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E-mail: lynne.jackson@ebc.emap.com

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EDITORIAL

Editorial Director and Editor

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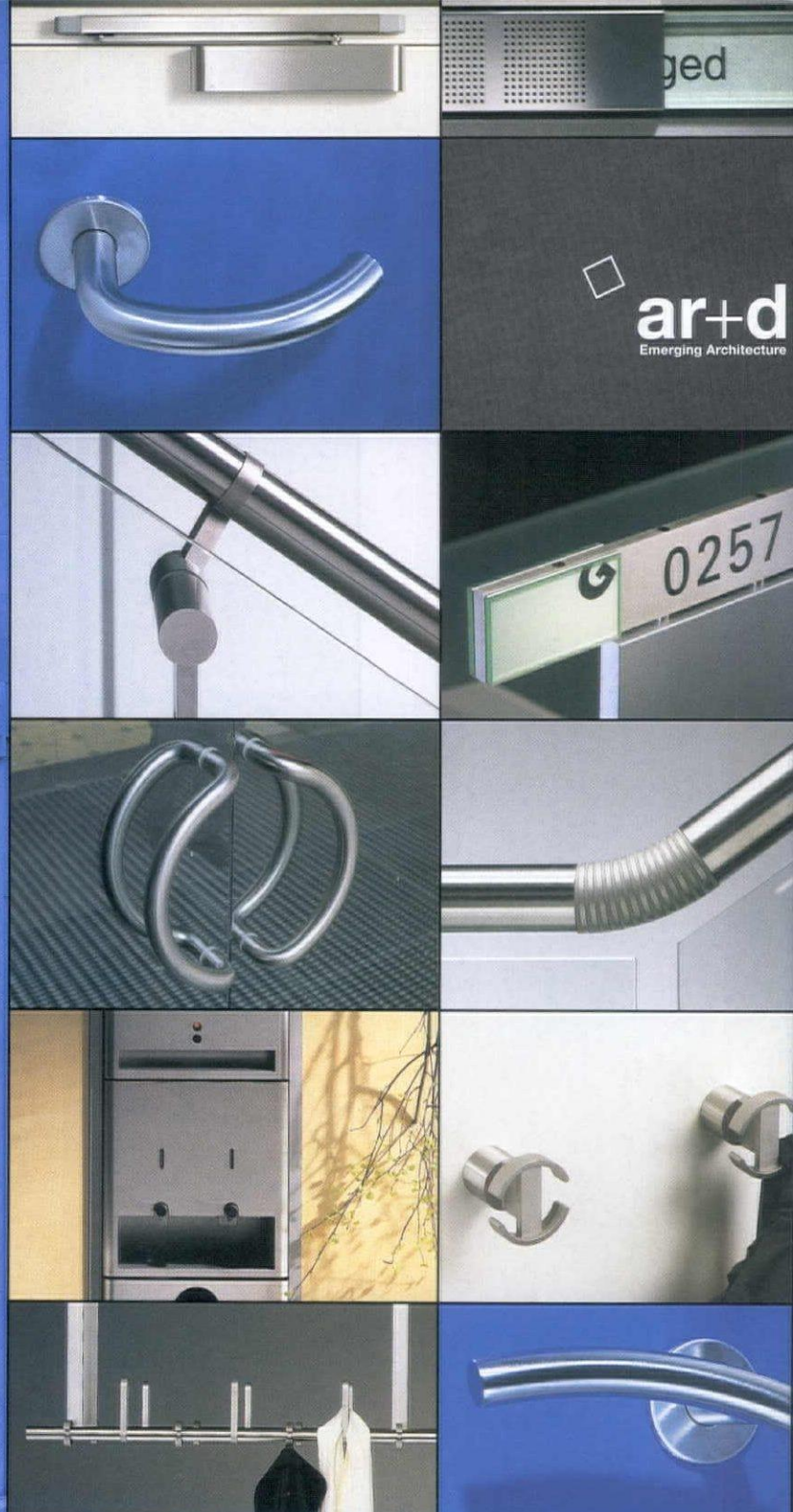
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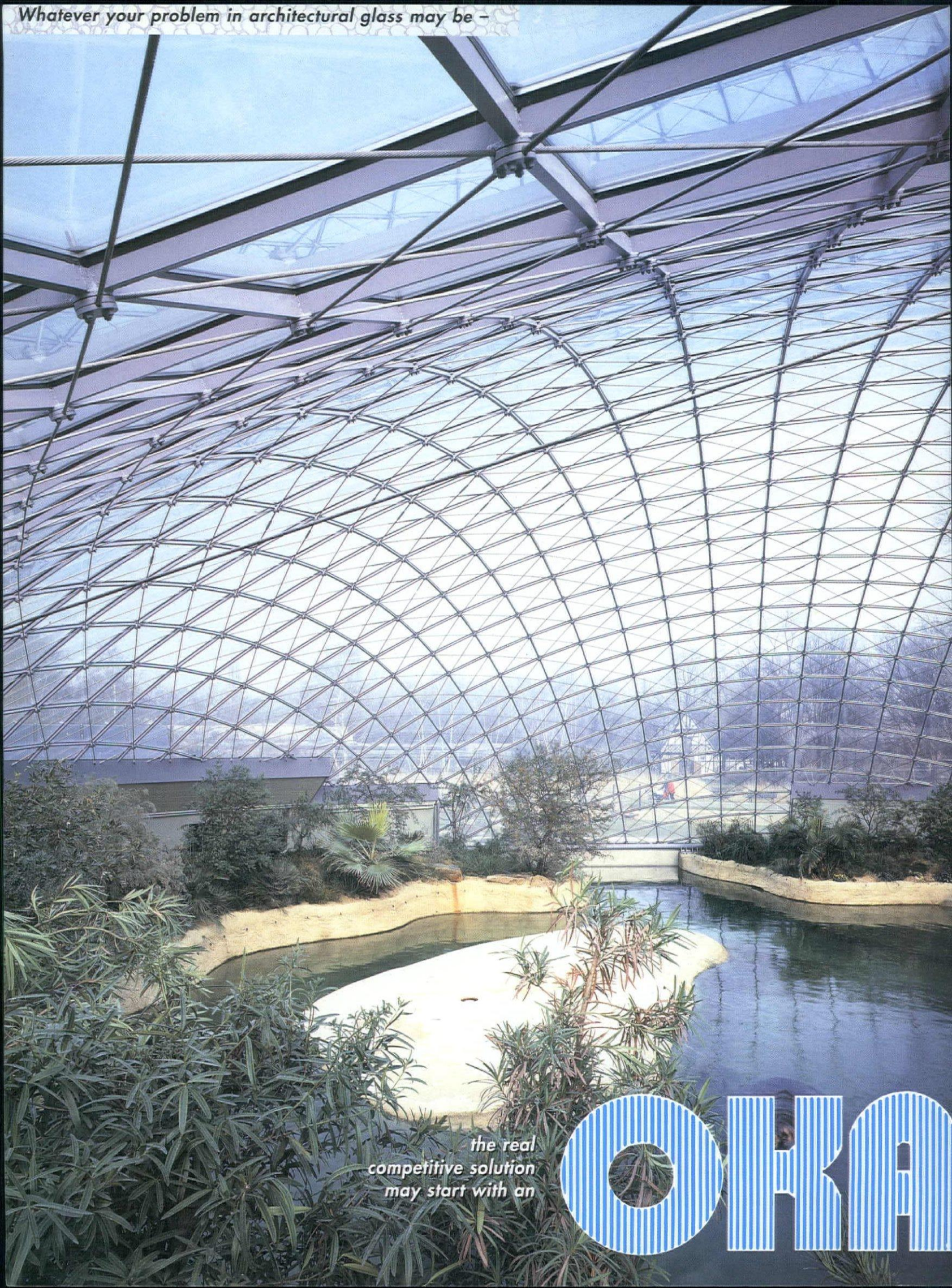
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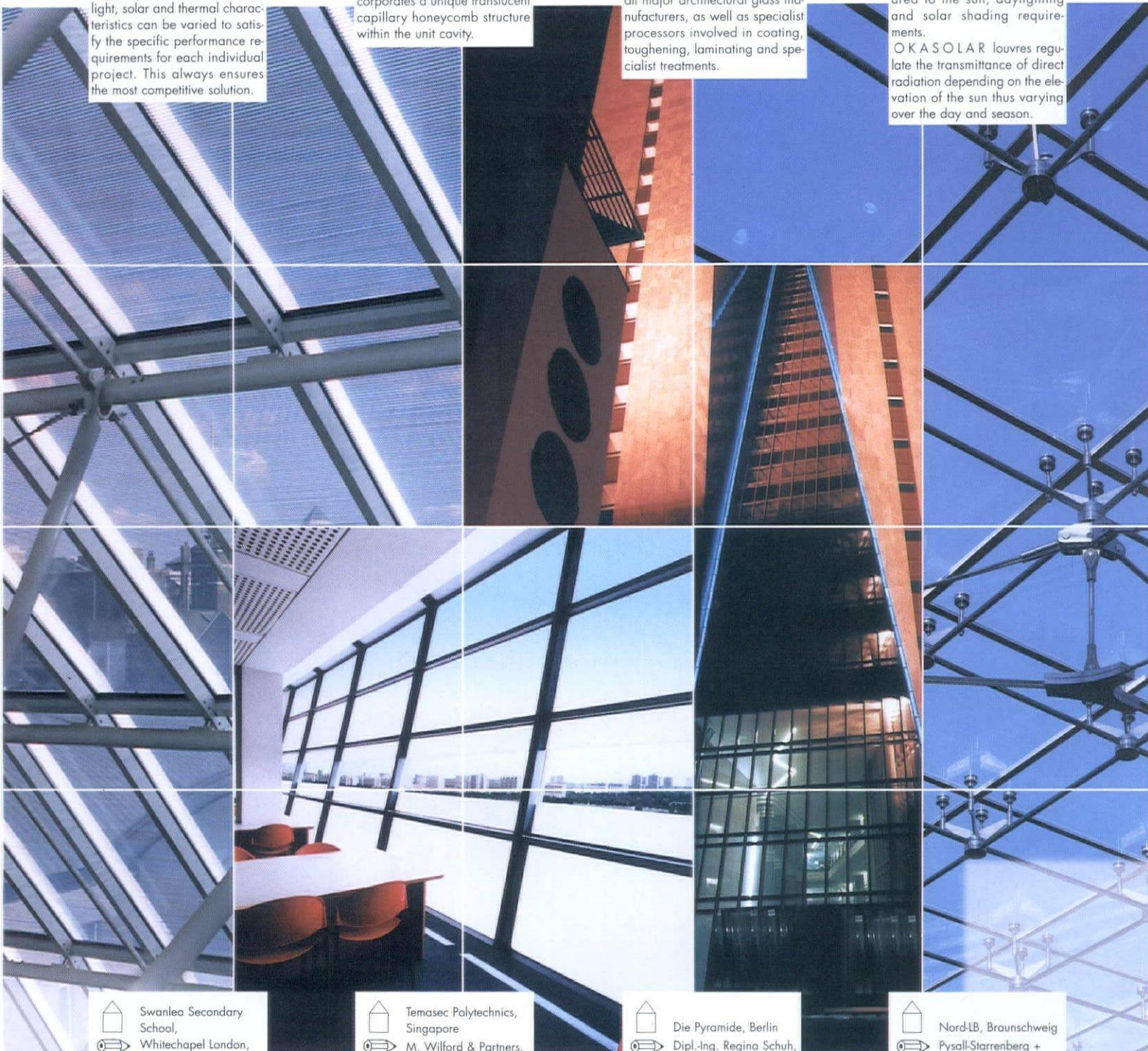
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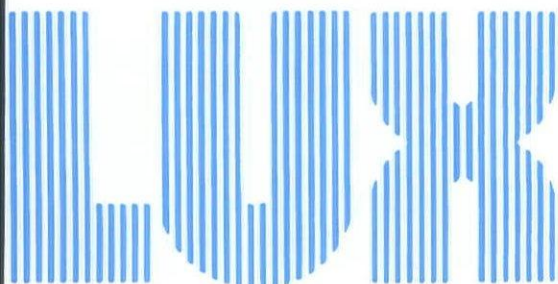
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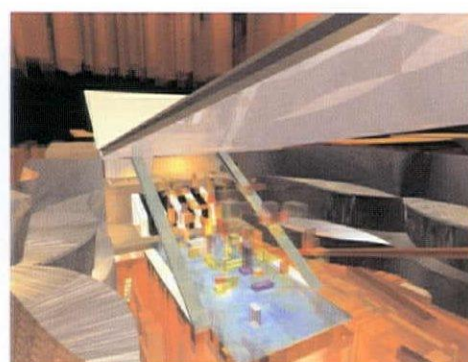
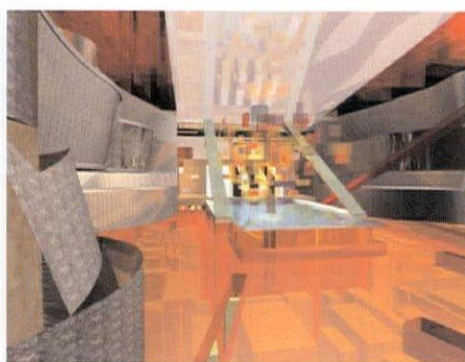
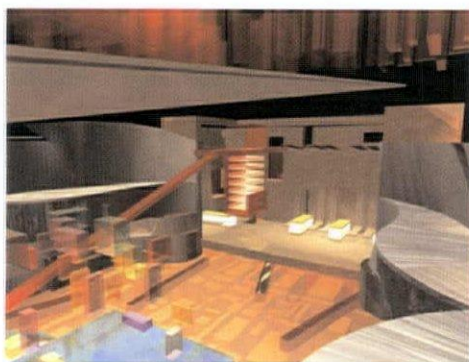
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INNOVATIONS IN INSULATING GLASS

view

GRAPHISOFT SHOWS THE WAY TO NEW DIMENSIONS IN CYBERSPACE; HELSINKI GETS NEW CIVIC HEART; HUGO HÄRING TO BE REASSESSED IN MAJOR NEW LONDON EXHIBITION; BRITISH MUSEUM'S GREAT COURT REVIVED BY FOSTER; LETTERS; 100% RUBBER DESIGN, EUROPEAN AND ARCHIPRIX INTERNATIONAL COMPETITIONS.



First place was awarded to Sam Rajamanickam from Design Collective for his stunning, highly sensual interpretation of *The Cotton Club* from the film by Francis Ford Coppola.

FURTHER ADVENTURES IN CYBERSPACE

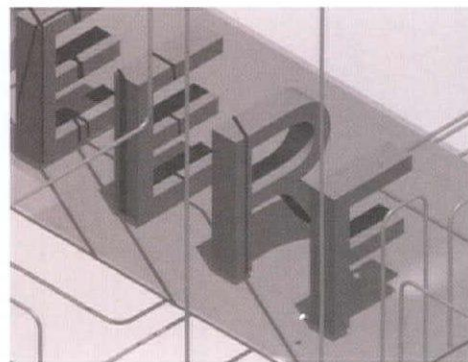
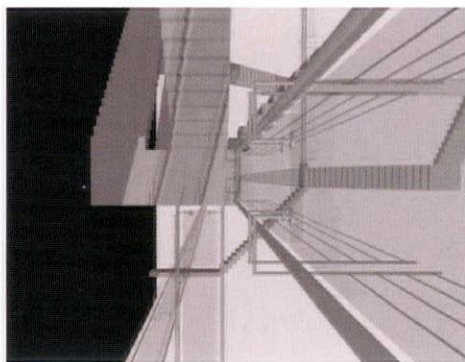
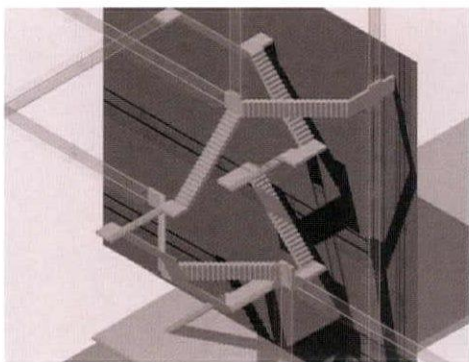
Since 1993 the Graphisoft Prize has rewarded architects and students for pushing back the boundaries of architectural expression using CAD software. Through sophisticated computer modelling techniques, the aim of the competition is to interpret myths, legends, literary works and musical pieces that have never existed physically – or are long missing from the physical landscape – but are nevertheless real in our present day culture. The annual competition challenges users to create 'virtual architecture' drawing from cultural themes as diverse as Bartók's *Bluebeard's Castle* and Italo Calvino's *Invisible Cities* to the science fiction novels of Ray Bradbury and William Gibson. Historically, it

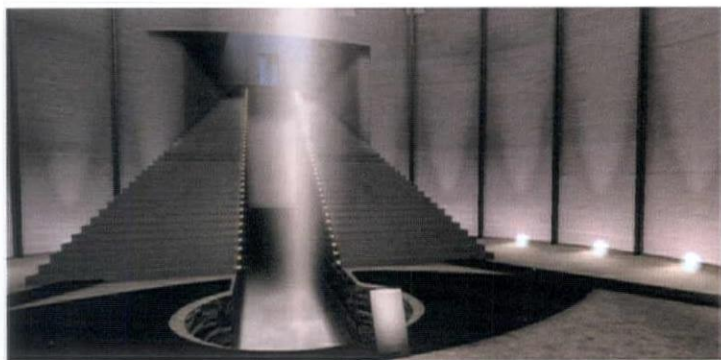
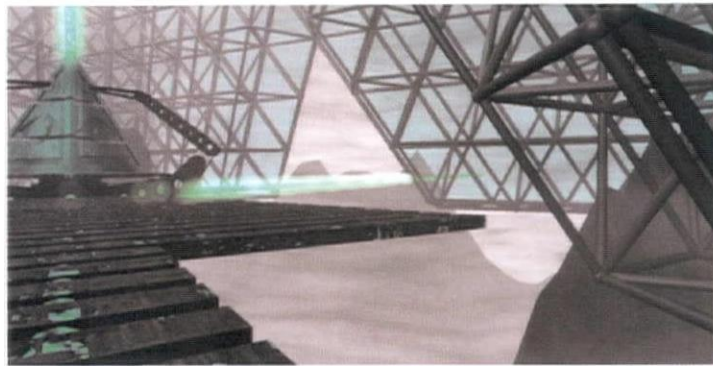
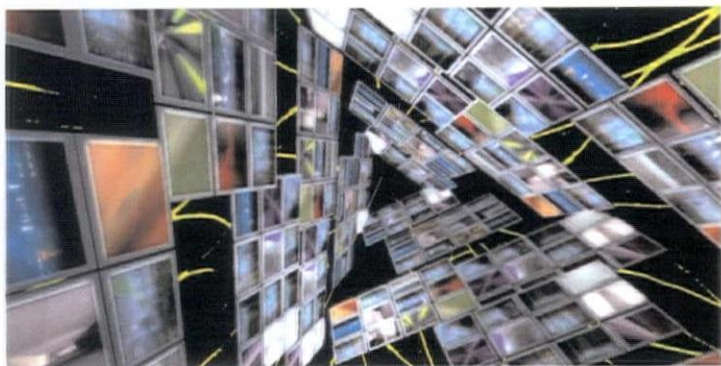
has also encouraged architectural students to consider the potential of the computer to stimulate architecture itself rather than merely automating the rendering of surfaces.

This year's competition attracted entries from dozens of countries and was judged in San Francisco by a panel drawn from the international architectural press. Jurors included Zahid Sardar, Architecture & Design Editor of the *San Francisco Chronicle Magazine*; Jean-Pierre Cousin, Editor of *L'Architecture d'Aujourd'hui*; Jerry Laserin, Contributing Editor to *Architectural Record*; Christian Schittich of *Detail*; and Catherine Slessor, Managing Editor of *The Architectural Review*. Cultural references ranged from The Ministry of Truth from George Orwell's novel *1984* and The Cotton

Club from Francis Ford Coppola's film, to The Roadside Inn from Cervantes' novel *Don Quixote* and The Walled City from William Gibson's novel *Idoru*. This year's competition also included a special Millennium Section, offering entrants the chance to design a contemporary version of a triumphal arch or pharaoh's pyramid. Alternatively, any individual student project undertaken as part of a course and which conformed to the entry requirements was also eligible for consideration in a separate Student Project category.

The competition has evolved greatly in seven years and aims to consolidate its evident success and popularity. The standard of this year's entries was again extremely high, showing both technical mastery and imaginative





Inventively interactive and highly structured, this version of *The Ministry of Truth* by student team of Marcel Schuler, Patrick Schmid and Guido Zimmermann took second place.

prowess. Some themes generated more submissions than others (notably *The Ministry of Truth* and other similarly dystopian visions of the future), but the diversity of approaches was consistently impressive.

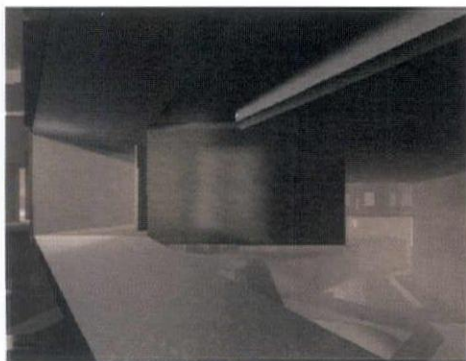
First prize was awarded to Sam Rajamanickam of American architecture practice Design Collective for his virtuoso interpretation of *The Cotton Club*. Lucid yet extremely sensual and suggestive, it took a simple theme to daring heights of creative skill. Second prize went to a team of students – Marcel Schuler, Patrick Schmid and Guido Zimmermann – from the Fachhochschule Aargau in Switzerland for their rendition of *The Ministry of Truth*. Tautly structured and ingeniously interactive, it took viewers on a surreal journey

into a nightmare city where occupants are under constant repressive surveillance. Third prize was awarded to a professional team from Hungary – Osváth Gábor, Attila Vocsa and Bojka Pehlivanova – for their highly moving and unusually abstract interpretation of *The Ministry of Truth*.

Two projects were singled out for Honourable Mentions. The student team of Daniel Leuthold, Cordula von Holzen and Christof Blickenstorfer (also from the Fachhochschule Aargau) submitted a floating, dreamlike rendition of *The Walled City* from *Idoru*, which slowly grew on the judges. And finally, another student team – Mark Purtell, Ross Langton and Lim Hong Swee – from the University of Tasmania produced a chilling

yet compelling vision of *The City* from Ray Bradbury's science fiction novel *The Illustrated Man*. The prize for best student project was awarded to Hungarian student Miklós Reidel who submitted a reconstruction of a Baroque gunpowder magazine on the banks of the River Danube. It demonstrated very clearly the immense potential of design and rendering software as an archaeological tool to recreate in three dimensions long-dead historic buildings.

Details of next year's competition will be available soon; in the meantime, winning entries can be surveyed on the Graphisoft website www.gsprize.com and will be distributed on CD with a forthcoming issue of the AR. CATHERINE SLESSOR



Dreamlike rendition of *The Walled City* from William Gibson's novel *Idoru* by Daniel Leuthold, Cordula von Holzen and Christof Blickenstorfer was awarded honourable mention.

view

HELSINKI HEART

Almost until now, there has been a big urban quagmire in the middle of Helsinki. After the delightful urbanity of the nineteenth-century Neo-Classical ideal city which stretches westwards from the harbour and the main square along the elegant Esplanade and its parallel streets, everything until recently ground to a halt

in a series of scattered formal object buildings connected only by dreary roads, railway sidings and bits of greenery that pathetically aspired to be parks. Numerous suggestions were made for the area, including Aalto's horrendously scaled post-war plan. Recently, the whole neighbourhood has started to look up. Steven Holl's gallery of modern art (AR August 1998) was the first new building to try to pull the area together,

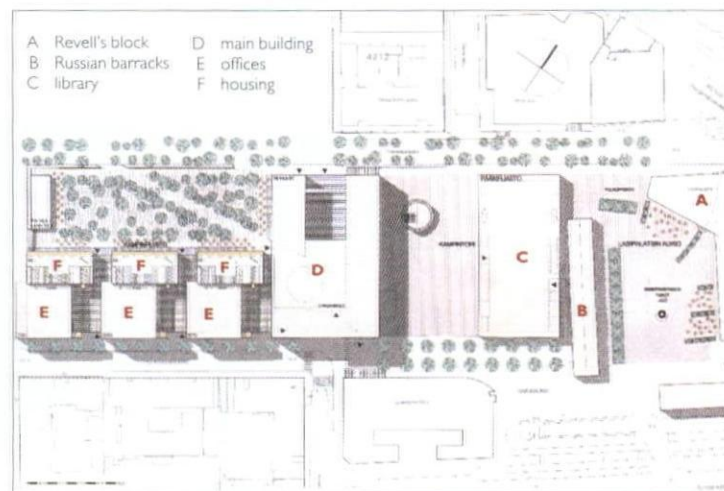
though its urban contribution is a bit *recherché* for most people. The big newspaper office with its huge public atrium by SARC Architects (February 2000) firmly relates the Neo-Classical grid to a new park on ex-railway land which is being made in front of the '30s Parliament building by the elder Sirén. A little to the south of this door, pompous colonnaded lump is the bus station, a big, almost desert site, several blocks deep and



Norri's housing (right) overlooks pocket park and has appropriate scale.



Main building: bus and metro transfers.



Site plan.

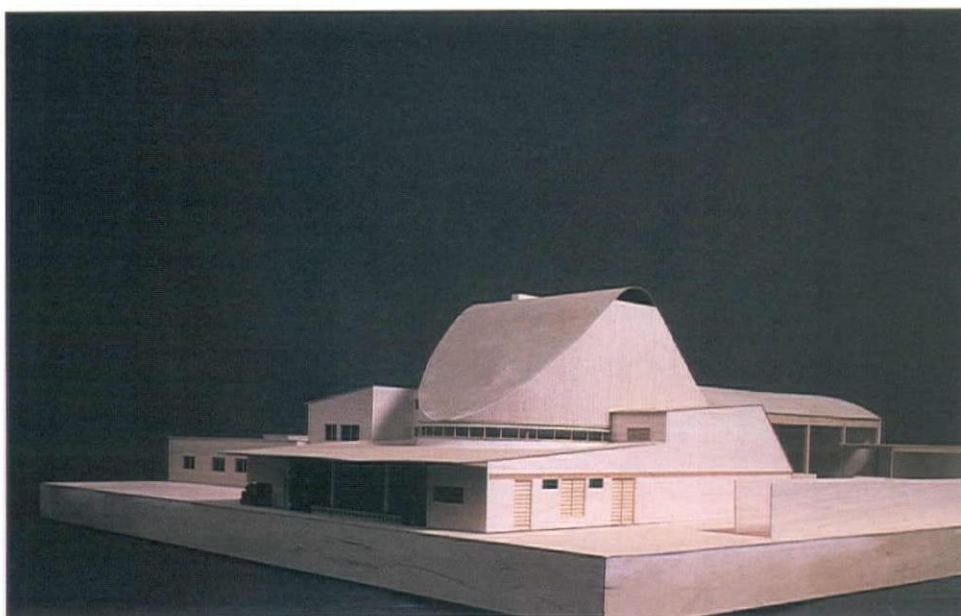
covered with all the miserable paraphernalia of bus travel: depressing shelters and signs, oil stained and messy. It is the last big empty site in the centre of the city.

Helsinki city council has built up a fund for developing the bus station based on planning gains for development of other sites under its aegis. A competition was held for teams of architects, each linked to a developer. Out of four entries, the one designed by the group led by Pekka Helin won.* A key move was to put the bus station underground: the architects argue that modern technology and judicious introduction of daylight shafts can make a subterranean bus station that will overcome the potential problems of marshalling people and large numbers of buses emitting stinking fumes in deep, enclosed spaces.

This single move transforms the whole site. To the east, Viljo Revell's long low block on Mannerheimintie was required to be retained, and so was the two-storey nineteenth-century military-functional Russian barrack block behind it. Now, a bus-free square can be created between the two. Moving westwards, a public library by Heikkinen & Komonen runs roughly parallel to the barrack block. Then, there is a new square over the heart of the bus station, then the main building, a mixture of bus and metro interchange, restaurant and shopping, which is combined with what could be a large atriumed office building for a single user, or for multiple tenants.

Further west is the most impressive urban contribution. To the north is a linear park, properly planted, contained and robust, unlike the dingy grey bits of green space already in the area. Facing onto this is the housing element of the scheme, in which Marja-Riita Norri has produced a gentle urban scale, partly by inclining the flats to obtain an almost straight westerly orientation in a block which fundamentally faces north. The three housing blocks are back to back with offices by Helin and on top of a layer of shops and cafés. Helin's red brick elevations echo the early twentieth-century brick facades across the road, but are much more severe, almost Berlin-rational. As a whole, the scheme is right for its site and for its importance in the city: it has appropriate scale (or rather scales), a mixture of uses appropriately located, and an urbane lattice of public, private and semi-private spaces. Helsinki should find the will and the cash to build it. P.D.

*Underground bus terminal: Pekka Helin, Vesa Jäntti, Tom Cederqvist, Mariitta helineva, Kimmo Lämätäinen, Juha Vesén, Ville Rautiainen
Housing: Marja-Riita Norri
Annanhalli (Anna Hall), library: Mikko Heikkinen, Markku Komonen, Mikko Rossi
Finlines, park: Kirsi Leiman



Häring's late and unrealized farm project (1943). Growing out of the programme.

DISCOVERING HARING

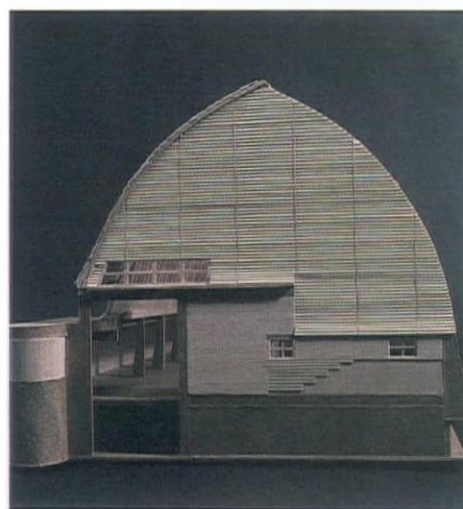
On 22 January 2001, an important exhibition will open at the RIBA in London. It lasts until the end of February. Peter Blundell Jones, its creator (with Nasser Golzari) writes:

Hugo Häring (1882-1958) was a key figure in the development of Modern Architecture in Germany. Although he built relatively little he was a copious writer and a deep thinker, developing a theory of Organic Architecture that later proved influential through the agency of his friend and colleague Hans Scharoun (1893-1972). He believed that architecture should not be 'imposed' as a preconceived idea but rather 'discovered' in an exploration of the place and conditions that the building is intended to serve. This laid an important emphasis on process rather than product, and on the expression of the task as opposed to the personal expression of the architect.

Since inspiration was to be found in the functional programme for the building, Häring has also been called 'the most extreme of functionalists' but his attitude was far from utilitarian. He wanted an architecture that responded to immediate conditions and therefore reflected them: an architecture of the utmost appropriateness. In his view the greatest obstacle to a building becoming what it needed to become was the imposition of 'geometry'. Whether this took the form of an axial methodology like that of the Ecole des Beaux Arts, a systematic grid like that of the Rationalists, or a Platonic belief in pure forms and proportions as held by Le Corbusier, Häring saw imposed geometry as a

straitjacket cramping a building's natural development. His critique of these methods was important for the attention it drew to a central issue for the Modern Movement: *Gestaltung* or form-making.

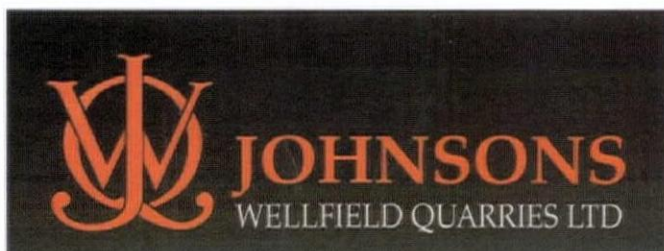
Häring was also important in the politics of Modern architecture in Germany. When he arrived in Berlin in the early 1920s he became friendly with Ludwig Mies van der Rohe, and for some years the two shared an office. Together in the mid 1920s they set up The Ring, an organization of architects which counted among its members all the main German Modernists, and which paved the way for CIAM. Häring was the Ring's secretary, organizing its exhibitions and publications, and he



Garkau farm, Lübeck (1923-25). Gable end of barn. Model of Häring's most famous work by Alan Williams and Rachel Hain, centrepiece of the exhibition.



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Häring's Siemensstadt housing in Berlin (1930). Several slab blocks which are his best known urban work.

also wrote polemical articles on contemporary issues in architectural politics. He and Mies shared a common conviction that the way forward in architecture was a return to first principles, but they each worked on their own projects, and from the beginning Mies pursued a somewhat reductive interest in simple and universal design solutions while Häring in contrast sought his territory more definitely, and Häring's position remains important as the defining antithesis to Mies's.

While Mies's background lay in the Neo-Classicism of Peter Behrens and the much earlier work of Karl Friedrich Schinkel, Häring had been taught by the great South-German planner and contextualist Theodor Fischer, who drew on the city planning theories of Camillo Sitte and the pan-European tendency of National Romanticism. Mies and Häring thus extended a debate from the previous generation, a debate that has continued in some ways to this day. It is about the advantages and disadvantages of repeatable building types as opposed to the unique building dedicated to place and purpose, and also whether architecture should be contingent or transcendent. Similarly still in flux are questions about the need for flexibility and the appropriate use of the machine. A surprising amount of work in the eighty or so years that have elapsed since Mies and Häring met to discuss architecture can be seen as an extension of their discussion.

PETER BLUNDELL JONES

HOLDING COURT

Queen Elizabeth opened the eponymous Great Court of the British Museum before Christmas. It is a splendid addition to the semi-public spaces of London. Robert Smirke's neo-Greek original museum building (1823-1847) contained a fine large central courtyard, each face of which had a portico. As the museum grew, it became clear that a large library was needed, and in 1854, Robert Smirke's brother Sydney started work on the famous cylindrical library which housed the cogitations of many of the most distinguished thinkers of the late nineteenth century and early twentieth, from Marx to Lenin, Kipling to Gandhi. Between drum and court, the corner spaces were filled with book stacks, the four porticoes looked over null spaces; the south one was demolished.

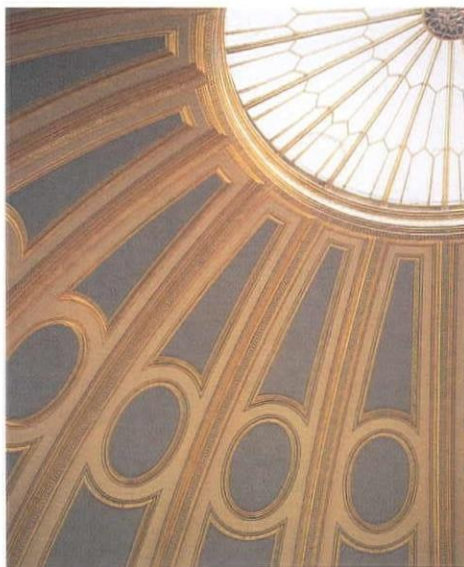
Over many years, proposals were evolved for relocating the library to free it of the intensely cramped conditions in the Great Court. Finally, in 1998, Colin St John Wilson completed his masterpiece on the Euston Road, a library which houses many more readers in different but equally majestic spaces, and in a building which has the possibility of expansion (AR June 1998). So the Great Court became free, and an international competition was held to decide how it should be developed. Foster and Partners won, and the new place is a tribute to their spatial skills, and the engineering vision of Buro Happold.

Fundamentally, the scheme is no more than making a glass roof over the pieces between quad and drum (the Victorian stacks have



Sydney Smirke's rotunda was never intended to be seen from the outside and has been refaced in stone.

been removed). But the problem was made very complicated because the cylinder is not absolutely central to the square, and each glass and metal member had to be made specific for its position. The library has been splendidly redecorated; the missing portico has been remade (with some controversy about the stone used). Surrounding galleries have been redesigned. New staircases round Robert Smirke's drum (which was never intended to be seen from the outside) link the levels of Sydney's building in a new and dynamic way. All this, and more will be discussed in the next issue of the AR.



Interior of library lovingly restored.



The mighty glass roof links Robert and Sydney Smirke.

competitions

Latest international competitions for architects and students.

Archiprix

Archiprix, the Netherlands prize for final year students, has done much to generate a vibrant architectural culture in the Netherlands (AR September, p82), and is becoming international. Archiprix 2001 will be judged by a distinguished international jury. The 50 best projects will be made into an exhibition held at the Van Nelle factory, Rotterdam, Mart Stam's marvellous Modernist masterpiece, which has been converted into a cultural centre. From these the winner will be chosen. Selected projects will be published in *The Architectural Review*, and Archiprix hopes to publish a book on the entries.

Schools can apply through the website www.archiprix.org, where full details of the award can be obtained. Each entry should have six A2 panels, ten 35mm slides and a 500 word synopsis of intentions.

Further details will be given in the AR shortly, and at our website: www.arplus.com.

European 6

Registration: 12 January 2001

Submission: 5 March 2001

Entry Fee: Euro 90/Euro 30 (see website)

Awards: Euro 14 000 total

Eligibility: European architects under 40

Jury: Not yet announced

European 6 explores proposals for transforming sites between the historic centres and the edges of cities. European towns are made up of several elements. For the most part, they have stable urban centres, but also have modern areas, the outcome of recent zoning. Between the historic centres and the periphery are a patchwork of older urban areas, inner suburbs, industrial districts, urbanized villages and demilitarized zones. European 6 proposes to explore these areas in order to reveal their potential and stimulate their development.

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100% Rubber Design

Type: Open

Registration and submission: 31 March 2001

Entry fee: None

Awards: £1000 award, plus a rubber floor

Eligibility: Open to all

Jury: To be announced

Now in its fourth year, 100% Rubber continues to flourish. Sponsored by specialist rubber manufacturer Dalsouple, the competition is open to any artist, designer or student who uses rubber in their work in a functional or aesthetic way. The amount of rubber used may be small, or the entire entry may be made of the material. The aim is to find innovative uses for rubber with an emphasis on creativity and wit. Categories include interiors and artworks; products; fashion textiles and jewellery; furniture and lighting. Winning entries will be shown in the 100% Rubber exhibition on the Dalsouple stand at this year's 100% Design Show in London. The winner of each category will receive a specially commissioned award and the overall winner will receive £1000 plus a rubber floor for one room in their house. Additional prizes may be awarded at the judges' discretion.

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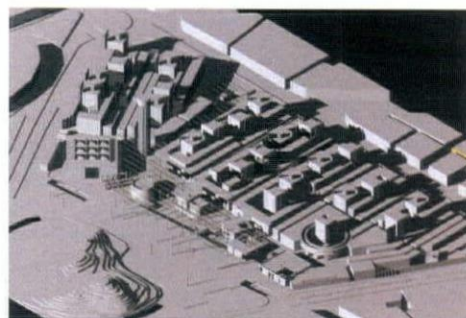
erratum

The credit for the Music School in Hamburg (AR November p66), should have read Enric Miralles Benedetta Tagliabue.

letters

PATIENCE EXHAUSTED

SIR: In your March 1998 issue (page 47), there had been an announcement for an international architectural and urban planning com-



Ilhan's ill-fated scheme for housing pilgrims ...

petition. The main theme of your magazine was the architecture in the Middle East. As a consequence of your advertisement, we decided to participate and submitted our design. And, after a very long evaluation process our project got the first prize out of 46 professional teams. You will find our project and the jury report attached.

Unfortunately, following the announcement of the results the organizer cut every means of communication! Naturally we expected to be invited to the ceremony of awards. But it did not happen at all and we could not get the \$50 000 prize. It is the same with the other teams whom you already know. For example, Dr Abdelmohsen Farahat from Egypt came second (one of his housing projects was also published in your March 1998 issue, p46).

Mr Davey, we have waited with an almost endless patience until today. But now we think that it is time to take this case to the international world and publicly known by other architects – again via your magazine. We hope you evaluate our unpleasant story and keep the architectural world informed as you always mention in your letters and issues.

Yours etc

CEMILHAN

Profis, Istanbul, Turkey



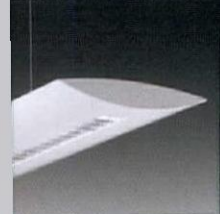
... which was intended to make a new urbanism in the Al-Riyadh District, Mecca.



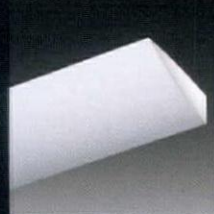
Malmo Pendant



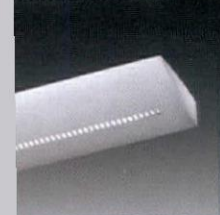
Malmo Trio Pendant



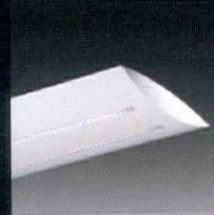
Malmo Wall



Malmo T16 Wall



Malmo T16 Pendant



Light in Detail

Malmo

Design Mats Thorén & Lars Bylund

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view

OBJECTIVE OBJECTION

SIR: I was a little surprised when I read the article on MVRDV's Dutch pavilion at Hanover (AR September, p64). The article is a mere (and a little swift) description of the building. There's nothing more of what we can see from the photographs ourselves.

There is, yes, an attempt at interpreting the building within its cultural context, but I found this very generalized and superficial. What most surprised me reading the article was the not-mentioning of Rem Koolhaas and his works. From the first photograph I had in mind Koolhaas' Bibliothèque Nationale de France and his writings on 'Bigness' and container buildings. What I want to express is that the similarities between MVRDV and Koolhaas appear evident (you only have to look at the books they wrote) and it seems to be a lack of information not connecting the two Dutch architectural experiences that today offer some of the most innovative ideas. I had heard that American, but particularly English, critics have always blamed Koolhaas and his projects, but I kind of didn't believe that ostracism could be so heavily evident.

It may seem that I'm a great fan of Rem Koolhaas, but I assure you it is not the case; the kind of architecture I like is quite a lot different. I'm simply a fan of objectiveness and historical exactness.

Yours etc
NICCOLÒ SEGATO
Rome, Italy

CRY FREEDOM

SIR: Please take three minutes out of your life to do your part. Madhu, the government of Afghanistan, is waging a war upon women. Since the Taliban took power in 1996, women have had to wear burqua and have been beaten and stoned in public for not having the proper attire, even if this means simply not having the mesh covering in front of their eyes. One woman was beaten to death by an angry mob of fundamentalists for accidentally exposing her arm while she was driving. Another was stoned to death for trying to leave the country with a man who was not a relative.

Women are not allowed to work or even go out in public without a male relative; professional women such as professors, translators, doctors, lawyers, artists, architects and writers have been forced from their jobs and stuffed into their homes. Homes where a woman is

that she can never be seen by outsiders. They must wear silent shoes so that they are not heard. Women live in fear of their lives for slightest misbehaviour. Because they can work, those without male relatives or husbands are either starving to death or begging on street, even if they hold PhDs. Depression becoming so widespread that it has reached emergency levels. There is no way in such extreme Islamic society to know the suicide rate with certainty, but relief workers are estimating that the suicide rate among women who cannot find proper medication and treatment for severe depression and would rather take their lives than live in such conditions, increased significantly. There are almost no medical facilities available for women. At one of the rare hospitals for women, a report found still, nearly lifeless bodies lying motionless on top of beds, wrapped in their burcas, unwilling to speak, eat, or do anything, slowly wasting away. Others have gone mad and were seen crouched in corners, perpetually rocking or crying, most of them in fear. A doctor is considering, when what little medication that is left finally runs out, leaving thousands of women in front of the president's residence in a form of protest.

It is at the point where the term 'human rights violations' has become an understatement. Husbands have the power of life and death over their women relatives, especially their wives, but an angry mob has just as much right to stone or beat a woman, often to death for exposing an inch of flesh or offending them in the slightest way. Women enjoyed relative freedom, to work, dress generally as they wanted, and drive and appear in public until only 1996. The rapidity of this transition is the main reason for the depression and suicide; women who were once educators or doctors or simply used to basic human freedom are now severely restricted and treated as non-human in the name of right-wing fundamentalist Islam. It is not their tradition or 'culture' is alien to them, and it is extreme even for cultures where fundamentalism is the rule.

Everyone has a right to a tolerable human existence, even if they are women in a Muslim country. If we can threaten military force in Kosovo in the name of human rights for the sake of ethnic Albanians, citizens of the world can certainly express peaceful outrage against oppression, murder and injustice committed against women by the Taliban.

Yours etc
SUZANNE DATHE and others

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Letter from Delhi

Arun Rewal reports from the Indian capital desperately in need of an urban architecture.

This summer we witnessed the birth of India's 'official billionth baby'. Delhi's population is now estimated at 14.3 million. Some suggest it will touch 22 million by 2021. While the city grapples with shortages of power and water, politicians, bureaucrats and technocrats have been grappling with numbers to work out how about 3000 megawatts of power and 4000 mglpd of water can be provided to the city. The increasing demand for new amenities and infrastructure – despite constant tussles to maintain the existing with limited resources – now sounds like a line from a scratched record. Urban crisis prevails. Yet most planners on the lookout for solutions remain safely ensconced in Nobel-prize-winning models lurking in economics textbooks from the 1950s. Articulate though they may be, these positions remain insensitive to the impact on the city. The planners persistently refuse to acknowledge that the solutions to the Delhi problem are connected with conditions in the neglected smaller towns and countryside. Mohandas Gandhi suggested decades ago that creation of better employment opportunities and living conditions in the villages for the bulk of the Indian population that lives there would be a wise investment. Yet what is being done for the villages is insufficient and Delhi will continue to suffer for it.

In this new era of liberalization, financing options have made it easier to get a loan to purchase a car than affordable housing. Consequently, in the absence of a good public transport system, the vehicles on Delhi's roads have swollen to around 2.7 million. This adds up to more than the other main cities – Mumbai, Calcutta and Chennai – put together. In their bid to solve the problem decision-makers have lived up to their reputation by creating yet another chain of problems. The solution they have gone for is flyovers that promise only to sweep Delhi's traffic problems from one area to another. These elevated mega-structures are enough to upset the stomach of anyone who contributes to the direct stream of excise taxes used to fund them. By avoiding anything related to a peripheral expressway, decision makers are merely sweeping problems under the carpet.

Meanwhile, the first 41.5km of a 198.5km metro network are also being built. For Delhi, the magnitude of this undertaking both in scale and coverage is unprecedented. It will be the largest urban intervention the city has ever witnessed; 85.2km² of the city will be within a five-minute walk of a station. In terms of sheer



Delhi being demolished.



Students' camp, Haryana by Gautam Bhatia.

magnitude, this works out at about three-quarters the area of Chandigarh; over 68 times the size of the existing floor plates of commercial district centres built by the Delhi Development Authority; or over seven times the area of the old walled city. Despite all this, it seems Delhi is to lose the chance to reinvent itself. Many of the proposed stations offer poor access and a number of transit lines would require reworking of the corridor alignments to be more purposeful.

Shameful

Both the Delhi Development Authority and the Delhi Metropolitan Rail Corporation have neglected the city building potentials. They have not grasped the enormous possibilities for raising finance for redevelopment, creating platforms for improvements and maintenance or even reshaping urban precincts. In fact the governmental bodies overseeing the project have not done anything to deal with the haphazard development that is most likely to follow. The less affluent parts will be left with an elevated section, which cities like Boston have after many years recognized as undesirable. What is even more shameful is that some of the very people who are working to tear down the elevated sections in Boston are helping build them in Delhi. Like cities in the United States, we may soon be spending billions of dollars to mitigate the metro's bad effects.



Recent misfits.



Arjun Malhotra house by Abhimanyu Dalal.

The Delhi summer is known to breed strange behaviour. In the heat, it becomes difficult to sleep, and it also becomes difficult to ignore what is going on around you. Consequently all the city's contrasts, contradictions and ambiguities seem to be magnified by the scorching sun. Contrary to all expectations, summer is also a time of year when some in the government are most active. The colonial legacy of moving out has found a new form within the city itself. This summer the Union Minister for Urban Development has taken it upon himself to arrest those guilty of non-compliance to building laws. This former bureaucrat has lashed the whip on those who built more than what is allowed.

Different estimates suggest that about 100 000 people live on the streets, 30 per cent of Delhi's population lives in slums, 70 per cent of the households live in one room or less and 90 per cent live in two rooms or less. Over 200 000 people come to Delhi every year in search of new employment opportunities and more comfortable living conditions. In the absence of provisions for humane living, most are forced to adopt public spaces. For the rich and middle class, cumbersome regulations, inflated land prices and greed have become convenient excuses to infringe the public domain. Land grabbing and building more than what was permitted have been widespread. After many years, encroachments were demolished and for

the first time authorities threatened to cancel leases to group housing apartments. Even as newspapers carried photographs of violations by the high and mighty – the politicians and builders – the action has so far been limited to the slum dwellers and the middle class. Some of the poor have recently been moved to Narela on the city's outskirts. Each family has been provided with bus passes and 12.5m² plots. Perhaps more such constructive approaches to accommodate the poor within the city would break this cycle.

As extremes become more pronounced, limits are breached and hope diminishes, perennially new ways of dealing with the reservoir of problems emerge. Much like the monsoon that follows, these provide a dash of respite and new rays of optimism. In this city of striking cultural, social and economic differences, the mood appears to be quite upbeat despite the urban crisis. Contributing to this are improved economic conditions for the wealthier classes. According to the World Bank's World Development Indicators, if purchasing power parity is considered, then the Indian economy is now the fourth largest in the world only behind the US, China and Japan. Also the new Forbes list of billionaires has more Indians on it than ever before. India is working hard to change its image from a nation of 'snake charmers' to 'mouse charmers'. Computers and information technology are 'in'. The government is certainly relying on this area to bail the country out. Delhi's new found prosperity is reflected in the numerous retail and entertainment outlets that are mushrooming all over. The interiors of these are no different from those in any cosmopolitan city in the world. However, what may differentiate this city is what is now a common condition in most Indian cities: filth and squalor in the public areas beyond Delhi's central Lutyens zone.

New-found aesthetic

For the first time both the Miss Universe and Miss World titles rest on Indian heads. However Delhi's new-found aesthetic is one area which would have no chance in any contest. Recent building types conjuring images from the American suburb are the latest set of banalities assaulting the landscape. A number of these hackneyed boxes have no architectural significance. They are the latest imports brought in by third-rate architects from overseas, now permanent fixtures in a system of consortiums necessary to win projects. The methods of selecting architects are drawn from archaic and insensitive World Bank guidelines that are not concerned about creating architecture. The assumption behind the new-found practice is that large firms, especially those from overseas, know and can deliver the best.

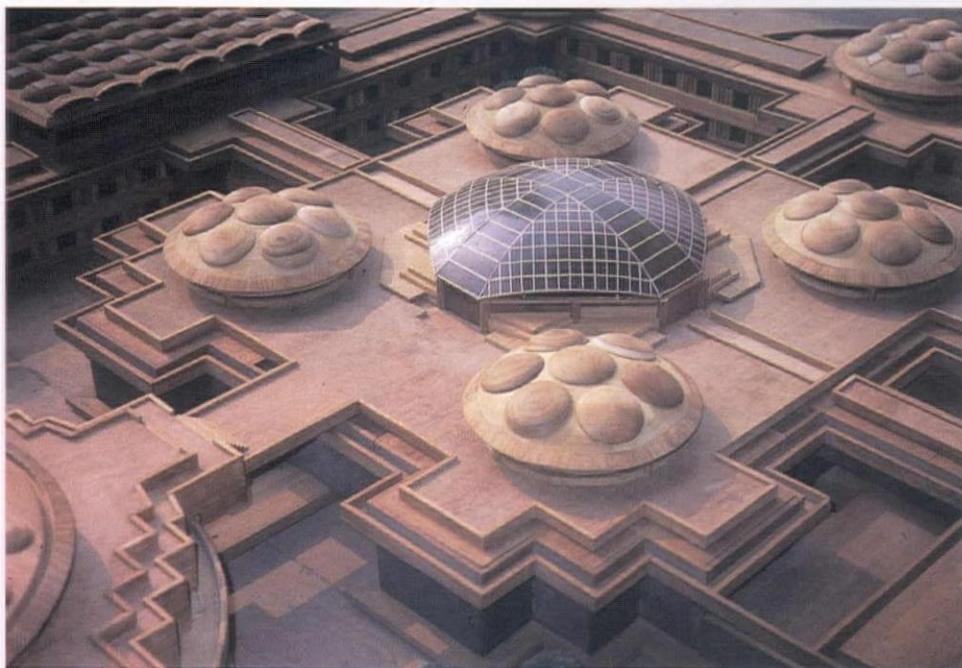
Consequently, large-scale architecture projects in the city have been left to the mercy of management firms with partners from abroad or large engineering businesses with architecture divisions. Building form and space is reduced to hackneyed unadulterated ugliness. On the other side of the organized building activity spectrum, greedy developers are busy subdividing single family homes to flats. The face of the dreary structures that they have been creating recall icing on decadent cakes, or patterns found on the soles of some of the gaudiest plastic shoes available in the bazaar.

Unlike Corbusier and Kahn's influence that paved the way for new architectural possibilities, the architectural value of these new imports is null from inception. Corbusier and Kahn's works in India emerged from readings

of a magical mysticism coupled with an understanding of ground realities and craft. Their synthesis provided the foundations for the creation of multi-layered orders that could transcend different conditions. It was grounded in realities that they sought to control and transform through their design. And, in celebrating human experiences, the architects resurrected involvement with the physical world. In response to Indian conditions, they demonstrated tactics to accommodate contrasting and contradictory conditions to create an architecture of great richness. These representations of 'optimism' and 'progress' also contributed to the advancement of building trades and the architectural profession too. In contrast, today's influence from the outside is an import that is neither sure of itself, nor rooted any-



Raj Rewal's Parliament Library adds to the great Lutyens/Baker complex. Under construction and ...



... as it will be.



Metro station, Kashmiri Gate by Delhi Metro Rail Corp Ltd.



NDMC Civic Plaza by Kuldip Singh.

where. Sporadic expressions of consumerism and clunky technology seek an equation with modernity and progress.

The troubling results are now showing. And as a consequence most young architects or even established Indian firms have little chance to display their talents. The new prototypes are taking over and erasing the vast canvas of architectural innovation that had been developed in the post independence era. The numerous 'Malibu Housing Estates' and the metro station at Kashmiri Gate seemingly modelled as a pregnant centipede fallen from Mars bear squat testimony to this.

The best buildings under construction are still those designed more than a decade ago. Kuldip Singh's block for the New Delhi Municipal Committee's Town Hall creates a new public square across from the Jantar Mantar. The building carves out a spatial form evocative of a Gopurums, that holds together diverse elements within the complex building envelope. Raj Rewal's innovative glass domes for

the Parliament Library provide for variations in spatial definition by utilizing delicate plays of light. These buildings allow means to support the 'cultural deep structures' that are embedded in traditional pattern making.

At the same time, there are a few whose work in this age of a smaller world is dominated by the desire to express an 'autonomy of the architecture'. This is a shift from the forces in a 'distanced' India, which within the first few decades of independence have aimed to express collective identities and national or regional concerns. At this stage of development, in most cases it is not the resultant form, nor the space and sometimes even the specificity of technique that is of particular interest, but the choice of the strategies that has contributed to their making.

In Gautam Bhatia's architecture there is an attempt to do away with a composite building. Fragmented programme components are often linked to place an observer simultaneously in a field and in front of objects that have been

scaled down. Bhatia utilizes a constrained irregularity to order his architecture. Abhimanyu Dalal's architecture attempts to define a context as much as to create it. He builds his works on narratives that provide the platform to engage in a site. In Dalal's work the narrative mediates to establish connections with history, the physical environment or the architectural context of the area within which he builds. Each of these connections is established in formal terms – a space between two gardens, a link to the sky, or a romantic reminder of Delhi's Barsati house type. Their physical manifestations are often reinvented and then composed in a fresh manner to project a new image. Closely related to the Dalal's ideas about the context are the expressions of 'lightness' and 'independence'.

A promising trend sponsored by the Urban Arts Commission is to develop visions for large precincts of the city. A recent proposal by Sanjay Kanvinde, Arun Rewal and Anuraag Chowfla carves out a new public domain within the central district's Barakhamba Road Area. The plan proposes to decongest the road, synergize the benefits of the proposed metro, provide for amenities like parking, parks and a series of pavilions to define the road edge. One only hopes that studies such as this pave the way for shifts in the creation of architecture. What Delhi needs is an architecture of the city.

ARUN REWAL

Arun Rewal, architect, urban designer and planner is a graduate of the School of Planning and Architecture, Delhi and the Massachusetts Institute of Technology, Cambridge. He has worked in Boston, Dallas, Montreal, New Delhi and Paris. He currently practises and teaches in New Delhi.



february

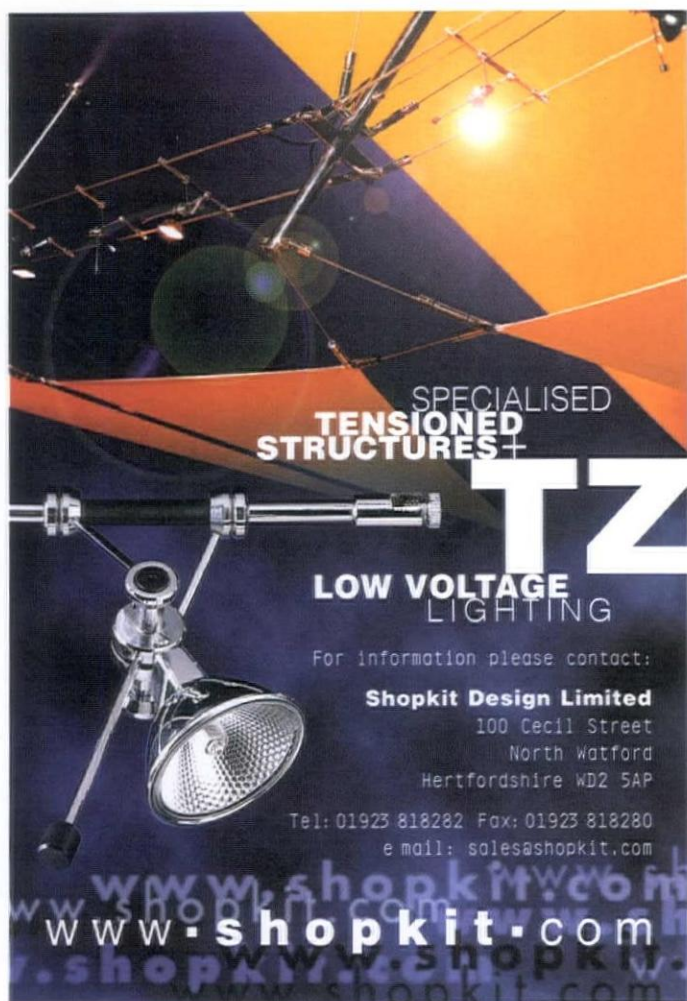
Workplaces are some of the prime urban types of our time and some of the most difficult. Modern cities are dominated by the soulless hulks of speculative office blocks. AR's February issue looks for signs of intervention and hope in the world of workplace.

Renzo Piano's splendid skyscraper in Sydney shows how architectural imagination and an enlightened client, prepared to allow a degree of mixed uses, can produce new forms of urbanity. A completely different kind of brief produced the Hopkins' controversial Portcullis House in London: the office extension of the House of Commons. Here is the office building as private, collegiate enclave, but it becomes part of the city by being set on top of shops

and a huge and complex metro station. Also in London, Richard Rogers Partnership have seized a conventional speculative office brief and shown how it can produce a large complex that has both human scale and a degree of engagement with the public life of the city. Bolles Wilson's Volksbank in Borken, Germany brings a continental European dimension to the debate about the nature of offices.

As well as the main theme, the February issue will have a major article on the revolutionary transformation of the British Museum by Foster and Partners. And of course, there will be our regular features: Delight, Design Review and a letter from Tanzania. Get this issue and 11 others at a discount by using the subscription form or from our website at:

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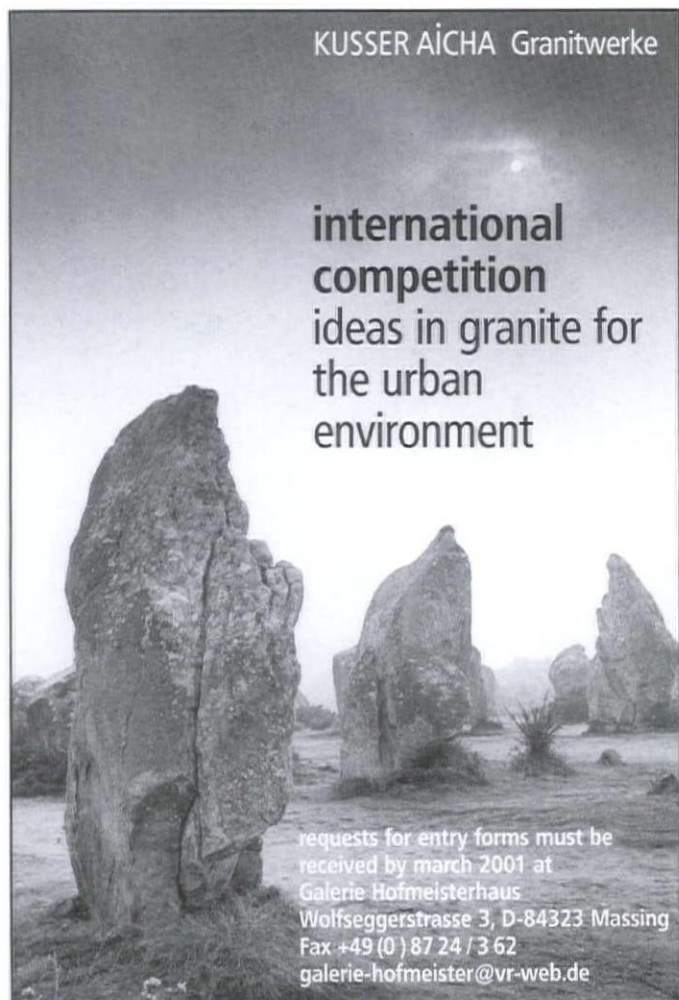
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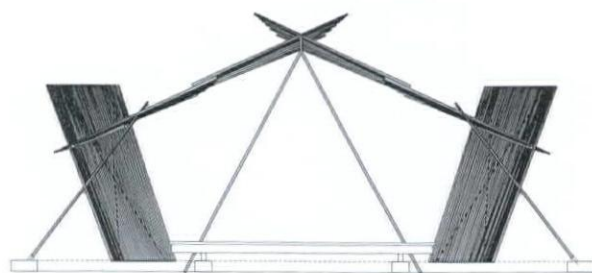
For more details enter 9 on AR enquiry card

Bamboo has always been held with special reverence in China. It is regarded as being synonymous with the nobler human qualities of resilience, honesty (being straight) and humility (being hollow in section). As a building material, bamboo is still commonly used today in Hong Kong in two main ways: as scaffolding for construction and for small temporary structures. The latter are best represented by the open bamboo theatres built to celebrate traditional festivals. These are quickly erected and then dismantled, all within a matter of days.

Rocco Yim, a Hong Kong based architect, was asked to design a temporary pavilion to function as an outdoor

performance venue and symbolic focus for a Hong Kong arts festival in Berlin last summer. Because of its traditional cultural association and practical properties, Yim chose to work in bamboo.

But the use of bamboo and the incorporation of age-old jointing techniques – by binding and lashing with sheaths or wires – are the only concessions to tradition. The configuration and structure of the Berlin pavilion is otherwise entirely contemporary. Unlike traditional bamboo structures constructed on the principle of redundancy, by employing many more members than required using a rough Cartesian grid, Yim's pavilion is meticulously set out and precisely engineered.



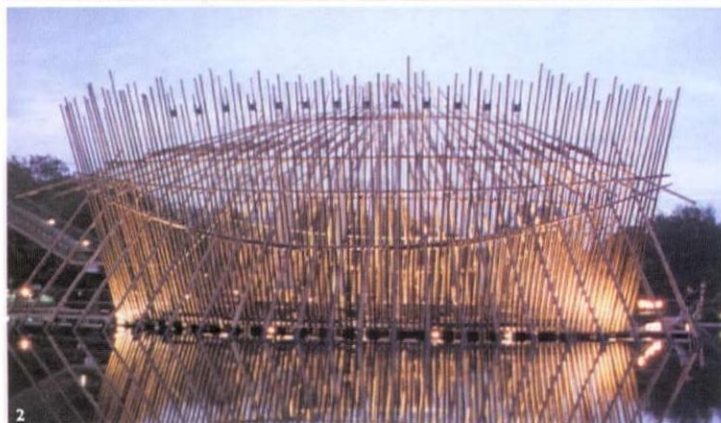
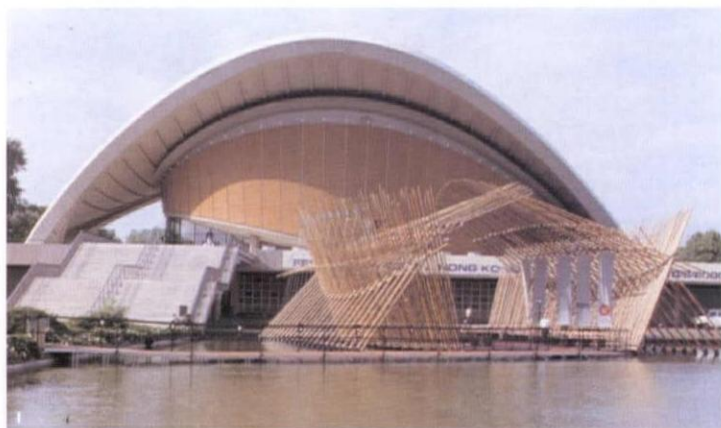
cross section



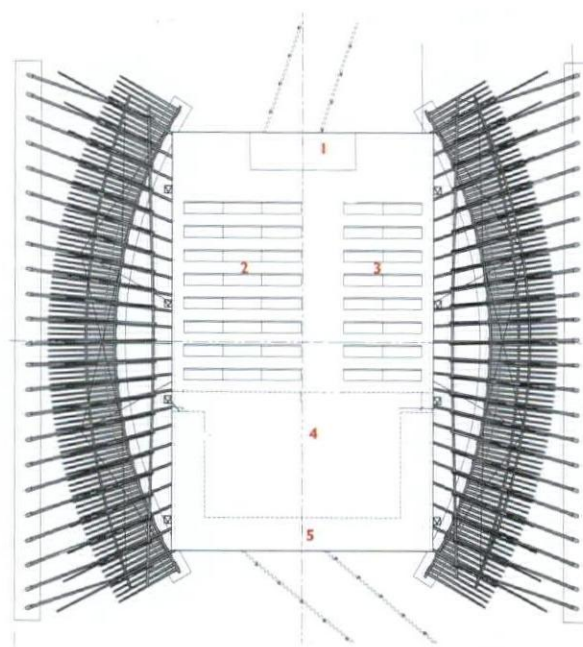
longitudinal section

Bamboo jamboree

Made entirely of bamboo, this temporary pavilion reinterprets a traditional material in a contemporary way.



- 1 control box
- 2 three-seater benches
- 3 two-seater benches
- 4 stage
- 5 cross-over



ground floor plan (scale approx 1:300)

- 1 The temporary bamboo pavilion nestles beside the House of Culture, overlooking a small lake.
- 2 Bamboo members form a delicate, lattice-like structure carefully engineered to optimize its structural efficiency.
- 3 At night, the bamboo lattice has a magical, sculptural quality.
- 4 Detail of the structure. Members are fixed together using traditional techniques of wire binding and lashing.

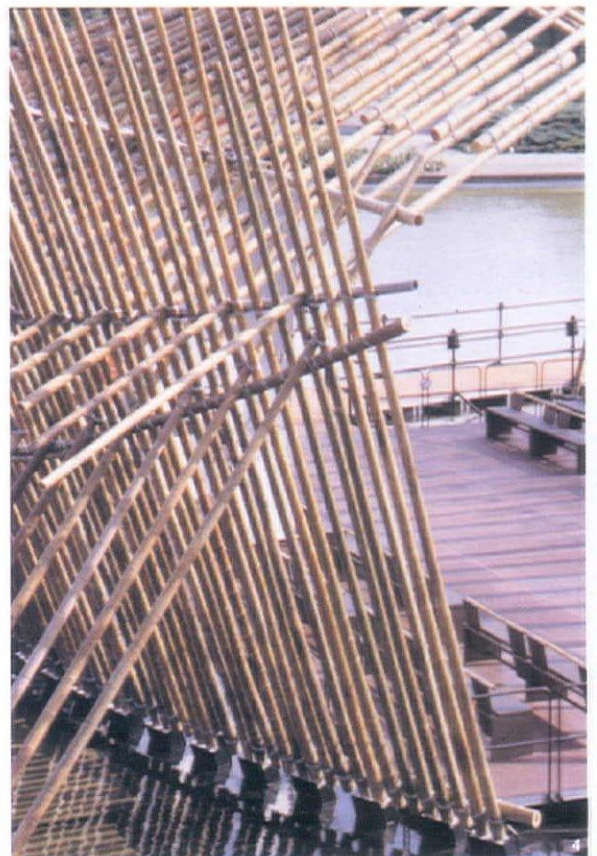
Exploiting basic structural concepts of triangulation and curvilinearity in order to produce an inherently rigid, yet dynamic form, the light, ephemeral pavilion sits serenely above a small pool. In all, around 400 pieces of bamboo were required for the project. These were specially sourced from the southern Chinese province of Guangxi, with strict requirements on thickness (approximately 120mm diameter), so that lateral setting out could be achieved with reasonable precision, and on length (approximately 8m) so that longitudinal lap joints only occur at the top-spanning pieces (across a clear span of 18m). Bamboo members were straightened in China through heat and pressure, and then processed with insecticide and fire retardant. All material specifications and structural

calculations had to follow strict German codes.

Since the form of the pavilion differed so greatly from traditional bamboo structures (none of the members, for instance, is horizontal or vertical), a prototype was first erected in Hong Kong so that workmen could familiarize themselves with its constructional intricacies. The same crew then went on to Berlin to execute the project.

Apart from its symbolic function, the pavilion was a venue for outdoor drama, music and arts events throughout the festival. Originally it was due to be demolished last September, but the Berlin House of Culture now intends to retain it on site until this spring. C. S.

Architect
Rocco Design, Hong Kong



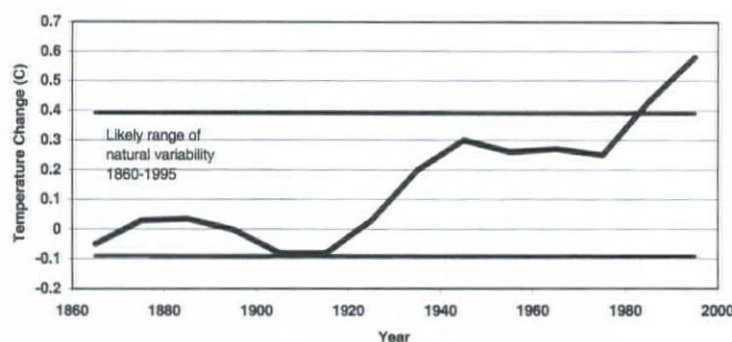
comment

A year or two ago, Max Fordham, the distinguished environmental engineer, remarked that 'Even if [human generated] global warming can't be proved to be taking place, we should behave as if it is'.¹ By its nature, climatic change cannot be determined with any accuracy over a short period of time. As we all know, there is a great deal of randomness about the weather: some years have always been much hotter, colder or wetter than others, and it is ridiculous to make generalized inferences on the basis of a couple of hot summers or wet autumns. Only observations over decades or even centuries can clearly demonstrate whether or not climatic alteration is really taking place.

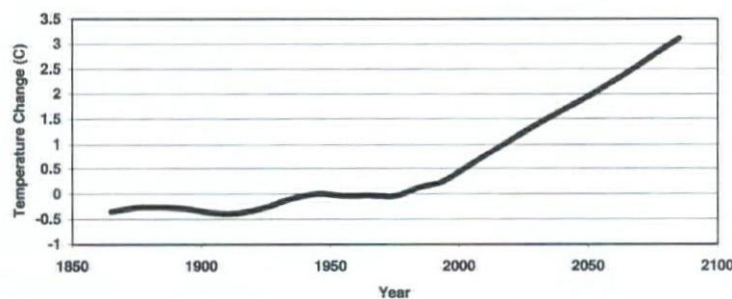
The earth is subject to remorseless very long-term alterations in climate caused by changes in its angle of axis of spin, and in the shape of its orbit round the sun. These have caused the ice ages and their rarely mentioned concomitant warm periods. Such colossal aeonian alterations in the world's climate are not the only ones. There was, for instance, what some historians have called 'a little ice age' between the thirteenth and seventeenth centuries in the northern hemisphere, when Dutch painters like Avercamp painted their happy skating scenes in which whole communities took to the ice, and the Thames regularly froze in winter so hard that frost fairs, complete with bonfires and temporary buildings, could be held in the middle of the river. So perhaps the present apparent warming of the earth is no more than a tiny fluctuation caused by minute alterations in the earth's rotational habits. Perhaps it is part of a counter swing to the little ice age. But, undoubtedly, the world has been getting warmer in the last couple of decades. Since 1980, the global mean temperature has begun to climb well above the likely range of natural variability experienced in the previous 120 years. Arctic ice is apparently melting. There have been hurricanes in Britain and France, wild fluctuations of temperature in Australia and floods all over the world.

Natural or human-made?

We simply cannot tell whether or not this global warming is natural, or human-made, or a combination of the two. So Fordham's proposal that we should behave as if it is a product of human activity must be taken seriously. Simple physics suggests that we must be involved. Carbon dioxide and other greenhouse gases made by fuel consumption on unprecedented scale trap the sun's radiation near ground level, so causing the mean surface temperature of the planet to rise. CFCs and other agents eat up the ozone level, increasing solar irradiation which further heats the earth: a vicious cycle has



Change in global mean temperature (from Potential Implications of Climate Change)



High scenario for global mean temperature (from Potential Implications of Climate Change)²

probably been set up. It is difficult to imagine that this will not have a cumulative effect which will be very harmful to humanity. A recent report from the British Foundation for the Built Environment stresses that 'Mitigation efforts are vital to minimize the effects [of climate change] and to delay their onset ... but changes to sea level will continue even if all industrial activity stops now'.²

Clearly, such an abrupt halt is quite impossible, because everyone's expectations of increasing prosperity are based on increasing industrialization, not only in the richest countries but, perhaps more importantly, in the developing ones. Why should folk in the richest countries expect people in the developing world not to share their ambitions of material improvement through industrialization? But if India, Indonesia and China strive to adopt the same kind of energy consumption as that of the United States, humanity faces catastrophe. Biological activity on the earth, however, will survive. Gaia will simply change gear and different species will flourish, while humanity descends into barbarism worse by far than the dark ages which have succeeded the collapse of empires.

DESIGNING OUR FUTURE

This issue is devoted to sustainable building, desperately needed in a world which is clearly becoming climatically unstable. Architects and other designers can really make a difference as building and other forms of construction consume more energy than all other human activities and intelligent environmental strategies are obvious.

We can design ourselves out of this terrifying future. But design will be needed at all levels. Only global political action can start to achieve a world-wide consensus about how individual nations can contribute to reducing the output of greenhouse gases. Unfortunately, as the recent failed Hague conference showed, the most powerful nation is not prepared to modify the extremely effective system which drives it at the moment. Instead it plans to purchase quotas of greenhouse gas emission from poorer and less industrialized countries. This is a sophisticated form of colonialism, and, like all other forms, will not be sustainable, even by force. But the other main idea from the US – massive planting of forests to help reduce the carbon dioxide content of the atmosphere – is surely worth consideration as part of global policy.

At the moment, no strategies or mechanisms are envisaged for reducing, never mind stabilizing, the exponential growth of travel which is beginning to be one of the major contributors to climate change. In the richer countries, we all fly, and would be very resentful if our air miles were to be curtailed by law. Perhaps the only hope here is that the skies will become so crowded, and other methods of communication, surface and electronic, will become so much more efficient that air transport will become less attractive, and that demand will gradually curtail.

Maximize ambient energy: teach its importance

Regional and national planning should surely lay emphasis on maximizing ambient energy: the forces of the wind, waves, tides and the fires in the bowels of the earth. Already, Denmark, one of the most successful economies in the world, derives a significant proportion of its national electricity from natural sources – it is a small country, but one of the most sophisticated, which has shown by example what bigger ones could try for. Nations like Denmark, Singapore and the Netherlands have also shown how public transport can be made attractive, so reducing energy inefficient private car journeys. They may be small, flat and prosperous places, but they have lessons to teach to much larger and topographically more varied ones.

At local level, planning should surely strive to increase density in urban areas to combat the increasing suburbanization of the richer countries. Suburbs smear themselves across the fertile land that gave cities their *raison d'être*, necessitating long journeys usually involving car transport. No one since immediate post Second World War planners with their green belts round cities (which have, on the whole, worked well when they have been maintained), has

suggested that suburbs ought to be curtailed. What architects failed to do was to provide geometries of living that offered density with the advantages of suburban living: close contact with nature, family and individual privacy. Yet density cannot be an end in itself, as slums from Bombay to Bogota demonstrate. Urban efforts need both the inspiring bravery of poor urban immigrants, and a sense of *civitas*, by which the community recognizes common interests and generates infrastructure which can enable both rich and poor to lead less environmentally destructive lives.

Finally, the micro scale of planning: the design of neighbourhoods and buildings. Construction and use of buildings and infrastructure are the main ways in which we use energy, a much greater proportion than either transport or manufacture. So anyone involved in originating buildings, clients and consultants alike, can make a real difference to the planetary balance in favour of humans. All students should be taught about the importance of the ecological imperative from the first hour of their first year. By intermediate stage, a thorough understanding of the principles of passive and active energy conservation should be expected. At graduation, students should be required to understand total environmental impacts of their work, both as individual buildings and parts of a greater organism. Such emphasis should not preclude the traditional studies. But as Catherine Slessor urged a year ago,³ we should add to Vitruvius's *firmitas*, *utilitas* and *venustas* (strength, functionality and beauty),⁴ with which we are all brought up, a further criterion for judgement of architecture: *restitutio*, restitution, in which the act of building enhances the environment in ecologically responsible manner.⁵

Unless our profession, which has so much responsibility for the environment, is seen to be in the forefront of concern for the condition of the world, we shall deservedly be marginalized. That will be a disaster because, as the work shown in this issue demonstrates, architects and planners can use their imagination to make the world a more sustainable planet for human beings to live in. We can and must all learn to respond to Fordham's challenge.

PETER DAVEY

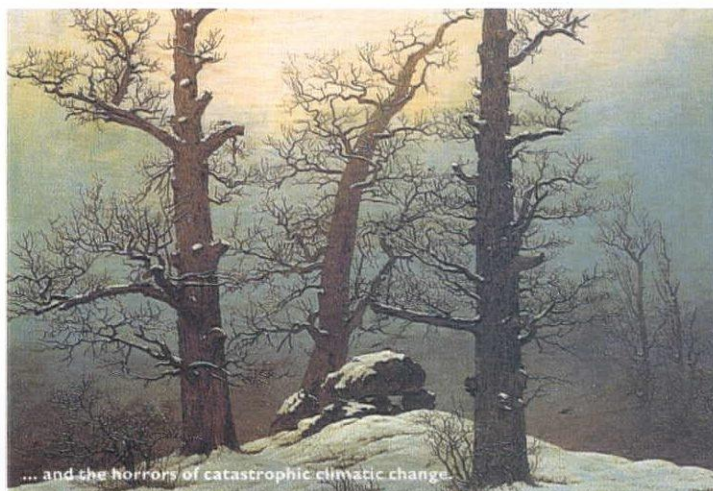
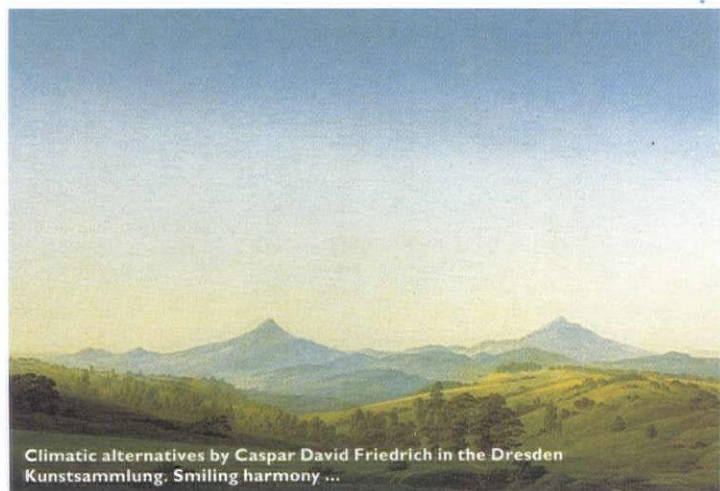
1 Fordham, Max. The remark was made at the AR's conference on *Sustainable Architecture and Construction for the Middle East* in Dubai, 1998.

2 Foundation for the Built Environment, *Potential Implications of Climate Change in the Built Environment*, Hilary M. Graves and Mark C. Phillipson, CRC, London, 2000, p2.

3 Slessor, Catherine, *Physics and phenomenology*, AR January 2000, p17.

4 Vitruvius, M. Pollio, *De Architectura*, Book I, chapter 3.

5 The original idea was propounded in *A Green Vitruvius*, pub James & James, London, 1999.



INSTITUTE FOR FORESTRY AND
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THE NETHERLANDS

ARCHITECT

STEFAN BEHNISCH
OF BEHNISCH, BEHNISCH & PARTNER

FORESTRY COMMISSION

The new Dutch Institute for Forestry and Nature Research shows how we can build sustainably without special financial incentives for green architecture.



When the Dutch combined three formerly separate bodies as a single Institute for Forestry and Nature Research, they decided to make a serious example of ecological planning following the aims of the Rio Summit.¹ No special funds were provided: it was to show that environmentally-conscious architecture can be achieved within normal cost limits, and although the building was to represent the ecological concerns of the institute, empty Eco-rhetoric was to be avoided.

The site was a field to the north of the town of Wageningen which had fallen into a depleted state through intensive agriculture. Its restoration was part of the institute's work, and the surroundings would both allow space for the development of experimental ecological gardens and create a green corridor between the Rhine valley and the Hoge Veluwe Park. Such corridors allow links between ecologically protected areas, so that plants and animals can spread from one to another and form a network. The handling of water within the site could also be studied, and has included a sophisticated grey water cycle for the building using rain-collection and a sequence of ponds. An invited competition was held with three entrants, and Stefan Behnisch and his

architects won with a design based on minimizing embodied and consumed energy, saving water, avoiding toxic products, and allowing for eventual recycling. This meant that choice of forms and materials was often dictated, or at least severely limited, by ecological and economic considerations. Thus the building is deliberately principle-rather than image-driven, the image being the result of the process.

Behnisch was also concerned not to compromise on providing the humane type of office environment for which the practice has long been known, and to provide a degree of participation in the planning process. Although the result is in some ways reminiscent of earlier works from the firm run by his father, such as the famous Diakonie in Stuttgart (AR June 1985), the architectural language is more restrained, even deliberately unshowy. Cranked angles and colliding details are few, the building being almost entirely orthogonal, and a pragmatic order rules. The ecological commitment was Stefan's, and shows a new direction which the city branch of the firm is taking under his leadership,² for though present in an advisory capacity and as partner, his father Günter had no great interest in ecological matters.

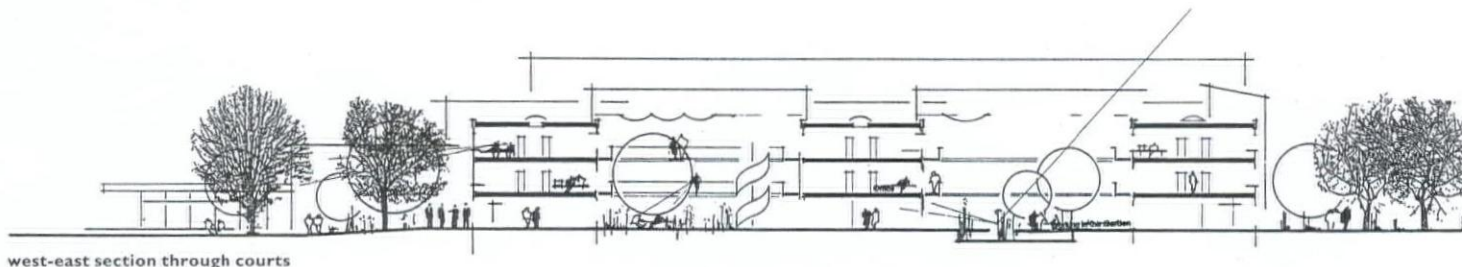
The three-storey building allows for

compactness without reliance on lifts, though there are two for use by disabled people. The parti is based on a continuous spine on the north side containing laboratories, from which three wings of double loaded offices extend southward. This articulates the two basic accommodation types and allows a straightforward economical construction grid, extendable if necessary by lengthening the spine and adding more wings. The major architectural innovation lies in the treatment of the two spaces between the office wings, which serve both as ecological gardens and as climatic buffers. Cheaply covered with a standard single-glazed Dutch horticultural system, these courts are not indoor spaces in the full sense, as the office windows and terraces looking into them had to be fully protected and double-glazed as external facades. Since place of work regulations set a minimum temperature of 16 deg C, they cannot be officially included in the building's circulation system although they are always so used: the official route is via the spine.

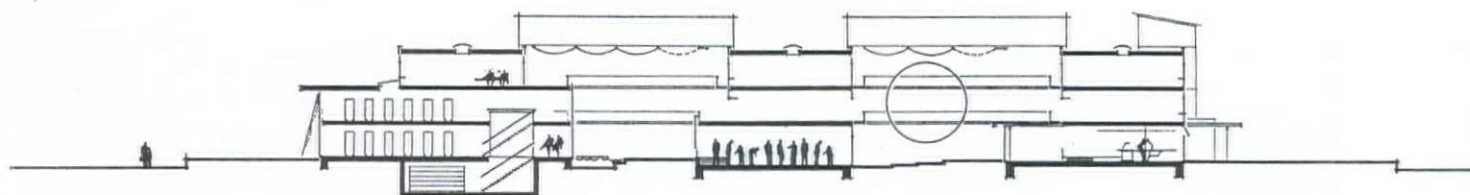
As gardens, the courts house ecological experiments while also providing views and recreation for the workers. The plants within them humidify and cool the air in hot weather. As climatic buffers they serve as solar collectors in the cooler part of the year.



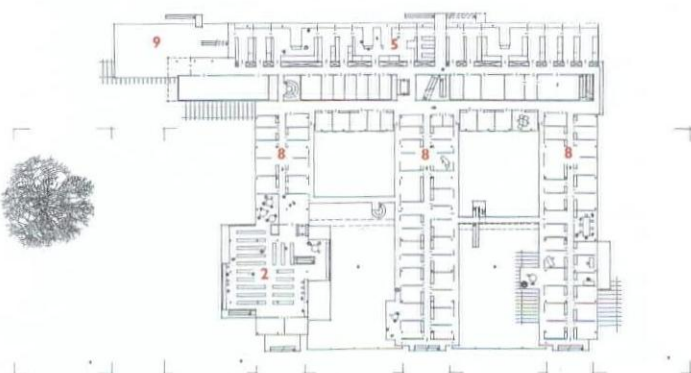
1, 2, 3
The south front is dominated by the huge glass walls of the two green courtyards, which ...
4
... give the building its character, and act as experimental landscapes. This is the west court which, like the other, also acts as main east-west circulation route.



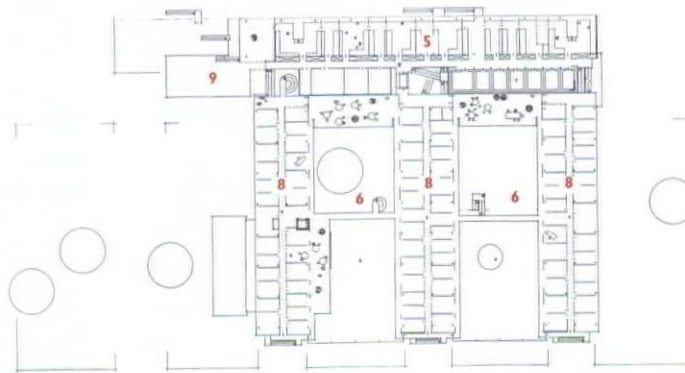
west-east section through courts



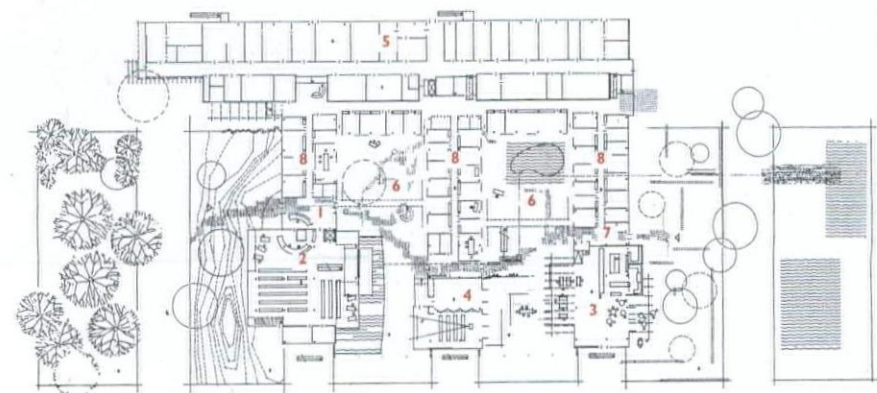
section through library and restaurant



first floor plan



second floor plan

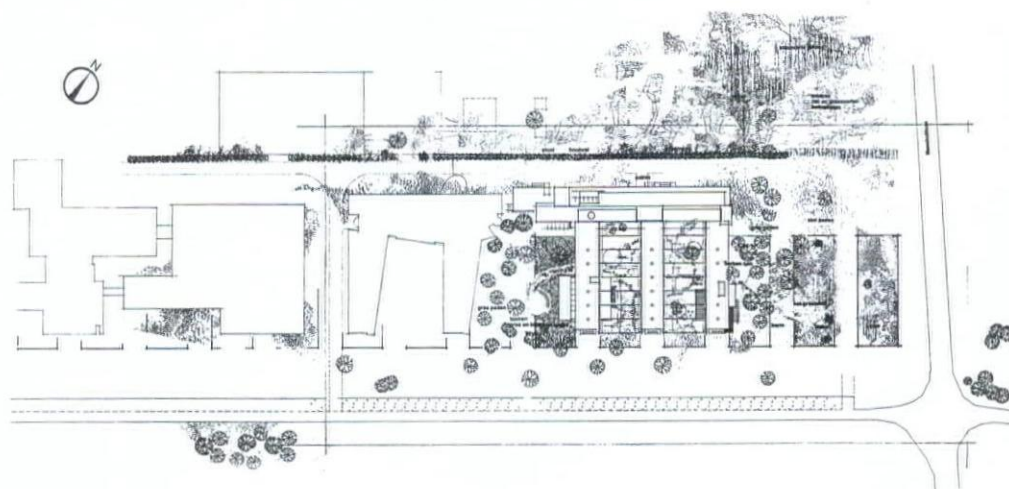


ground floor plan (scale approx 1:2000)

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NATURE RESEARCH, WAGENINGEN,
THE NETHERLANDS**
ARCHITECT
**STEFAN BEHNISCH
OF BEHNISCH, BEHNISCH & PARTNER**

5,6
Offices and nature are intimately
mixed, with varied planting and
landscaping.

- 1 main entrance
- 2 library
- 3 cafeteria
- 4 conference suite
- 5 laboratories
- 6 court
- 7 secondary entrance
- 8 offices
- 9 roof terrace



site plan



5



6

night re-radiation being prevented by reflective blinds pulled across under the glass roof. If the temperature is high enough, heat is transferred to the offices by opening windows, but even when it is low, heat loss is reduced. In summer the blinds are closed to cut solar input while the large roof vents are opened to provide a thermal chimneys, cool air being sucked in through the crawl space of the north wing. The adjoining offices to each court can then be cross-ventilated via open doors and windows.

Exposed concrete slab ceilings in the office wings act as heat stores, stabilizing the temperature of the working environment. In winter they can be gently heated. In high summer, daytime heat build-up is dissipated at night by through draughts, exhausted via the open roofs of the courts. As a result of all these measures, the office wings could be left without air conditioning, and it is avoided everywhere else in the building except the laboratories, where the nature of the work compels it. Beside saving electricity, avoidance of air conditioning reduces capital outlay on mechanical services, and it side-steps the bacterial problems known as sick building syndrome. It also meant that no space needed to be left for ducts, so floor-to-

floor heights could be reduced by around 300mm. For a low-energy building there seems to be a lot of glass, but thanks to wooden frames and double glazing, heat retention is high, while strong daylight reduces the need to burn electricity for lighting. The relatively shallow plans are also vital in this respect, their central corridors being partly daylit by high-level glazing. As in other Behnisch buildings, generous daylighting is inspiring, and even on an overcast day the place seems bright and cheerful: many of the photographs published here were taken when it was raining outside.

Despite the rigid and repetitive construction grid, the institute is a lively and varied building spatially because of the many variations played against the core rhythm. The courts have developed in contrasted ways with varied internal watercourses, terraces and types of planting. Equally effective is the varied treatment of the stairwells between office wings and spine: one is a spiral, the second has two skewed flights, the third is a dogleg. These variations not only help with orientation, they also provide much needed spatial accents within the general structure. More prominent still are the specialized social areas of the ground

floor, for the three wings contain respectively the library, conference suite and cafeteria. Though planned each time around the column grid which carries offices above, they expand beyond the narrow wings to project as bays into the courts, providing terraces for the offices above.

The main entrance is at the west end next to the library, and is tied to it by a drum-shaped reception counter. A meandering route runs through from here across the two courts, linking the three social facilities. Most of the time this irregular route, along with the bridges and stairs which connect it to higher levels in the courts, take over from the spine as the main circulation. There are places for people to stop and meet for a chat as they come and go, and those in surrounding offices can enjoy the spectacle of life in the courts.

In constructing the building, every attempt was made to reduce embodied energy and potentially toxic products. Doors and windows were made from local larch and robinia cut in small sections and relatively short lengths, using wood which is normally wasted. Because timber is regenerable, Behnisch also wanted to use it in massive form in place of concrete for the office floors,

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OF BEHNISCH, BEHNISCH & PARTNER

7
Working life can easily move from individual offices
to the semi-open space of the courts.
8
East court: solar gain is mitigated in summer by
reflective velaria.
9
Bridge over west court.
10, 11
Stairs in laboratory block are welcome spatial accents.
12
An ideal way of working in a large organization.



supported on a minimal steel frame. Despite the considerable quantity needed, this promised a lower embodied energy figure, meeting structural, acoustic and fire performance, while calculations of thermal mass also looked promising. But in the end, this unconventional form of structure was regarded as too risky by the client. Attention was also given to the environmental impacts of incidental materials, including for instance, the avoidance of standard PVC electrical conduits in favour of chlorine-free plastic pipe. (This caused unforeseen difficulties because the new pipes lacked the lubricant which helps the wires through.) Scrutiny of all materials showed how difficult it is to avoid environmental damage: ecologists at the institute regarded even the use of galvanized steel frames for the glazing as unfortunate, because of the gradual run-off of toxic zinc salts.

The economics of building are usually governed by immediate figures on the balance sheet: cost of site and construction, running costs such as gas and electricity, pay-back periods on loans and so on. Longer term maintenance costs are a lower priority, while demolition costs are usually completely ignored, along with disposal of site debris. The energy cost of extracting or producing materials, working them and conveying them to the site, is generally

hidden within the more general construction costs, so that comparisons between more and less energy-rich solutions are not made. Differences in immediate or later toxicity also go unremarked, provided they do not contravene safety standards. All in all, judgements about costs to the planet are hard to make, and architects are generally too busy to bother calculating them on their own behalf.

Behnisch's institute shows that by bringing this issue into the foreground, the overall cost to the environment can be cut from around 150 and 200 per cent of the initial investment – the figure for most current buildings – to around 127 per cent.³ This is achieved by considering embodied energy, operating energy, local resources and recycling. In the realm of office building Behnisch's design suggests a radical alternative, both more flexible and more sustainable. Putting up with a little temperature variation can result in considerable saving of energy, and parameters can be less strict if people are empowered to change local conditions themselves. It is also healthy and psychologically beneficial to remind ourselves of the differences between day and night, summer and winter. And instead of planning

buildings indiscriminately and then using mechanical systems like air-conditioners to squeeze the result into certain norms, we could be more intelligent in our initial choices, building to welcome sunlight and daylight and providing adjustments against excess. Everything remains on the surface of our small planet to be reused in some way, and every place has to be cared for.

PETER BLUNDELL JONES

1 The competition was launched in 1993, the building completed in 1998.

2 Günter Behnisch split his office in 1989, with the original branch in the Stuttgart suburb of Sillenbuch and the new one in the city centre. Since 1990, Stefan has headed the city office, since 1992 as a partner in Behnisch, Behnisch & Partner, which, at that time, were called Behnisch & Partner, Büro Innenstadt.

3 Statement issued by the architects on the basis of a study performed by the Dutch government. This and much more information is also given in a Dutch/English book by Egbert Koster entitled *Natuur onder architectuur* (Architecture for nature) and published by Schuyt & Co, Haarlem, 1998.

Architect

Behnisch, Behnisch & Partner
(Günter Behnisch, Stefan Behnisch, Günther Schaller)

Project architects

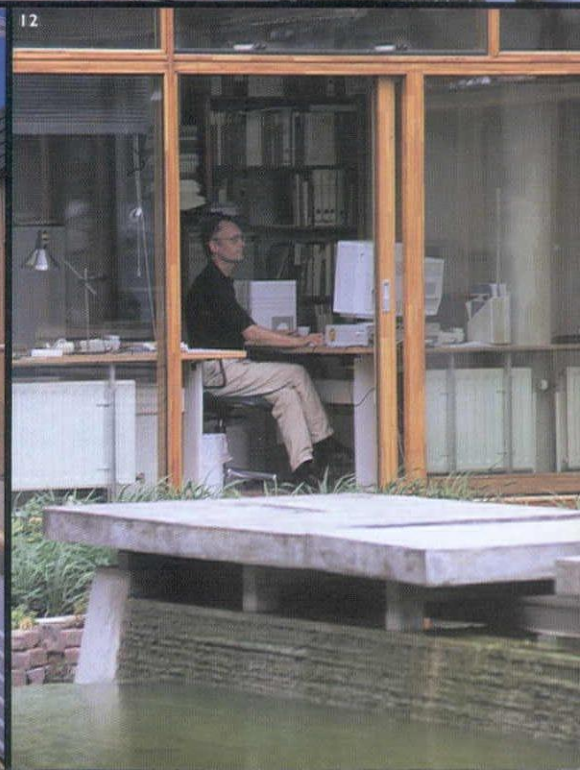
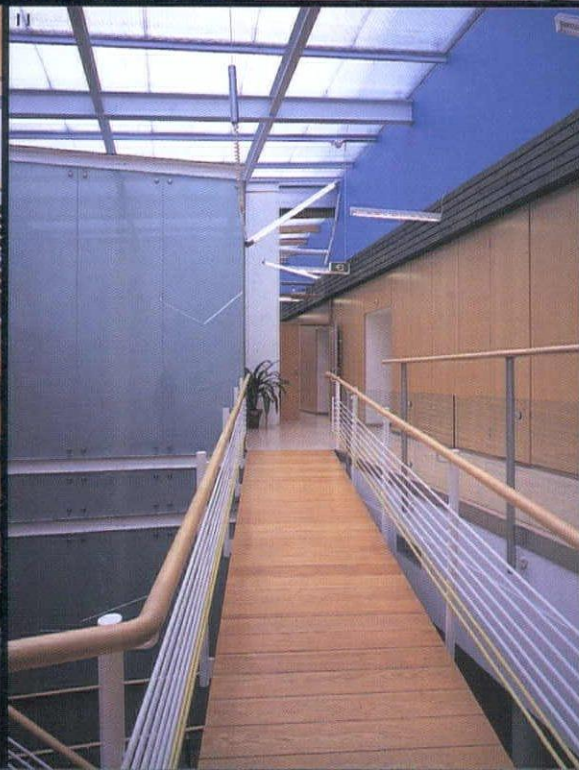
Stefan Behnisch, Ton Gilissen

Internal gardens and pathways

Michael Singer (artistic work)
Copijn Utrecht (landscape architecture)

Photography

All photographs by Peter Blundell Jones apart from 7, 8, 12 which are by M. Schodder



**SEED BANK, WAKEHURST PLACE,
SUSSEX, ENGLAND**
ARCHITECT
STANTON WILLIAMS

Of all Millennium Commission schemes, the new seed bank at Wakehurst Place in Sussex is the one that best embodies what should be one of the principal aims of the Commission – to encourage conservation of precious resources and advance knowledge and understanding in the interests of the earth's future. Officially called The Wellcome Trust Millennium Building,¹ the seed bank is part of the Royal Botanic Gardens of Kew of which the Wakehurst estate is an offshoot (handed over to the institution in 1965 by the then Ministry of Agriculture, Fisheries and Food which had leased it from the National Trust).

Stanton Williams' quiet, intelligently organized and pleasing building – really a linked complex of buildings – provides proper accommodation for and rationalization of the institution's seed conservation section. Due to international collaboration, its collection is immense; and the bank, dedicated to wild plants and rare species, is the largest in the world. It holds nearly all the UK's flora (about three million individual seeds) and by 2010 will hold 10 per cent of the world's dry lands' flora (about 28 000 species) with storage space for a further 40-50 000 species.

Aside from the exterior, and interior remnants, of the sixteenth-century mansion, Wakehurst is known for its gardens, for exotic plants and oak and beech woods. Because the area has more rainfall than Kew and greater variety of habitats, it has been possible to grow plants which do not thrive in Kew's gardens. Lying to the north of the mansion and set among newly planted wild meadows, the seed bank adds to the attractions with a winter garden and parterre open to the public.

Once part of an old deer paddock on the line of a spur ridge in the High Weald, the site is part of an area of outstanding natural beauty and planning constraints were strong. Stanton Williams' inclinations anyway were to create a building in harmony with its surroundings, a 'building that does not shout or wave banners, but sits quietly in the landscape, grounded, held by the line of the horizon'. Their determination to minimize impact on the landscape was helped by topography, for the site drops some 16ft from east to west; and the sandstone layer, which appears as outcrops in parts of the estate, is here submerged 50 or so feet below the surface. The building settles into

1
The building sits quietly in the landscape, its barrel-vaulted form concealing a huge subterranean storage chamber.
2
A glazed winter garden forms the building's public focus.
3
Inside the tranquil, luminous winter garden.

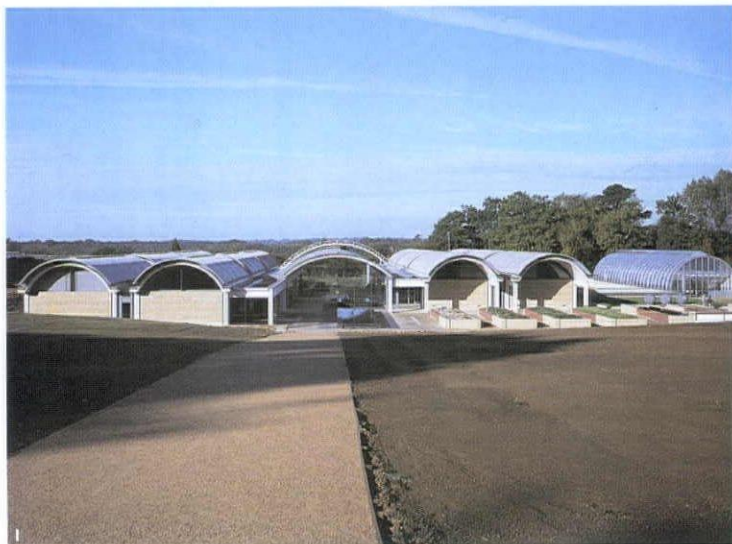
contours, spreading out horizontally over a vast buried chamber – the seed bank itself. On the north-west, it drops down a level with a sunken courtyard (to be formally planted with shaved elms); around it are various facilities for visiting scientists, pushed under a terrace on the east and under a research greenhouse on the north.

Materials tie the building into its surroundings. The structure moves out into the landscape in the form of blade walls, arcading and abstract parterres. Sandstone paving covering a forecourt folds up into elevations, locking the building into the ground. A perimeter brick wall, echoing an old estate boundary wall, is threaded horizontally into paving and drawn into parterre structures. Surrounding grassland is drawn into the composition, over the terrace above the academic court and weighted down by three huge stone sculptures, carved spheres of Kilkenny stone by Peter Randall-Page.

On the main ground level, the building is composed of a series of templates. These are vaulted concrete structures, measuring 14.4 x 7.2m, supported by in-situ concrete frames and stiffened by edge beams. (The repeating

SEEDS OF THE FUTURE

Buried deep in the English countryside, this vast seed bank is intended to conserve the earth's precious resources.







**SEED BANK, WAKEHURST PLACE,
SUSSEX, ENGLAND**

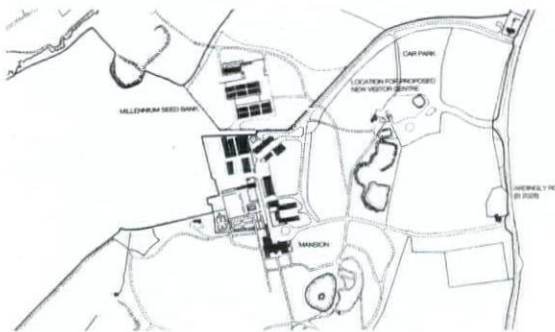
ARCHITECT

STANTON WILLIAMS

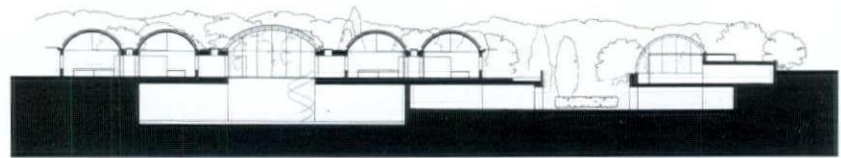
4
Regular geometry of the vaults is carried through into the formal landscaping.

5
Part of the sunken courtyard on the north-west side.

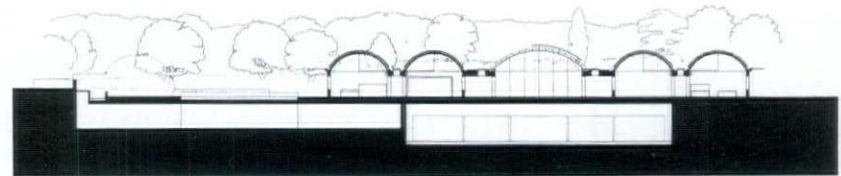
6
Materials and detailing have a spare refined elegance.



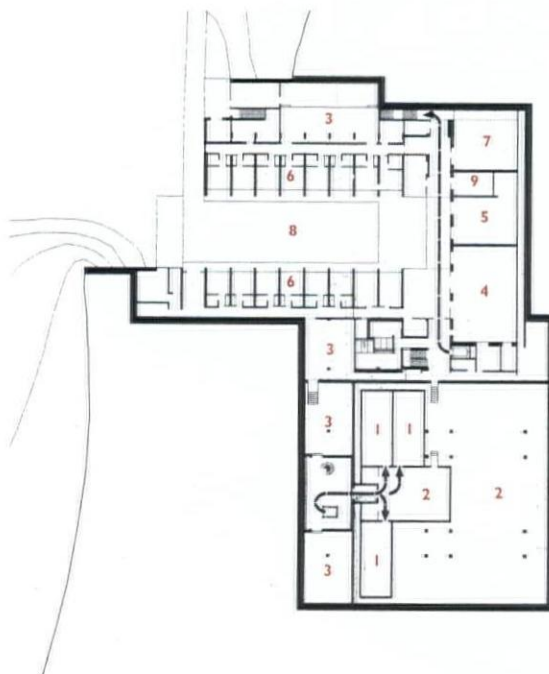
site plan



north-south cross section looking west



north-south cross section looking east



36 | lower ground floor plan

- 1 seed storage
- 2 seed drying
- 3 plant
- 4 teaching
- 5 common room
- 6 study bedrooms
- 7 library
- 8 academic court
- 9 kitchen
- 10 winter garden
- 11 seed delivery
- 12 process
- 13 collection
- 14 reception
- 15 wcs
- 16 research lab
- 17 parterre
- 18 landscaped court
- 19 research greenhouse
- 20 pool



ground floor plan (scale 1:1250)





**SEED BANK, WAKEHURST PLACE,
SUSSEX, ENGLAND**

ARCHITECT

STANTON WILLIAMS

7

The winter garden contains a series of thoughtful exhibitions and interactive displays on the work of the seed bank.

8

Spiral staircase corkscrews down to lower storage and academic levels.

9

Winter garden seems like an extension of the gently rolling landscape.

10

Simply detailed cabinets underscore the linearity of the space.

forms of a sea bean casing were apparently an inspiration.) Aligned roughly east-west and disposed in two groups of six either side of a glazed winter garden, the structures house the main process and research laboratories and public areas. Arching over laboratories, the barrel-vaults provide the thermal mass necessary for natural environmental control and are surmounted by zinc tern-coated canopies which add another layer of protection. Air circulates in a gap between metal and insulated concrete moderating temperature swings.

In form, proportion and lucency, the winter garden is a really pleasing space. Its layered vaulted roof has a glazed north side, to admit the sky, and shading devices on the south side. When seen in winter, the glancing shafts of sunlight on pale York stone and fairfaced concrete contributed to the pleasure and tranquillity of the place. At both

ends of the vault, space flows out through transparent walls into undulating landscape. At present the grounds are bald and the visitor must return next summer to get the full effect of wild meadows and flower starred grasses.

But this space has an informative function and by employing interactive techniques, virtual reality technology and simple display, Studio Land Design's exhibition explains the purpose and work of the seed bank. Linear arrangements of reticently designed cases underscore spatial linearity, as do the skylit ambulatories down both sides of the winter garden, from which you can stare through glass at white coated technicians, your scrutiny informed by display cases beneath the windows.

At the west end, screened off by glass balustrading, is a stainless steel pit traversed by a glass bridge which links the two

laboratory wings. Spiralling stairs and a glass lift transport technicians to subterranean depths and storage vaults. (Part of the research being carried out is to determine how long and at what temperatures different seeds can be stored. It is thought some 80 per cent could survive for over 200 years.)

The only complaint must be that there should be more of this sort of thing – in the end, Kew is a government department and, despite the generosity of sponsors, is largely dependent on government monies – and saving endangered plants, which could avert famine and disease, control pollution and climate, is not necessarily a priority for hard-pressed governments. But it is to be hoped that this, the largest international conservation project ever undertaken, will be enlarged further, and, furthermore, copied elsewhere in the world – that this will not be a Noah's Ark. **PENNY MCGUIRE**



1 The building was sponsored by the Millennium Commission, by Orange plc, and by the Wellcome Trust. Recognizing the enormous contribution that plants make to remedies, the Trust provided £9.2m towards the building, hence the name; the winter garden for visitors, named the Orange Room, marks the contribution made by Orange plc.

Architect

Stanton Williams, London

Quantity surveyor

Gordon Fanshawe & Partners

Structural/drainage engineers

Michael Barclay Partnership

Service engineers

Pearce Buckle Partnership

Environmental assessment

EA Planning, Environmental and Development Consultancy

Exhibition design

Land Design Studio

Photographs

Peter Cook/VIEW





Since the virtually unknown partnership of Studio Granda won an international competition for Reykjavík city hall in the late 1980s, their progress through a series of major Icelandic civic buildings has been quietly assured. Both the City Hall (AR October 1992) and the later Supreme Court (AR August 1998) are remarkably mature reflections of local concerns about civic identity and the imposition of law in a small community, combined with an incisive approach to materials and context. The result is a rigorous yet romantic Nordic Modernism, paradoxically grandiose in form and painstaking in detail. As Steve Christer, the English half of Studio Granda, observes 'there are only two scales in Iceland: the massive and the tiny'.

The practice's latest building, a new art museum in Reykjavík, differs in important respects from its predecessors, although the architectural outcome is equally intriguing. First, the programme is a cultural one, suggesting a freer rein compared with the proscriptions of lawyers and civil servants; and second, the building already exists, providing a framework for intervention and dialogue. It also advances, to some extent, an understated (but important) conception of ecological awareness, since reusing existing buildings is inherently less wasteful in terms of energy and resources than new construction.

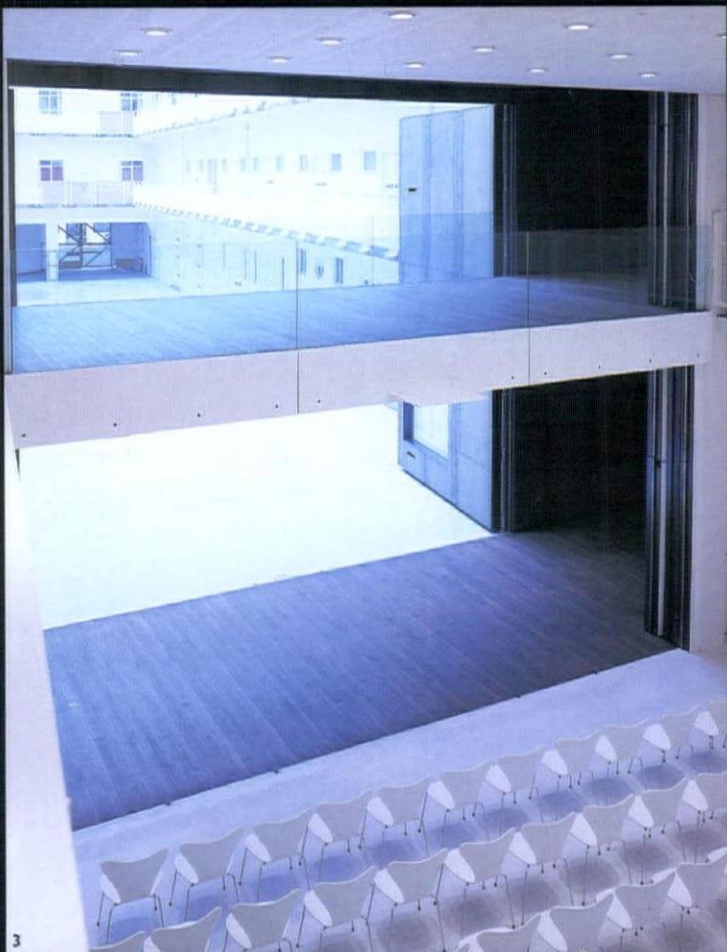
Studio Granda's competition-winning proposal occupies two floors of the south wing and three floors of the north wing of a large harbourside warehouse, originally built between 1933 and 1939.

ARCTIC ARTHOUSE

Reusing buildings is a vital part of the green agenda and one that needs encouragement. Inventively inserted into an old harbourside warehouse, this new art museum creates an important cultural and social focus for Reykjavík.



2



3

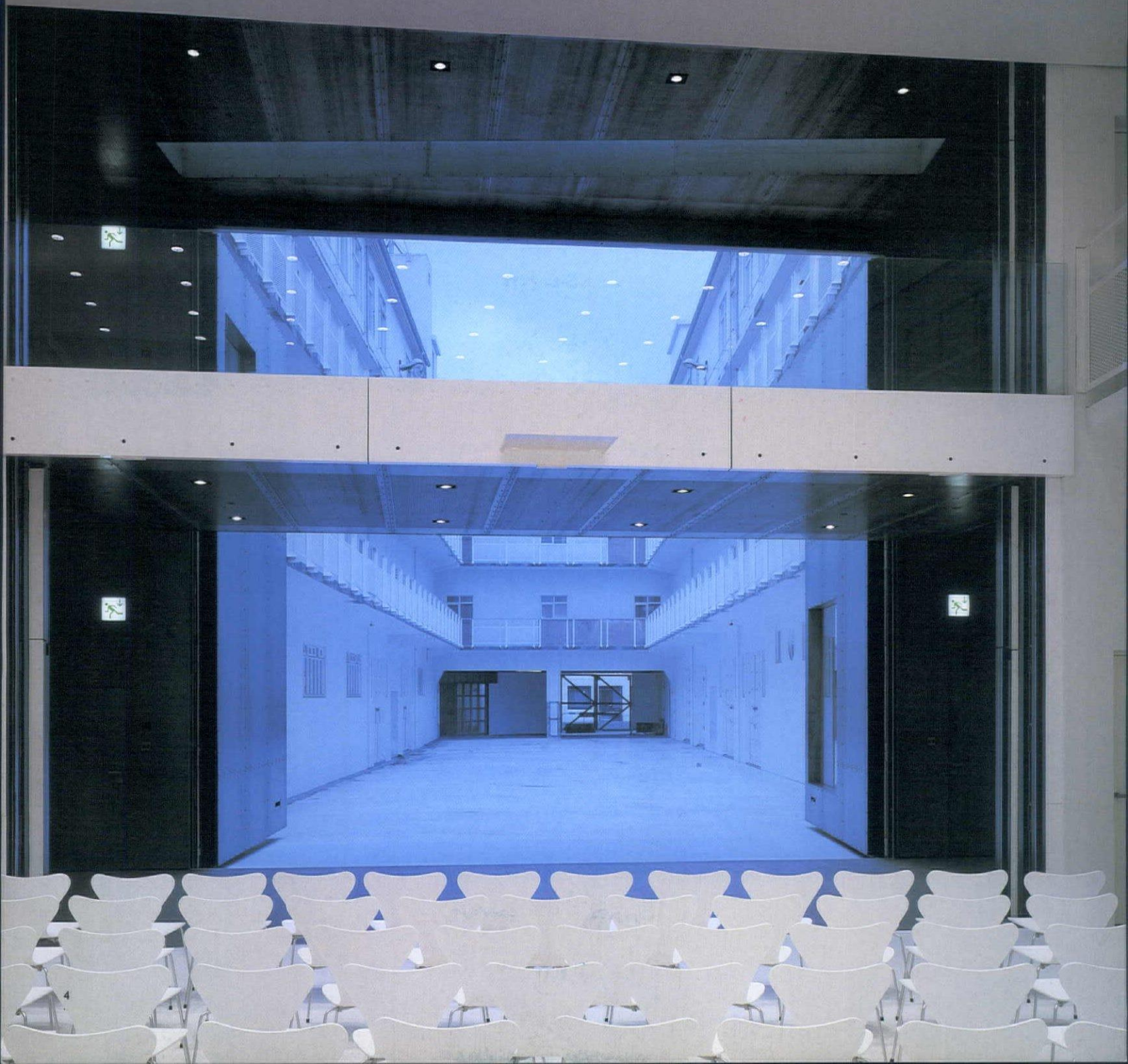
ART MUSEUM, REYKJAVIK,
ICELAND
ARCHITECT
STUDIO GRANDA

1 The heroically scaled harbourside warehouse has been reincarnated as a new modern art museum.

2 New spine/pier opens up to the internal courtyard, revealing the new exhibition space beyond.

3 A dark walnut floor marks the route of the spine/pier.

4 Long thin courtyard framed by a proscenium of folding doors and walls, which can be adjusted to create degrees of openness.





Made of concrete with a distinctive mushroom headed column structure, the warehouse has a robust dignity and solidity, typical of the best industrial functionalism. Icelanders were enthusiastic converts to concrete following its introduction in the early part of the twentieth century. It succeeded turf and indigenous basalt rock which is notoriously difficult to work. The harsh volcanic geology of the island also lacks naturally occurring clay for making bricks and mortar.

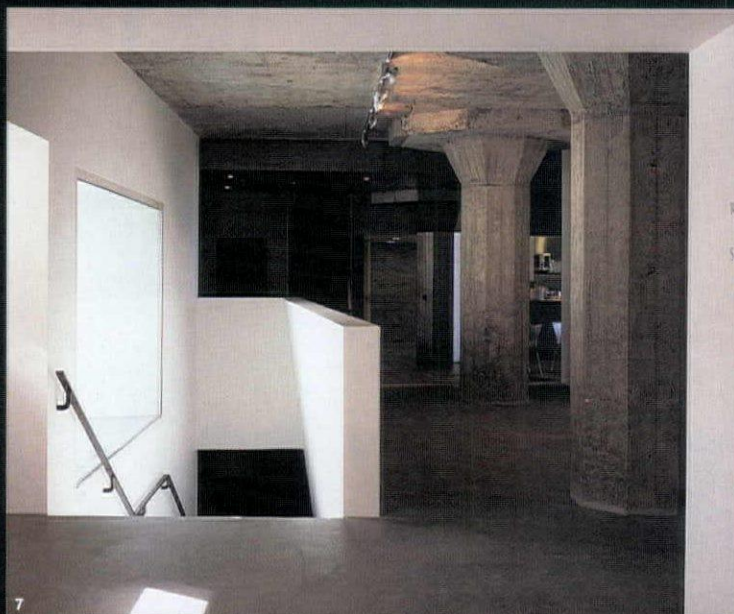
The two wings of the warehouse are arranged around a long thin central courtyard. Studio Granda's main move bisects the two wings in plan with an angular spine that follows the line of the original pier for the port of Reykjavik. Discovered by the architects after studying historic maps of the harbour, the pier was the umbilical cord that linked Iceland with the outside world, channelling resources, culture, artefacts and supplies. Its archaeological imprint now underscores the physical and metaphorical evolution of the new museum. The spine/pier leads from the entrance hall in the south wing through the courtyard, terminating in a tall glazed opening overlooking the harbour. It also links two sets of staircases that lead to the upper floors in each wing. Along the length of the spine, a sumptuous black walnut floor and hot-rolled steel sheets tightly bolted to walls and

columns (like a fetishistic metal corset) introduce an intentional air of Stygian gloom into the predominantly white, luminous spaces.

Externally, the warehouse has been simply spruced up and painted in what the architects describe as 'Fishery Protection Vessel Grey', with the museum parts demarcated in white. An implausibly angular concrete canopy shafts into the south flank to denote the main public entrance. Cunningly, the canopy also reflects light into the double-height entrance hall, illuminating its black floor and steel plate walls that mark the beginning of the spine/pier route.

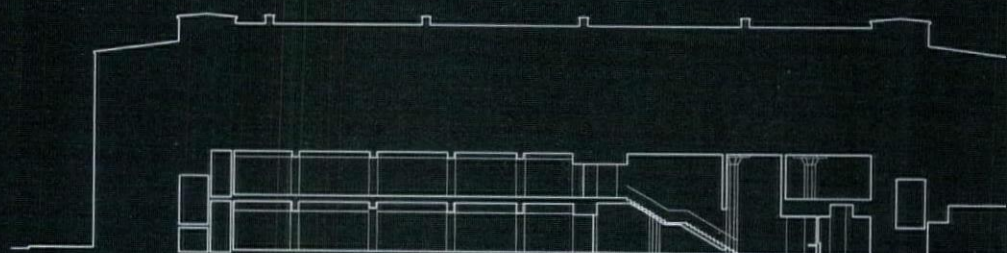
The parti is both elegant and economical. Flanking the entrance hall are the museum shop made of raw concrete and cloakrooms enclosed in a delicately crystalline glass box. Galleries are distributed through both wings, with the museum café and library housed in the north wing at the end of the spine. Delivery, workshop and storage occupy the ground floor of the north wing, connected to a service entrance on the harbour side. Offices and the museum's architectural archive are located on the second floor of the north wing.

Cutting through the courtyard, the spine/pier defines a large external exhibition space on the east side and double-height white room on the west that can be adapted for various uses. Two hefty steel doors open

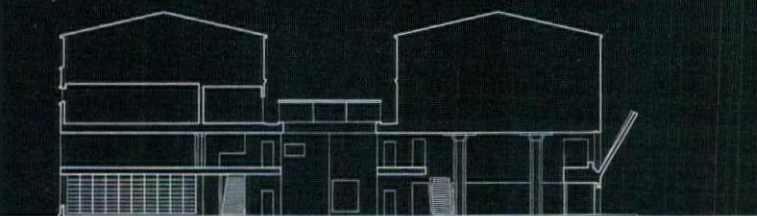


**ART MUSEUM, REYKJAVIK,
ICELAND**
ARCHITECT
STUDIO GRANDA

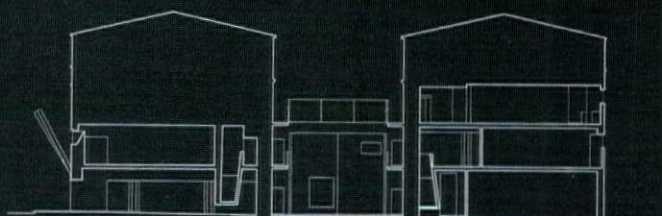
- 5
Walls of the spine/pier are clad in steel sheets, like a tight metal corset.
6
The darkness of the spine contrasts with the airy luminance of galleries.
7
The original 1930s concrete structure with mushroom-headed octagonal columns has been preserved and, in places, exposed.
8
Upper level of spine/pier.



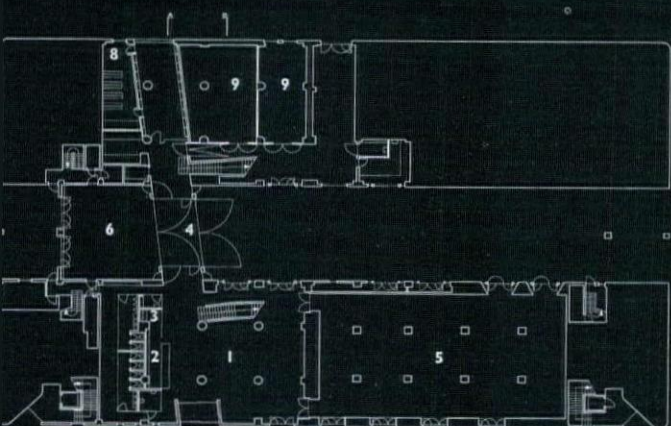
longitudinal section



cross section looking east

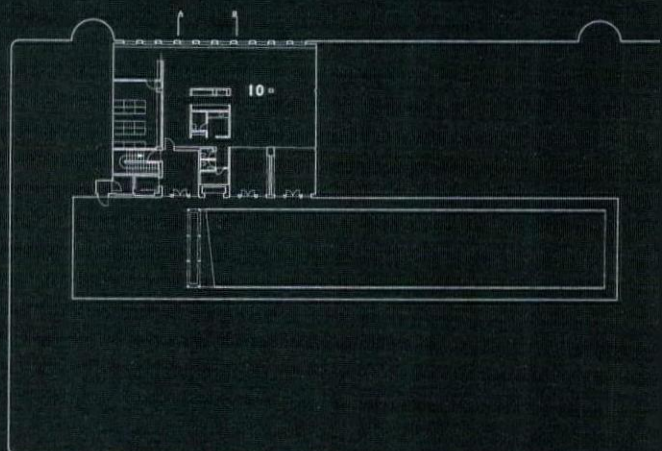


cross section looking west

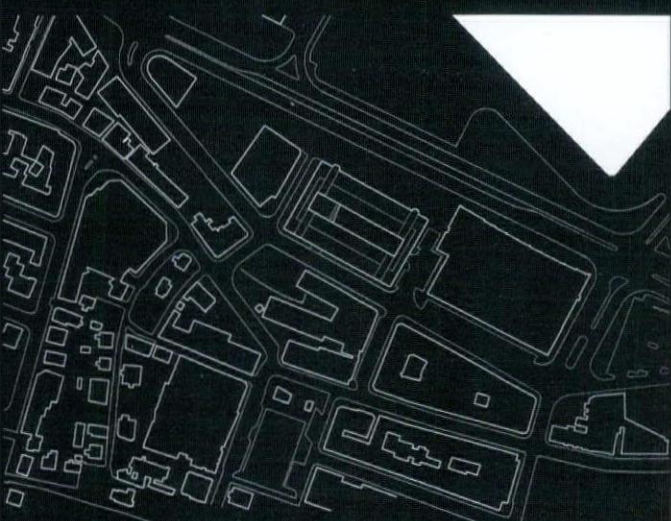


ground floor plan (scale approx 1:100)

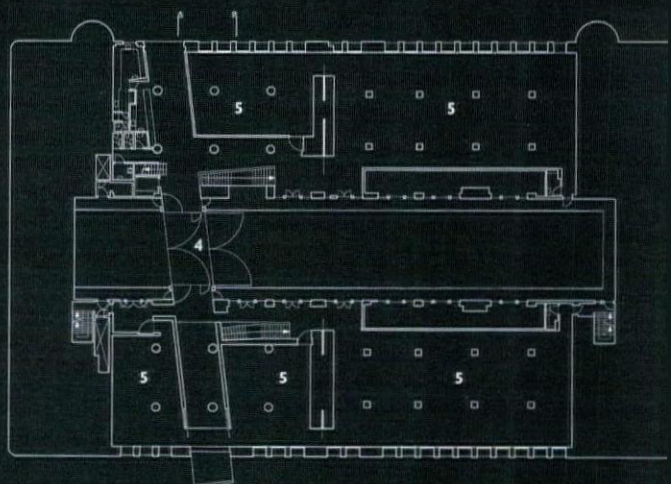
- | | |
|-----------------|--------------------------|
| 1 entrance hall | 6 multipurpose space |
| 2 reception | 7 courtyard |
| 3 cloakroom | 8 library |
| 4 spine/pier | 9 storage |
| 5 gallery | 10 architectural archive |



second floor plan



location plan



first floor plan



**ART MUSEUM, REYKJAVIK,
ICELAND**
ARCHITECT
STUDIO GRANDA

9, 10
Typical gallery spaces. An ascetic
palette of white and concrete prevails.

11
Cut through the building on the axis of
Reykjavik's old main pier, the new
spine/pier of the museum links and
defines the various spaces.



up the spine to the court, and further sets of folding doors reveal the white room beyond. A skylit box illuminates the spine (in the manner of Herzog and de Meuron's light beam at Tate Modern, AR April 2000) and at night its softly palpitating glow washes through the court.

The sextet of galleries share an ascetic palette of concrete and white wall planes, but subtle variations in form, scale and the play of light gives each a particular character. Daylight is admitted indirectly to each gallery space and arrangements of sliding or folding screens can create totally artificially-lit conditions when required. The antiseptically white walls of the new galleries contrast with murkier spaces where the original concrete structure and chunky octagonal columns have been retained.

Studio Granda's meticulous use of materials and spare detailing has a clear kinship with Caruso St John's recent Walsall Art Gallery (AR May 2000); interestingly, Christer was a contemporary of Peter St John at the Architectural Association (where he met his Icelandic partner Margrét Hardardóttir.) The two buildings also have programmatic resonances, in trying to provide small, regional urban centres (despite being a European capital city, Reykjavik's population is only around 100 000) with a transcending sense of culture and identity. In a quiet yet determined way, both buildings succeed, enlivening the rational through sheer sensuality and an absolute delight in design. C. S.

Architect

Studio Granda, Reykjavik, Iceland

Structural engineer

Linuhönnun

Services engineer

Vidsjá/Lagnatækni/Rafteikning

Photographer

Dennis Gilbert/VIEW





TRADE FAIR ADMINISTRATION BUILDING,
HANOVER, GERMANY

ARCHITECT
THOMAS HERZOG

- 1 Two vertical services and circulation towers clad in clay tiles flank office accommodation.
- 2 Extract air is drawn off via heraldic devices at top of services tower having passed through heat exchangers.
- 3 Roof terrace of tallest building in Hanover.
- 4 Double layered facade.

SYSTEMS ANALYSIS

This sophisticated stubby tower at the Hanover trade-fair grounds was built as a permanent exposition of Expo 2000's theme Man-Nature-Technology, showing the best environmental control techniques of the turn of the century.

Passive and active energy-saving devices are no longer exceptional in Germany. Legislation encourages solar energy use and wind parks. Environment taxes on fuel have increased insulation standards. Eco-architecture no longer has to make ideological statements with symbolic features. As one of the latest examples, Hanover's International Trade Fair administration tower looks no more spectacular than a Japanese lantern of screen facades and sandwich layers, set off by a communications tower looking like an elaborate hat pin.

Hanover, an otherwise unexceptional small town in Germany, received two economic boosts post-1945; the establishment of West Germany's largest trade fair organization and the decision to extend and renovate the grounds with both temporary and permanent buildings for the millennial Expo (AR October 2000). In accordance with the 'Man-Nature-Technology' theme, Herzog + Partner were asked to improve comfort conditions in existing halls and, as a prototype for later exhibition structures, to design Hall 26. Their latest permanent landmark development is the Fair's new administration tower. At a modest 20 storeys it is Hanover's tallest building.

Administrative staff occupy 250 workplaces, placed around the perimeter on 14 office floors; there is also an executive floor of suites, and reception and entertaining.

Concurrent with the outcry against battery farming, German architects increasingly subscribe to the European design of workplaces for humans: non-toxic building materials, environmental comfort through individual regulation, and low energy consumption. But, although German codes of practice for workplaces define thermal requirements, other factors are important for a subjective sense of well-being, such as perceived room temperature, symmetry of surface temperatures, user influence and balancing fluctuating values. Few of the principles now categorized under the heading 'environmentally friendly architecture' are new. The art lies in their refinement.

The Hanover Trade Fair administration building facade is made up of lightweight, non load-bearing external wall elements, developed from studies Herzog and his team have been working on since 1978. Cladding is a refined form of a system first used in Lohhof, near Munich, in 1984. It is a system that can be equally well used on both new and existing structures. A Middle-Eastern inspired wind tower, making use of

convection currents, lies at the heart of the building services concept.

Internal heat gains are often all that is necessary to heat a building constructed according to modern building regulations. Rooms with large internal gains need cooling, which is considerably more expensive in energy terms than heating. Here, cooling is provided with minimum exploitation of resources by using structural elements as thermal reservoirs of coolness from night-time air. Coolness can then be released by natural time delay over the following day. Night-time cooling energy is transferred to a water circulation system via a hybrid cooling plant.

By wrapping the building in a two layer facade, a protective buffer zone is created. This allows rooms to be naturally ventilated, even during gusty wind conditions. The buffer zone also has structural, fire-fighting and constructional advantages. As the projecting and cantilevered concrete floor slabs define each zone, every floor maintains its fire-fighting integrity.

Eight 3m high strips of louvres in the outer skin ventilate the zone. Louvre adjustments are computer controlled and based on satellite weather station information, previous wind tunnel tests and analytical values. To refine responses, actual





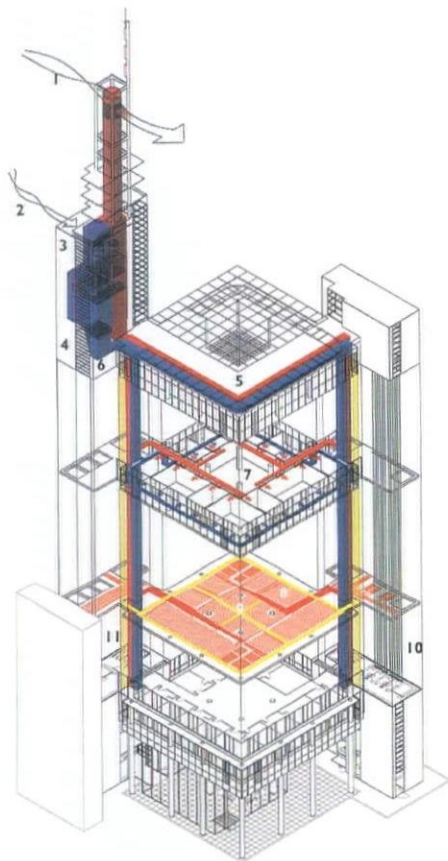
**TRADE FAIR ADMINISTRATION BUILDING,
HANOVER, GERMANY**

ARCHITECT
THOMAS HERZOG

5
Entrance.

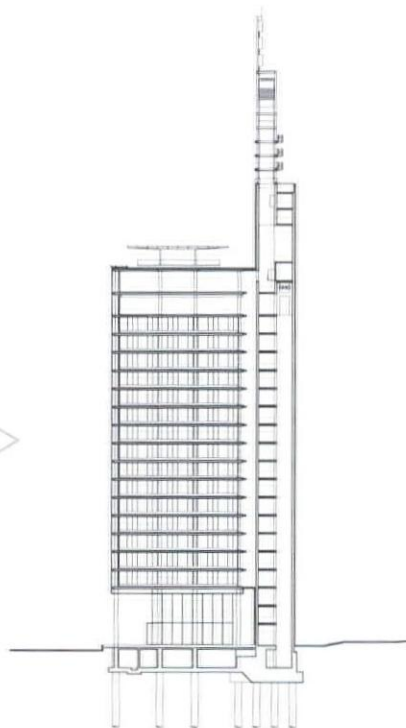
6
Typical office corridor (in Germany individual
offices are the norm, hence the need for
corridors).

7
Between the two facade skins.

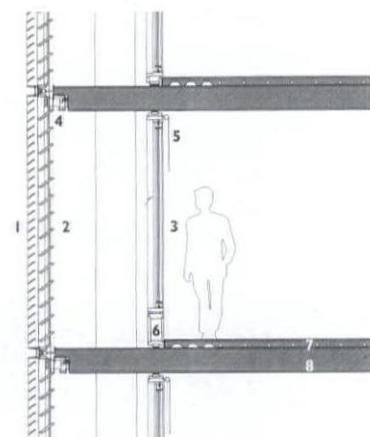


technical diagram

- 1 extract air
- 2 supply air
- 3 fans
- 4 heat exchanger
- 5 air ducts in mechanical services storey
- 6 vertical air supply and return ducts
- 7 extract ducts in offices
- 8 heating and cooling runs in office slabs
- 9 electrical and communications distribution
- 10 ventilation and sanitary runs
- 11 vertical electrical runs

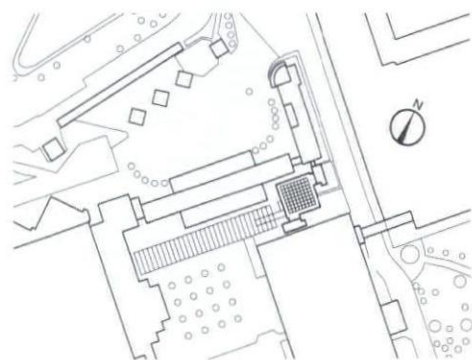


west-east section

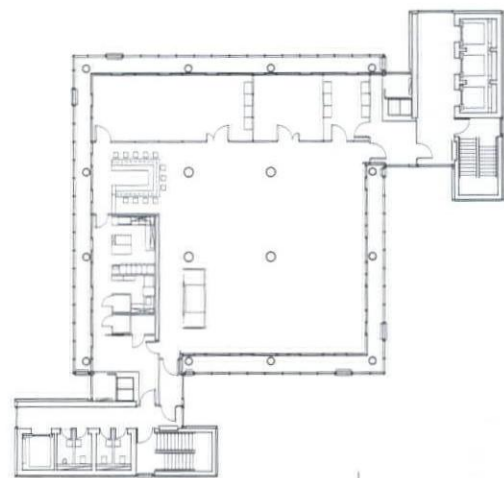


detail of double wall

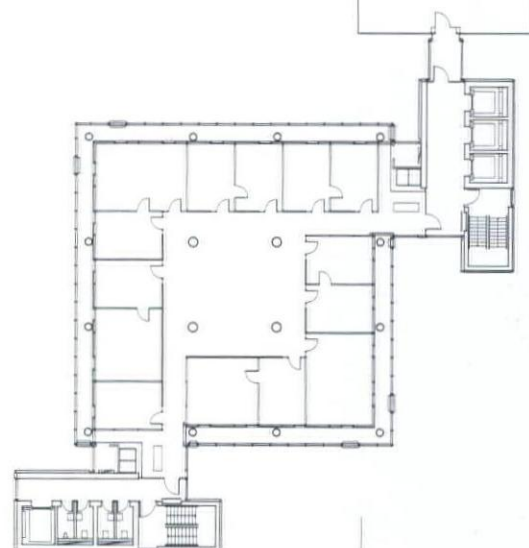
- 1 protective louvres
- 2 adjustable low-E glass louvres
- 3 wood and glass wall with sliding windows
- 4 sunblind
- 5 anti-glare blind
- 6 air supply duct
- 7 heating and cooling runs in screed
- 8 slab



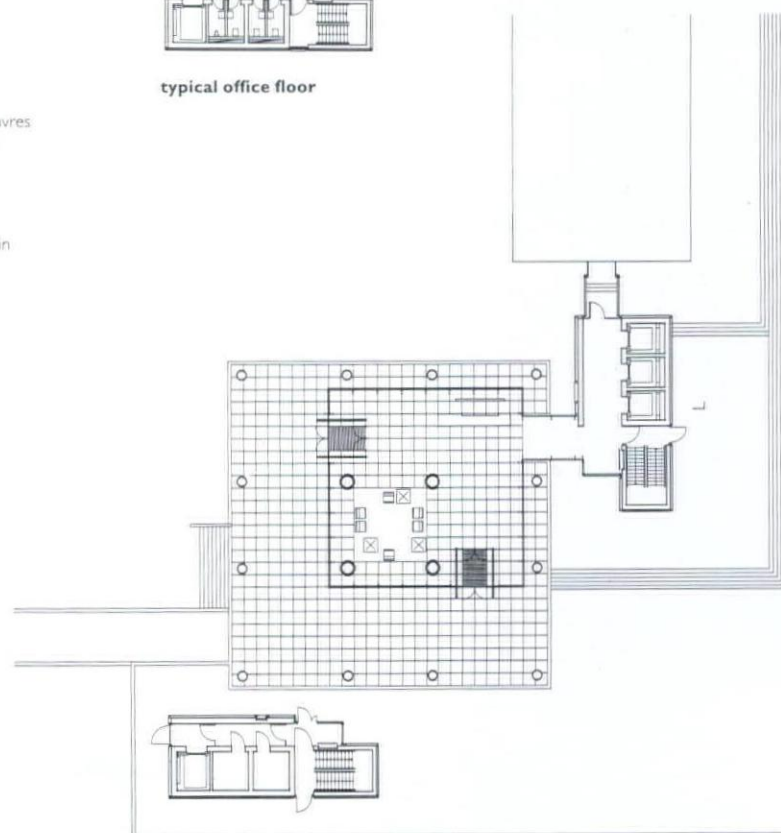
location plan



top (Hermes Lounge) floor



typical office floor

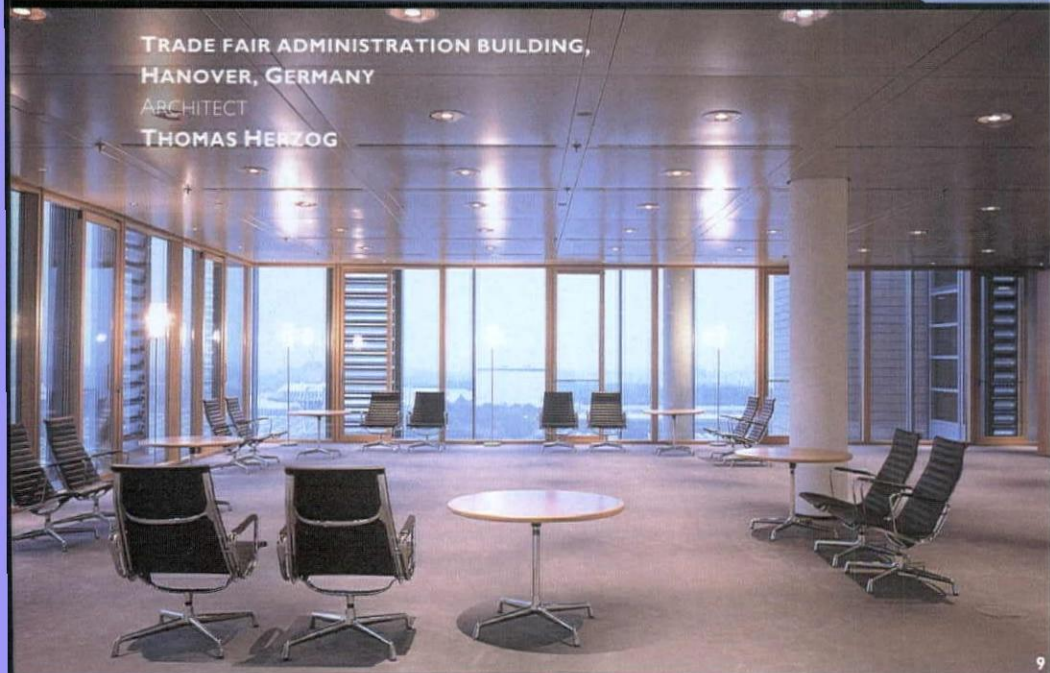


entrance level (scale approx 1:520)

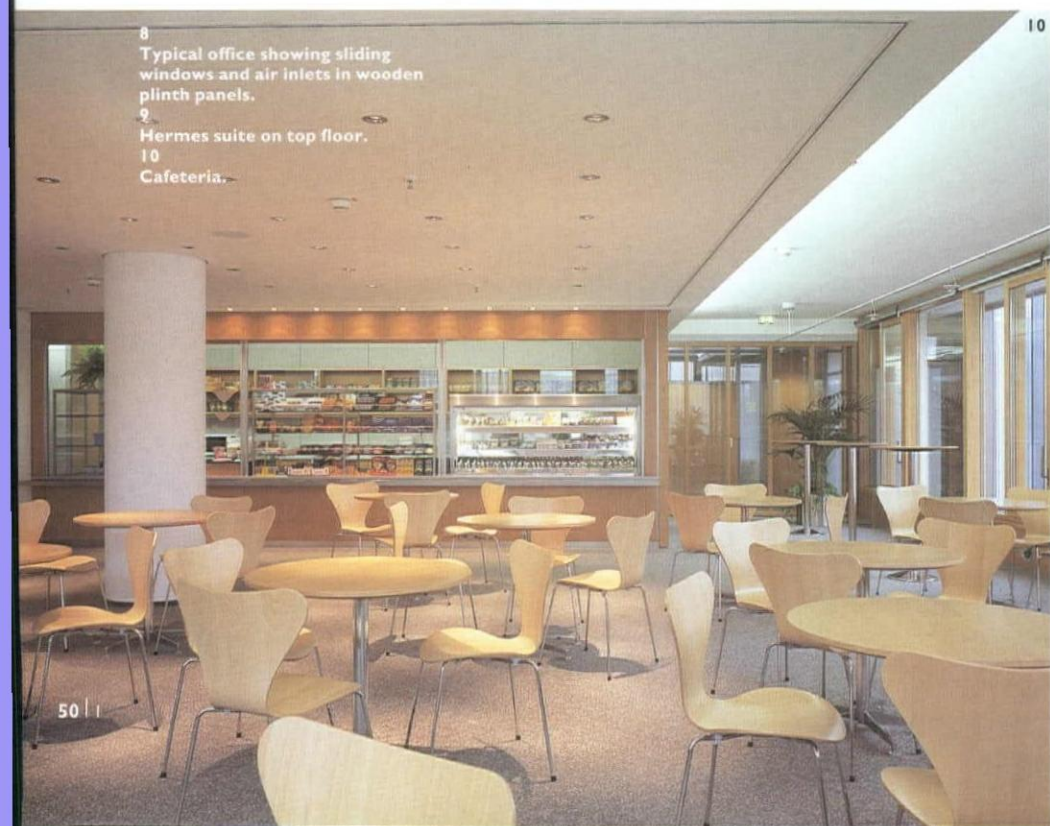


8

TRADE FAIR ADMINISTRATION BUILDING,
HANOVER, GERMANY
ARCHITECT
THOMAS HERZOG



9



10

8
Typical office showing sliding
windows and air inlets in wooden
plinth panels.
9
Hermes suite on top floor.
10
Cafeteria.

external temperature (as opposed to broad brush seasonal categories), time of day, solar impact on the facade, wind speed and direction, are all taken into account.

The internal skin has sliding windows and air inlets in apron panels. A mechanical element closes the inlets when a window is opened. Used air is removed over ducting and passed over a rotary heat exchanger before being discharged. Heat recovered in this way meets most of the additional internal space heating needs. There is always a choice of mechanical or passive air conditioning. In winter, the passive system makes use of the buffer zone for cooling and the mechanical system provides heating. Solid floors laced with water filled pipes become thermoactive slabs. Simultaneous heating of floor and ceiling slabs, in contrast to normal purely floor heating, reduces differences between air and surface temperatures. In summer, the systems are reversed and air from the buffer zone tempers the internal spaces while the mechanical system injects cooler air into work spaces. It is estimated that this network of constructional, passive and mechanical, systems will reduce building operating costs by 2.50 to 25.00 DM per square metre, in comparison with conventional technology.

The reduction in building material tolerances, thinner, lightweight components, the move from wet to dry construction systems all required development of compensatory machines. They replaced previous generations' reliance on, for instance, a building's orientation in the landscape, massive stone brick walls, sash windows, fireplace chimneys and natural time delayed air movements. We have almost come full circle with the rediscovery of passive and free physical phenomena. The question is whether the developed world's activities have not irreparably damaged these meteorological cycles so as to preclude their future availability. But after the circus has packed up, Herzog's building remains as a modest reminder of what is actually possible. LAYLA DAWSON

Architect

Herzog + Partner, Munich

Project team

Thomas Herzog, Hanns Jörg Schrade, Roland Schneider, Nico Kienzl, Christian Schätzke, Thomas Straub, Brigitte Tacke, Stephanie Zierl

Structural engineer

Sailer Stepan

Services engineer

Ingenieurbüro Hausladen

Mechanical engineer

Schmidt Reuter

Aerodynamic studies

Design Flow Solutions

Interior designer

Verena Herzog-Loibl

Photographer

Dieter Leistner/artur

cedar-clad box sits on a
ste base. Materiality is
isive, yet also intended to
bute to the efficiency of
ing's energy consumption
vironmental control.

Over the years, the Royal Melbourne Institute of Technology has acted as an enlightened and enthusiastic patron of architecture, through a modest programme of new teaching and residential buildings. The college's newest campus is in Brunswick, a northern suburb of Melbourne, where its schools of textiles and printing technologies are located. The suburban site is unexceptional – beside a railway line and hemmed in by industrial buildings – but the new School of Textiles aims to transcend its mundane surroundings.

Designed by H2o architects in collaboration with Bates Smart Architects, the building uses materials (predominantly timber) to achieve both visual

effect and environmental modulation. Panels of Western red cedar wrap around the upper two of the three storeys. The slatted panels create a curious herringbone effect, rather like woven fabric, that shimmers and striates in the changing light. The cedar, which has been left a raw untreated red, will eventually weather to a silky grey.

The school is divided into two distinct halves. One side contains large volumes for textile weaving machinery, the other smaller cellular spaces for teaching, studio work, administration and other functions. The two parts are linked by a long spinal atrium, its length traversed by a sloping blade-like wall. The tall vertical

voids of the atrium can be used to display lengths of textiles produced by the students. A series of glass bridges span the width of the atrium, so the spine becomes a circulation and informal meeting space, animated by the comings and goings of the students. Bridges are made of laminated glass to encourage light transmission, supported by a steel structure. The underside of each sheet of glass will eventually be decorated with applied coloured patterns from drawings by a group of Aboriginal artists involved with RMIT University. The walls of the central spine have also been painted in a gridlike device of vibrant red and purple, akin to an extreme version of traditional tartan.

MATERIAL INVENTION

This new faculty building for a textile college makes striking use of materials.





Designed to achieve passive environmental control, the building is only partially air conditioned. H2o architects worked closely with the building engineers, the Timber Promotion Council and European researchers in the development of the facade systems to develop an environmentally responsive method of construction for buildings of this type. Passive environmental control is achieved through double skin on either side of a thermal chimney that limits transferred heat to the internal fabric.

At its most basic level, the building is a simple box wrapped in plastic with a protective skin of timber. The cedar panels act as a rain screen protecting the underlying moisture membrane. A gap between them encourages air circulation which not only helps to dry the timber, but also assists in the cooling of the facade. The double skin allows for the draining of any excess moisture that may penetrate the timber.

Other environmentally responsive moves include orienting the building's longest elevation to the (sun) north, maximizing glazing on the north and south sides and minimizing glazing to the west and east. Sun screens protect the north-facing windows and are efficiently shared through the building from fire dampers connected to a central corridor and vented out through dampers opposite clerestory windows at the top of the central spine.

Through ingenious use of materials, what would otherwise have been little more than a pragmatic institutional building has been elevated into a modestly compelling piece of architecture. SHEILA HUGHES

Architects

H2o architects with Bates Smart Architects

Project team

Tim Hurburgh, Mark O'Dwyer, Jane Jim Tsoukatos, Daryl Milner, Keith D

Structural and civil engineer

Ove Arup & Partners

Services engineer

Norman Disney & Young

Landscape architect

Chris Dance Land Design

Photographs

Trevor Mein



**TEXTILE FACULTY,
MELBOURNE, AUSTRALIA**

ARCHITECT
H2O ARCHITECTS

2, 3

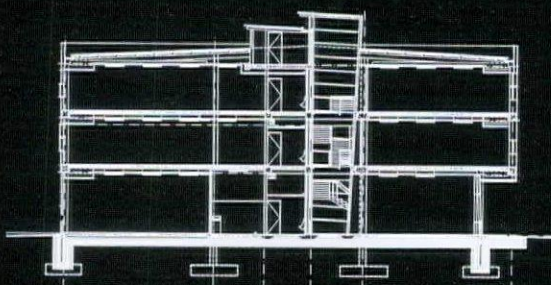
The rain screen layer of slatted timber panels evokes the texture of fabric and will eventually weather to a silky grey.

4

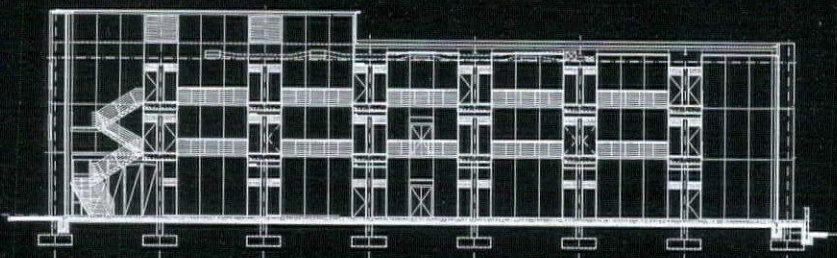
Larger volumes are designed to house textile weaving machinery, so the uncolonized spaces have a functional, factory air.

5

A long, light-filled atrium space runs down the spine of the plan. Bold slabs and grids of colour are used to graphic effect.

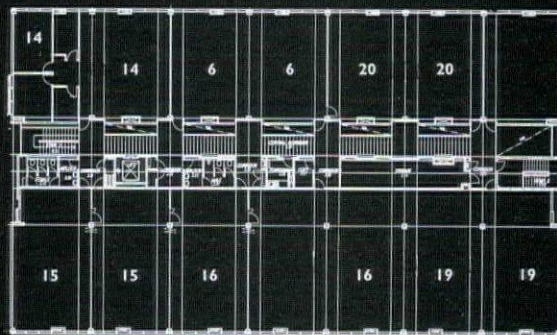


cross section

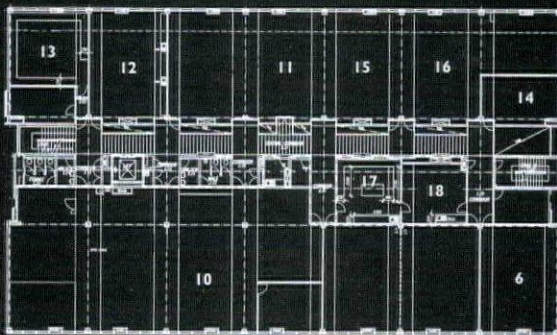


longitudinal section

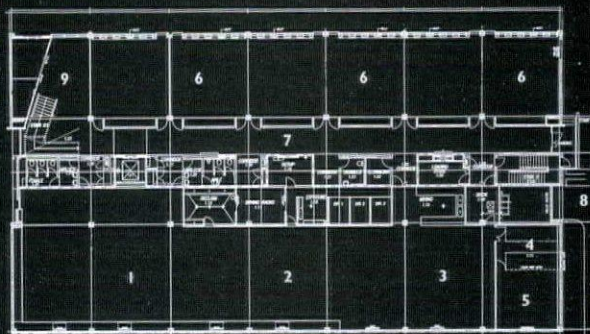
- 1 textile printing
- 2 support
- 3 paper print
- 4 screen racking
- 5 store
- 6 general classroom
- 7 atrium spine
- 8 loading
- 9 foyer
- 10 mechanics' workshop
- 11 footwear & leather
- 12 millinery
- 13 photography workshop
- 14 staff offices
- 15 design studio
- 16 pattern studio
- 17 fire test
- 18 physical text
- 19 production
- 20 computer pattern



second floor plan



first floor plan



ground floor plan (scale approx 1:300)

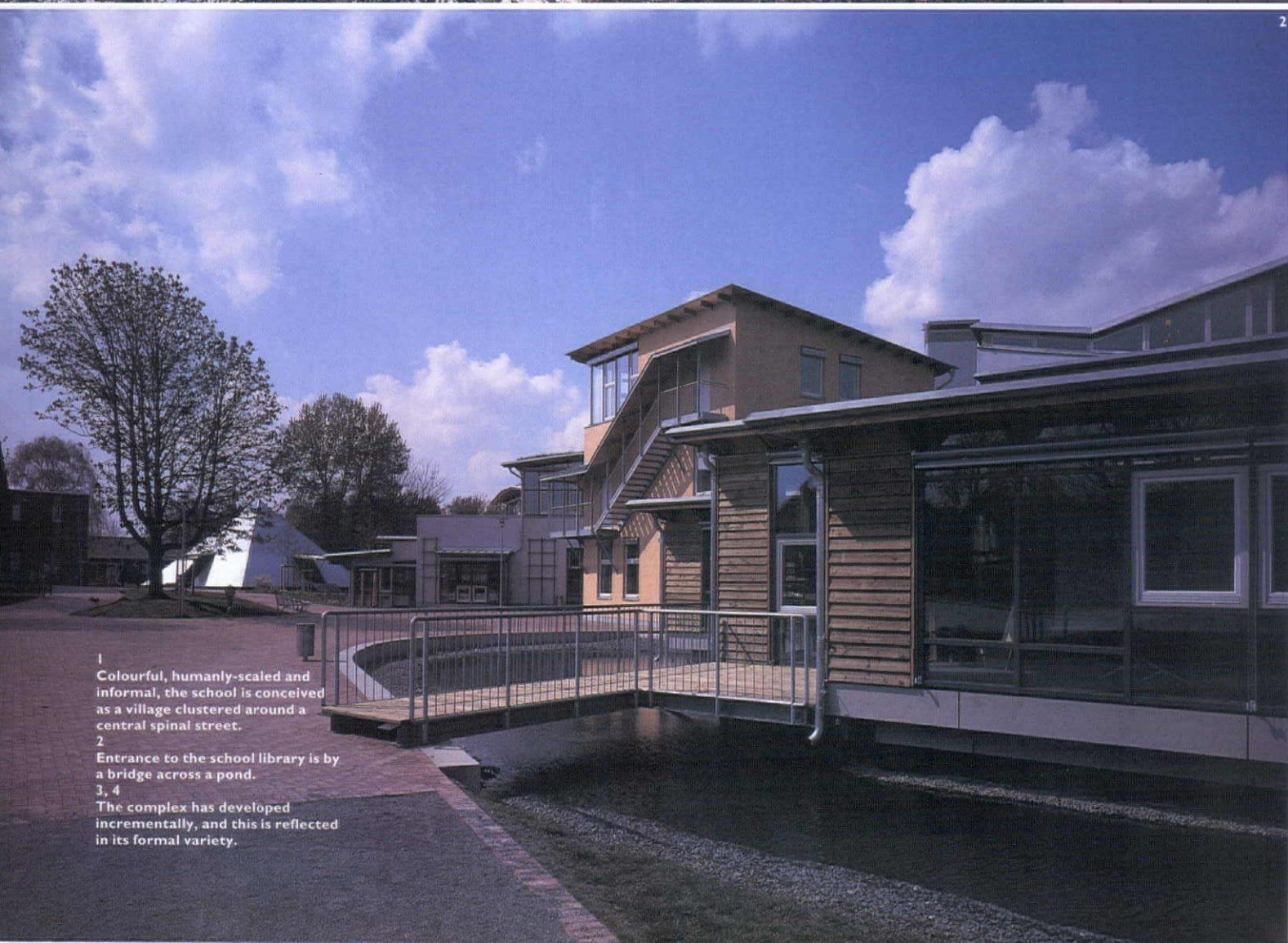


SCHOOL, GELSENKIRCHEN-BISMARCK,
GERMANY
ARCHITECT
PETER HÜBNER



1

2



1
Colourful, humanly-scaled and informal, the school is conceived as a village clustered around a central spinal street.
2
Entrance to the school library is by a bridge across a pond.
3, 4
The complex has developed incrementally, and this is reflected in its formal variety.

Unusually, Peter Hübner and his office plus+ won the IBA Emscher Park¹ competition for a new school at Gelsenkirchen-Bismarck with a written story. It took the form of a hypothetical speech given by Kemal Özcül on receiving the European Environmental Prize in 2034. Son of poor Turkish immigrants – they number about 30 per cent of the local population – his life had been transformed by the new school he had joined in 1994 at the age of 11. Inspired by a teacher obsessed with saving the planet, he witnessed the gradual transformation of the surrounding cornfield site, taking part in the building of classrooms, housing, communal facilities and ecological garden in a collaborative process involving teachers, pupils, the local community and outside professionals. Kemal goes on to study ecology at university then returns to the school as a teacher. He eventually leaves in 2014 to undertake a forest project in Ankara that makes him famous. His story concludes with the announcement that he proposes to donate the prize money to the school because he owes it so much.

Kemal's narrative touches on just about every aspect of an ecological existence, stressing repeatedly that it is not just about building. Hübner accompanied his proposal with a time scale, supplying sketch plans of the annual progression. Not only would staff and pupils be involved – and inhabitants for the associated housing – but there could also be many different architects and landscape architects. The place would evolve in response to changing local needs, instead of

being fully planned out from the start: indeed a variety of building styles would add to its richness. Once the jury had grasped the implications, they could see how different and radical Hübner's proposal was. Yet it suited the bold educational and cultural intentions of the competition, and once the other judges were convinced (by Lucien Kroll) that it was workable, it was chosen almost unanimously.

Developed around a huge coal mine in the late nineteenth century, Gelsenkirchen-Bismarck is a former industrial suburb in the Ruhr. Housing sprang up for miners and their families, along with churches, schools and other modest social institutions, but it remained a grim place. The prosperity of the 1960s allowed expansion, and German families were replaced by immigrant workers mostly from Turkey. But by the 1980s the mine had become uneconomical and uncompetitive. Its subsequent closure generated rampant unemployment and Bismarck became a problem area. Illiterate in German, its Turkish children had difficulty in escaping the vicious circle of poverty and depredation. The Protestant Church (Evangelische Kirche von Westfalen) sought to ease this problem with a new school.

Fritz Sundermeier, a visionary educationalist who had run schools in Tehran and Tokyo, conceived the idea of a multi-cultural ecological school as a catalyst for redevelopment. Not only would it welcome people of many faiths – the Turks are Muslim – but it would also be a cultural centre promoting ecological education. Sundermeier

struggled for support, first of his synod, then of the city and regional authorities, and finally of the Education Ministry. Money was difficult,² but financiers were eventually convinced. In 1993, with the further backing of IBA, an invited architectural competition was launched for a school with ecological housing on an adjoining site.³ The eight teams produced some attractive proposals, but only Hübner's shifted the emphasis so far and so radically towards process.

The new school is developing alongside an existing one built in the 1960s. New classes will move over each year until it reaches its full complement of 1100 pupils. It occupies a former meadow just behind the heart of the suburb, set between the old school and local sports facilities. Conceived as a village, the group of buildings clusters around a central covered street with a kind of public square at the end where you enter it. Toplit and brightly coloured, this is an inspiring and exciting space, the best of its kind that Hübner has yet produced. The precedents, and to some extent inspiration, are the street-like halls of Scharoun's Marl and Lünen schools both built around 1960 and both within a few miles. In these and Hübner's buildings, the notion of a school is interpreted as a family of rooms rather than a monolithic lump, with a central hall that becomes more street-like through accepting its irregular form from the more positively-shaped elements around it.⁴

At Gelsenkirchen the entrance is flanked to left by the cafeteria and to the right by the

LIFELONG LEARNING

A new school for a bleak, former industrial suburb is an object lesson in ecological awareness and community spirit.





library, with music rooms and chapel above. Beyond to the left is the impressive theatre with its large side window and tree-like structure, while to the right, administrative quarters are housed in a relatively banal box. Then come a chemist and cinema, workshop and laboratory, teaching spaces conceived as shops along the street, used by different groups at different times. The complex ends in a court adjoining a radial workshop. This entire public domain is both for pupils and for local people, who can put on plays in the evening, or use the workshops and sports facilities. A large new sports hall has been built to the east of the complex next to existing open-air sports facilities. Though planned in close consultation with the teachers, all these buildings were largely contractor-built, only finishes being completed by the school. Hübner had wanted to hand out the separate buildings to independent architects, but the clients feared such complex patterns of responsibility, so in the end the parts were divided among plus+ members to provoke the desired variations in style.

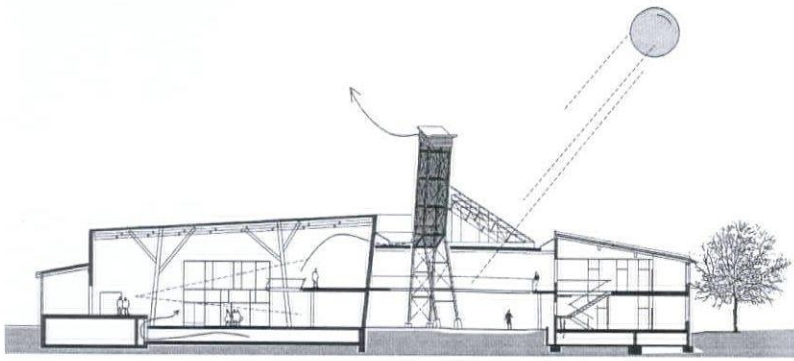
Classroom blocks are being added as a series of side wings away from this central spine. Their design and construction is more radical, involving teachers and pupils directly.

They take the form of free-standing pavilions like terraces of houses, added progressively as classes move over. Initially only two groups of five were built, but two more groups were completed in 2000 and a further two have just been planned. They are being designed by their future inhabitants for Hübner has involved the children in planning, modelling and construction. The architects work up initial proposals based on the children's ideas and after discussion and adjustment of the design, the children build precise models based on the architects' drawings. Further work by the architects takes the designs through the necessary bureaucratic stages and the basic structures are then erected by contractors. Much of the subsequent fitting-out and finishing is done by teachers, pupils and parents.

Hübner has enjoyed the enthusiastic co-operation of the school's director Rainer Winkel. The author of many books on educational theory, he relished the chance to put his progressive ideas into practice. These are based on learning by doing, extending the ideas of Dewey and Montessori, and introducing academic subjects through practical projects. Encouraging pupils to participate in the design and construction of their classrooms reinforces this ethos.

Because social problems are so severe, with poverty, broken homes, alcohol and drugs, many children lack a stable background and this must be addressed by the school. Children are therefore assigned to classes which occupy the same classroom-home for six years led by the same teachers who act as surrogate parents. With 30 per cent of children Muslim and 25 per cent Catholic, mutual understanding and tolerance is also a high priority; though the school is based on Christian values, it is open to other faiths and concerned to accommodate them. Beyond its educational aims, the school forms part of the wider community and is usable by local people around the clock. The theatre is equipped for all kinds of productions, lectures, or film evenings, and there is space for a disco in its basement.

Hübner's architecture has long followed a familiar formula: insulated concrete foundations topped by lightweight construction in timber frame, calculated and cut to size by computer. Wood is an easily worked, renewable resource, and as frame and studwork, flexible enough to absorb the varied shapes and sizes suggested by the participative design process. Roofs can be flat or gently angular, protected by a membrane, then covered in soil for growing



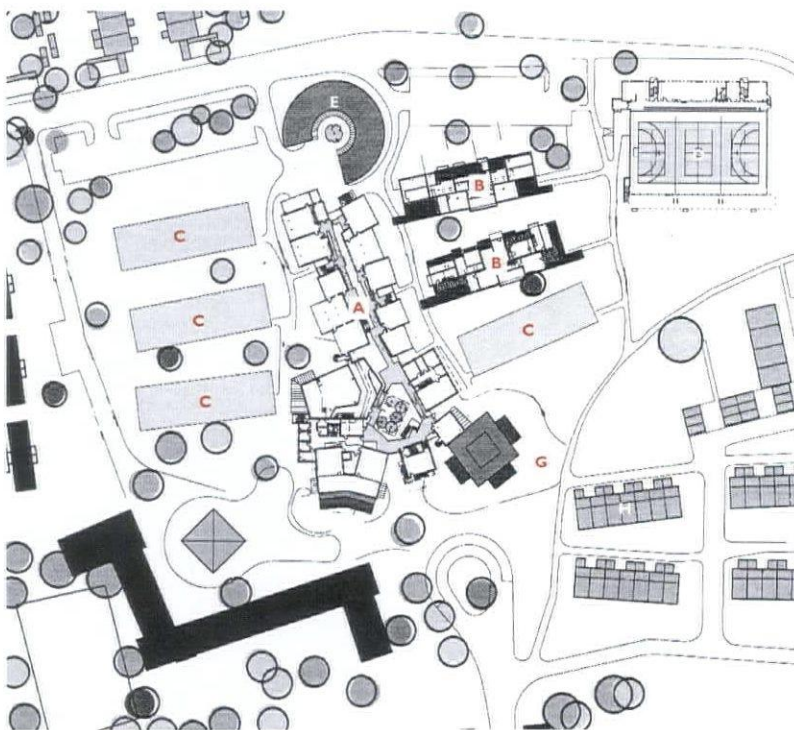
cross section

- 1 library
- 2 theatre
- 3 spinal street
- 4 administration
- 5 café/bar
- 6 chemist
- 7 classrooms
- 8 workshop

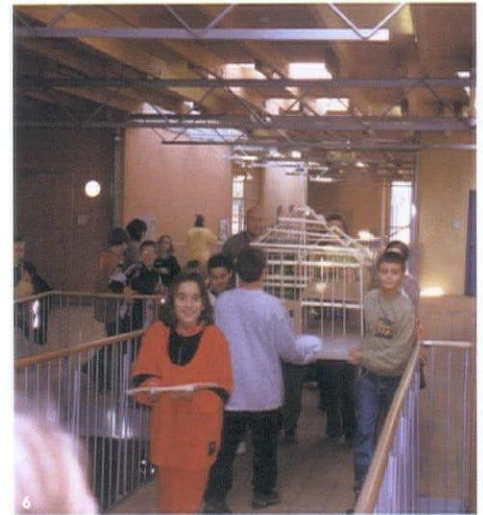


ground floor plan of main school block (scale approx 1:500)

- A main school block
- B classrooms
- C future classrooms
- D sports hall
- E workshop
- F pyramid
- G pond
- H housing



site plan

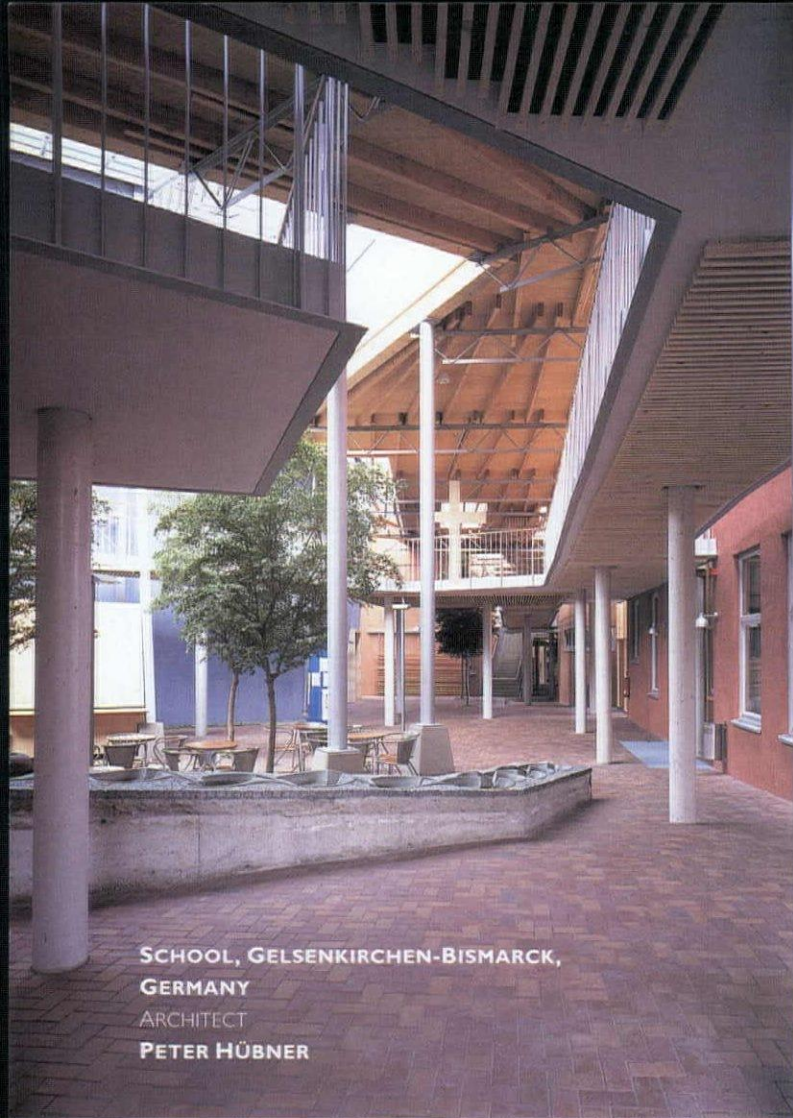


SCHOOL, GELSENKIRCHEN-BISMARCK, GERMANY

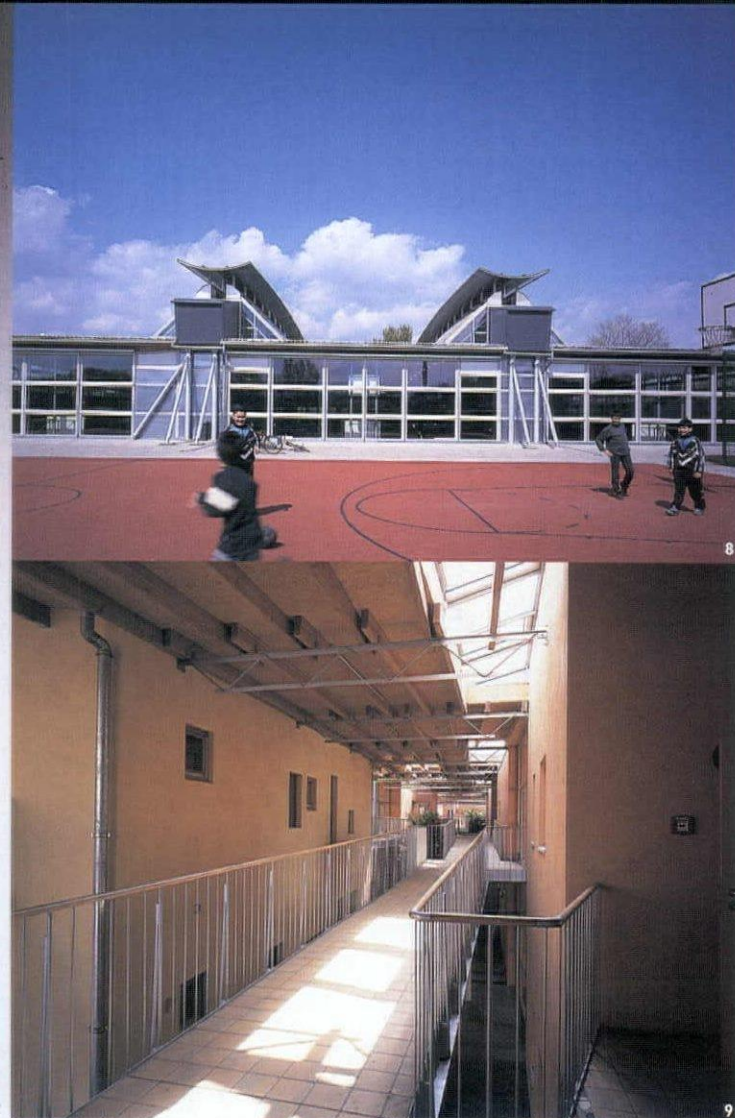
ARCHITECT
PETER HÜBNER

5 Radial workshop terminates main street spine.

6 User participation was an essential element of the design process. Schoolchildren built up scale models of their classrooms based on architects' drawings of initial ideas discussed between the project team and the children.



**SCHOOL, GELSENKIRCHEN-BISMARCK,
GERMANY**
ARCHITECT
PETER HÜBNER



plants. Walls can be clad in various ways, but usually in timber boarding, with windows inserted as necessary. The addition of thick insulation and judicious use of glazing renders the buildings thermally efficient, and classroom daylighting is usually a more pressing concern than heating, as a roomful of children produces kilowatts of energy.

Natural ventilation is usually sufficient, provided that cross draughts can be created. Larger spaces, such as the theatre and sports hall, require more special treatment. Both have ambitious passive energy systems, advancing concepts which Hübner and his consultants Transsolar have used before.⁵ Air is drawn through long underground inlet pipes to be prewarmed in winter and precooled in summer. To create an airflow, both volumes also have thermal chimneys, two on the sports-hall roof and one in the wide end of the school's street which can be opened to exhaust it or the theatre. Unheated, and allowed to fluctuate in temperature further than the permanently inhabited rooms, the whole indoor street space is used as a climatic buffer, with cold air arriving at the bottom and warm air escaping through vents at the top. Air movement helps ventilate rooms on either side, sucking in fresh air from the outside and exhausting into the central street.

The ecological imperatives of learning by doing apply not only to the building but also to the landscape. Landscape architect Christof Harms has developed a concept involving the children and their teachers which is even more open-ended than the classroom design. Part of their education will be to create gardens of vegetables, herbs or flowers, to develop small fruit orchards, to collect water from the roofs, to keep small animals and encourage butterflies and bees. Like the buildings, the garden is conceived as an evolving entity, growing and responding through the efforts of the children. Harms had to decide the approximate layout, the hard landscape, the division of areas with fences and hedges, and the placing of large long-lived trees, but his landscape concept is otherwise open-ended, dynamic and interactive. It is the exact opposite of the well-manicured unchanging park miraculously restored each day by unseen servants, which for many is the assumed gardening ideal. Children need to understand the landscape as a product of human endeavour, of our interaction and dialogue with nature. In seeing the results of their efforts to manipulate and control it, they discover their power to influence the world.

PETER BLUNDELL JONES

1 Internationale Bauausstellung, a national initiative to promote architecture in a particular area founded in 1990, following the model of 1980s Berlin. For another IBA Emscher Park project see AR April 1998, pp46-50 (housing by Szyszkowitz-Kowalski).

2 The church provided the initial resources and the school then had to borrow the rest, before reclaiming it from the state, which finally covered the bulk of the costs. After winning the competition, Hübner had to work to a reduced budget, and a state guarantee was sought against excessive costs.

3 The housing component includes 28 self-build houses and a 72 house solar estate, the first in the Ruhr area. This part of the project is not covered here because the school is already so large and complex.

4 For the Scharoun schools see *Hans Scharoun*, Peter Blundell Jones, Phaidon, London, 1995.

5 See for example the sports hall at the Odenwald school (AR July 1998) and the school at Cologne (AR February 1999).

Architect

plus+, Neckartenzlingen, Germany
Hübner, Forster, Eggler

Structural engineer

Weischede & Partner

Services engineer

Inco

Landscape architect

Christof Harms

Environmental consultant

Transsolar

Colour consultant

Heiner Nienhaus

Photographs

Peter Blundell Jones



10



11

- 7 Part of the street spine that links the various volumes.
- 8 Sports hall, which, like all the school's facilities, can be used by the community.
- 9 Upper level of street spine.
- 10 School theatre, showing its arboreal structure.
- 11 The inside of the library.



ARCHIVE BUILDING, JERSEY,
CHANNEL ISLANDS
ARCHITECT
BDK ARCHITECTS WITH
MACCORMAC JAMIESON PRICHARD

ISLAND ARCHIVE

A new archive building for the island of Jersey has a dignified civic presence and wider green ambitions.

The new archive building in Jersey has been built in the bowl of a quarry on the east slope of a hill above the centre of St Helier. The building is surrounded on three sides by the pink-brown textured walls of old quarry workings, so that the archives are held in a granite embrace.

The building, by the Jersey practice of BDK Architects in association with MacCormac Jamieson Prichard, was designed for the Jersey Heritage Trust which wanted to make the island's history more accessible to the public. Its brief asked for a reading room and associated facilities, and 7km of environmentally controlled shelving for archives including

rare documents, artefacts and photographs.¹ Running costs had to be minimal.

Jersey Archive announces its presence off a narrow one-way street with an elegantly landscaped forecourt, glass entrance box and porte cochère which leads into a courtyard. Landscaping around the L-shaped building has a solid sculptural quality, in keeping with the beauty of the surrounding rock face visible from all nearly all parts of the Archive. You park your car under a pergola curving around the rock face. Behind you, a sloping lawn filling the angle of the L rises to a smoothly curving concrete bench (in the

monolithic context, Richard Powell's relief, meant to evoke historic documents scattered over the concrete, simply looks untidy); another curved seat is set into a rock garden at the back of the building.

The Archive is made up of two main parts connected by stair and lift tower and glazed bridges. The need for security imposed its own restraints, and access to successive zones becomes increasingly restricted as you move towards secure staff rooms and the sealed four-storey repository.

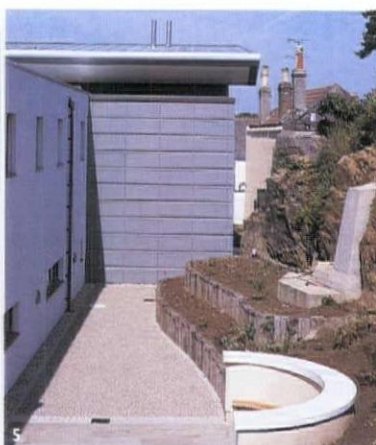
Running west-east, the public building begins with the openness of the two-storey reception, glazed on two sides.

From it you can reach the education room on the ground floor, or mount the stairs to exhibitions in the first floor gallery. Beyond the gallery, the rectangular reading room is cantilevered over the education space on white precast concrete beams. This side of the building faces due south and, to prevent overheating, daylight is deflected and diffused by various means. Underneath the cantilever, glass panels between the beams form a band of clerestorey glazing admitting daylight to the ground floor. In the green panelled reading room (meant to evoke the traditions of leather bookbinding), daylight is diffused through brise soleil over





- 1 Entrance courtyard, overlooked by the glazed reception block.
- 2 The long linear volume of the education and reading room block floating above a rusticated base.
- 3 Materials are sensitively combined to generate a balanced yet authoritative civic presence.



**ARCHIVE BUILDING,
JERSEY, CHANNEL ISLANDS**
ARCHITECT
**BDK ARCHITECTS WITH
MACCORMAC JAMIESON
PRICHARD**

horizontal window slots, and through a clerestorey shaded by the oversailing roof.

Emphatic articulation by material and form (certainly a familiar part of the MacCormac practice's vocabulary) makes the building immediately legible and comprehensible; held within the rocky bowl, the composition has the balance and authority of an early Modernist painting. The long horizontals of the reading room floating over a stony base are underscored by wooden cladding, the whole counterpoised to the blockiness of the impassive white cubic repository on the one hand, and the transparent entrance box with its flash of scarlet wall on

the other. Internally, the same articulation occurs in the design of details and junction.

Consideration for energy saving played a large part in design. To support the island's economy and cut down transport costs, the architects have used durable materials found locally wherever possible, and in constructing the building have tried to ensure energy consumption was kept to the minimum.

Working with Arups, the architects devised a passive system of environmental control for the repository (it is said to be one of the largest archive buildings in the world to be so controlled). Constructed of double 440mm concrete block

walls separated by ventilated wall cavities, the building's thermal mass is enough to absorb variations in temperature and humidity and create a stable environment. Wrapped in a bitumastic waterproof membrane to prevent moisture escaping, the walls are insulated and protected externally with a silicone rainscreen render. Heat from solar gain in the rendered facade is drawn through the cavities and expelled through a void in the double roof. A sophisticated building management system monitors and responds to changes; when required it activates natural ventilation or low level heating systems. The strategy has

apparently saved £300 000 in expenditure on plant and it is predicted that, when compared with the cost of running standard mechanically air-conditioned buildings, this one will save £43 000 a year. Architecturally speaking, Jersey has had a lean time in recent years. There is scarcely a modern building of any worth and it is heartbreaking to see how much of its fine historic and vernacular architecture has been – and is still being – treated (the rash of plastic windows inserted into the magnificent pink granite faces of the island's old houses is a ubiquitous and painful eyesore). But there are hopeful signs that things may be changing



4
The archive complex is contained within the rocky bowl of a former quarry. Archives are housed in a white, cubic repository.

5
Curved seat is set into the rock at the rear of the reading room block, humanizing the landscape.

6
Light-filled reception space.

7
Handsome green panelled reading room evokes the traditions of leather bookbinding.



ARCHIVE BUILDING, JERSEY, CHANNEL ISLANDS

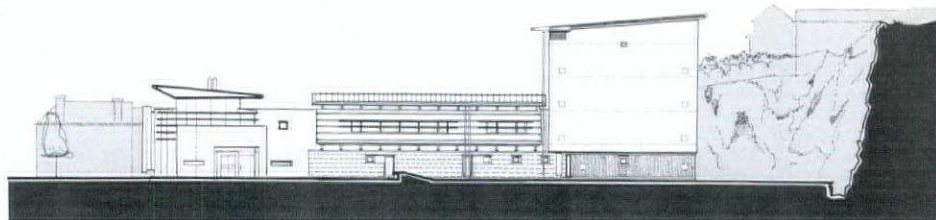
ARCHITECT

**BDK ARCHITECTS WITH
MACCORMAC JAMIESON PRICHARD**

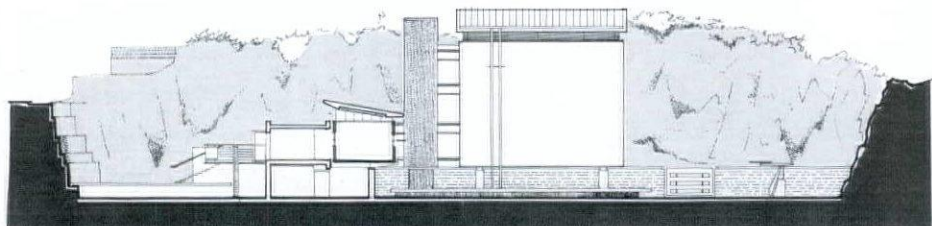
— there is now a new office building in St Helier by Haworth Tompkins — and Jersey Heritage is to be congratulated on an archive building that is an exemplary new public building, and one that should endure.

PENNY McGUIRE

1 Archival material should be rich in at least one respect, for the situation of the Channel Islands off the coast of Brittany in northern France has ensured their lively military history as one power or another has recognized their strategic advantages — hence their castles, garrisons and fortifications. The famous Battle of Jersey of 1781, when invading French were bravely repelled by Jersey men, is commemorated in John Singleton Copley's painting *The Death of Major Pearson* that hangs in the Tate Gallery in London. Wellington insisted on the necessity of reinforcing the Islands' defences, and Hitler was obsessed with their strategic importance. Jersey has been a wealthy island, at least since the nineteenth century, its prosperity founded like that of the Basques on cod fishing.

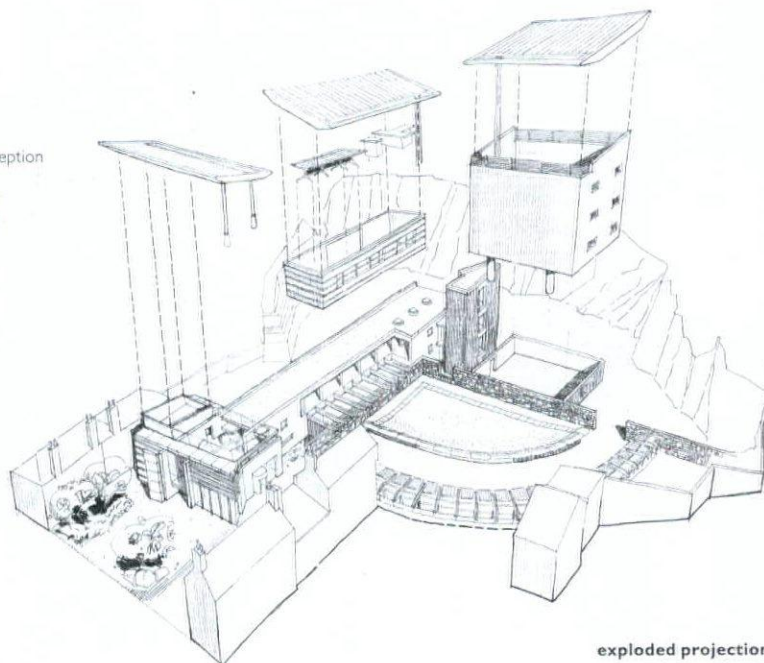


cross section through courtyard

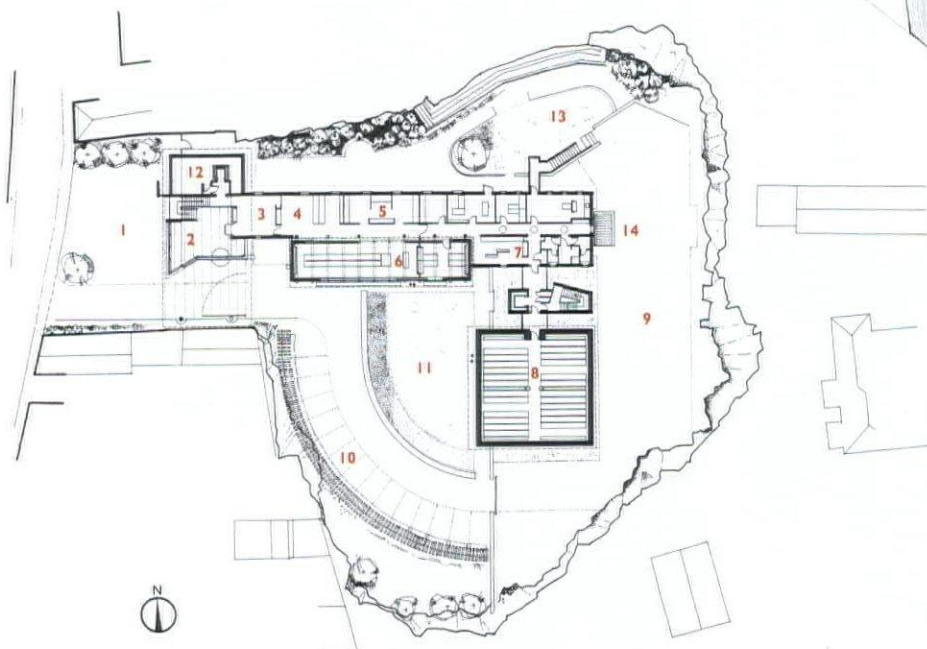


cross section through education and reading room block

- 1 entrance court
- 2 exhibition and reception
- 3 first floor gallery
- 4 information finder
- 5 microfilm viewing
- 6 reading room
- 7 copying area
- 8 repository
- 9 service area
- 10 public parking
- 11 lawn
- 12 plant
- 13 north garden
- 14 loading bay



exploded projection



Architects

BDK Architects in association with
MacCormac Jamieson Prichard
BDK Architects, Jersey

Paul Harding (lead project director)
Fiona Godel (project architect)
MacCormac Jamieson Prichard
David Prichard (partner in charge)
Neil Deely (project architect)

Structural and M&E engineers

Ove Arup and Partners, Arup Rothwell

Landscape architect

Colvin & Moggridge

Quantity surveyor

Tilyard Jersey

Artists

Louise Lusby Taylor, Richard Powell,
Elisabeth Taylor

Photographs

Andrew Southall/arcblue.com



**GREENHOUSE, LEIDEN,
THE NETHERLANDS**
ARCHITECT
HUBERT-JAN HENKET

HORTUS CONCLUSUS

A secret garden in the middle of Leiden's busy centre has been reinvigorated.

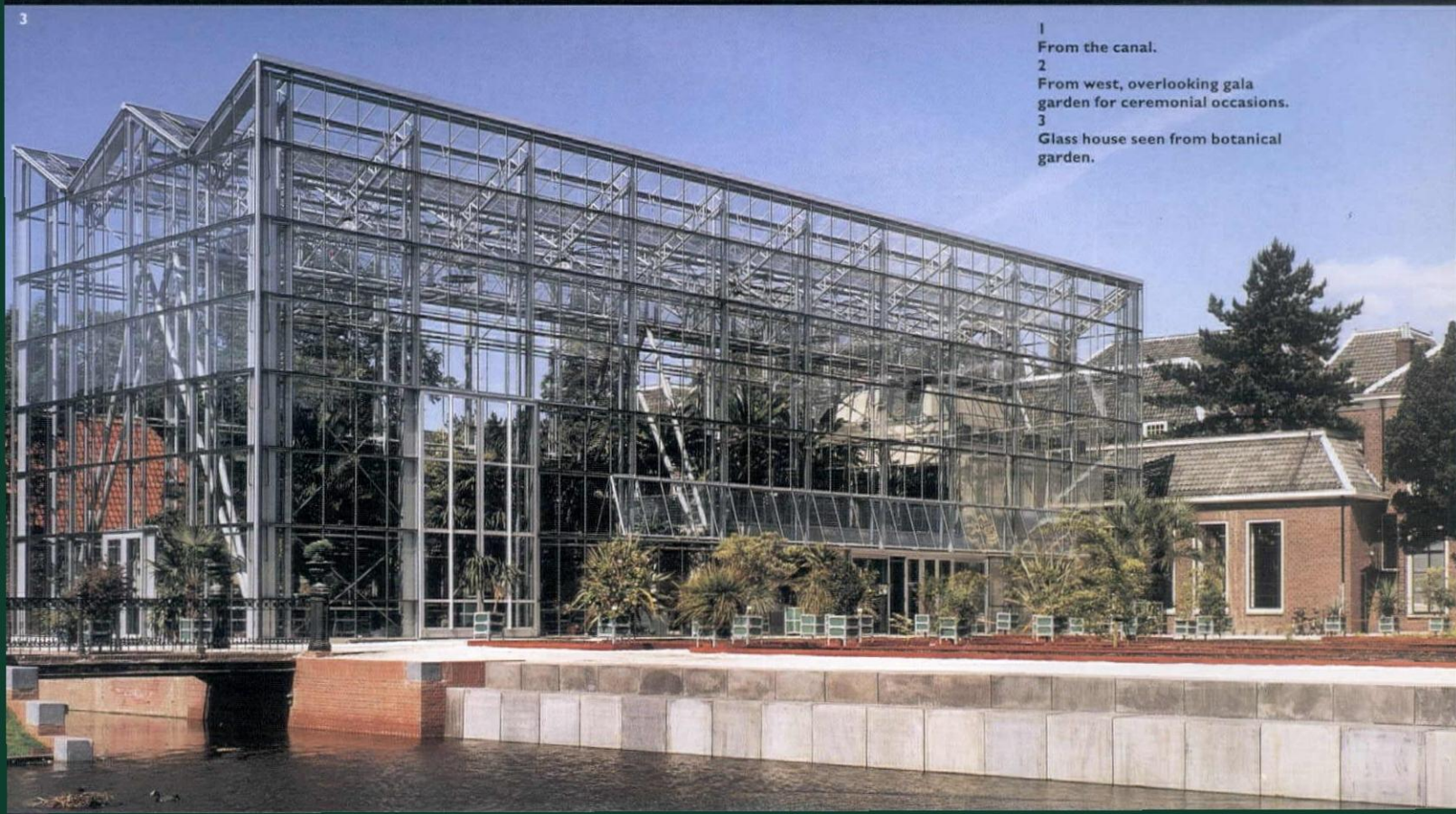
Directly after the defeat of the Spanish army in 1573, Leiden – then the second largest city in the Netherlands – was granted the right to start the first University in the Republic, as a gesture of appreciation to the city's heroic citizens. In 1590, following the trend from leading Italian universities, it was decided to establish a botanical medicinal garden for the

institution. Since the city fathers claimed Roman ancestry, the city was known as 'Lugdunum Batavorum' and so the botanical garden was given the grand title of 'Hortus Academicus Lugduno Batavus'. The Hortus was located directly behind an old monastery along the Rapenburg, the city's main canal. Ever since then, the Hortus has been a small peaceful oasis in the

medieval inner city. Here botanic science and aesthetic pleasure have been combined and infused over time. Four centuries of cultivated nature and architecture merge into a poetically beautiful synthesis.

However, during the last century various interventions were allowed to take place, drastically changing both the spirit and character of the

Hortus. To rectify the mess, the University of Leiden organized a limited competition among landscape architects for a masterplan, which was won by MTD. Among their proposals was the restoration of the front court of the Hortus and the development of a ceremonial place for official celebrations in the garden of the original University office. Between these



- 1 From the canal.
- 2 From west, overlooking gala garden for ceremonial occasions.
- 3 Glass house seen from botanical garden.

**GREENHOUSE, LEIDEN,
THE NETHERLANDS**
ARCHITECT
HUBERT-JAN HENKET

new spaces it was proposed to introduce a new winter garden on the site of existing lecture rooms. Hubert-Jan Henket was commissioned to design the winter garden. The huge new greenhouse provides shelter to an array of large potted plants, some of which are almost 300 years old, originating mainly from the dry climates of the Mediterranean and South Africa. Previously, they were stored in existing greenhouses which had become inappropriate and overcrowded. The university also commissioned Henket to design a small restaurant, bookshop, ticket office and a meeting room.

Henket has taken great care to preserve the notion of the quiet oasis, the secret garden in the bustling inner city. Sitting lightly on the ground, the transparency of the winter garden helps the new intervention to merge into the historical university complex. To keep the front court as free as possible, new facilities are housed in the soaring glass volume of the winter garden. This exploits the structure's 13m height and gives the visitor the opportunity to survey both the plants and the city beyond from elevated walkways. Ticket office, café and meeting room are stacked on top of each other to form three

terraces for smaller specimens. To induce and heighten the sense of transparency, the café opens both towards the front court and the gala garden.

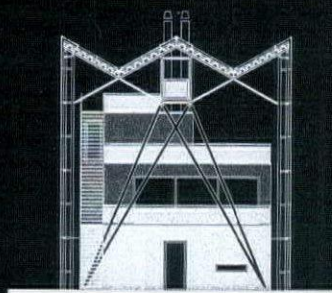
The limited budget dictated that only a standard greenhouse skin could be used. But due to the extreme commercial efficiency of Dutch greenhouse contractors, standard systems are generally engineered to a conventional height of 4m. To accommodate the winter garden's 13m height required some deft adaptations of the standard system and also a specially designed structure.

Emphasizing the connection with the past, the first visitors to

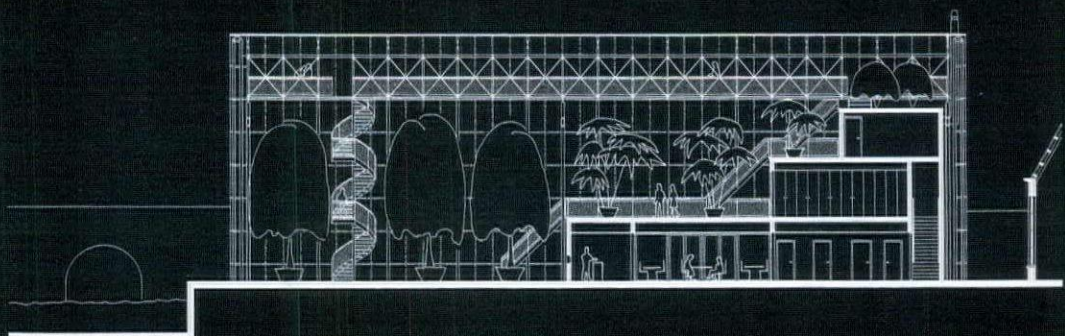
the redesigned Hortus in May last year were the Emperor of Japan and the Queen of the Netherlands. On that occasion the Emperor was presented with young plants obtained from originally Japanese trees, planted about 180 years ago in the Leiden Hortus Botanicus.

CONNIE VAN CLEEF

Architect
Hubert-Jan Henket Architecten, Esch
Project team
Hubert-Jan Henket, Sylvia Wirtz
Landscape
MTD Landschapsarchitecten
Structural engineer
ABT
Service engineer
Ketel
Photographs
Sybolt Voeten



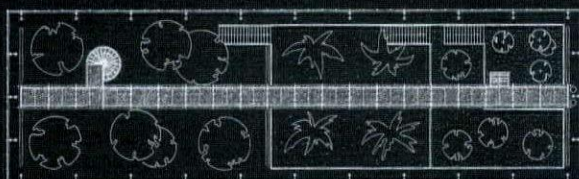
cross section



long section

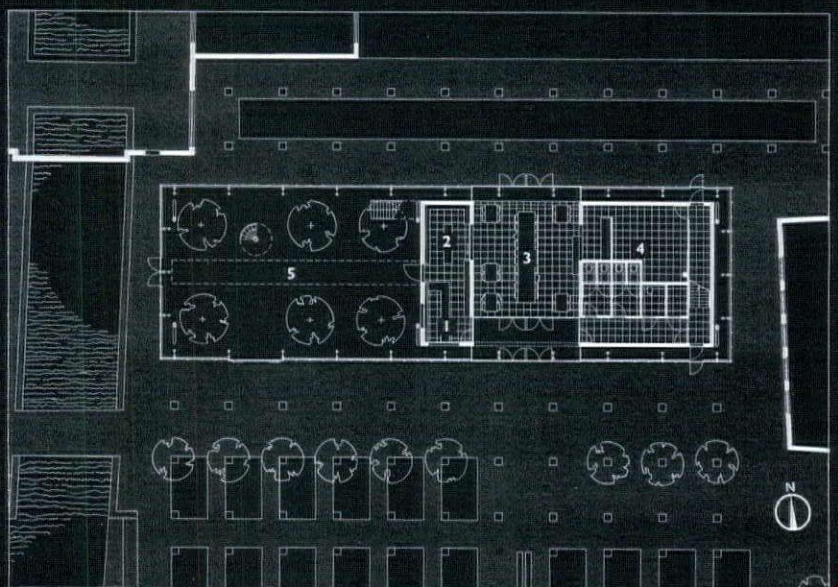
4
South elevation: the whole 13m high building is ingeniously constructed from standard glass house parts.

5
Bridge flies along whole length of interior which steps up towards east end in terraces.



bridge level

- 1 tickets
- 2 bookshop
- 3 café
- 4 kitchen
- 5 enclosed garden



ground level (scale 1:500)



place

From the shade of a café, surveying the sun-washed columns of a Baroque cathedral of Portmeirion proportions, Dubrovnik seems to be an ideal city. People – not cars, not scooters, not buses – pass with their shopping baskets and briefcases. Three- and four-storey houses line the angled exits of intimate squares. On the ground floor, business is conducted. On the upper levels, domestic life takes place behind the slats of hinged shutters. Compared with this bastion-ringed grid of regular streets and irregular squares, conventional

pedestrian malls and zoning are a banal imitation. Set on a rocky headland of the Southern Adriatic, the city of Dubrovnik presents a bulky carapace of freestone wall on bare rock to the open sea. On the land side, a generous flagged quay runs round a sheltered harbour. Decked with Gothic windows, Renaissance loggias and Baroque stairways, the city's public spaces emulate the comfortable stride and swagger of Shakespeare's stage Italy.

The heart of the city, and a measure of its breadth, is the Stradun,

RESTORING RAGUSA

Dubrovnik, one of the jewels of the Mediterranean world, suffered greatly in the Balkan wars: important buildings were destroyed and much else was damaged. International aid has restored a lot of the city, but work continues.



a long, tapering lane. It opens to piazzas at its top and bottom, and is purpose designed for the evening *passaggiata*. You can saunter along it in 10 minutes, gate to gate. Access has not altered since the fourteenth century, when the maritime republic, then known as Ragusa, completed its two land gates, with barbicans, and two sea gates feeding the harbour. A monastery serves each road in, creating a cool oasis of green cloister at either extremity of the city. At the eastern end are the Dominicans, to the west the Franciscans, who since 1317 have been pounding herbs in one of the oldest pharmacies in Europe.

From the corniche coast road, high on the cliff above, the scale and character of Dubrovnik is fully revealed. Walls, streets and houses are built almost entirely of a uniform bone-white limestone. Colour is added by the equally homogenous covering of orange roof tiles, and the surrounding arc of sapphire sea, which tightly hems in the city's compact form. Such an ensemble could not fail to elicit delight. G. B. Shaw called it 'an earthly paradise'; Jules Romains spoke of the 'inexhaustible charm' of its wall walk. Nor could it fail to have been put on the UNESCO World Heritage List.

Yet on 1 October 1991, this city among cities, which the civilized world held so precious, and which was of no modern military value, came suddenly and without warning under artillery shelling, air attack and naval bombardment from Yugoslav Federal forces. The attacks continued until 20 July 1992. The orange roof tiles shattered under the high-explosive shells, exposing the 300 year old beams. These were set ablaze by incendiaries. Both the Franciscan and the Dominican monasteries were damaged. Renaissance palaces were gutted, Baroque steps scarred with shrapnel, the delicate stone fountain on Gundulic square was dismembered, the limestone dome of the great fountain of Onofrius was pierced. Statues, balustrades, cornices and lintels were chipped or punched with holes. The Franciscan monastery library was hit by guided missiles.

Dubrovnik had suffered before. In 1667, an earthquake left most of it in ruins. Another struck in 1979. As a result of this more recent disaster an Institute for Restoration was created, which now took on another challenge: reversing the effects of twentieth-century warfare. According to director, Dubravka Zvrko, 70 per cent of the buildings



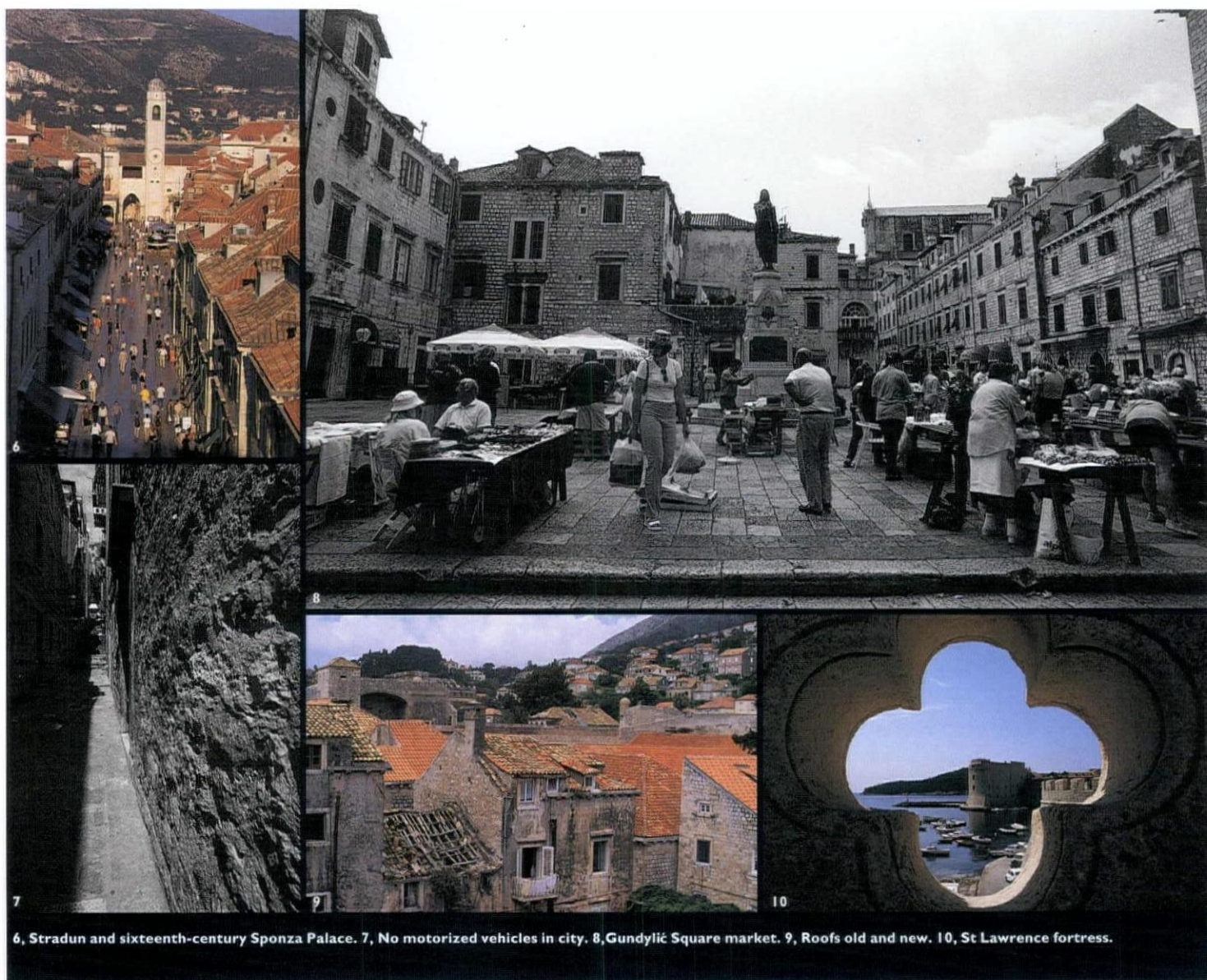
1, Set on a rocky headland in the southern Adriatic. 2, Grand Harbour fronts model ideal town. St Lawrence fortress, left (fourteenth to sixteenth centuries). 3, Franciscan monastery, Stradun (fourteenth to seventeenth centuries). 4, Rector's Palace (fourteenth to seventeenth centuries). 5, Concert in court of Rector's Palace.

place

in the Old Town had been damaged in some way. Most of the roofs were in need of repair, nine palaces had been burnt out. State funds could not be expected to cover the huge costs, but fortunately Dubrovnik had generous and sympathetic friends overseas. Famous individuals generated publicity and a fund-raising concert was held in the Albert Hall by the London-based International Trust for Croatian Monuments. In the United States a Rebuild Dubrovnik fund was launched and in Germany, artists and citizens of Düsseldorf founded the Künstler helfen Dubrovnik, Dusseldorfer helfen Dubrovnik. A similar organization was set up in France, promoted by the mayor of Rueil-Malmaison, Dubrovnik's twin town.

The task of the restorers was not merely a question of widespread and extensive repair, but also of maintaining quality in materials and workmanship on precious historic buildings, most of which date back to the seventeenth century. A major setback to the quest for authenticity was that much of the fine detail, such as statues, facade ornamentation, the characteristic stone guttering and the many medallions of St Blaise, patron of the city, had been chiselled from

stone quarries on the island of Korcula, which were now too small and ill-equipped to cope with the sudden huge demand. Here a compromise had to be accepted, whereby the most obviously visible elements are being repaired with the rarer Korcula stone, while the guttering, familiar only to pigeons, is supplied from the large commercial quarries of the island of Brac. Locals are also disturbed that the dull mottled tone of the old roof tiles has mostly been replaced by identical bright orange new ones. Exceptions are being made on historically significant buildings, where new but variegated and 'weathered' tiles are used. Masons, sculptors, carpenters and painters have both been recruited locally and lent by those countries donating aid as a contribution in kind. Two thirds of the repair work has now been completed, but the visitor still comes across workshops of medieval aspect (except for the coffee-pot and radio), in cavernous stone cellars, where details are finished. A series of postcards published by UNESCO showing 'before and after' views of restoration to damaged areas of masonry, carvings and roofs forms an imaginative and fund-raising celebration of the work to date.



6, Stradun and sixteenth-century Sponza Palace. 7, No motorized vehicles in city. 8, Gudylić Square market. 9, Roofs old and new. 10, St Lawrence fortress.

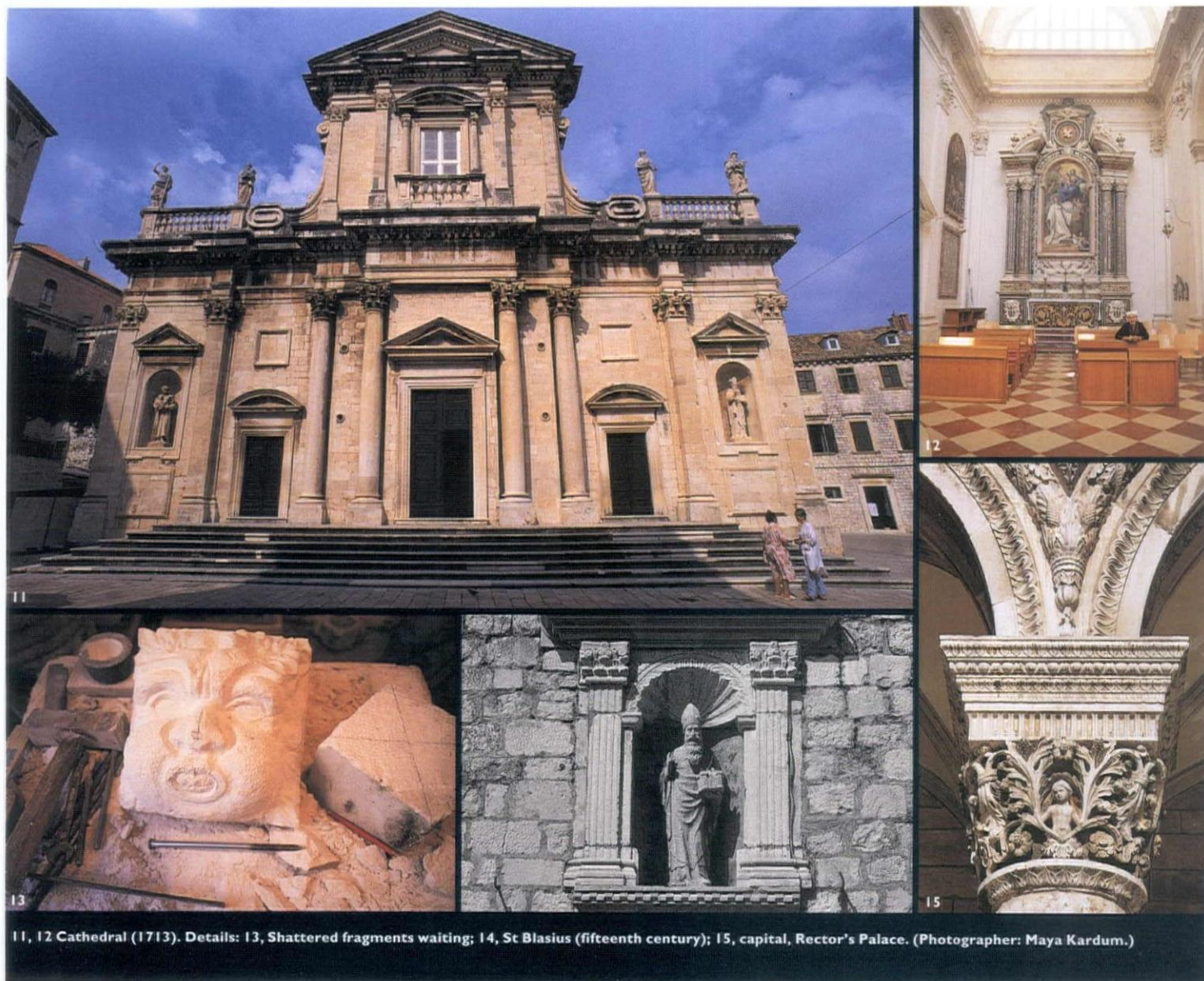
In its Ragusan heyday Dubrovnik earned its living by sea-borne trade, ship construction and from the charter of crews and vessels. (The date, size, intention and fate of the Spanish Armada may be familiar to every British schoolchild, but it is less well known that a quarter of the major vessels were supplied by a subcontractor called Ragusa.) In the twenty-first century, the only hope for the city to survive economically and to finish the vital work of restoration and maintenance of the building fabric is tourism. To this end the community possesses many advantages: pedestrianized streets, magnificent monuments and a picturesque harbour with boat excursions to the environs, including the green island of Lokrum where Richard the Lion Heart is said to have found shelter. Cafés and restaurants are well established and there is an exceptional absence of beggars and graffiti. There is also an apparent lack of aggressive threat or crime, as there are only two exits to the city, both barred to traffic.

In the summers before the war, the city was packed, with police having to slow the entry of the crowds. Last spring, when the sunny, mild climate is at its most inviting, the streets were nearly empty, the

cafés patronized only by locals, except for those brief hours when cruise ships moored offshore. Traffic levels are the lowest for years, the heaviest being the lorries of UN and NATO forces, en route to Bosnia and Kosovo. Restaurants are full of hopeful waiters beckoning and bowing. A short drive along the Magistrale, the Dalmatian cornice road, is Cavtat, the Croatian St Tropez, but the foreign visitors here are now mostly troops on R&R breaks.

The best introduction to the city is the circuit of its walls, for which a small charge is now levied. The route includes stiff climbs up to bastions and weaves around the crests of buildings along the harbour, past breezy gun platforms overlooking Adriatic-washed rocks on one side and tiny, overgrown gardens on the other. Yet in its gentle, humane urbanism, this historic city still offers lessons for the future. For advocates of a balanced and mixed-use built environment, for planners of an ecologically enlightened car-free future, for those who would revive a shared communal life in high-density but healthy housing, Dubrovnik is an enviable model.

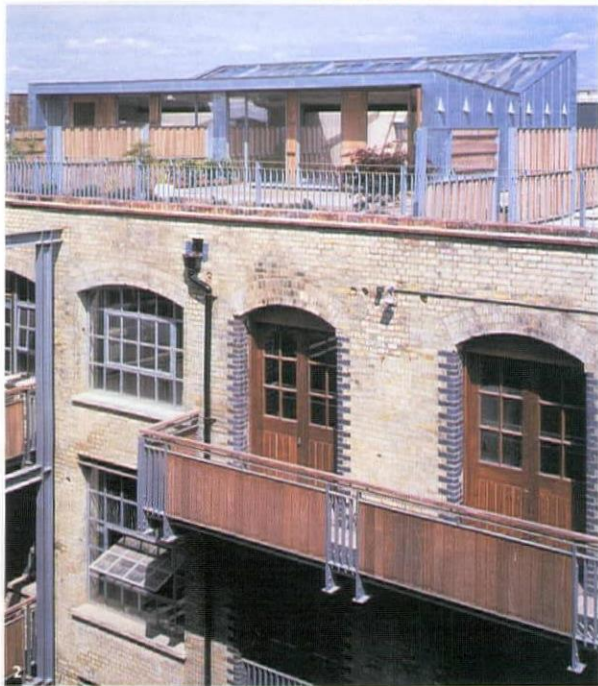
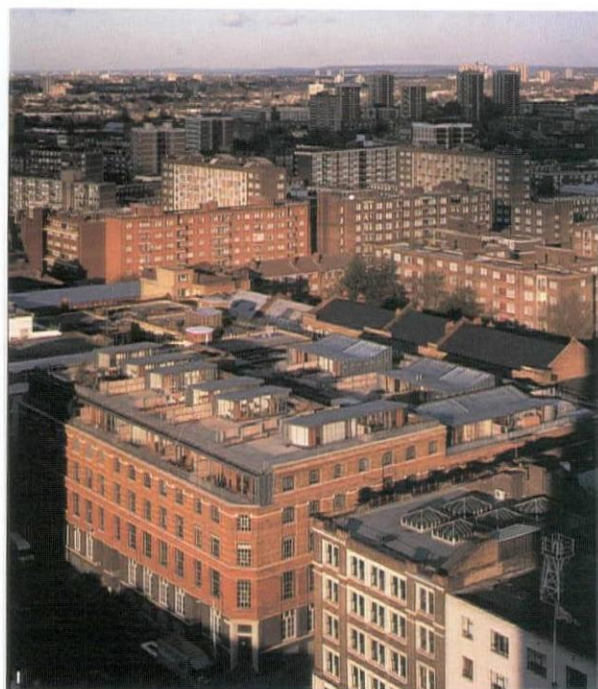
MARK POWELL



11, 12 Cathedral (1713). Details: 13, Shattered fragments waiting; 14, St Blasius (fifteenth century); 15, capital, Rector's Palace. (Photographer: Maya Kardum.)

High life

The sensitive conversion of a Victorian factory in east London into residential shells has provided the opportunity for elegant architectural essay.



WAREHOUSE CONVERSION, SHOREDITCH, LONDON

ARCHITECT

BUSCHOW HENLEY

1 Exterior of The Factory from west.

2 West face of apartment with entrance from new walkway, rooftop pavilion and terrace.

3 From main bedroom and skylight to kitchen and living room.

4 Living room, stairs to gallery (left) and kitchen beyond.

5 Kitchen sink and translucent wall to cupboards.

6 Bathroom under skylight with concrete bath and basin.

7 Main bedroom and entrance to bathroom (left).

8 Rooftop pavilion and terrace.

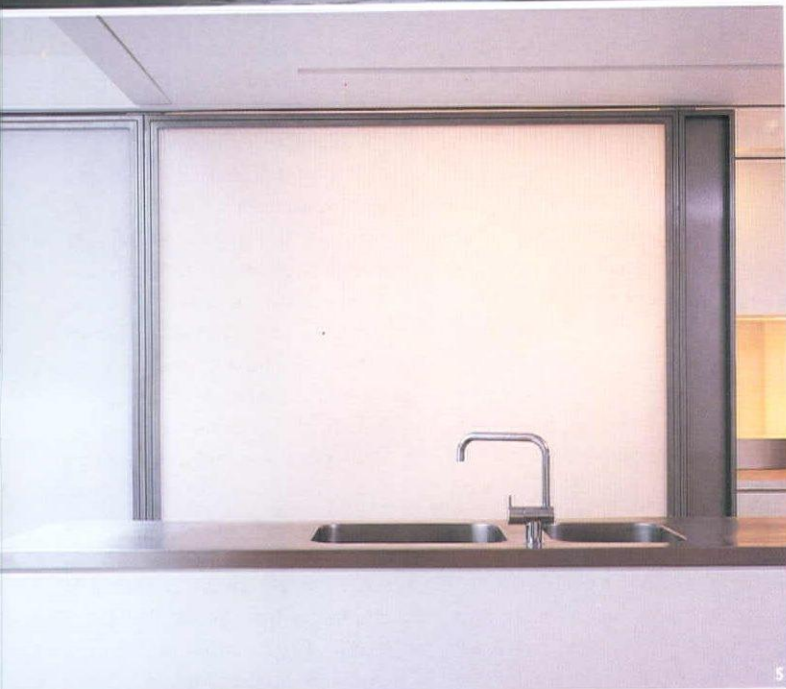
Buschow Henley's conversion of an old industrial warehouse in Shoreditch, east London, into a series of empty loft shells, has brought about a remarkable concentration of architectural essays. In spite of the place's remoteness from any semblance of village life (a local paper shop, grocery store and the rest), the architects' intelligent conversion seems to have attracted a breed of city-dwellers that has only recently appeared in Britain – affluent, largely youthful and interested in architecture and in living in apartments. Very well informed about design, they have, one by one, bought these shells and created individual Modernist eyries, either on their own or with the help of architects. In Britain, such a community is probably unique.

The building, now known as The Factory, is thought to have been used at various times for garment making, by the fur trade and for museum storage. Lining one side of a narrow canyon-like street, it is a massive Victorian structure, built around a central courtyard and subdivided into units, the extents of which accord with existing party walls. Additions by the architects take the form of skeletal structures supporting a lift tower, wooden decks around the upper floors, balconies and rooftop extensions. In playful counterpoint to the urban street, the practice has recreated the ideal of the garden suburb on the roof, with a succession of zinc-clad glazed pavilions and terraced gardens

surrounded by fences. In consequence, units on the top floors, illuminated by pavilions and with wide views over the city, are the most desirable; and Buschow Henley's commission to organize the interior of one on the east side provided the opportunity to work within its own parameters. The architects' volumetric manipulation of the simple shell transforms it into a luminous dwelling composed of vertical and horizontal layers so that spaces flowing one into the other are thereby enlarged.

Though pavilions are used elsewhere to provide a garden room, their main function is to bring light into the centre of the deep plan. Here, though the structure contains a gallery, it is emphatically a central skylight introducing a strong vertical element and dividing the apartment into public and personal space. At the back are bedrooms; at the front, a living room, with intermediate space devoted to kitchen and dining.

Working with the vertical order, the second horizontal one imposes two peripheral blocks underneath the big skylight. This leaves a central corridor so that you can see clear from the front to the back wall of the apartment. Running down the south side are the kitchen, and behind a small study and guest bedroom. On the north, the block contains a wooden staircase to the gallery and terrace, and bath- and shower-rooms. Capped with glass and conceived as light boxes within the bigger light





**WAREHOUSE CONVERSION,
SHOREDITCH, LONDON**

ARCHITECT
BUSCHOW HENLEY

9,10
Gallery and skylight.

box, they are full of a diffused luminance which reflected off pale concrete lends it the beauty of stone.

Such manipulation of light appears elsewhere. The gallery, which is the transition between interior and exterior, is set below the level of the roof terrace so that light filtering between it and existing beams gives the structure a floating quality. Glass risers set into the stairs form translucent slots into

the shower underneath. And throughout, reflective materials and finishes such as white plastered walls and glossy resin floor are earthed by the wood of stairs and gallery, and by the wooden decks and massive structure of the host building.

Architect

Buschow Henley

Project architects

Ralph Buschow, Gavin Hale Brown,
Simon Henley, Craig Linnell, Ken Rorrison

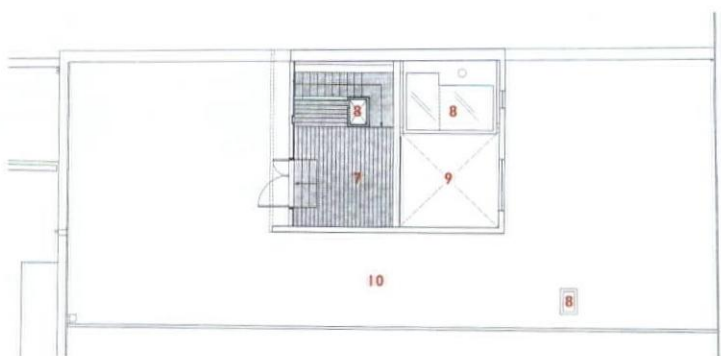
Photographs

Nicholas Kane

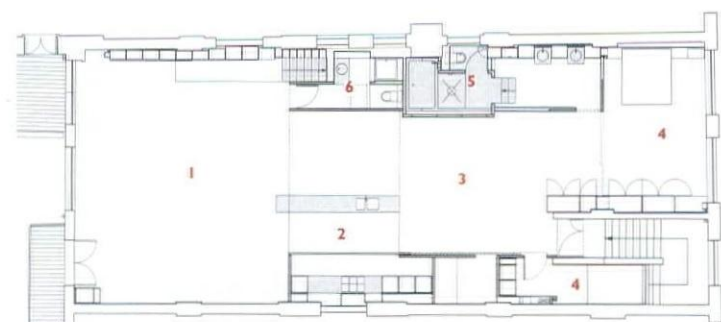


section

- 1 living room
- 2 kitchen
- 3 dining room
- 4 bedroom
- 5 bathroom
- 6 washroom/shower
- 7 gallery
- 8 skylight
- 9 void
- 10 roof terrace



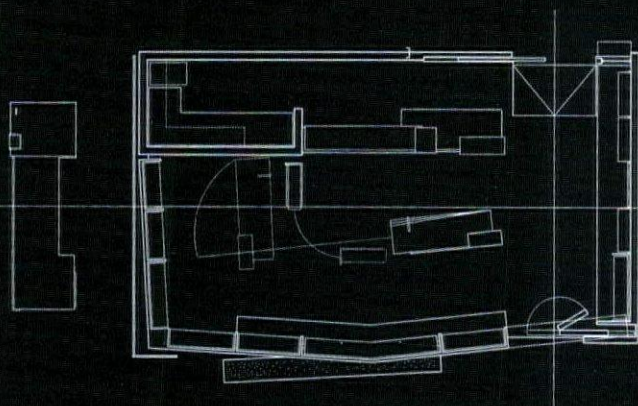
level 2 plan



level 1 plan (scale approx 1:350)

BOOKSHOP, UNIVERSITY OF MICHIGAN, USA
ARCHITECT
UNIVERSITY OF MICHIGAN SCHOOL OF
ARCHITECTURE

1,2
Exterior faces of white box.
3
Bookshop interior.



plan (scale approx 1:470)



2

Student essay

A new bookshop set within an American museum of art was inspired by monochromatic art and subtly respects the architecture of its Beaux Arts host.

The new bookshop inside the University of Michigan Museum of Art was designed by students of the University's school of architecture. Positioned on the main axis of the Beaux Arts building, it is an independent structure measuring 540 sq ft (about 50 sq m).

The designers describe the bookshop as a 'reluctant object' for its position within the host building obliges it to fit in, to avoid calling attention to itself. Inspired by Robert Ryman, the American artist of white paintings, who achieves subtle effects with monochromatic textures, the exterior skin of the shop is an essay in textured monochrome. White pickled plywood panels clad the two long walls and a white painted drywall surface presents a textured face to the existing apse. On the fourth wall, a cloudy white screen of fibreglass acrylic is a backdrop for an information desk.

Externally, the white surfaces provide a background for medieval fragments and figures, their display designed to disturb the symmetry of the box and convey ambivalence. Embedded into one long wavering wall is a slender glass case which, supported on 101 spidery steel legs, holds manuscripts, chalices and small artefacts. On the opposite exterior is a composition of medieval figurines, individually held off the wall by steel arms and bases. As an object in space the box, that is the bookshop, becomes almost symmetrical, almost white, almost an object that competes with art.

Project team

School of Architecture, University of Michigan: Jason Young, Matt Berry, Zeke Busch, Justin Kwok, Christina Pungchar

Construction

Jason Young, Luay Bahoora, Matt Berry, Zeke Busch, Clair Colburn,

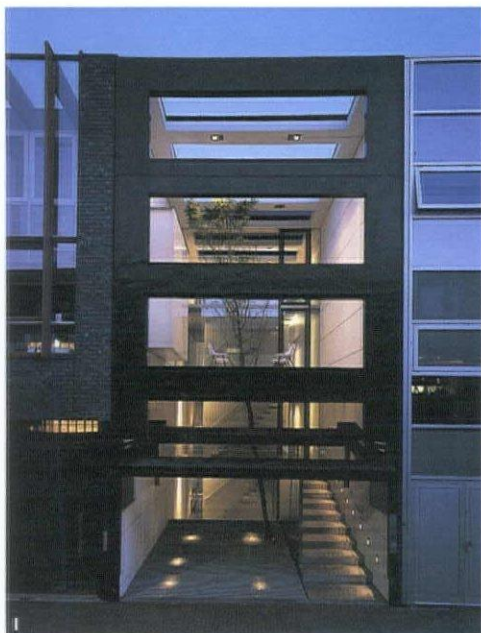
Christina Pungchar

Photographs

Christopher Campbell



3



**HOUSE, AMSTERDAM,
THE NETHERLANDS**
ARCHITECT
KOEN VAN VELSEN

The latest expression of architectural Calvinism, prevalent in Holland at the moment, is to be found at its most exquisite in Koen van Velsen's house for an alpinist in the eastern docklands of Amsterdam. Occupying a long narrow site between street and canal, the building demonstrates the Dutch art, here at its most refined, of extracting more out of less.

The building, four storeys high and designed to a taut geometry, is an abstract composition of concrete, stainless steel and glass. It is enclosed front and back by a screen – a black concrete frame incorporating a regular pattern of rectangular openings and rising sheer from the street on one side, water on the other, to turn into a skylit roof. The screen, maintaining a distance between living accommodation and the external world, defines open space on each side – a courtyard or patio, a terrace or balcony.

At street level, a garage door rises smoothly to admit the car into a courtyard floored with a stainless-steel grid. The house bridges a drop in level from street to canal and beneath the grid is a shallow basement which is used for storage. Seduction in today's Dutch architecture so often succeeds in the tension drawn between strict geometry and romantic organic (AR March 1999). Here, the void literally accommodates the organic, the roots of a tree which rises through courtyard and terrace grids to the top of the building.

Plan and section are consonant, for the building is dissected in each dimension into three parts. Vertically, division is by means of glass walls, and, horizontally, by stainless-steel grilles or stainless-steel panelled floors. Paradoxically, considering the elaborate strategies for secluding the house, privacy disappears at night. The occupant has yet to get screening devices and when

DISTILLED DUTCH DOMESTICITY

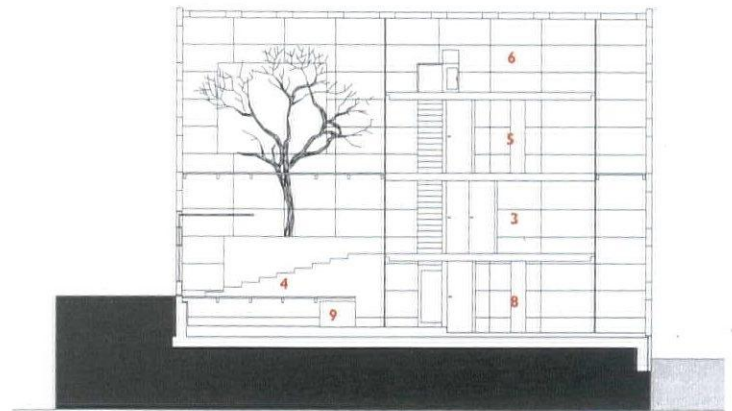
A house in Amsterdam's docklands is an elegant expression of ingenuity and the Dutch art of getting more from less.



- 1 Street face of house with garage door tilted to reveal forecourt and glass enclosed interior.
- 2 Canal face.
- 3 Basement staircase, entrance and storage under metal grille.
- 4 Parking space on metal grille, semi-basement study and bedroom above.

ar house





long section

- 5 Double-height terrace of kitchen/dining room; living room above.
- 6 Living room.
- 7 Staircase, second floor.
- 8 Dining room with movable wall of kitchen on left.
- 9 Kitchen with movable wall on right.
- 10 Bedroom.
- 11 Basement bathroom with movable storage wall on left.

illuminated the house becomes a transparent box open to scrutiny from both sides.

Accommodation, attached to a nucleate service core, reverses the usual convention, so that private quarters are underneath dining and living rooms. Glass walls soften the transition between interior and exterior and are combined with the

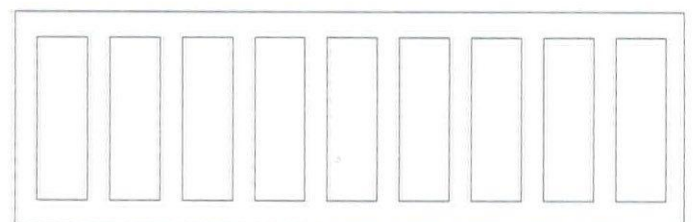
stainless-steel grilles to blur vertical distinction. In places, movable walls enlarge or diminish space. The extent of the semi-basement study can be varied by rolling the wall of the bathroom backwards and forwards, and similarly, the size of the kitchen can be changed by moving the wall between it and the dining room.

The polished sophistication of this essay on how to use compressed space is underlined by the architect's ingenious use of materials. V. G.

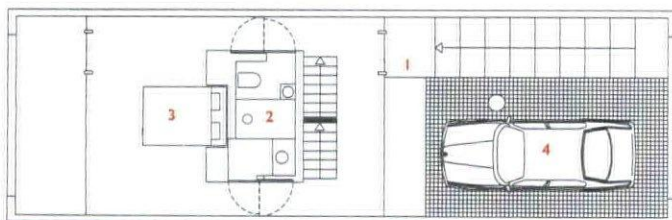
Architect
Koen van Velsen
Project architects
Koen van Velsen, Gideon de Jong,
Lars Zwart, Marcel Steeghs
Photographs
Duccio Malagamba

**HOUSE, AMSTERDAM,
THE NETHERLANDS**
ARCHITECT
KOEN VAN VELSEN

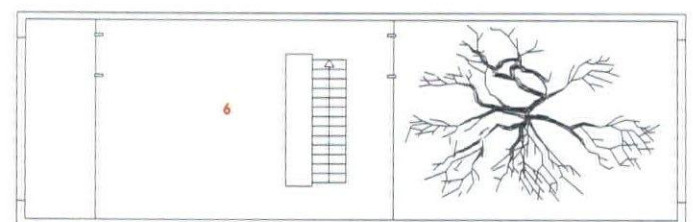
- 1 entrance
- 2 shower/bathroom
- 3 bedroom
- 4 parking
- 5 kitchen/dining room
- 6 living room
- 7 terrace
- 8 study
- 9 storage
- 10 void



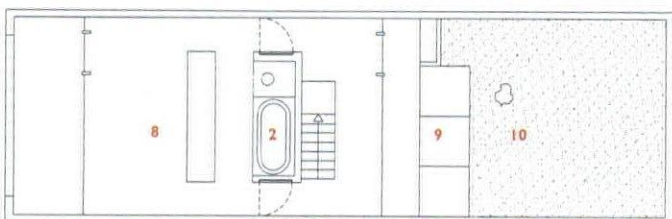
roof plan



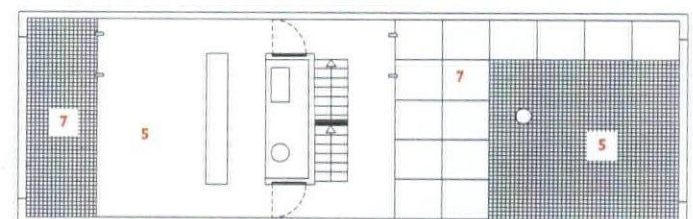
ground floor plan (scale approx 1:170)



second floor plan



basement plan



first floor plan





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FAMILY HOUSE, COSENZA, ITALY

ARCHITECT

MICHELE PANZA

1
Overlooking olive groves, the house is a prominent boat-like prow in the landscape.

2
Angular geometry dominates the composition.

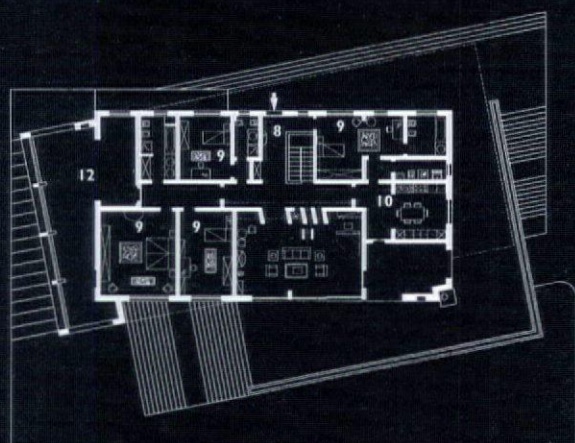
Michele Panza's house built for a family near Cosenza in Calabria, the southern toe of Italy, is carefully placed just below the crest of a hill, over a sea of olive trees. Panza could not resist making the house have boat-like characteristics, and its prow cuts the sky and the green waves below with rather alarming sharpness. He admits that the strange result was generated by 'passion', and that the tilts are made as a symbol of 'the contemporary deconstructivist architecture'. This part, like the base of the composition, is finished in ochre, while the 'rationalist' element, the white main body of the house is a calm rectilinear block, slightly twisted on its podium to obtain the best views downhill north-east over the wonderful landscape.

The base and rationalist superstructure are united at the east end by a most generous verandah curious in plan, which outside forms the prow of the ark on its hillside. In the base, which is partly cut into the hill, are services rooms, the garage, and a winter farmhouse living area. Externally, this plinth is carved into a two massive flights of stairs which gently connect the upper (rational) level with irrational nature. To the south-west (uphill) side a generous canopy protects facade and entrance from the sun. Elements combine or fall apart according to your point of view (in literal and metaphorical senses). As Panza says, 'something tilts but never falls: no one is perfect'.

Architect
Michele Panza, Cosenza

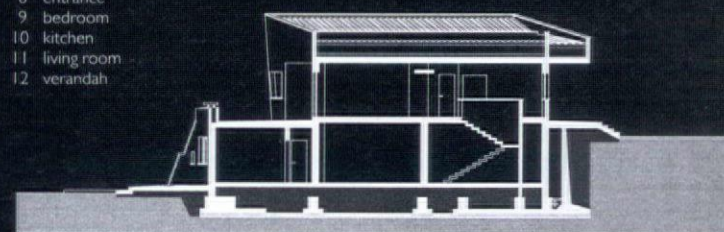
HOUSE PROWED

This little house in the Italian countryside explores colour and angular geometry to make a bold rural statement.

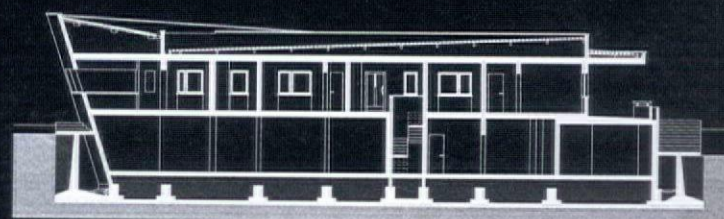


ground floor plan (scale approx 1:500)

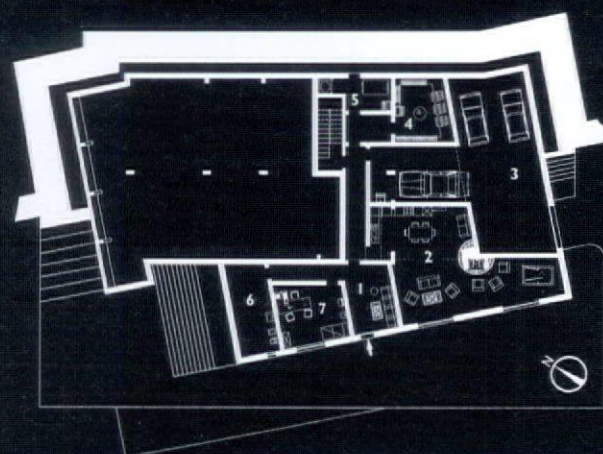
- 1 lower lobby
- 2 farmhouse room
- 3 garage
- 4 wine cellar
- 5 mechanical
- 6 laundry
- 7 storage
- 8 entrance
- 9 bedroom
- 10 kitchen
- 11 living room
- 12 verandah



cross section

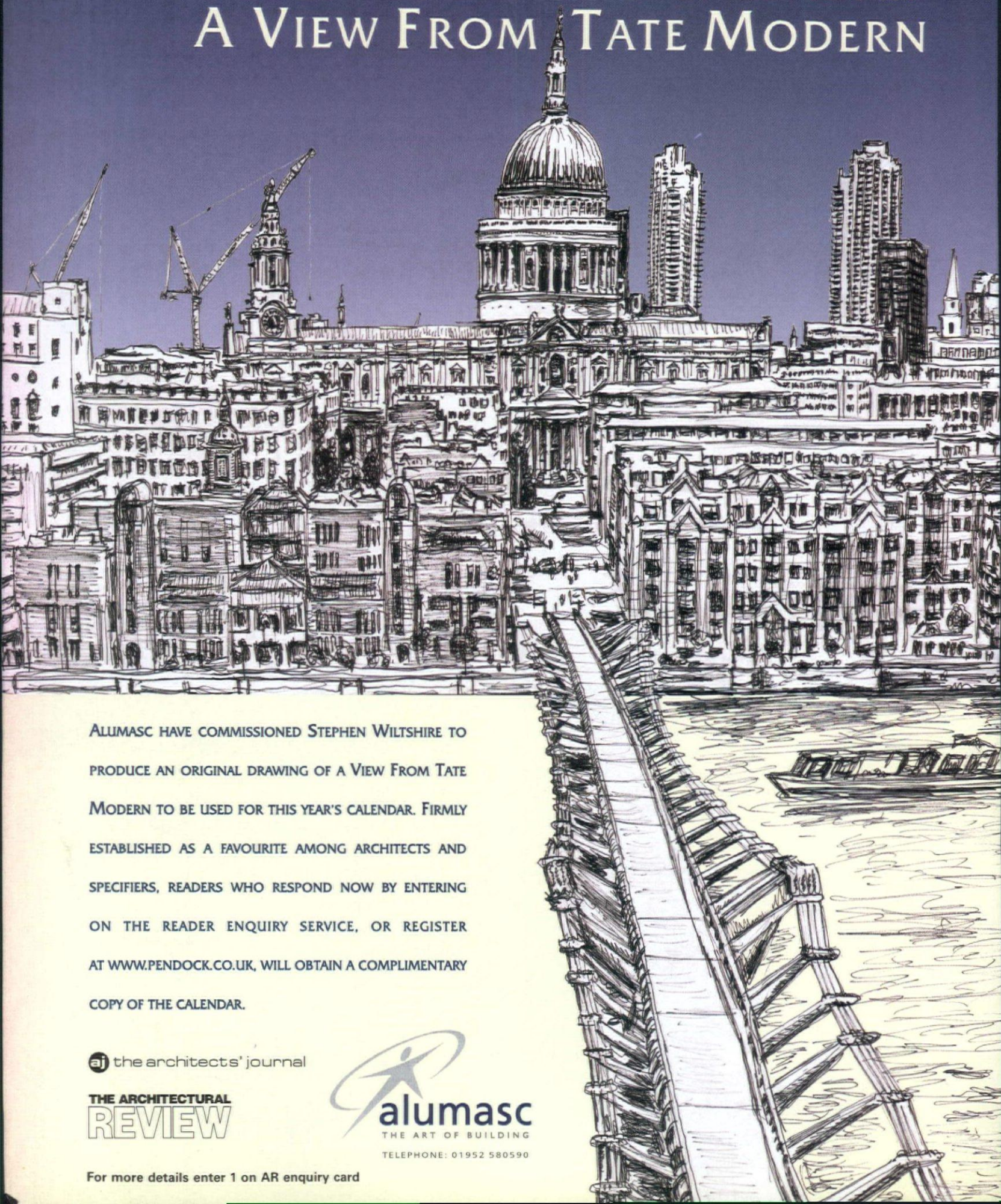


longitudinal section



basement floor plan

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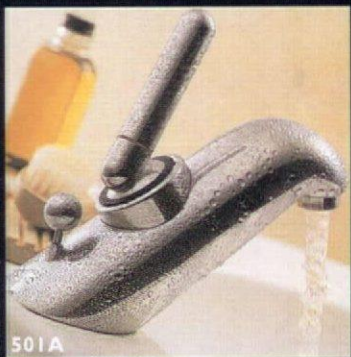
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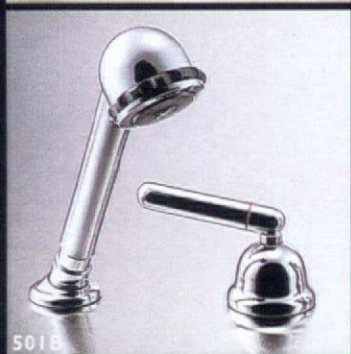
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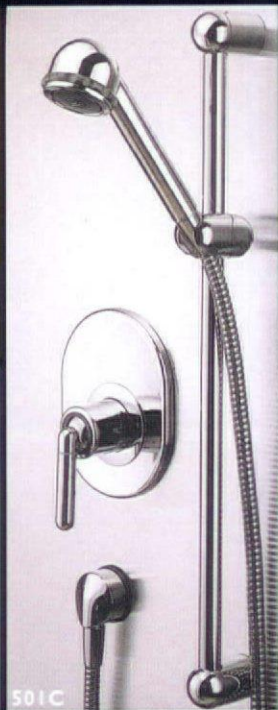
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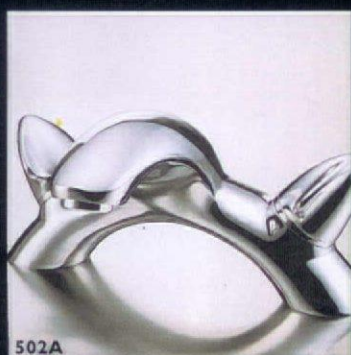
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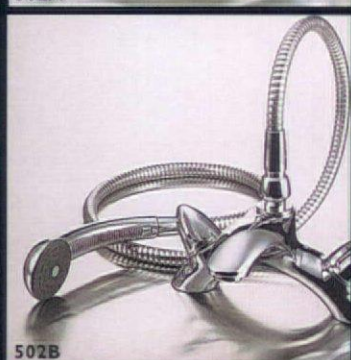
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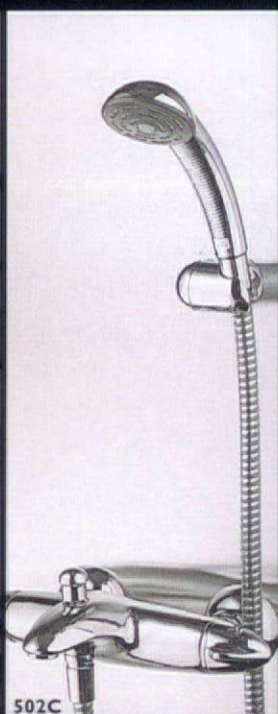
501C



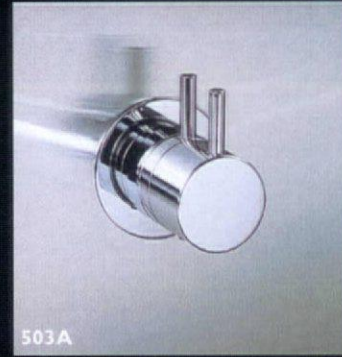
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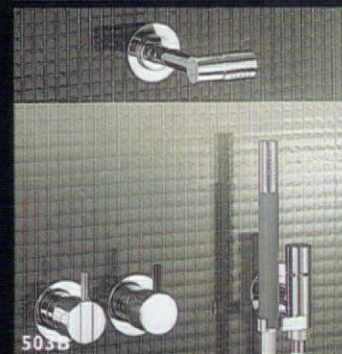
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502C



503A



503B

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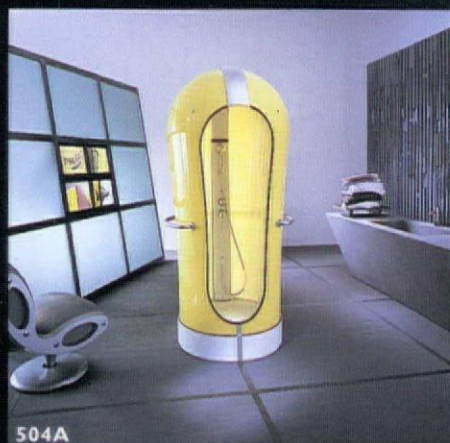
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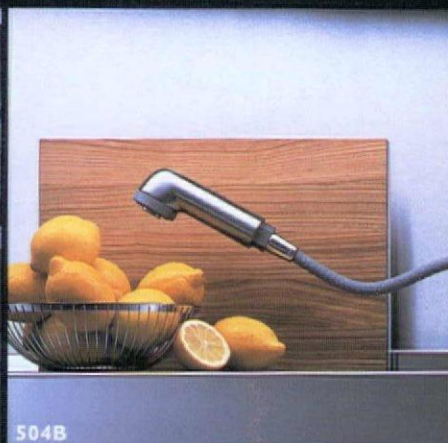


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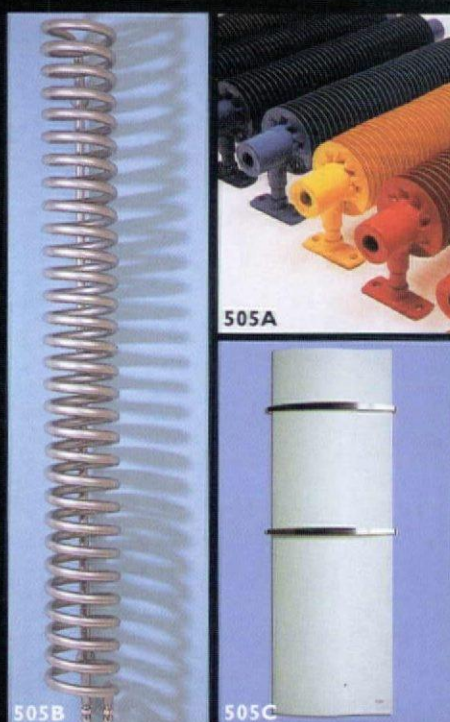
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504A



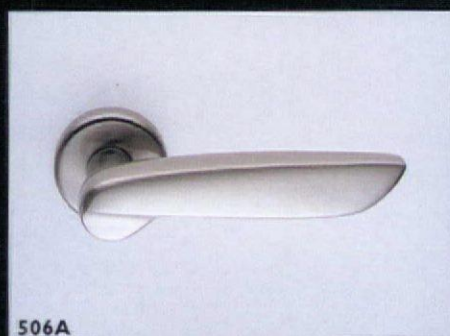
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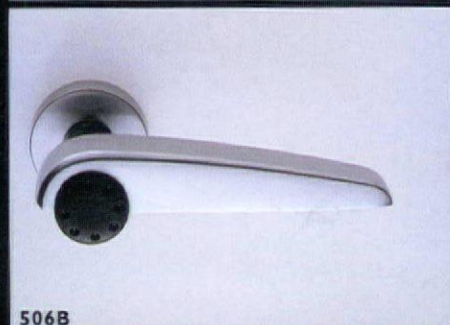
505A

505B

505C



506A



506B

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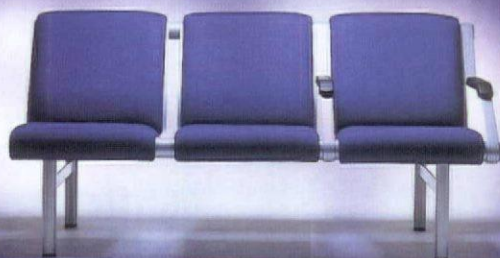
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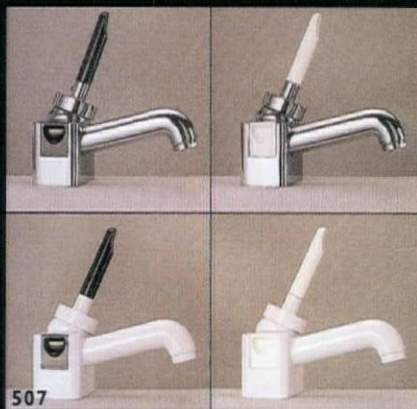
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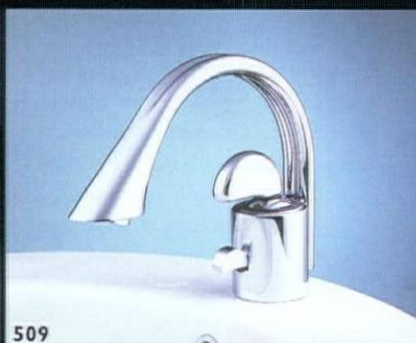
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508



509



510



511



512

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AFTER THE CITY

By Lars Lerup. London: MIT Press. 2000. £15.50

Beginning with discussions of modernism, Nan Ellin's *Postmodern Urbanism* traces and contextualizes the ebbs and flows of the postmodern debate about the city especially among architectural and urban design theorists. By presenting a most readable overview of what are often polar visions of the city and modernity, Ellin provides fodder for just about all the positions that have been taken in this debate as well as providing useful critiques of these same approaches. One should come away from this book more knowledgeable than one started but without any better sense of where these debates might be leading us. Ellin's discussion of the many conflicting architectural voices has no real passion even though it is clear she cares about the relationship between design and the city. On the one hand, Ellin can be congratulated for her balanced analyses of the many theories she discusses and avoidance of an overarching metanarrative to carry her analyses. On the other hand, one goes away wondering if the multiplicity of voices that she and the postmodernists celebrate is the path to a more open and engaged world. Or, whether this multiplicity of voices is symptomatic of a discourse, that unlike modernism, has found itself increasingly removed from the economic, political, social and even cultural practices and decisions that are responsible for contemporary urbanism.

Lars Lerup's work suffers from no lack of passion. His is a unique combination of modernist concerns and values with a willingness to engage that which is different and new in the American city. Rather than bemoan sprawl and the ascendancy of the private home over the public street, Lerup sees these new developments as something with which the architect can and indeed must come to grips. By providing a rich textual description of Houston and what needs to be confronted, reframed and rethought, most centrally the single family house, Lerup provides a most challenging set of ideas for dealing with the new forms of American – and soon to be European I suspect – urbanism. His call for more teamwork, more concern for use, for an authorless architecture and his notion that sprawl is not chaos but a new mega-shape and the single family house a critical piece of urban form, among other things, puts lie to so much that are givens in contemporary discourse. Agree with Lerup or

not, his work is a salutary call for an architecture of engagement that revels in its belief that architecture can and should be a part of making our world a better place.

EDWARD ROBBINS

FOGGY TERRITORY

UNCOMMON GROUND

By David Leatherbarrow. London: MIT Press. 2000. £25.95

Professor Leatherbarrow is his own worst enemy: he cannot write well enough for the sort of thing he is trying to do. This book has some very subtle observations about defining horizontality and modernity across and within the borders of a building: they are drowned out by too many words and too vague a context. He writes one thing, and too soon says something else. One moment he is in the middle of a peroration about horizons, and the next he is inexplicably talking about 'beautiful garbage cans'.

As with all books of the Alberti-Von Klenze-Loos-Heidegger canon, the author prefers to fill pages with arid discussion on subjects such as the link between a building and its landscape, rather than refer to English 'outsiders' like Ruskin or Lethaby, who said the same things but better. Astonishing unproven assertions abound: 'Louis XIV was King of France for two reasons, his royal birth and the fact that he lived in Versailles'; 'technical objects are exactly the opposite of aesthetic figures, or objects with representational substance, because this latter type are naturally oversaturated with references'.

A Singaporean Agony Aunt once famously admonished a wordy correspondent with the unforgettable rebuke 'I am becoming increasingly fed up with people who write letters using both sides of the paper'. Leatherbarrow has not found an authentic voice, and he can only be speaking to his own home audience. That great fog of words, a terrible vanity for any author, is used to blur over too many, too different things.

TIMOTHY BRITAIN-CATLIN

UTOPIA OF CALM

VERMEER'S WAGER: SPECULATIONS ON ART HISTORY, THEORY AND ART MUSEUMS

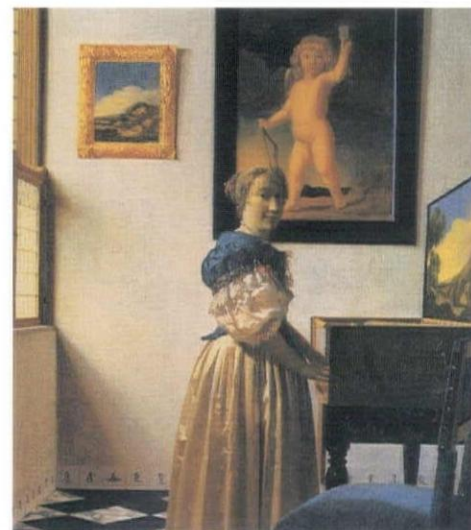
By Ivan Gaskell. London: Reaktion Books. 2000. £16.95

The book takes a single picture of Johannes Vermeer, *Woman Standing at a Virginal*, of about 1672, and weaves a series of fascinating and scholarly discussions around the painting and the issues it raises. Gaskell makes the painting,

which now hangs in the National Gallery in London, 'the deputy of the world', borrowing a phrase from Emerson. This opens up a multitude of trails which he pursues, occasionally doggedly but always bringing out some illuminating fact or assumption. In his discussion of the after-life of the painting in etchings and, later, photography for instance, he notes that an etching of 1866 alters the woman's eyes from looking directly at the viewer to looking sideways, thus avoiding eye contact. Gaskell suggests that mid-Victorian codes of perception and decorum held that only courtesans met the viewer's gaze directly.

All of Vermeer's paintings are now in institutions; they are very unlikely ever to come on the market. The role of museums, their curators, donors, trustees and visitors are therefore significant in creating the environment in which paintings are viewed. The latter part of the book is devoted to these themes and in particular to the dangerous effect donors and commercialization may bring about in museums, universities and similar bodies which need to treasure a dispassionate stance. Does it matter that a gallery of French paintings at the National Gallery in London is named the 'Yves Saint Laurent Room' or is this the limit to which a commercial label should be allowed to intrude? There are no rules; historically of course many of the great museums of the world carry the name of their benefactor: Tate, Guggenheim, Frick, Getty, Gulbenkian ...

The book is very much what its subtitle states: a set of intellectual speculations on art history, theory and museums. There is – probably deliberately – very little if anything about the painting as an object of sensory stimulation or as a canvas with brush marks. Even the penultimate chapter labelled 'Therapeutics', which compares museums to hospitals as institutions of healing, deals only cursorily with the idea of visual pleasure; it is almost as if paint-



Vermeer's *Woman Standing at a Virginal* (c1672).

ings could be part of a pharmacopoeia. If words are necessary – and they are always difficult in relation to art – I find those spoken by Neil MacGregor, Director of the National Gallery, and published in the *Radio Times*, the more telling: 'At the end of the day I go round the gallery once again, just before the doors close at six. It's a quiet time, and this is when I just enjoy the pictures. If it's been a particularly chaotic day I'll head for the Vermeers. I seem to spend all my time moving very fast in a losing struggle to impose order on chaos, and it's wonderfully encouraging to look at the calmness of Vermeer, even if you know you can never achieve it'.

MICHAEL BRAWNE

LINGUISTIC IDENTIFICATION

ARCHITECTURE AND LANGUAGE: CONSTRUCTING IDENTITY IN EUROPEAN ARCHITECTURE C.1000- C.1650

Edited by Georgia Clarke and Paul Crossley.
Cambridge: Cambridge University Press. 2000.
£45

This compelling discussion of style and nationality, and of the relation between vernacular and 'official' languages, sheds important light on the creation of modern Europe. Eleven essays by international scholars, providing a partial corrective to John Onians' determinist study of the orders in *Bearer of Meaning* (1988), focus on architectural and linguistic debates over style and national identity. They show how the search for a canon of architectural rules was likened to the literary imitation of the Latin masters. On such impeccably Classical foundations, architecture-language comparisons entered the mainstream of Western architecture so that the style of individual architects was likened to literary styles and architecture compared to eloquence.

Paul Draper describes the relation between architectural stylistic choices and the range of languages spoken in Post-Conquest England. Caroline Bruzelius brings similar considerations of nationality to bear on her study of French Gothic in Central and Southern Italy in the thirteenth century. Deborah Howard, investigating Gothic and Renaissance in Scotland, wisely explains how 'the rapid transformation of society – hegemony, religion, and economy – makes the identification of any shared system of communication a complicated task'.

Implicitly sceptical about the world of semiotics and linguistic philosophers such as Umberto Eco who claimed that, 'architectural language is an authentic linguistic system obeying the same rules that govern the articulation of natural languages', Caroline van Eck argues

that, 'By their beauty buildings do not spell out some truth that originated outside the architectural domain', though she also sees them as 'a variety of human communication'.

DAVID WATKIN

COMPRESSED GREEN

SUSTAINABLE HOUSING: PRINCIPLES AND PRACTICE

Edited by Brian Edwards and David Turrent.
London: E & FN Spon. 2000. £29.95

Over the last decade or so, there has been a shift of interest from low-energy dwellings as individual entities towards sustainable housing in a wider context, taking in social and economic questions, health, the relationship of housing to transportation patterns, and so on. This book is a collection of papers based on the 'Housing and Sustainability' conference held at the RIBA in 1998, brought together and sandwiched between introduction and conclusion by Brian Edwards. Topics include housing and transport, building and landscape, an overview of renewable energy in housing, and a chapter on water – the oil of tomorrow.

The book is an introduction rather than a detailed exploration. I was in the middle of reviewing the book when a British weekly architectural paper reported that making sustainability central to architectural education would overload teaching programmes. If this is the case, then this book will provide a very good résumé for students to fit into their otherwise busy timetables. But God forbid that sustainability never forms a significant part of every student's education. As many of the book's contributors point out, the architect's role is essential in the sustainability debate. It is integral to responsible design today, not an optional add-on.

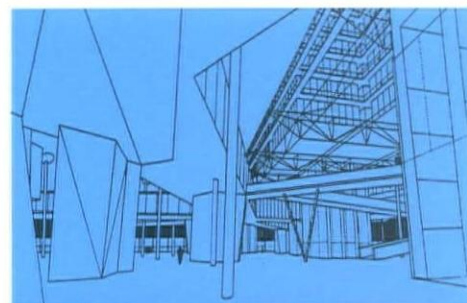
ADAM VOELCKER

EDUCATIONAL DEVELOPMENT

THE MAKING OF THE MODERN ARCHITECT AND ENGINEER

By Ulrich Pfammatter. Basel: Birkhäuser. 2000.
SFr50. DM58

To anyone involved in the day to day turmoil of architectural education, the promise of this book gives pause for thought. The reading of it, while stretching the definition of the word 'modern', brings to light some interesting aspects of what could be an important evolving debate, concerning what architectural education has been, and could be, in a professional world struggling (not very hard) for equivalence, and trying to address multidisciplinary. The book provides useful background to the current European dimension of the educational debate.



The Power of Contemporary Architecture (ed Peter Cook and Neil Spiller, Academy, London, 1999, £24.95), is a sprightly compilation of lectures at the Bartlett School, London, by figures as diverse as Kathryn Gustafson and Stan Allen (shown here), with essays by the editors on others including Helmut Richter and Tom Kovac. Trendy, but lively, sharp and well illustrated.

The author was concerned with what he considered to be the origins of 'modern' architectural education: the founding of the Ecole Polytechnique in Paris in 1795, and the later formation of the more relaxed Ecole Centrale des Arts et Manufactures in 1829. Two thirds of the 300 pages in the book are concerned with the evolution of these two institutions. These were brave times in the world of what was genuinely architectural engineering: Rohault de Fleury, who designed the beautiful greenhouse in the Jardin de Plantes of 1833 was a Polytechnicien, and both Eiffel and Contamin were graduates of the Ecole Centrale, as was William de Baron Jenney who helped form the Chicago School. The rest of the book covers the contemporaneous development of education in the nineteenth century in Austria, Germany, Switzerland and the US.

Given the title, the holes in this extrapolated thesis are sad. The position of the Beaux Arts (which was reopened in 1806) is not examined in any depth, and readers who seek a real overview will find the time frame, as well as the concentration on two French institutions, rather narrow (we stop well short of the Bauhaus and its antecedents).

However, for those steeped in the British or American systems of architectural education, it helps to explain much of what is behind some of the positions of educators in continental Europe, colleagues in the attempt to harmonize education and training. It also provides a salutary look at the problems of the subdivisions generated by the professions, and the nature of multidisciplinary.

MICHAEL WIGGINTON

Book reviews from this and recent issues of *The Architectural Review* can now be seen on our website at www.arplus.com and the books can be ordered online, many at special discount.

delight



Photograph: Pawel Libera

LONDON'S OLDEST CHURCH RETAINS THE NEARLY NINE-HUNDRED YEAR OLD VISION OF ITS FOUNDER, WHO AFTER SPENDING HIS EARLIER YEARS AS A COMEDIAN, DEDICATED HIMSELF TO GOD AND THE SICK.

St Bartholomew the Great is the oldest church in London. Built in 1123 by Rahere, the court jester to king Henry I, the solemn procession of the building's massive Romanesque arches still fills the space with Rahere's awe of God and his austere piety. (Having spent his early years playing the fool at court, he went on a pilgrimage to the Holy Land, had a vision, and after dreadful sickness, found his real vocation as the prior of his Augustinian community, which ran the first hospital in London – still one of central London's most important hospitals, after repeated attempts to close it.

The present church is the original chancel. The nave was largely demolished in the sixteenth century, after Henry VIII abolished the monastic orders and sold off their assets to highest bidders. Over the years, the remains of the monastery buildings were used for almost everything from houses to factories; a school was made in the north gallery – its traces can still be seen; the crypt was used to store coal

and wine. In the lady chapel, there was a printing press at which Benjamin Franklin worked, and a forge was set up in the north transept.

Throughout all the changes, Rahere's chancel remained as a place of worship. Aston Webb was given the task of restoring the whole complex in the 1880s, and, though neither Goth nor restorer (and perhaps because he wasn't), Webb made a most sensitive reinterpretation of the fragments that remained. Few can be aware that much of the east end with its gothic clerestory over Norman arches is largely a Webb reconstruction. Webb retained and restored everything he could find – for instance Prior Bolton's early sixteenth-century oriel window on the south side (right) and Rahere's monument opposite (remodelled about 1405).

Webb (on this occasion) had modesty and gentleness. So for us, the building tells a most moving story. Rahere speaks, and is reverently translated by his Victorian successor 750 years later. P.D.