	Slovak Institute for Protection of Monuments, Pistany	Czechoslovakia
Ivan	Mudroch	Kulturny Zivot-Cultural Review, Bratislava	Czechoslovakia
Vladimir	Slapeta	University of Prague	Czechoslovakia
Elena	Szolgayova	Slovak Association of Architects, Bratislava	Czechoslovakia
Nils-Ole	Lund	Aarhus School of Architecture	Denmark
Karin	Hallas	Museum of Estonian Architecture, Tallin	Estonia
Mart	Kalm	Tallin Art University	Estonia
Krista	Kodres	Museum of Estonian Architecture, Tallin	Estonia
Markku	Aalto	Architectural Office Markkus Aalto, Helsinki	Finland
Teppo	Jokinen	Alvar Aalto Museum, Jyväskylä	Finland
Maija	Kairamo	National Board for Antiquities, Helsinki	Finland
Julia	Lemstrom	National Board of Public Buildings, Helsinki	Finland
Anne	Makinen	National Board for Antiquities, Helsinki	Finland
Riitta	Nikula	Museum of Finnish Architecture, Helsinki	Finland
Laura	Tuominen	Ministry of Environment, Helsinki	Finland
Dan	Bernfeld	Council of Europe, Paris	France
Karin	Blanc	The J. Paul Getty Trust, Paris	France
Cecile	Briolle	Briolle-Marro-Repique Architects, Hyères	France
Oliver	Cinqualibre	University of Paris	France
Gwenael	Delhumeau	Sorbonne University of Paris	France
Sylvie	Denante	Dept. for Conservation, Aix en Provence	France
Marie-Jeanne	Dumont	L'Architecture d'Aujourd'Hui, Paris	France
Silvie	Ferey	Museum of Modern Art, Villeneuve d'Asq.	France
Francois	Goven	Dept. of Cultural Affairs, Aix en Provence	France
Richard	Klein	School of Architecture of Lille	France
Gérard	Monnier	Sorbonne Institut d'Arts, Paris	France
Gilles	Ragot	French Institute of Architecture, Paris	France
Jaques	Repique	Briolle-Marro-Repique Architects, Hyères	France
Viola	Beil	Winfried Brenne Architectural Office, Berlin	Germany
	Bethke	Gartensiedlung Reform, Berlin	Germany
Winfried	Brenne	Winfried Brenne Architectural Office, Berlin	Germany
Berthold	Burkhardt	Technische Universität Braunschweig	Germany
Karl-Heinz	Burmeister	Bauhaus Verein, Dessau	Germany
Johannes	Busmann	Müller & Busmann, Editors, Wuppertal	Germany
Sergej	Fedorow	University of Karlsruhe	Germany
Simone	Hain	Institute for Development and Planning, Berlin	Germany
Rolf	Kuhn	Bauhaus Dessau	Germany

Wolfgang	Laszny	District Dessau-Anhalt, Dessau	Germany
Werner	Möller	Bauhaus Dessau	Germany
Jürgen	Neubert	Stadt Dessau	Germany
Wolfgang	Paul	DOCOMOMO Germany	Germany
Michael	Pletsch	Min. of Fed. German and European Affairs, Sachsen-Anhalt	Germany
Andrea	Pleugel	Müller& Busmann, Editors, Wuppertal	Germany
Christian	Schädlich	Architectural historian, WEIMAR	Germany
Jost	Schäfer	Conservation Department of Westphalia, Münster	Germany
Dietrich W.	Schmidt	University of Stuttgart	Germany
Susanne	Schmitt	Architecturestudent, Hamburg	Germany
Heidrun	Schröter	Deutscher Werkbund, Frankfurt/Main	Germany
Joachim	Schulz	Regional Planning Office, Berlin	Germany
Jos	Tomlow	University of Stuttgart	Germany
Klaus-Jürgen	Winkler	Weimar Polytechnic	Germany
Andrea	Giacumacatos	University of Saloniki	Greece
Andras	Hadik	Hungarian Museum of Architecture, Budapest	Hungary
Katalin	Kiss	Budapest Department of Conservation	Hungary
Shane	O'Toole	University College Dublin	Ireland
Sean	Rothery	Dublin Institute of Architecture	Ireland
Francesca	Acerboni	Milano Polytechnic	Italy
Fabricio	Aggarbati	University Tor Vergata, Rome	Italy
Ciro Luigi	Anzivino	University of Florence	Italy
Alberto	Artioli	Department of Conservation, Milan	Italy
Chiara	Baglione	Magazine 'CASABELLA', Milan	Italy
Pier Giovanni	Bardelli	Turin Polytechnic	Italy
Clementina	Barrucci	University of Reggio Calabria	Italy
Virginia	Bernardinl	University of Rome 'La Sapienza'	Italy
Elena	Buskow	Architecturestudent, Milan	Italy
Rinaldo	Capomolla	University Tor Vergata, Rome	Italy
Maristella	Casciato	University Tor Vergata, Rome	Italy
Paola	d'Orsi	University of Rome 'La Sapienza'	Italy
Federica	dal Falco	University of Rome 'La Sapienza'	Italy
Francesca	de Caroli	Politecnico di Torino	Italy
Sergio	Innamorati	Institute of Health, Rome	Italy
Aline	Leroy	Area- European Review of Project Culture, Milan	Italy
Giovanni	Morabito	University of Rome 'La Sapienza'	Italy
Stefania	Mornati	University Tor Vergata, Rome	Italy
Giorgio	Muratore	University of Rome 'La Sapienza'	Italy
Sergio	PORETTI	University Tor Vergata, Rome	Italy
Maria C.	Redini	University of Venice	Italy
Antonio	Saggio	ETH Zürich	Italy
Carla	Saggioro	University Tor Vergata, Rome	Italy
Mauro	Saito	University Della Basilica, Potenza	Italy
Giuseppe	Strappa	University of Rome 'La Sapienza'	Italy
Silvano	Stucchi	University Tor Vergata, Rome	Italy
Luca	Veresani	University of Rome 'La Sapienza'	Italy
Emanuela	Verger	University of Venice	Italy
Elena	Vincenzi	Staff DOCOMOMO International	Italy
Rosalia	Vittorini	University Tor Vergata, Rome	Italy
Valeria	Voaturo	Ministry of Urban Planning, Rome	Italy
Janis	Krastins	Riga Technical University	Latvia
Morta	Bauziene	Museum of Architecture of Lithuania, Vilnius	Lithuania
Brigitte	Sauge	The Norwegian Museum of Architecture, Oslo	Norway
Wanda	Kononowicz	Technical University of Wroclaw	Poland
Andrzej K.	Olszewski	Academy of Catholic Theology	Poland
Jadwiga	Urbanik	Wroclaw Technical University	Poland
Boris	Kirikow	Museum of History of St. Petersburg	Russia
Maria	Makagonova	Museum of History of St. Petersburg	Russia

Maria	Nashchokina	UNESCO-Commission, Moscow	Russia
Ludmilla	Tokmeninova	The Ural Institute of Architecture and Arts, Ekaterinburg	Russia
Stane	Bernik	Arts Magazin Sintessa, Ljubljana	Slovenia
Xavier	Febre	DOCOMOMO Section Spain, Barcelona	Spain
Luis	Hortet	Mies van der Rohe Foundation, Barcelona	Spain
Claes	Caldenby	Arkitektur-Swedish Review of Architecture, Stockholm	Sweden
Bjorn	Linn	Chalmers University of Technology, Malmö	Sweden
Marianne	Raberg	The City Museum of Stockholm	Sweden
Eva	Rudberg	Swedish Museum of Architecture, Stockholm	Sweden
Lena	Simonsson	Central Board of National Antiquities, Stockholm	Sweden
Rebecka	Tarschys	Dagens Nyheter, Stockholm	Sweden
Karin	Winter	Swedish Museum of Architecture, Stockholm	Sweden
Jorge	Arsich	City Geneva-Dept. of Architecture	Switzerland
Martine	Koelliker	City Geneva-Dept. of Architecture	Switzerland
Nicola	Losinger	Zürich Dept. of Monuments	Switzerland
Quintus	Miller	Miller & Maranta Architects, Basel	Switzerland
Inge	Beckel	Building Department, Zürich	Switzerland
Nina	Rappaport	Correspondent, Neuhausen	Switzerland
Erhardt	Schütz	ETH Zürich	Switzerland
Monika	Spring	ETH Zürich	Switzerland
Ruggero	Tropeano	ETH Zürich	Switzerland
Frank	Altenburg	Dept. of Urban Planning, Rotterdam	the Netherlands
Dirk	Baalman	Het Oversticht, Zwolle	the Netherlands
Yske	Braaksma	Braaksma & Roos Architectural Office, Den Haag	the Netherlands
Rainer	Bullhorst	Rainer Bullhorst Architects, Den Haag	the Netherlands
Martin C.	Bulthuis	Dept. of Urban Planning, Rotterdam	the Netherlands
Joke	de Jong	Delft University of Technology	the Netherlands
Wessel	de Jonge	Eindhoven University of Technology	the Netherlands
Rob	Dettingmeijer	University of Utrecht	the Netherlands
Rob	Docter	Ministry of Culture, Den Haag	the Netherlands
Rudolphine	Eggink	Delft Technical University	the Netherlands
Jaap	Franso	Franso & Partners Architects, Leiden	the Netherlands
Victor	Freijser	Municipality of The Hague	the Netherlands
Hubert-Jan	Henket	Eindhoven University of Technology	the Netherlands
Marleen	Hermans	Eindhoven University of Technology	the Netherlands
Jan-Piet	Kloos	Architect, Haarlem	the Netherlands
Marieke	Kuipers	Netherlands Dept. for Conservation, Zeist	the Netherlands
Paul	Meurs	The Urban Fabric, Utrecht	the Netherlands
Jan	Molema	Delft University of Technology	the Netherlands
Robert	Oerlemans	Architectuurfotografie - Review, Blaricum	the Netherlands
Arjen	Oosterman	Architectural Historian/Editor, Bussum	the Netherlands
Cor	Passchier	Architectural Office 'Noord', Bussum	the Netherlands
Ben	Rebel	University of Amsterdam	the Netherlands
Job	Roos	Braaksma & Roos Architectural Office, Den Haag	the Netherlands
Jaap	't Hart	Conservation Department, Den Haag	the Netherlands
Nic	Tummers	Council of Europe, Heerlen	the Netherlands
Berend	van der Lans	Eindhoven University of Technology	the Netherlands
Ernst	van der Vecht	Eindhoven University of Technology	the Netherlands
Peter	van Dun	Netherlands Dept. for Conservation, Zeist	the Netherlands
Leo	Van Nispen	ICOMOS	the Netherlands
Jacob	Voor in 't Holt	Department of Physical Planning, Rotterdam	the Netherlands
Mariet	Willinge	Dutch Architectural Institute, Rotterdam	the Netherlands
Charlotte	Benton	Freelance Historian of Architecture, Cambridge	UK
Edwin	Simpson Brierley	Leicester Polytechnic	UK
Martha	Camisassa	Architectural student, Essex	UK
Catherine	Cooke	The Open University, Cambridge	UK
David	Cranmer	Crittall Windows Ltd., Braintree	UK
Allen	Cunningham	Polytechnic of London	UK

Christopher	Dean	DOCOMOMO - UK, London	UK
James	Dunnett	The Architects' Journal, London	UK
Neil	Jackson	University of Nottingham	UK
Alan	Jago	University of Westminster, London	UK
Eitan	Karol	Louis Karol Architects, London	UK
Finch	Karol	Royal Society of Art, London	UK
Jan	Lans	Crittall Windows Ltd., Braintree	UK
Alan	Powers	Twentieth Century Society/DOCOMOMO - UK, London	UK
Ivor	Richards	University of Wales, Cardiff	UK
Raymond	Ryan	L.A. Architect, London	UK
Dennis	Sharp	Royal Institute of British Architects, London	UK
Maria	Pepchinski	Progressive Architecture, Stanford	USA

List of journals

'Architectuur'
 'Archis'
 'Area'
 'arkitektur'
 'arts magazine sinteza'
 'AJ' The Architects'
 'Bauwelt'
 'Building design'
 'casabella'
 'C.J.F.'
 'domus'
 'Historic preservation News'
 'Journal RIBA Magazines'
 'Kultúrny Zivot'
 'L.A. Architect'
 'L'architecture d'journales'
 'Penton Publishing-Progressive Architecture'
 'projeto', brazilian-architecture-magazin
 'Swedish architectural review'
 Verlag müller & Busmann GbR
 'Weekly Newspaper'
 'Werk und Zeit'

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Mrs. Willinge
 Mr. Oosterman
 Mrs. Leroy
 Mr. Caldenby
 Mr. Prof. Bernik
 Mr. Dunett
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 Mr. Sharp
 Mrs. Baglione
 Dr. Giacomatos
 Mr. Anzivino
 Mrs. Rappaport
 Mr. Sharp
 Mr. Murdoch
 Mr. Ryan
 Mrs. Dumont
 Mrs. Pepchinski
 Mrs. BrancoSoares
 Mrs. Winter
 Mr. Busmann
 Mr. Kalm
 Mrs. Schröter

Press release

16 September 1992

The International Workingparty for Documentation and Conservation of buildings, sites and neighbourhoods of the Modern Movement was initiated in 1988 by the University of Technology in Eindhoven where a first international conference was held in September 1990.

DOCOMOMO is meant to advance an effective registration, documentation and preservation of the most important results of the Modern Movement in architecture.

It has been established as a platform for discussion and exchange of experience and know-how. Another important issue is to draw the attention of the general public to this significant part of the cultural heritage.

Since its foundation, many national working parties have been established, stimulated by the DOCOMOMO Statement of 1990 (see appendix) and the general impulses of the UNESCO World Decade for Cultural Development. These national groups are composed of historians, researchers, consultants, conservation officials, critics, financial and technical experts, architects and urban designers, and operate in their countries to advance the documentation and conservation of buildings, sites and neighbourhoods of the Modern Movement. DOCOMOMO is in contact with experts all over Europe, as well as in North and South America. Until now, national DOCOMOMO working parties have officially been established in seventeen countries being Argentina, Belgium, Czechoslovakia, the Commonwealth of Independent States, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, the Netherlands, Poland, Scotland Sweden. DOCOMOMO is represented in Austria, Brazil, Canada, Norway, Spain, Switzerland and the United States.

DOCOMOMO developed a variety of activities in the participating countries, ranging from seminars and excursions to publications and exhibitions, some of which can be seen at the Bauhaus during the conference.

Also, some national groups started campaigns for the preservation of specific objects, such as the Narkomfin Flats (Moscow), Bergpolderflats (Rotterdam), the Copenhagen Air terminal, Isoken Flats (London) and a set of furniture by Eileen Gray, auctioned in Monaco.

To keep in touch with each other, every six months a Newsletter has been produced by the International Secretariat. Most important however, are the biannual international conferences. At the first conference the proposal by the German (then DDR) group to have the next conference at the Bauhaus Dessau, was warmly welcomed.

This proposal obtained support from UNESCO and the Council of Europe and enjoys financial support from the European Cultural Foundation, the District Government of Sachsen-Anhalt, the Bauhaus Dessau and the Bauhaus Dessau e.V.

The Second International DOCOMOMO Conference centers on two main themes, being 'Neighbourhoods and their functional concept' and 'Registers of Modern Movement architecture'. Besides, sessions include architectural history, technology and the development of building types.

The development of housing estates was a major issue for the architects and urban planners of the Modern Movement. The results of their social, architectural and technical experiments still form an important part of the way things in social housing are done today. However, many of these estates have been dramatically changed over time. The main theme of the conference is the question what to do with this important part of the 20th Century heritage, particularly in view of possible conflicts between the social needs of today and historical as well as architectural values.

The composition of national registers was one of the main points of the 1990-1992 Plan of Action (see appendix), since it so far is rather unclear what is still left of the heritage of the Modern Movement in many countries concerned. Some 15 countries have prepared a concept on which criteria should be used to make such a list; some countries already made up a draft. Now, DOCOMOMO delegates have to agree on a common standard and how to finish the first part of the project in the next two years. A proposal for cooperation with ICOMOS regarding the implementation of such a register, will be discussed.

The conference will conclude with a meeting of the DOCOMOMO Council, where the results of these activities will be discussed.

The Council will also decide upon a second Plan of Action for 1992-1994 and the venue of the next conference in 1994, for which Rome and London have announced their candidacy.

After the conference, a tour of Modern Movement architecture in Dessau and Magdeburg is scheduled for Saturday.

On Thursday, members of the press will have the opportunity to have lunch with DOCOMOMO officials and the conference organisers. A second press release will be available on Friday, after the DOCOMOMO Council meeting.

enclosed: Newsletter 7, June 1992; DOCOMOMO Statement, 1990; DOCOMOMO Plan of Action, 1990-1992.

Second press release

21 September 1992

The Second International DOCOMOMO Conference has been concluded last Friday with a meeting of the DOCOMOMO Council, in which representatives of 27 countries took part.

Many decisions have been made with respect to the organisational and financial structure of DOCOMOMO as well as its working plan for the next two years.

It has been decided that the financing of the Newsletters will be dealt with separately from that of the International Secretariat. The periodical will depend on sponsoring and subscriptions. Its frequency and volume will depend on the available funds; its contents will remain dependant on the contribution submitted by our members.

The costs for the International Secretariat will be covered by individual membership of DOCOMOMO International in the short term the delegates of Ireland, Italy, Denmark and the United Kingdom, together with chairman Henket, will develop a proposal on how to arrange this.

In the future, more activities of DOCOMOMO International will be carried by its members, while the International Secretariat will remain responsible for communications and Newsletters as before. This has been done to make a better use of the available expertise amongst our members, but also to reduce the workload of the International Secretariat.

After several heated discussions on criteria for the registers of Modern Movement architecture, the following was agreed. Quality of the object concerned, dictated by its innovative character in social, technical or aesthetic terms, should be decisive for inclusion in a register. As regards the period concerned, it was decided that rather than adhere to strict limitations, an open ended approach stretching the period from the end of the 19th Century till today was more suitable. Besides, it will be left to the national working parties to decide on which period within that timestretch to concentrate their efforts, depending on the histories of their own countries. See statement for details. To develop proposals for future elaboration of these concepts as well as technical details, an International International Specialist Committee on Registers has been appointed, including delegates from Spain, the Netherlands, Belgium, Italy and the United Kingdom and chaired by the French delegate, Gérard Monnier. The Committee will decide upon technical aspects of the register in June 1993. The first chapter of national registers should be available by January 1994, after which the Committee will compose a proposal for an international register of Modern Movement buildings, sites and neighbourhoods.

Within the framework of a collaboration between DOCOMOMO and Icomos, proposed at the conference by Icomos director Leo van Nispen and in principle accepted by the Council, the first part of an international Modern Movement register will be made available to Icomos after the next conference.

In the field of MoMo technology, a research project will be initiated by experts from Poland, France, Germany, the United Kingdom, Italy and the Netherlands. This preliminary group of experts will be coordinated by Wessel de Jonge from the Netherlands.

A research program on restoration technology and an International International Specialist Committee on Technology will be proposed at the next conference.

Coordinated by Catherine Cooke from the United Kingdom, experts from Argentina, Brazil, the Netherlands and Switzerland will study how future generations could be given the opportunity to 'explore and develop the knowledge of the Modern Movement' (point 6, DOCOMOMO Statement 1990).

A proposal for the WUWA Werkbund Estate in Wroclaw, Poland, was welcomed by the Council. Delegates from Italy, Hungary, Czechoslovakia and the United Kingdom showed their interest in joining. The group will be coordinated by Dan Bernfeld from France, consultant for Urban Affairs to the Council of Europe. Its aim will be to survey possibilities for restoration of the estate as an international effort.

The Council voted unanimously to send a letter of its gravest concern about the loss of lives and damage to the cultural monuments in the countries of former Yugoslavia, to the Secretary General of the Council of Europe and the Director General of UNESCO.

The council voted for Spain as the host country for the Third International DOCOMOMO Conference in September 1994. Lluís Hortet of the Fundació Mies van der Rohe in Barcelona offered to organize the meeting in that city. Apart from the presentation of the work done by the various specialist groups, the main theme of the conference will be current architecture and the concepts of modernity in the past. In January 1993, a final decision by the Executive Committee will be made after presentation of a draft of themes and contents by the Spanish delegation and more details will be available on commitment and cooperation from other institutions.

Lluís Hortet, as the representative of the host country for the next conference, was appointed as a member of the Executive Committee. Chairman Hubert-Jan Henket and secretary Wessel de Jonge were re-elected. The International Secretariat will remain at the Eindhoven University of Technology.

Half of the 200 participants of the conference joined the post-conference tour to modern buildings in Dessau and two neighbourhoods in Magdeburg on Saturday.

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