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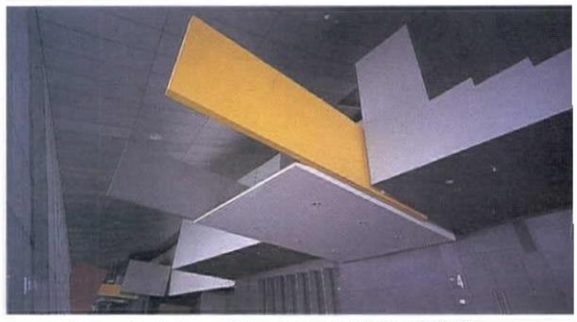
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Local government offices in Mérida by Juan Navarro Baldeweg (p52).



Denton Corker Marshall's exhibition centre in Melbourne (p57).

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THE BIG ISSUE

Historically, bigness is inextricably linked with expressions of power, yet as humankind's needs expand, it is clear that big buildings – true creations of the modern technological age – will always be needed. New paradigms show that architecture on a grand scale can be both inventive and humane.

Beyond a certain scale, architecture acquires the properties of Bigness. The best reason to broach Bigness is the one given by climbers of Mount Everest: 'because it is there'. Bigness is the ultimate architecture.[1] Rem Koolhaas

Throughout history, big buildings have exerted a powerful (and not always entirely benign) influence on humankind. In mythology, one of the earliest putative big buildings was the Tower of Babel (believed to have been a Babylonian ziggurat), but its failure was a prophetic warning against mere mortals overreaching their place in the universe. Paradoxically, bigness has always been an essential dimension of religious buildings. From the Justinian Hagia Sophia to Philip Johnson's Crystal Cathedral, overwhelming scale is seen as a triumphant expression of spiritual supremacy. Procopius described the sublime effect of the Byzantine spatial aesthetic with its vast central dome symbolising the Dome of Heaven: 'The dome is marvellous in its grace, but by reason of the seeming insecurity of its composition, altogether terrifying. For it seems somehow to float in the air with no firm basis, but to be poised aloft to the peril of those inside it.'[2] This magical synthesis of space and structure to orchestrate a sense of the divine was subsequently refined by the builders of Gothic cathedrals.

Bigness is inextricably associated with power, whether it be religious or secular. The ancient fortified towers of the Tuscan town of San Gimignano symbolised the wealth and identity of the ruling families. The late twentieth-century equivalent is clearly the corporate skyscraper, an extrusion of bald capitalism epitomising the power of business empires. Outside the world of commerce, from pharoahs to modern politicians, monumentality has always had a tantalisingly Pandora's Box-ish appeal. Mitterrand's great legacy, his *Grands Projets*, include the Grande Arche at La Défense and Dominique Perrault's Trés Grande Bibliothèque, heroic conceptions that had their origins in Boullée's megalomaniac visions two centuries earlier. As the nineteeth-century Chicago architect Daniel Burnham put it 'Make no little plans; they have no magic to stir men's blood'.[3]

Yet at least the French do not seem daunted by bigness, even warming to the (now largely discredited) notion of the megastructure as reinterpreted by, for example, Will Alsop's Big Blue regional government headquarters in Marseilles (AR November 1994) or Rem Koolhaas' reconfiguration of Lille (AR September 1993). Neither can compare in scale, however, with a recent proposal for Kuala Lumpur; already the location of the World's Tallest Building (Cesar Pelli's grotesque Gotham City out-take, p27), Kuala Lumpur may also acquire the World's Longest Building, if a development for a 7.4 mile linear complex of shops, hotels, residences, offices, entertainment and cultural facilities, goes ahead.[4] Occupying an area of 8.08 million sq ft, Kuala Lumpur Linear City would be complete by around 2020.

The notion of building longer or higher has preoccupied modern architects from Frank Lloyd Wright to Norman Foster. In 1956, Wright designed the 528-storey Mile-High building, conceived as a soaring, tetrahedral sword, poised to slash at the indifference of the Bauhuas box. Over 40 years later, Denton Corker Marshall's design for the Melbourne Tower (p60) embodies a similar gestural power, bonding the city with the surrounding landscape and seascape in a dramatic manner that aims to rival Sydney as the pre-eminent Australian city.

The quantum leaps in the ability to build higher, longer or bigger have generally been contingent upon the technological means to do so. Since the beginning of human organisation, the height of buildings has been limited by the human ability to climb stairs. For centuries, buildings reached a modestly optimum height of around four to five storeys. All this changed with the invention of vertical transportation in the mid-nineteenth century,[5] which meant that architecture could at last scale new heights. Shaped by the voracious commercial ambitions of New York and Chicago, the new typology of the skyscraper was brought into being (the alternative term 'cloudscraper' failed to catch on). Together with the development of the lightweight steel frame (generating faster construction) and air conditioning (generating deeper plans), the sky has become, literally, the limit. Moreover, a new form of lift that can move horizontally as well as vertically, appears to herald the next paradigm shift in the planning of buildings and even cities.

Yet there is still a tendency to adopt a



The Tower of Babel, the first mythological big building, as awesomely envisaged by the Flemish painter Pieter Bruegel the elder, in a painting c1546.

lowest common denominator approach to bigness. Too often architects are engaged simply to design the wrapping paper on the exteriors of behemoths. Bigness demands a different approach; it renders conventional proportional and ordering systems obsolete. As Koolhaas notes 'The absence of a theory of Bigness – what is the maximum architecture can do? – is architecture's most debilitating weakness. Without a theory of Bigness architects are in the position of Frankenstein's creators: instigators of a partly successful experiment whose results are running amok and are therefore discredited.'[6] However there are signs that the challenge is being addressed. Ken Yeang's bioclimatic towers (p76) reassess the skyscraper typology, relating tall buildings to culture and place, while seeking to reduce energy consumption. Yeang describes it: 'The understanding and incorporation of the external and internal environmental aspects of the skyscraper will contribute to its architectural expression'.[7]

This issue attempts to illustrate how big buildings can be commercial, functional and humane. We look at the ways in which large, complex programmes for a range of building types, are transformed into imaginative and responsive architecture. Not all are soaring skyscrapers, but all are big, relative to their particular contexts. As cities and populations expand, it is clear that big buildings will always be needed. By examining some positive paradigms, we hope to show that architecture is not simply a crude tool for making grand gestures – that even on a large scale, it can be subtle, inventive and humanly rewarding.

CATHERINE SLESSOR

1 *S,M,L,XL* OMA, Rem Koolhaas and Bruce Mau, edited by Jennifer Sigler, 1995, Rotterdam, 010 Publishers, p495.
2 *A History of Western Architecture* David Watkin, 1992, London, Lawrence King, p78.
3 *Space on Earth*, Charles Knevitt, London, 1985, Thames Methuen, p60.
4 For a fuller description of the proposal see *Architectural Record* 02.97, p30.
5 Although over a century earlier, a prototypical version of a passenger lift (known as the 'Flying Chair') was installed in Louis XV's private apartments in Versailles in 1743 to give him private access to his mistress Madame de Chateauroux on the floor below.
6 *Ibid*, Koolhaas, p509.
7 *The Skyscraper Biomatically Considered*, Ken Yeang, London 1996, Academy Editions, p18.

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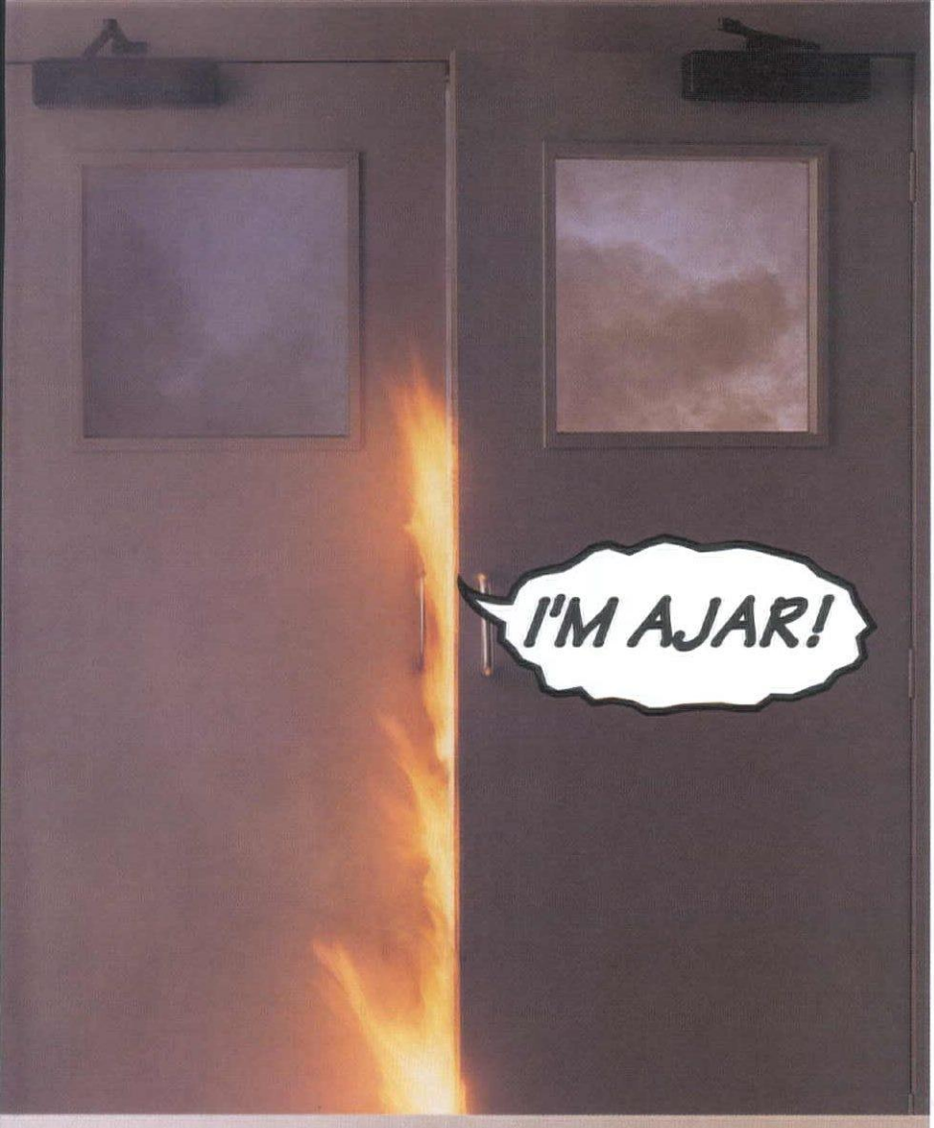
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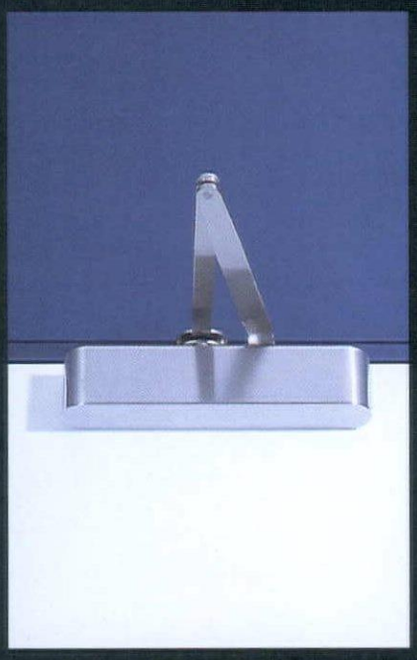
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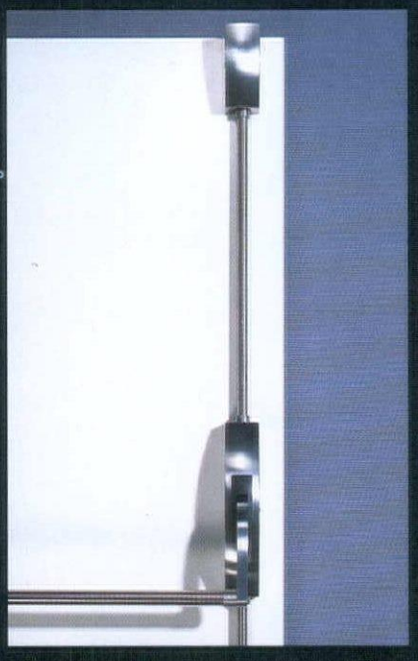
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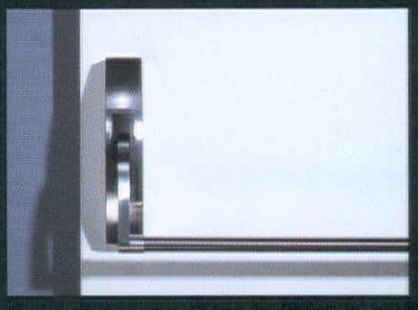
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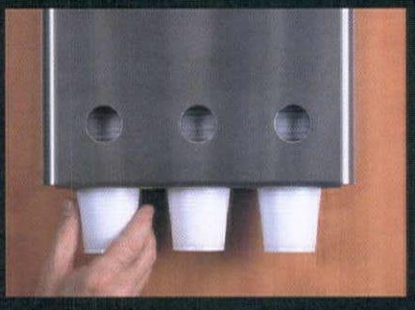


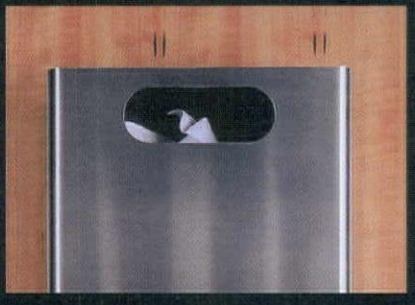












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MARGINALIA



Prague competition site with Castle in foreground.

Prague Castle competition

The Architectural Review is sponsoring a major international architectural and urban design competition for the redevelopment of the Pheasantry of Prague Castle. The area, the northern approach to the Castle (seat of the President of the Czech Republic), includes buildings and landscape fragments of many different ages and is a most important intermediary zone between castle and city, but it was all allowed to decay in communist times.

The aim of the two stage competition is to make the Pheasantry into a public garden as a key part of the castle environs and link it effectively to the life and texture of the Czech capital. Buildings and landscapes, which include medieval and Baroque as well as Neo-Classical and later nineteenth-century elements, are to be adapted and complemented with new ones to offer recreational and educational facilities for the public. It is expected that the winning scheme will make a contribution to the unique Castle complex as distinguished as the work of the architects of previous ages, the most recent of whom was Josip Plecnik.

The promoter intends to build the winning scheme. Prizes will be: first, 300 000 CZK (approx US$11 000); second, 180 000 CZK (approx US$6600); third, 120 000 CZK (approx US$4400). All entrants shortlisted for the second stage will be given an award of 60 000 CZK (approx US$2200). The jury will be Eva Jiricna, Hans Hollein, Giancarlo De Carlo, Zdenek Novak (historian and landscape architect), Zdenek Lukes (art historian), Ivo Koukol (Director of the Prague Castle Administration) and Peter Davey, Editor of The Architectural Review.

Further details and competition conditions can be obtained from Jan Zemanek, AYH Homola Projektmanagement s.r.o, namesti Barikad 1134/3, 130 00 Prague 3, Czech Republic. The fee for conditions (to be available between 5 and 30 May) is 3000CZK (US$110 or equivalent) with a 2000 CZK (US$75 or equivalent) for postage within Europe (3000 CZK overseas).

First stage designs must be submitted by 15 August 1997. The winning scheme will be announced at the end of the year. That scheme and the work of other finalists will be published in the Architectural Review early in 1998.

The Ecological Challenge

Half the energy produced in Europe is used to run buildings. Architects and services engineers provide energy use calculations for individual buildings or components, but there is no recognised universal calculation system for rating the ecological soundness of any building in relation to its site. With the support of two university schools, international architectural institutions, individual architects, the German government and private industry, the Deutsches Architekturmuseum has staged 'The Ecological Challenge', an exhibition accompanied by two weighty publications and a symposium.

The exhibition is a mixture of first principles simply explained, with many built examples from around the world and detailed studies of five German buildings. These include Foster's Commerzbank, the Thompson agency offices by Schneider + Schumacher, the Götz GmbH building by Martin Webler + Garnet Geissler, a new but traditionally built office by Meiler Consulting and a trade union headquarters by Jörgen Böge + Ingeborg Lindner-Böge. The exhibition shows that there are enough ideas and technological instruments available, but the solutions to ecological problems require political change. Without regional policies, there is no orchestration of efforts. Instead, progress is haphazardly manifested in one-off corporate buildings or small pilot projects, leaving the mass of world building as energy wasteful as before. Architects are no less schizophrenic than society as a whole when it comes to ecology. 'Ecological building means not building,' says Frei Otto on one of the banners over the exhibition entrance.

Our optimistic view on the linear progression of human development, in a future where science would solve all our problems (exemplified in nuclear power development and Archigram's pods and tubes vision for Montreal's 1963 World Fair), has been replaced by cynicism. Architects collaborate with the prevailing economic forces to compete in constructing the highest towers and they simultaneously try to convince us they are ecologically correct. These buildings certainly include energy-saving systems but their basic premise is at odds with ecological aims, as is also the detached energy-saving house built on an open, green field site. Architectural practice has difficulty in matching architects' good intentions. *The European Charter for Solar Energy and Planning* signed by Norman Foster, Richard Rogers, Nicholas Grimshaw, Thomas Herzog, Herman Hertzberger, Renzo Piano, Frei Otto and an international cast in Berlin in 1996 trod carefully around the political dimension by calling for 'a rapid and fundamental reorientation in our thinking', and more power for architects in environmental decisions without mentioning either the competitive world economy, or the architect's client, who lacks any idea of world solidarity but drives and influences all our present development, from civil war to building.



Challenged: Hübner's youth hostel, Möglingen ...



... like Herzog's youth training centre, Munich ...



... and Schneider-Wessling's German Environmental Foundation, Cologne.

In attempting to solve our environmental crisis, architectural theory and practice will have to change even more drastically than Egon Eiermann observed during Germany's post 1945 reconstruction phase. 'Architecture has nothing to do with art. It is pure thinking work. Architecture today is carried out according to laws of economy, construction and function.'

LAYLA DAWSON

The Ecological Challenge: Architecture and Urban Design, Deutsches Architekturmuseum until 2 March 1997. *Solpower* by Sophia and Stephan Behling and *Solar Energy in Architecture and Urban Planning* by Thomas Herzog are both published by Prestel.

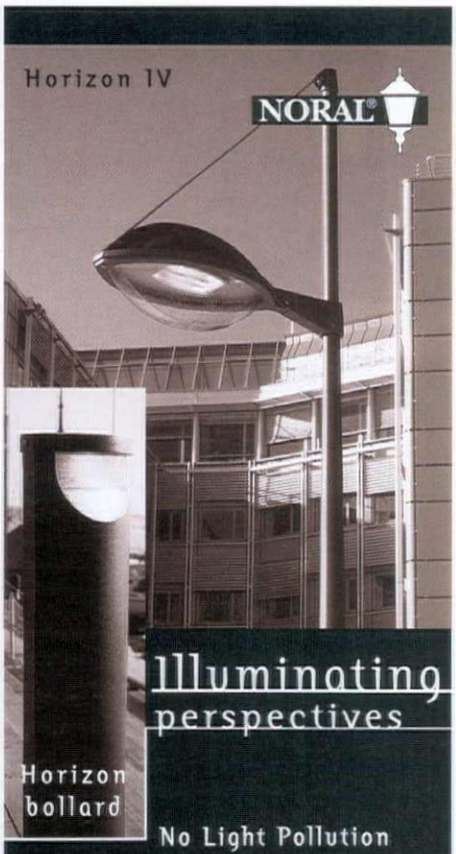
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The July to December 1996 index is now available. Please enter no 800 on the reader enquiry card.

Errata

Lighting engineers for the Harvey Nichols restaurant at Oxo Tower Wharf (AR February 1997) were Equation Lighting Design.

We regret the omission of Pat Carter: Main Contractor, from the credits for the Bank restaurant by Wickham Associates, AR January 1997, pages 76-80.



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LETTERS

Baltit fortitude

SIR: Doubtless carried away by enthusiasm and skimpy information your description of the Hunza campaign in the winter of 1891-92 was inaccurate in several respects. The Baltit fort was never attacked by the British. The main battle was fought further down the valley at Nilt, where the fort, built on the same principles as the Baltit one, did indeed easily withstand considerable battering from seven pound mountain guns. It was only conquered after a small party had blown up the main gate with gunpowder in traditional fashion.

There was great bravery on both sides. The defending Dards withdrew to an apparently unassailable natural position in the cliffs of the Hunza gorge and held up the advance for weeks until a detachment of British, Indian and Kashmiri troops scaled a 1000 foot sheer cliff and overcame the Dard positions.

The Mir of Hunza, parricide Safdar Ali, fled from the Baltit fort with his wives and treasure over remote passes in the Hindu Kush to the city of Kashgar in China. In the hour of victory, the British behaved disgracefully, sacking the Baltit fort and selling its contents down in Gilgit. But the later treatment of the Mirs by the British (the line was re-established through a half-brother of Safdar Ali) and of their subjects was generally fair and genial. They did (on the whole) give up brigandage.

The whole amazing story has been told with a wealth of detail in 'The Gilgit Game' by John Keay, which is published by the Oxford University Press, Karachi.

Yours etc
HENRY NORMAN
Camberley, England.

No more gARgoyles

SIR: I really do think that you should give up publishing pictures of grinning, smirking and ogling people in your pages (see January pages 12 and 15). The Architectural Review is (usually) a serious magazine devoted to presenting good architecture.

Please do not go down the slippery slope of assuming that portraits of architects (or even yourselves) are more important than what they do. The vulgar fashion was started on television and has spread over to many publications about the visual arts in which a huge image of the artist appears to be considered more important than the artwork, vaguely glimpsed in the background.

Yours etc
JINTO BEDFORD
New York

Sorry, Centenary euphoria. Won't happen again for a long time. ED

NEXT ISSUE

Workplace is the theme of the April AR in which we take a look at buildings for work that offer a wide range of particular places to their users. The range is from Frank Gehry's Fred and Ginger building which lightly dances through the business district of Prague to a new office block in Münster, Germany by Bolles Wilson which deals with the problems of making places against a hard edged, busily trafficked road. Günther Behnisch has made a new building for the Diakonisches Werk in Stuttgart, which supplements his previous extraordinarily successful headquarters for this Christian charity. The Media Haus in Briggentz, Austria by Ernst Giselbrecht is a blend of Internet centre and traditional printing works.

In contrast to all these central European schemes is Raj Rewal's World Bank Headquarters in Delhi, where lessons learned from climate control and space handling in traditional architecture are brought to bear on a large modern bureaucracy. Also in the heat, Lucien Lafour has made a new Dutch Embassy in Surinam, which is both a dignified and expressive synthesis of space and light. Meanwhile in California, Eric Owen Moss adds magic to the everyday with his Kodak building at Culver City.

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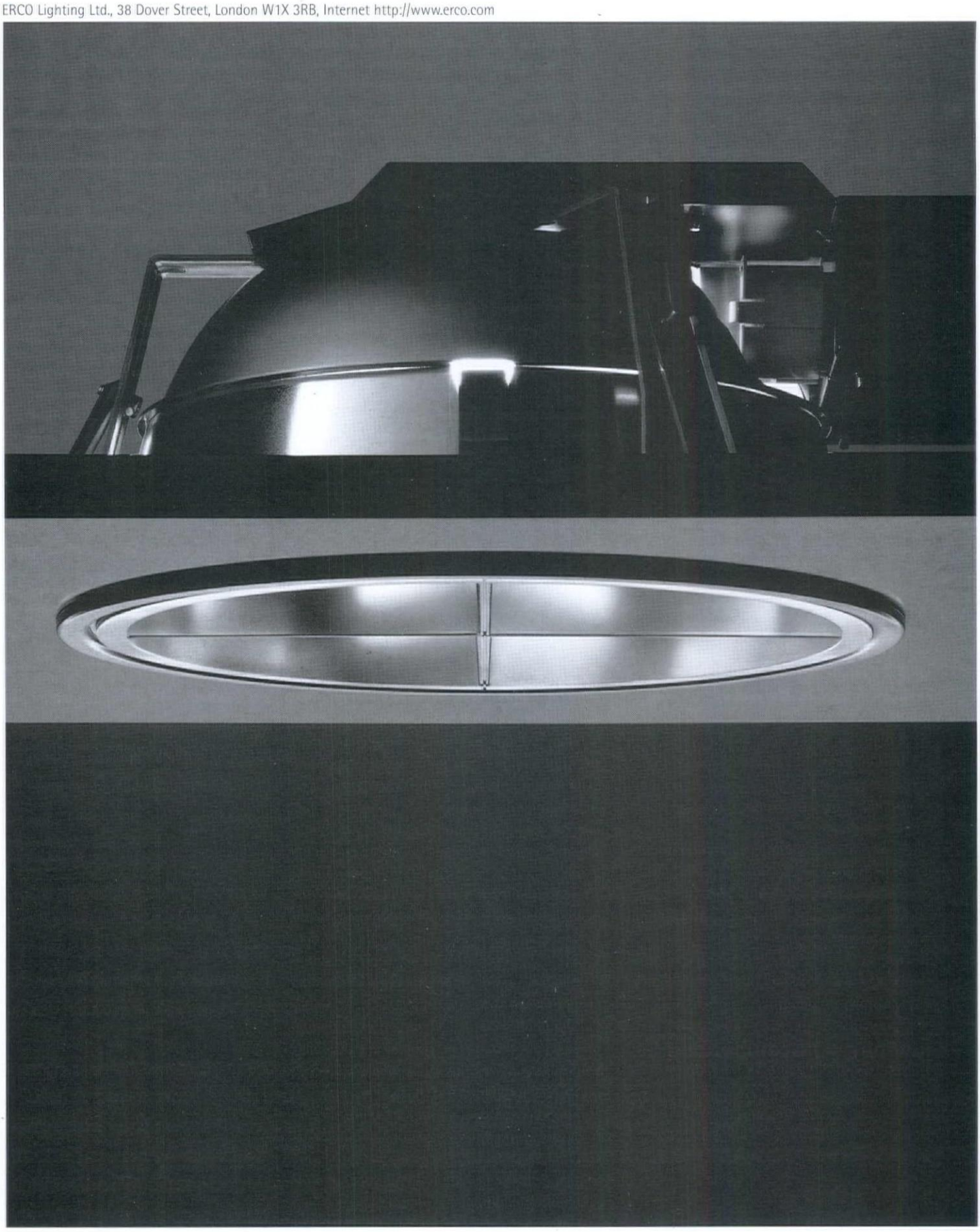
The 4200 is Europe's most-specified roller blind – giving many years of trouble-free operation in banks, offices, stations and other frequent-use locations. With a huge range of flame retardant fabrics from blackout to screens it's in a class of its own. Working class.

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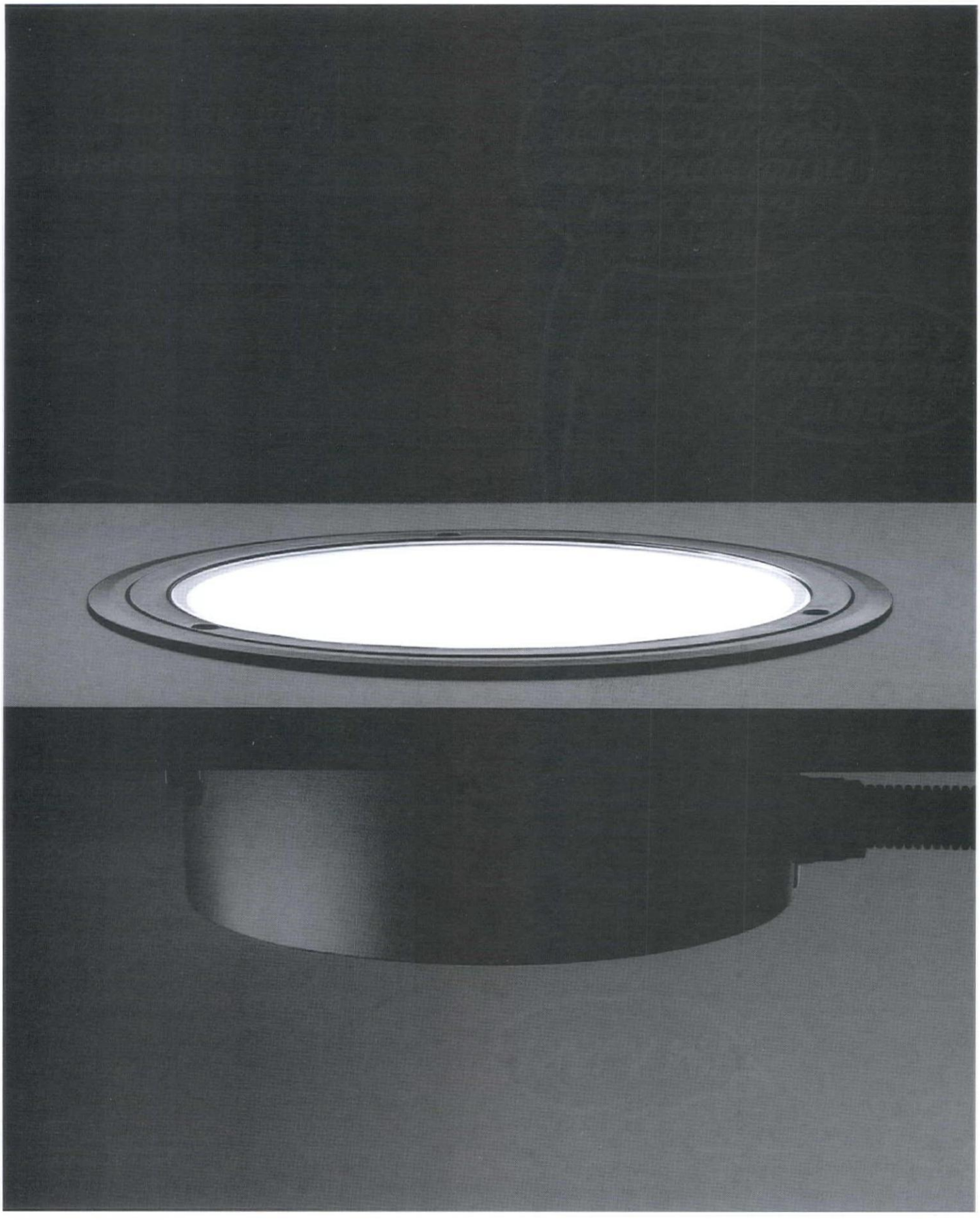
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All good things come from above, perhaps.

ERCO has always given priority to the light rather than the luminaries. ERCO began by concealing the luminaries in the ceiling creating an atmosphere of refined conviviality.



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Today, even the ingenious CL Luminarie (on the left) with its low brightness cross blade louvre and shallow recess depth is accepted as the norm.

Once again, it's time to turn accepted lighting concepts upside down. Whilst everybody was looking to the ceiling, we realised that quality lighting could come from the floor. In defines the route.

It attracts attention and complements architecture dramatically. However, floorlights may not be to everyone's taste. Taste takes time to develop. Consider, for example, our extensive range of downlights.

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STADT LEIPZIG

Open, single-stage realisation competition in two phases for the Museum of Fine Arts in Leipzig

Solicitor of entries: The City of Leipzig: Stadt Leipzig, represented by the Dezernat Planung und Bau, and the Dezernat Kultur, Neues Rathaus, Postfach 780, D - 04092, Leipzig, Germany

Coordination: Conradi, Braum & Bockhorst, Stadtplaner und Architekten, Niedstr. 17, D - 12159 Berlin, Germany, Tel. (+ 49 30) 851 40 10, Fax (+ 49 30) 851 37 27

Statement of objective for the competition: The objective of the competition is to design the Museum of Fine Arts to be newly constructed within the historical Old Town of Leipzig, Germany. It shall be the objective for design of the museum to create a self-contained and eminently distinctive exhibition building appropriate for the significance of the collection it will contain. Owing to the special nature of this objective, which results from the sensitive urban situation in which the museum will be located, in addition to the specific requirements for the constructed building alone, the objective of the competition will be broken down into two parts. The solicitor expects not only preliminary design for the museum itself, but also urban design proposals for development of the adjacent open spaces in the form of commercial, office and residential buildings.

Type of competition: Open, anonymous, single-stage realisation competition in two phases. In the initial phase, the jury will make a selection of approx. 50 participants on the basis of the proposal drawings submitted. These selected participants will subsequently be invited to submit more detailed competition solutions for the second phase.

Countries of eligibility: This competition is open to participants in the countries of the geographical area subsumed within the European Economic Community, the European countries of the former Commonwealth of Independent States (CIS), Poland, Switzerland, Slovakia, the Czech Republic, and Hungary, Japan, and the USA.

Authorisation to participate: Natural persons residing in the above-stated countries of eligibility shall be authorised to participate provided they are entitled to carry the professional designation of architect in accordance with the legal regulations of their home country on the date of solicitation of entries for this competition. It is recommended that the submitting architects collaborate with urban planners and interior designers. In the event that the authorisation to carry the professional designation of architect is not definitively regulated by law in a particular company, the professional prerequisites as architect, urban planner, or interior designer shall be considered to have been met by those persons who have been awarded a diploma, successful certification of having completed a professional examination, or some other certification of professional capability, the recognition of which has been assured by directives 85/384/EW6 and 89/48/EW6 of the European Economic Community.

Likewise eligible to participate shall be legal entities insofar as the declared purpose of business set forth in their bylaws is exclusively oriented to performance of the design tasks as set forth in the objective of this competition, and under the condition that one of the authorised agents of the legal entity is a natural person who fulfils the prerequisites as set forth above.

In the event that collaboratives wish to participate, each member must be eligible to take part; i.e., an office may be represented in only one working group.

Jurors: Rainer Ilg, Leipzig, Prof. Peter Kulka, Dresden and Cologne, Prof. Dr. Vittorio M. Lampugnani, Milan and Zurich, Dr.-Ing. Engelbert Lütke Daldrup, Leipzig, Axel Schultes, Berlin, Winfried Sziegoleit, Leipzig, Prof. Peter Zlonicky, Dortmund

Alternate jurors: Peter Busmann, Cologne, Dr.-Ing. Dietmar Fischer, Leipzig, Charlotte Frank, Berlin, Wolfgang Kunz, Leipzig, Hildebrand Machleidt, Berlin, Prof. Dr. Hille von Seggern, Hamburg

Jurors (technical): Dr. Hinrich Lehmann-Grube, Lord Mayor of the City of Leipzig, Dr. Georg Girardet, Councillor for Culture of the City of Leipzig, Dr. Herwig Guratzsch, Director of the Museum of Fine Arts in Leipzig, Dr. Joachim Fischer, Committee for Civil Engineering and Planning of the City of Leipzig, Brigitte Moritz, Culture Committee of the City of Leipzig, Arnd Schultheiss, Leipzig, Artist and Culture Senator of the German Federal State of Saxony

Alternate jurors (technical): Wolfgang Tiefensee, Ruling Mayor of the City of Leipzig Susanne Kucharski-Huniat, Cultural Office of the City of Leipzig, Dr. Jan Nicolaisen, Museum of Fine Arts, Leipzig, Ingrid Findeisen, Representative of the Caucus of Councillors, Wolf-Dietrich Rost, Representative of the Caucus of Councillors, Siegfried Schlegel, Representative of the Caucus of Councillors.

Prizes and acquisitions: A total of DM 445,000, plus German value-added tax *(Mehrwertsteuer)*

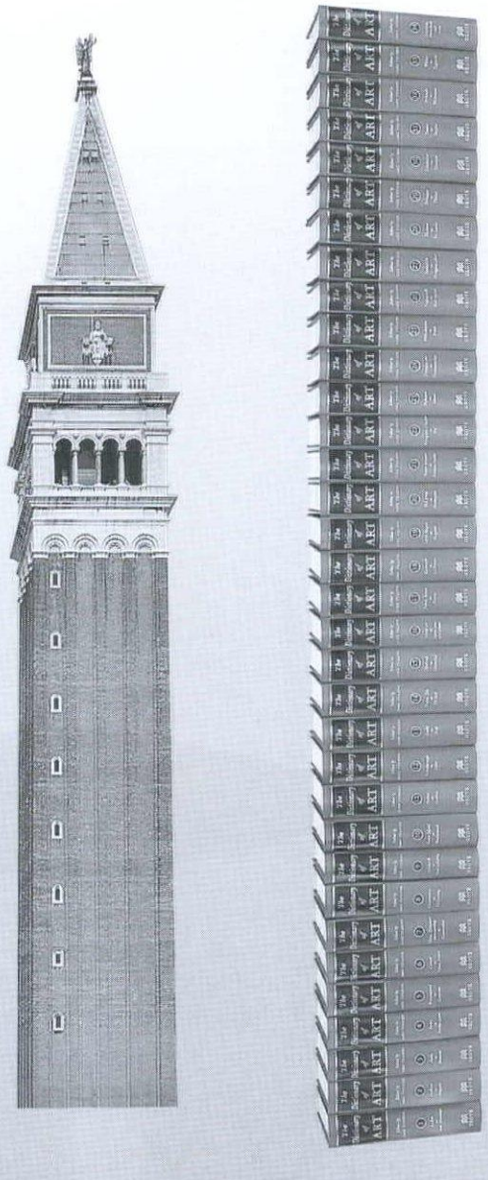
1st prize:	DM	110,000
2nd prize:	DM	88,000
3rd prize:	DM	66,000
4th prize:	DM	53,000
5th prize:	DM	36,000
Acquisition:	DM	92,000

Issue of competition specifications and materials: The specification and other required documents for participation in this competition are available by paying a deposit fee of DM 200, in the form of a nonnegotiable clearinghouse check for account only, paid to the coordinating office: Conradi, Braum & Bockhorst, Niedstr. 17, D - 12159 Berlin, Germany. This material for phase 1 will be issued beginning on 17 March 1997.

Repayment of deposit fee: The stated deposit fee will be repaid in full to all the competition participants who submit an entry in accordance with the terms of the competition, and likewise to all persons who return the materials in undamaged condition not later than 7 April 1997.

Schedule of dates:

Issue of materials for phase 1:	17 March 1997
Submission for Phase 1:	6 May 1997
Juror deliberation for Phase 1:	9 - 10 July 1997
Issue of materials for Phase 2:	21 July 1997
Submission for Phase 2:	23 September 1997
Juror deliberation for Phase 2:	10 - 11 November 1997



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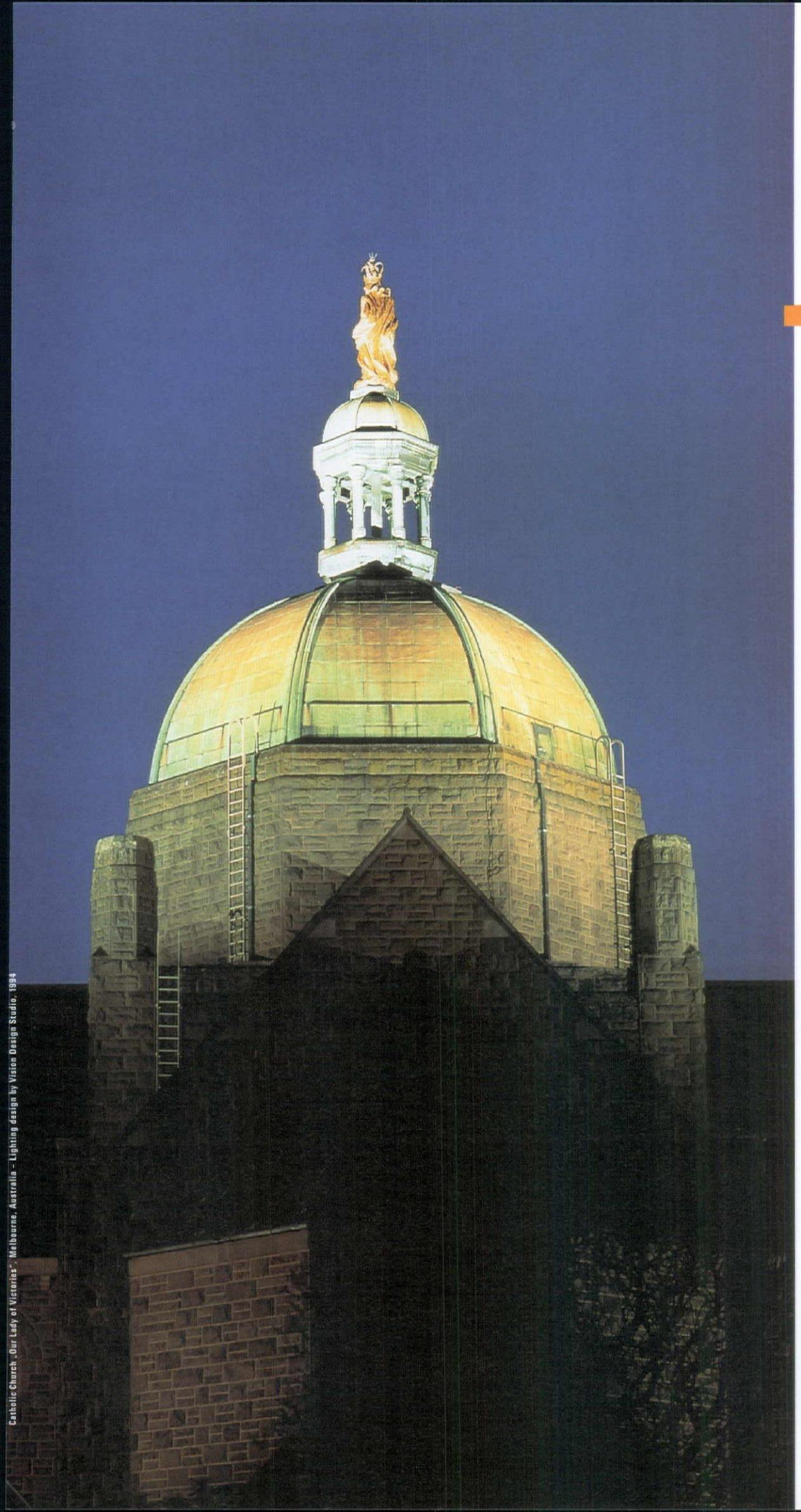
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Catholic Church „Our Lady of Victories", Melbourne, Australia – Lighting design by Vision Design Studio, 1994



THE GREAT FLOOD

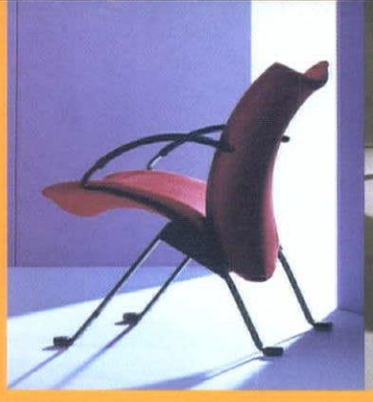
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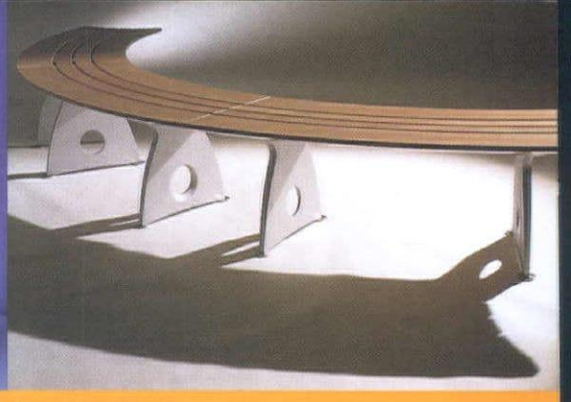
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DR DESIGN REVIEW



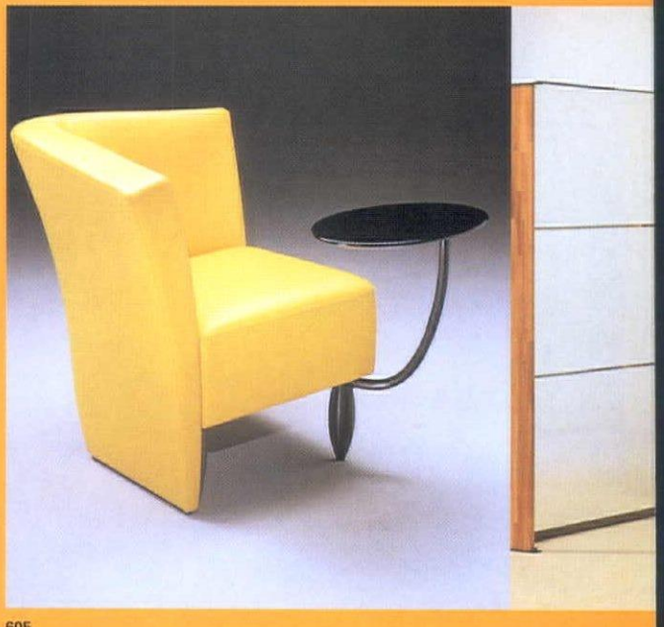
602
Futu reception seating, designed by Maika and Rainer Fuss for Klöber, available from Neil Rogers Interiors.



603
Smart Alex concourse seating designed and manufactured by Wales + Wales.



601
Kama, a flowing irregularly shaped sofa, combines with others to create various configurations. Designed by Rock Galpin for Aram Designs.



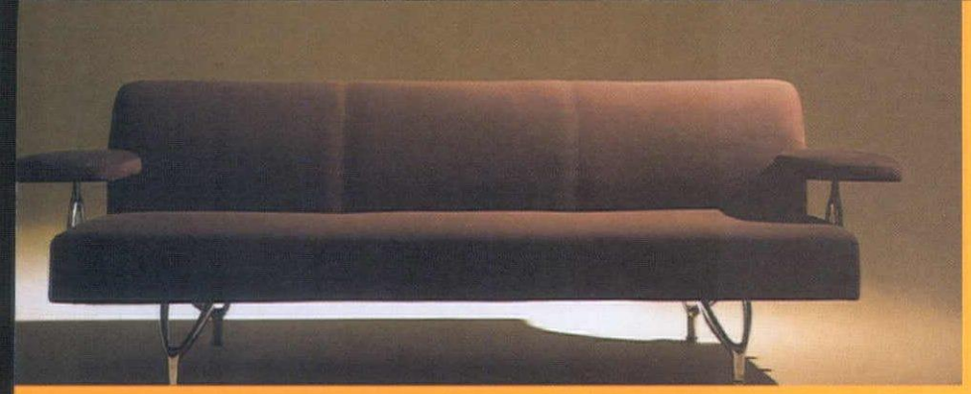
605
Studio: leather-covered armchair designed by Christoph Tamussino for Wittmann.

This month AR will be introducing its own product design award at Spectrum, an elite design fair for architects and designers held annually in March at the Royal College of Art in London. AR's Award for Product Excellence, given to products shown for the first time at Spectrum, will be decided each year by a jury including two eminent architects and an equally eminent industrialist. The first jury is Nick Grimshaw, Nicholas Grimshaw & Partners; Eva Jiricna, Eva Jiricna Architects; Rodney Kinsman, OMK: and Penny McGuire, AR assistant editor.

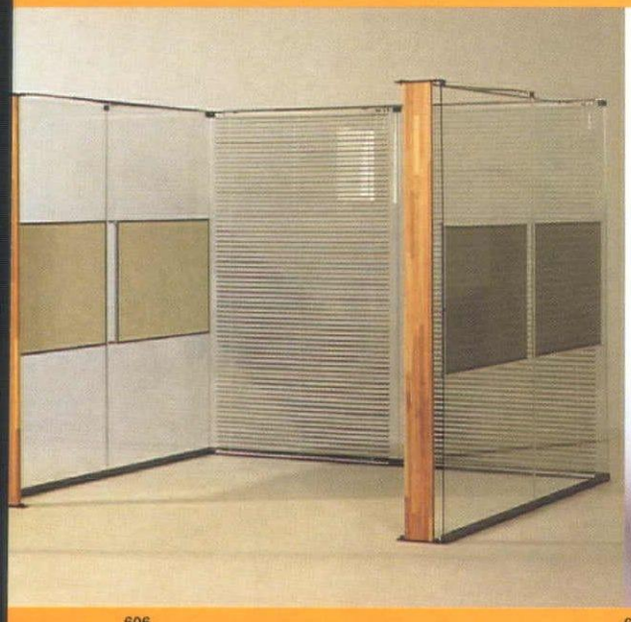
In the main, exhibitors at Spectrum are European furniture firms like Vitra (Germany), Magnus Olesen (Denmark), Aram Designs (UK); but lighting, textiles and flooring are also represented. The eponymous company which organises the fair enforces strict selection criteria so that standards of design and manufacture are universally high. Below is a preview of some of the entries to the Award; the winner will be examined in closer detail in the April issue.

Award for excel

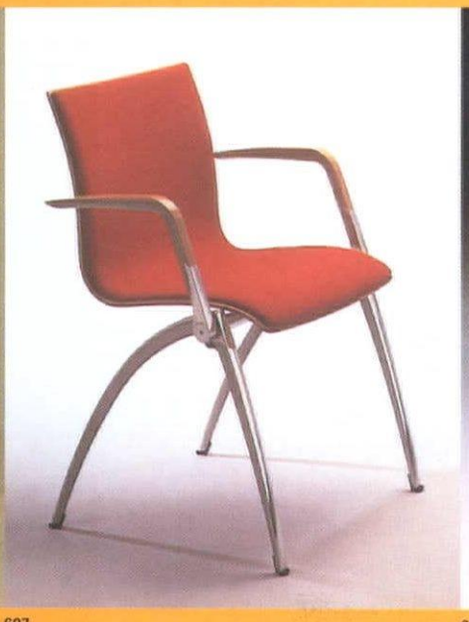
Spectrum, Royal College of Art, Kensington Gore, London SW7, 17-20 March 1997. Opening times: 17-19 March (Mon-Wed) 11am-9pm; 20 March (Thurs) 11am-6pm. Pre-registration hot-line: +44 181 390 0203.



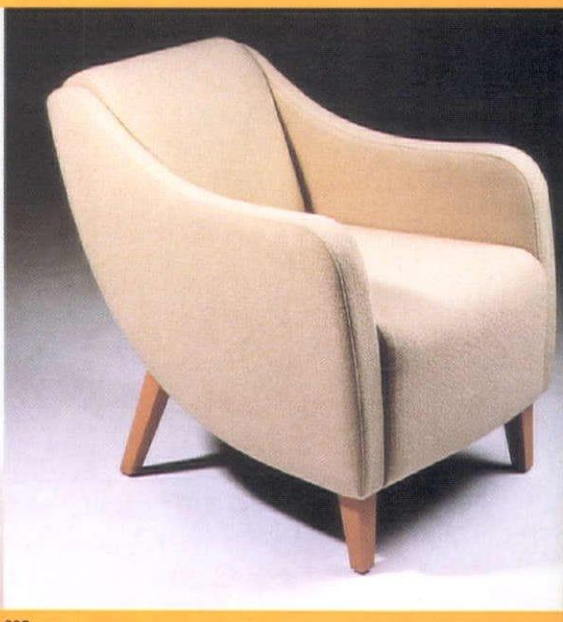
604
Wide Boy Bench, part of a range of leather covered seating designed by Paul Heritage for UK.11. Furniture.



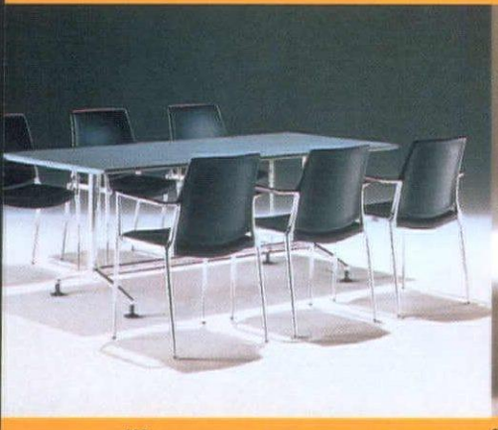
606
Vision Glass Wall System from Schiang.



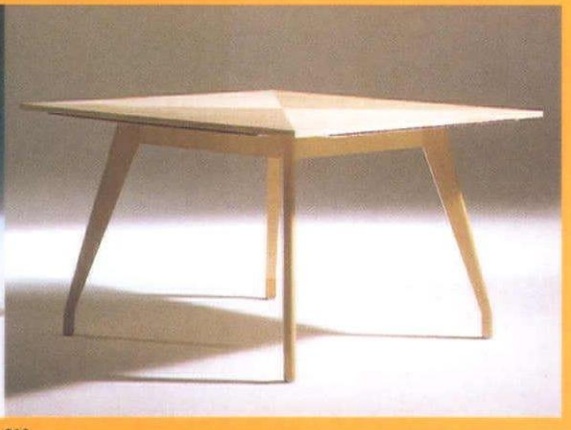
607
Zeno business seating range, designed by Wolfgang C.R. Mezger for Artifort. Available from Samas Roneo.



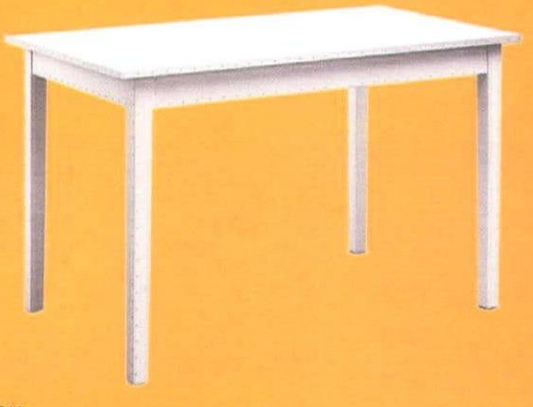
608
Swoop, an upholstered armchair for the contract market, designed by Peter Christian and made by Englender. From Janette Carpenter-Donnelly.



609
Stacking/linking side and armchair in cast aluminium, part of Kusch + Co's Capa Programme 4200 seating. Designed by Jorgi Pensi.

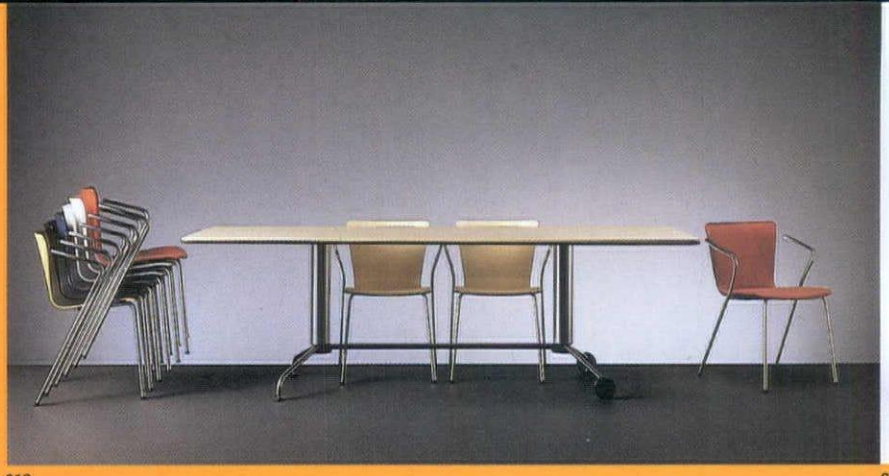


610
DFT 1 maple table with aluminium joint details. Designed by David Field for Opus Magnum.

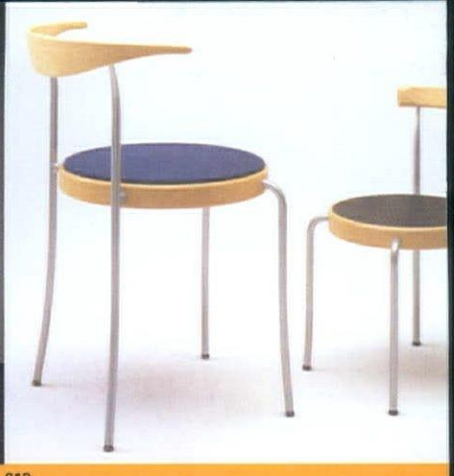


611
Table Blanche, simple white table designed by Ann Demeulemeester for Bulo.

ence at Spectrum



612
VicoDuo stackable armchairs and light tables, designed by Vico Magistretti for Fritz Hansen.



613
Partout chair and junior chair in laminated beech and steel tube. Designed by Rud Thygesen and Johnny Sørensen for Magnus Olesen. Available from Scandia.



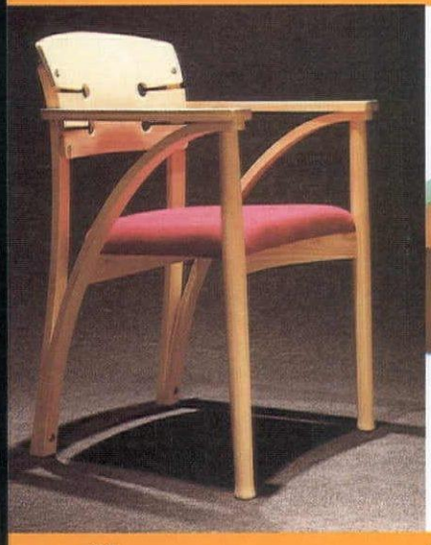
614
Qvintus chair designed by Johannes Foersom and Peter Hiort-Lorenzen for Lammhults Möbel.



615
Satellite café chair in laminated beech and chrome, designed by Roger Bateman for RDS Solutions.



616
Dokomo, stacking linking steel-framed chair with laminated beech shell. Designed by Ron Gibbons for KI Casala. Available from Krueger International UK.



617
C9 Leighton Chair designed by David Colwell for Trannon Furniture. Steam-bent structure made of green ash thinnings.



618
OL Range of furniture, designed by Laurids Ortner for Bene Office Furniture.



619
Glasgow Conference Chair, designed in a collaboration between Foster & Partners and Race Furniture.

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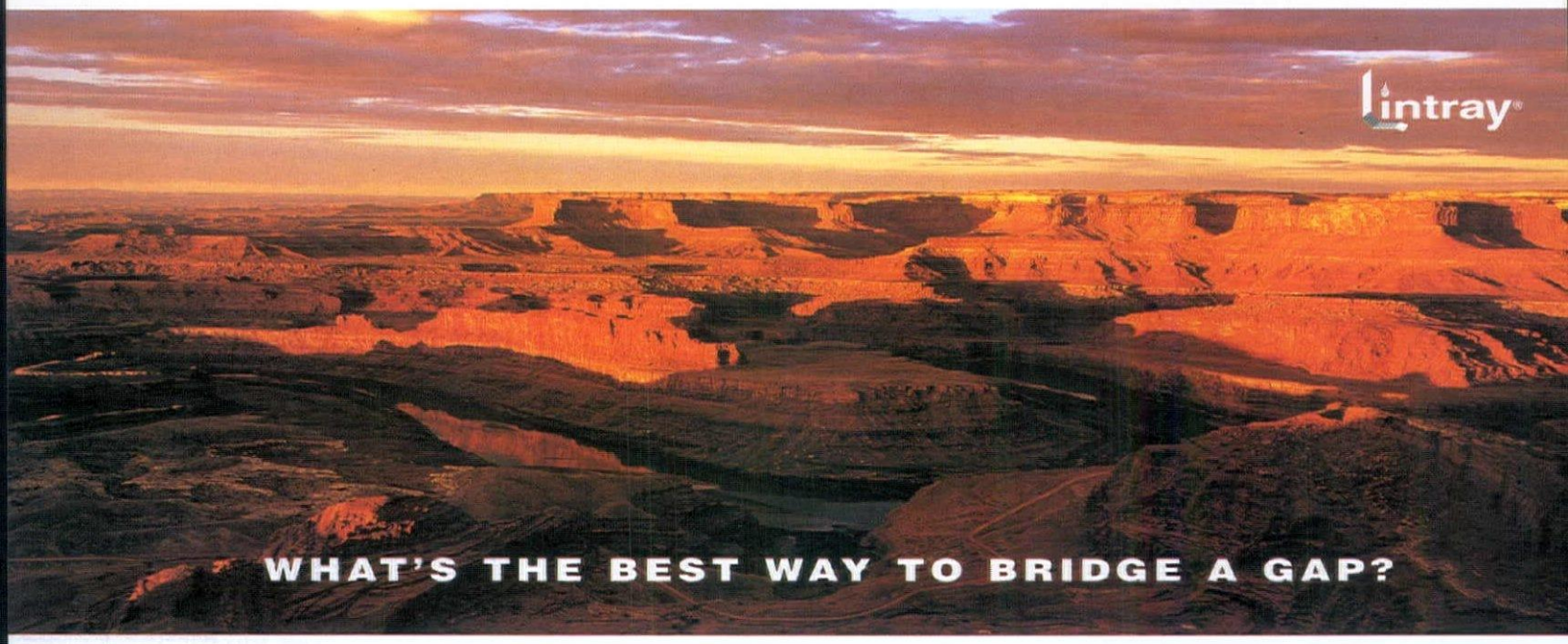
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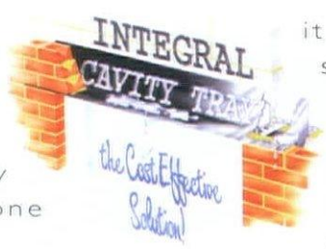
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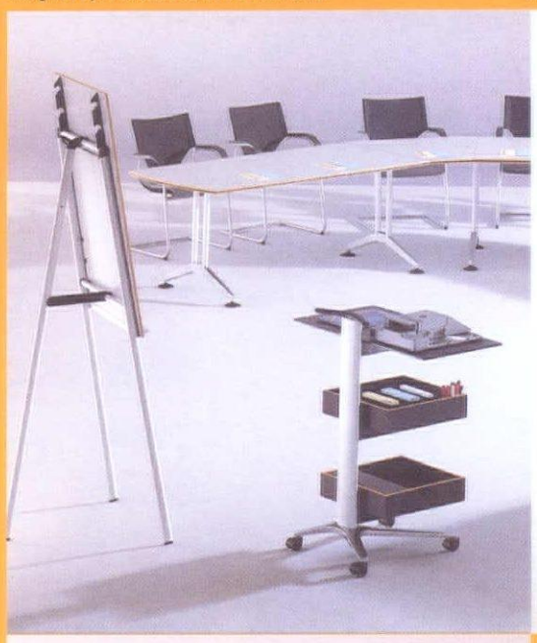
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620
Mobile elements of the Logon range of conference/office furniture, designed by Andreas Storiko for Wilkhahn.



621
Q3000 seating system designed by Roberto Lucci and Paolo Orlandi for LAMM. Available from J. T. Contract Marketing.

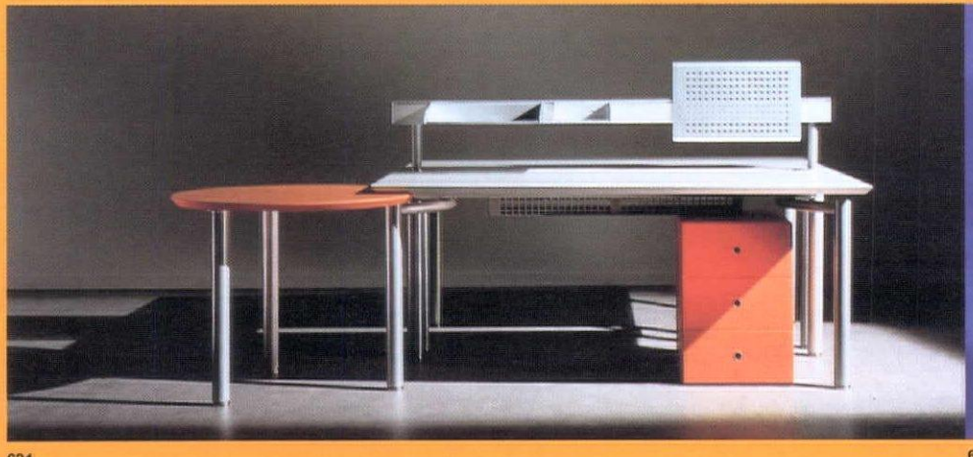




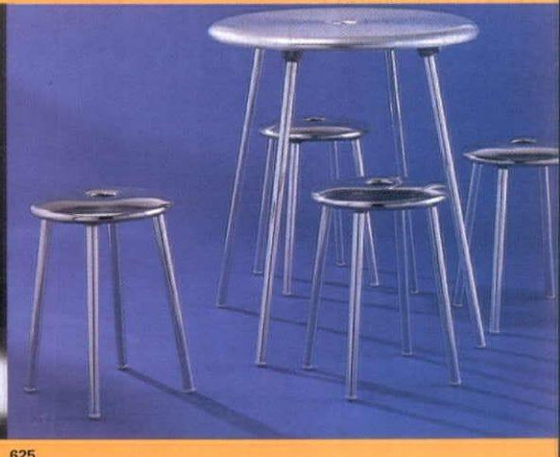
622
Axess ergonomic office chair, part of the Citterio Collection of furniture by Antonio Citterio and Glen Oliver Löw for Vitra.



623
Zuro Beam seating, with water jet cut aluminium arms and steel tube beam. Designed by Alan Zoeftig for Zoeftig & Company.

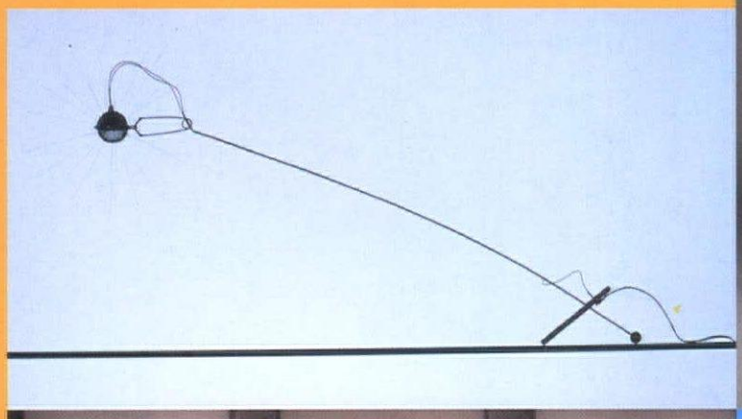


624
Meta desking and storage system, designed by Mario Broggi and Michael Burckhardt for Fantoni.



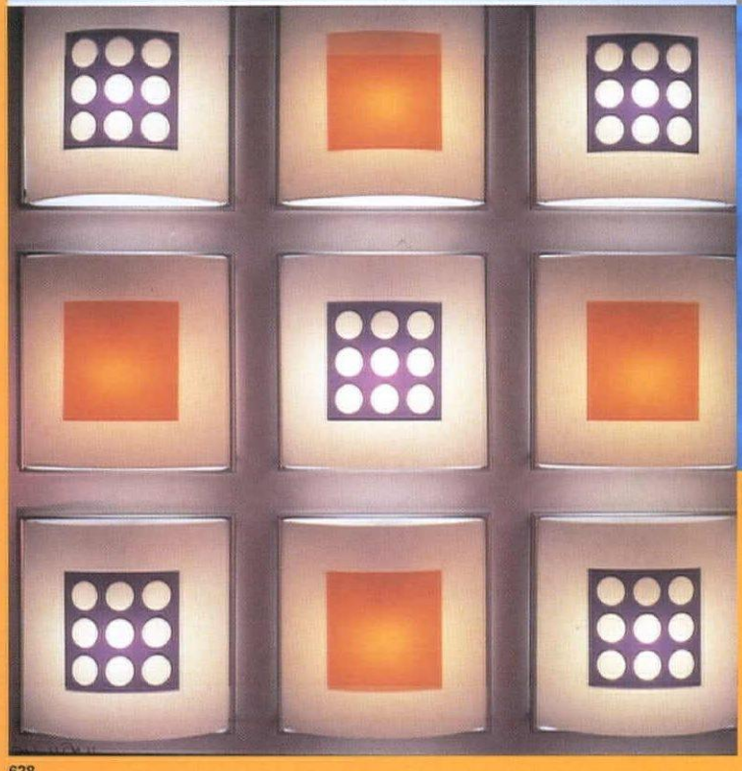
625
Luna stools, part of a cast aluminium range of stools, stacking chairs and tables. By Amos Marchant/Blue for Allermuir.

626
Mozzkito: task light designed and made by Ingo Maurer, and available from Catalytico.

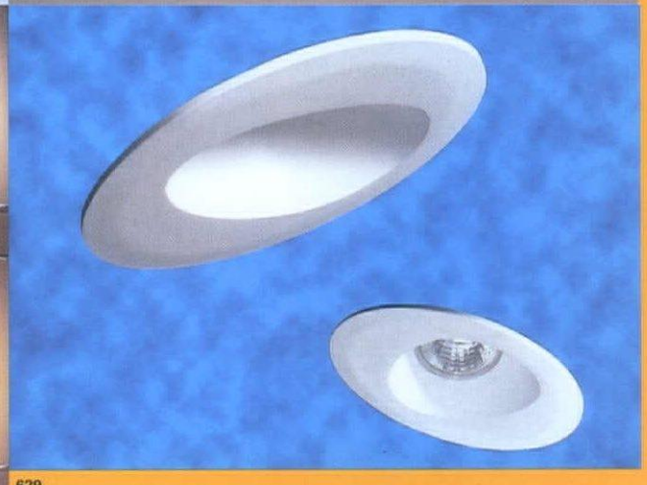


627
Wagtail stacking chair in beech. Designed by John Coleman for his firm.



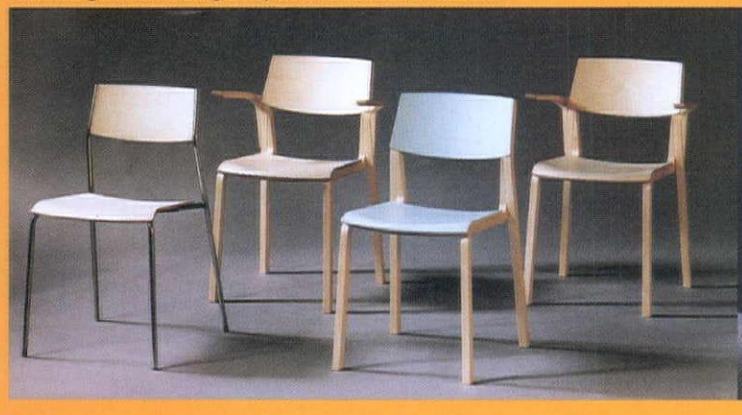


628
Icon One: a wall mounted luminaire, designed by Peter Christian for Aktiva.



629
Orli 'Scoop', spotlight by Altima Lighting.

630
Forum range of chairs, designed by Jon A. Lindström for Gärsnäs.



631
Cadence range of office furniture, designed by John Thiele and Brian Graham and made by Halcon. Available from Allsteel Europe.



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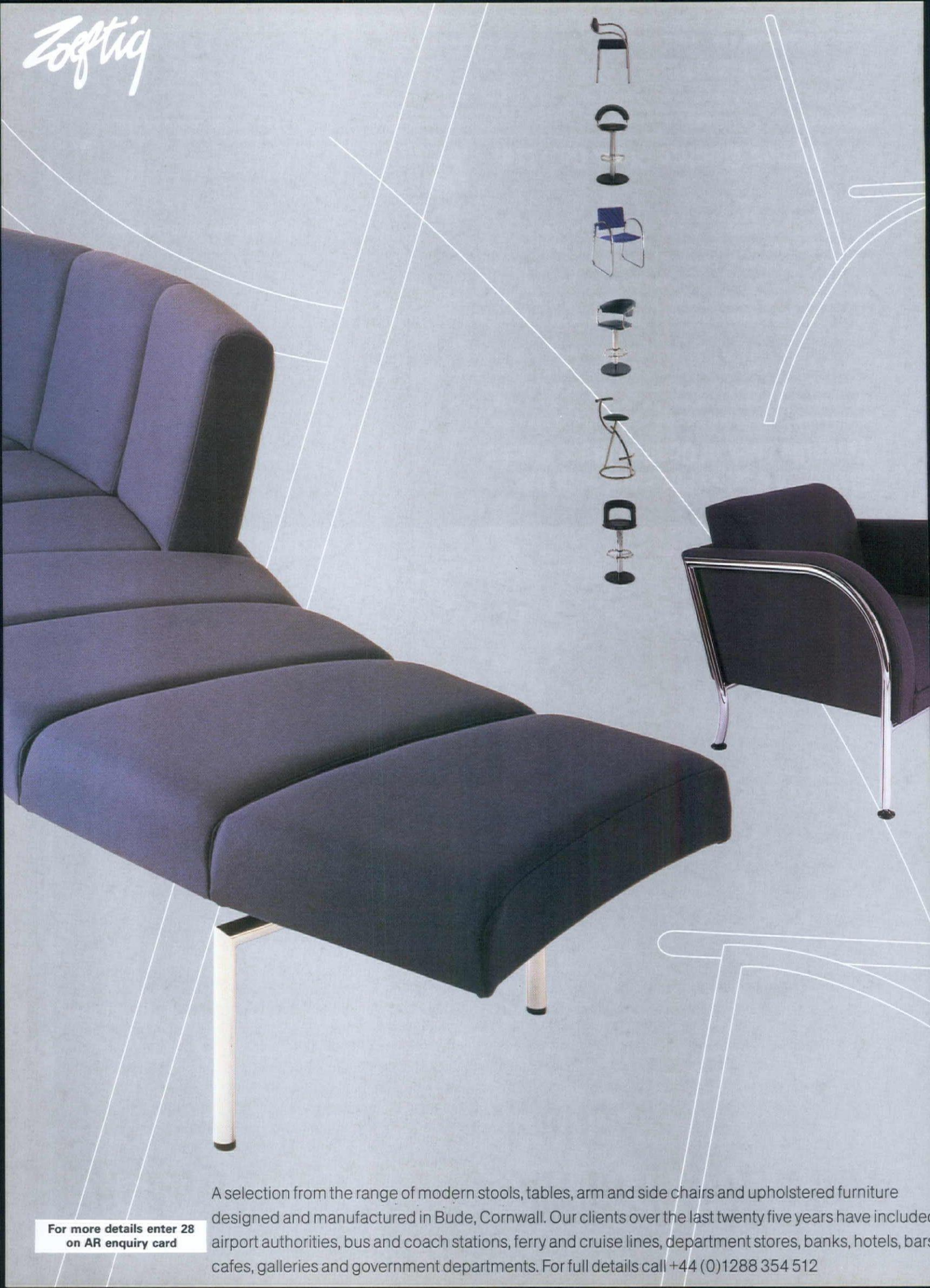
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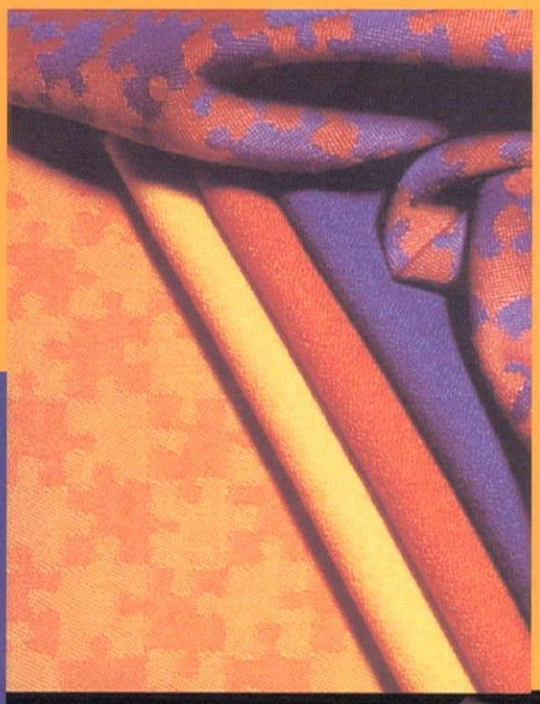


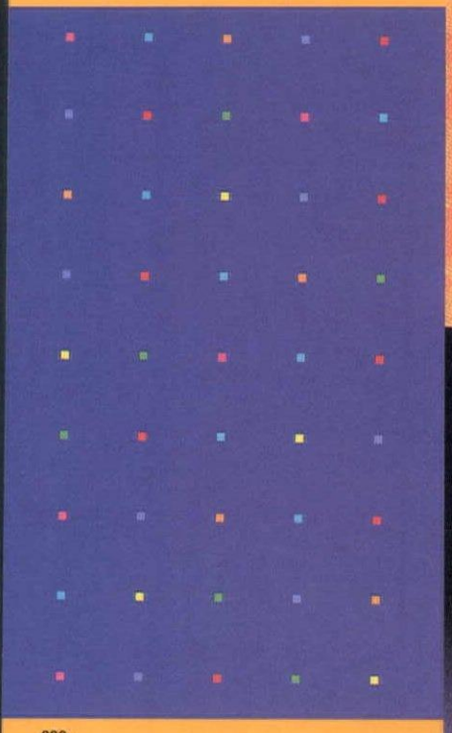
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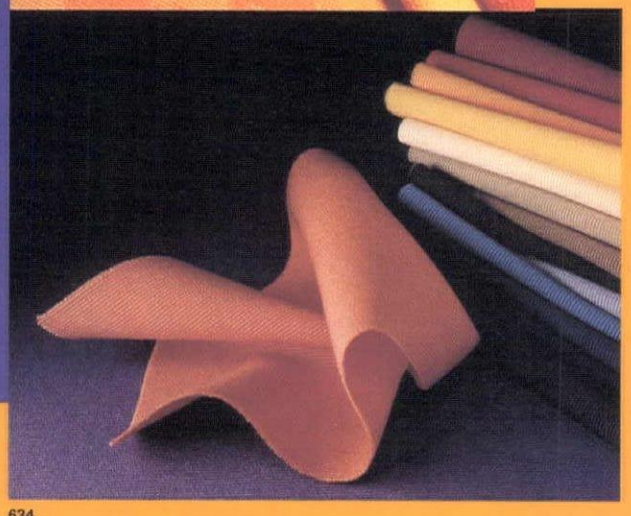
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632
The Danish firm, Gabriel, which produces furnishing fabrics like the Jacquard woven collection shown here, is introducing Kalligrafi, a new fabric made of 85 per cent wool, 15 per cent polyamide in various colours.





633
Magne-bond is a new carpet tile with a magnetic backing for raised floor systems. Developed and made by Westbond, it eliminates the need for adhesive without affecting computer equipment.

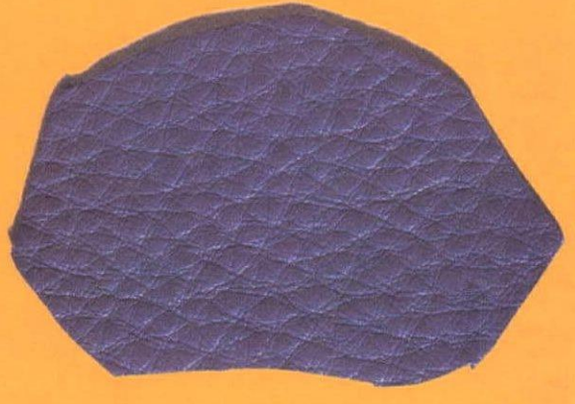


634
Magenta woollen furnishing fabric from Kvadrat, the glowing colour palette of which was designed by artist, Finn Skodt.



635
Erik Magnussen Handle Programme from FSB. Available from Allgood Hardware.





636
Elmo Calf, with Living Design, has been using robotic technology to create decorative coloured hides for covering furniture. The results of their research are two new ranges, Création and Piqué.

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In every detail, Oasis' cat-walk looks are matched by a steely determination to withstand rough treatment and reduce maintenance.

Brackets, through fixings, door lock and adjustable feet are all made from stainless steel.

The system is already working beautifully in the new £42 million Bridgewater Hall in Manchester.

With Oasis, there's less to see but more to admire.



Oasis by Thrislington Cubicles.

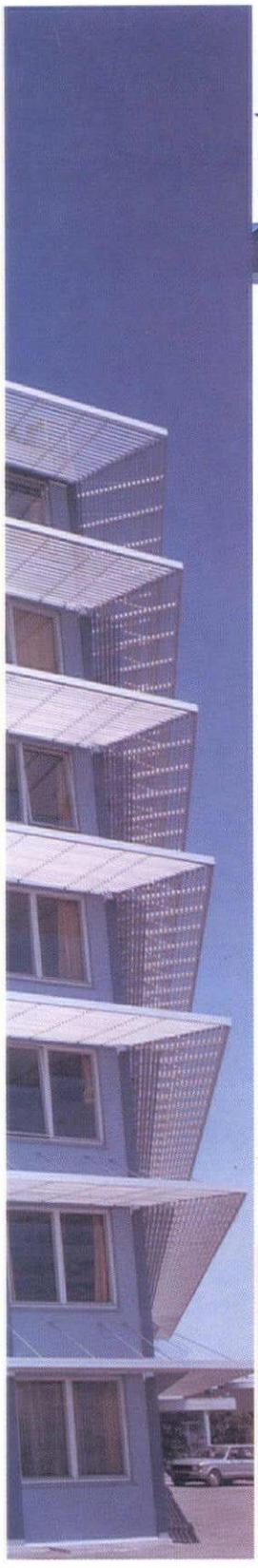
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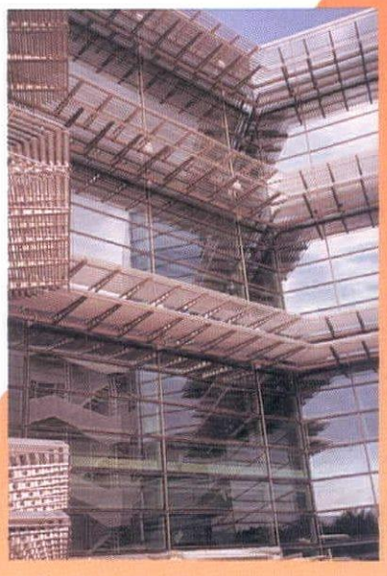
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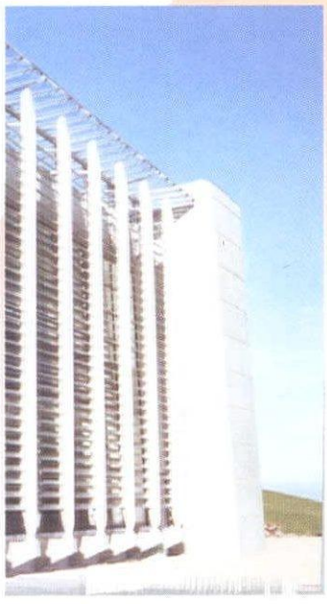












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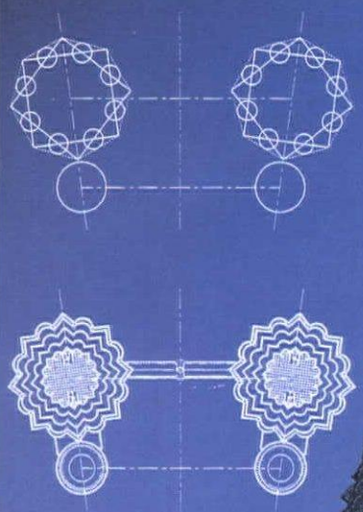
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The next building to be tallest in the world offers a pattern for Malaysia's architectural identity. But surely the cocktail of superficialities is too absurd.

There is a certain kind of Western architect who, when working in other places, attempts to foster regionalism (so often ignored by insensitive locals) by copying the most obvious traditional forms and liberally smearing them about, with no regard for propriety, scale or materiality. Such people were responsible for that revolting eruption of concrete ogee arches that infected the Middle East in the '70s.

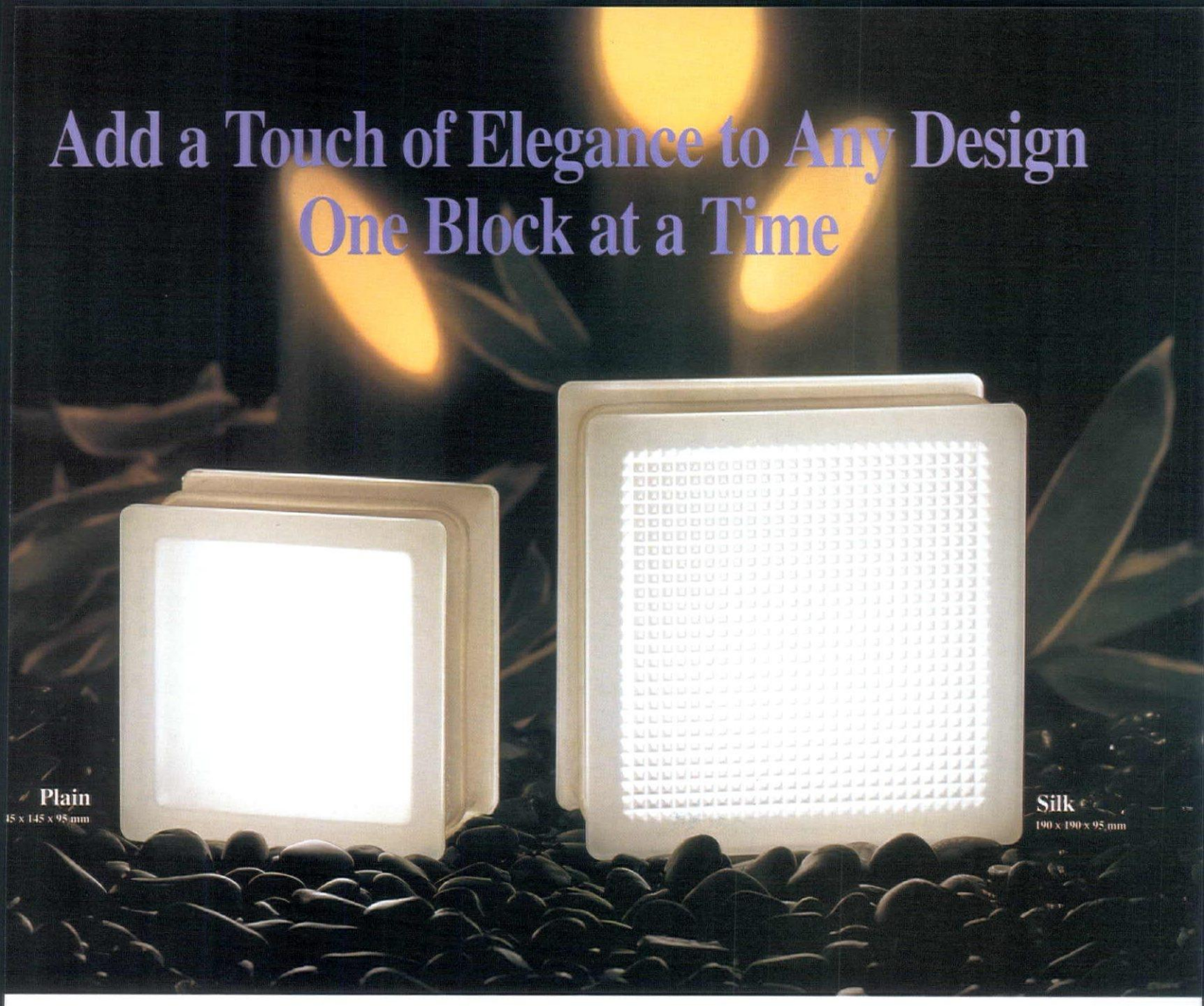
Today, the game is a little more subtle. Cesar Pelli's twin office towers, now finishing in Kuala Lumpur, combine elements from at least two traditional cultures. The towers (topped by 73m high finials) will be the tallest buildings in the world for a while (six months, six years, who can tell?). No-one can criticise Kuala Lumpur for wanting to join in the (essentially daft) race to have the world's tallest edifice: the city wants to demonstrate that it is a great thriving business centre. Why not? And who better to turn to than Mr. Pelli? A thrusting modern commercial city can scarce be considered complete without one of his massive erections.

No casual tourist he: in the first half of 1997 he's in Malaysia, and is determined to let us all (particularly the locals) know that he's got a grip of the culture, and indeed has much to contribute to it – a national architectural identity, no less. The poor folk had nothing to offer as precedent to a busy international architect than a few log huts and run-down colonial buildings. So where are the nearest memorable silhouettes? In Thailand – but Siamese temples are Buddhist, and Malaysia is a Muslim state, so something had to be done. Why not make an arbitrary pattern of squares and circles, announce that it is a Muslim arabesque and make it the plan? In a few simple moves, the quotidian is miraculously permeated by the numinous. And, don't forget that it's a modern glazed office in the tropics: add little *brise-soleil* to show energy consciousness (and riffle the silhouette).

Shake the whole medley of superficialities vigorously together and you've got a new architectural style, a pattern for the nation. Surely Malaysia is too proud and sensible to take to the cocktail. P.D.

Photograph by Neil Tromans/Arcaid

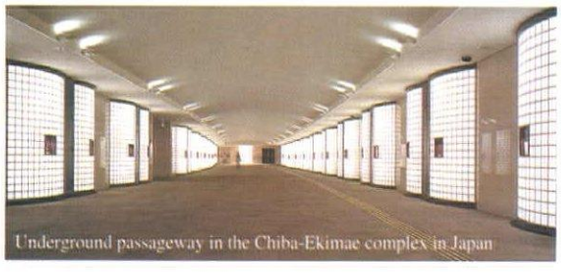
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Underground passageway in the Chiba-Ekimae complex in Japan

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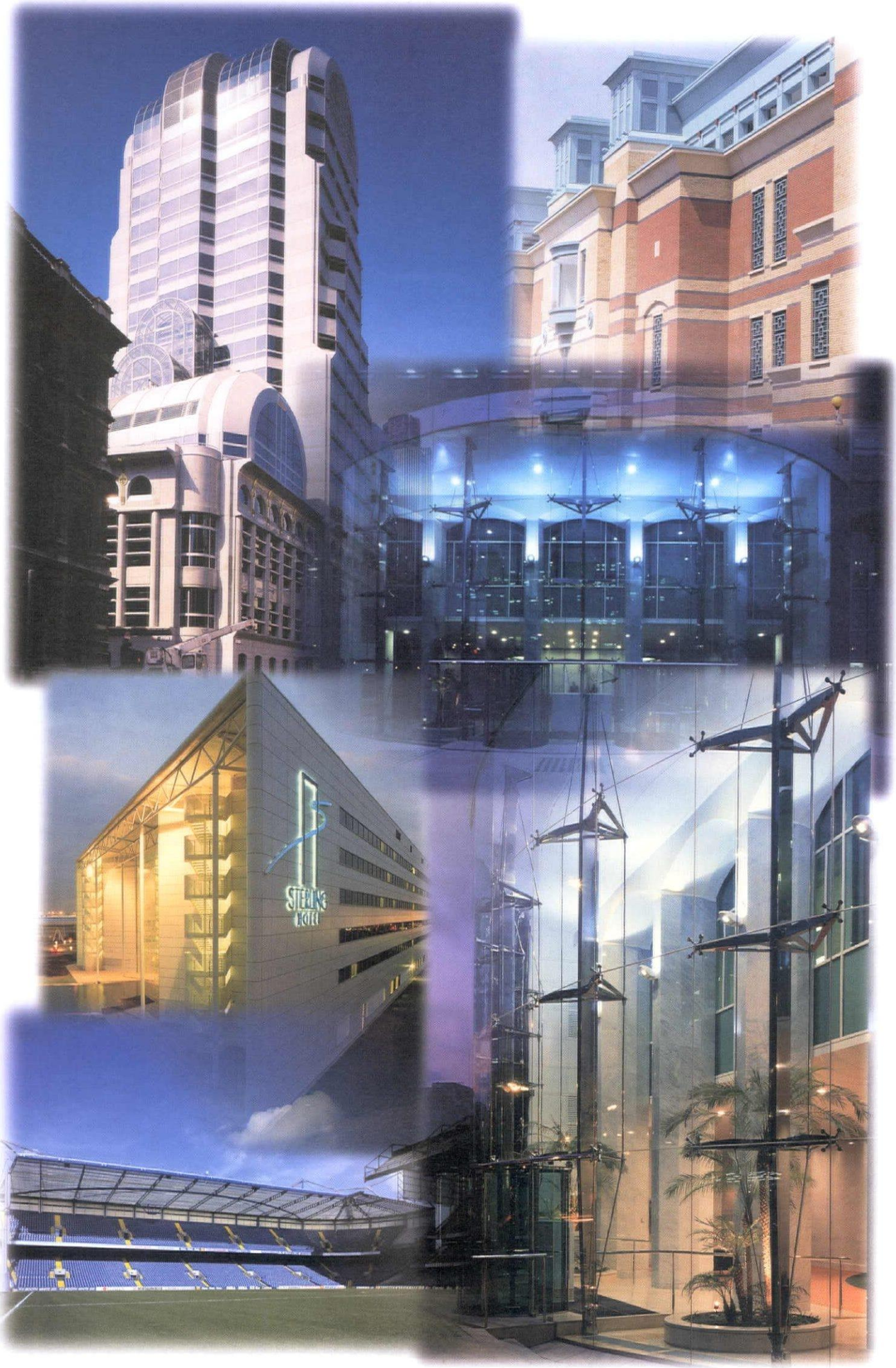
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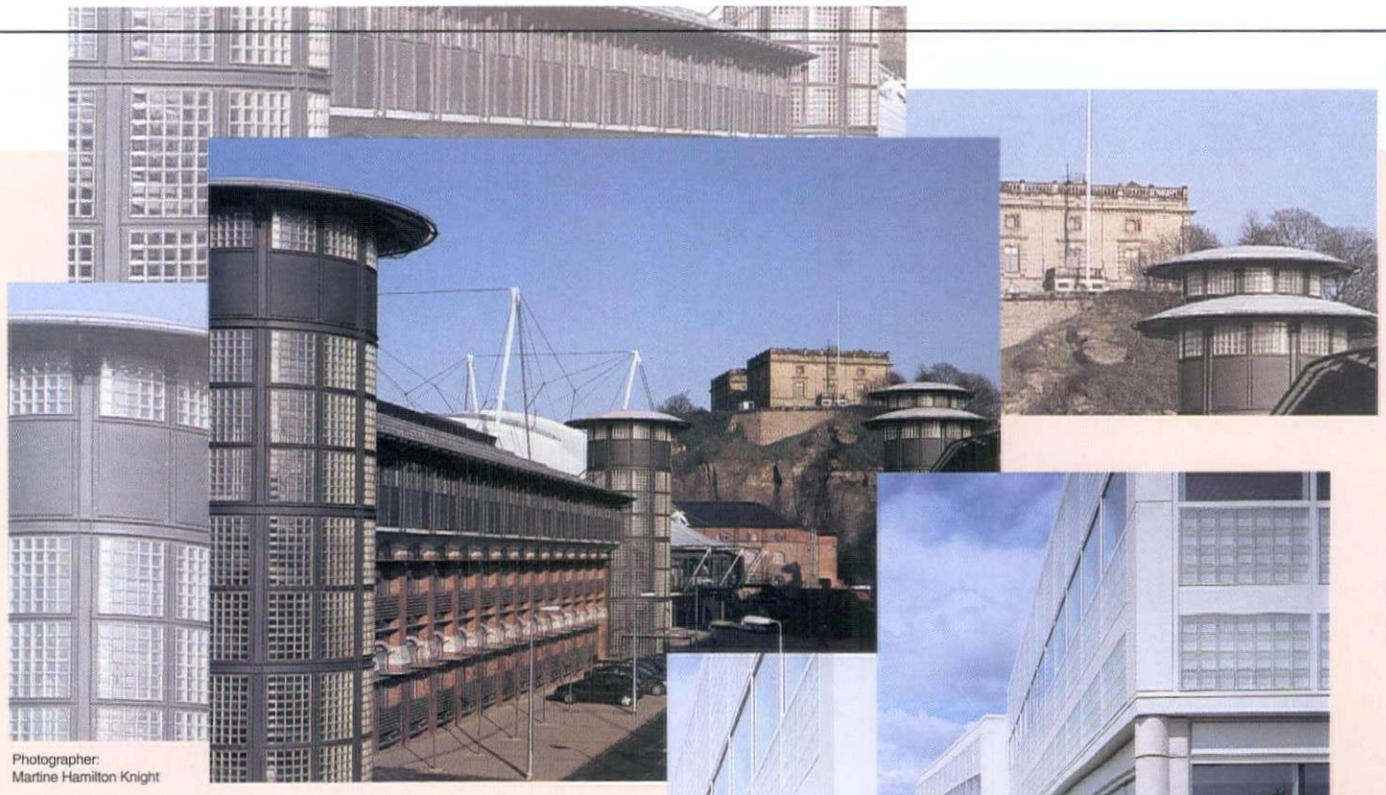


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STERLING
HOTEL



Photographer:
Martine Hamilton Knight

Project ~ Inland Revenue Offices, Nottingham, England
Architect ~ Michael Hopkins & Partners
VUE® Pattern

Project ~ Stockley Park, London, England
Architect ~ EP Associates Ltd. Architects
VUE® Pattern and VUE® Pattern with "LX" Fibrous Glass Insert

Photographer:
Martin Charles

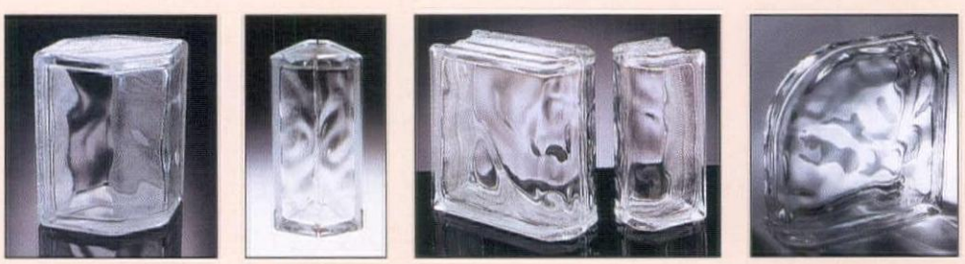
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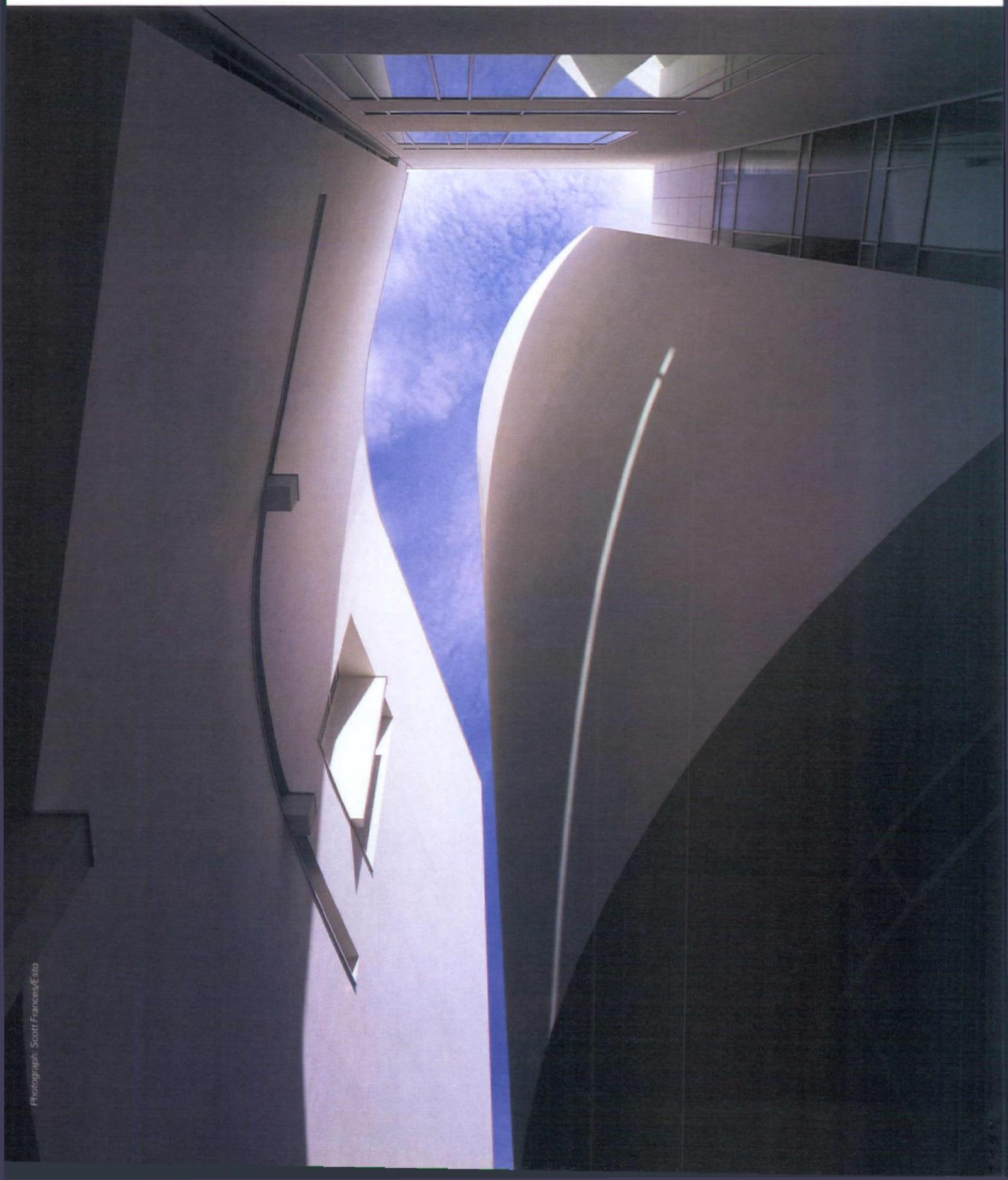
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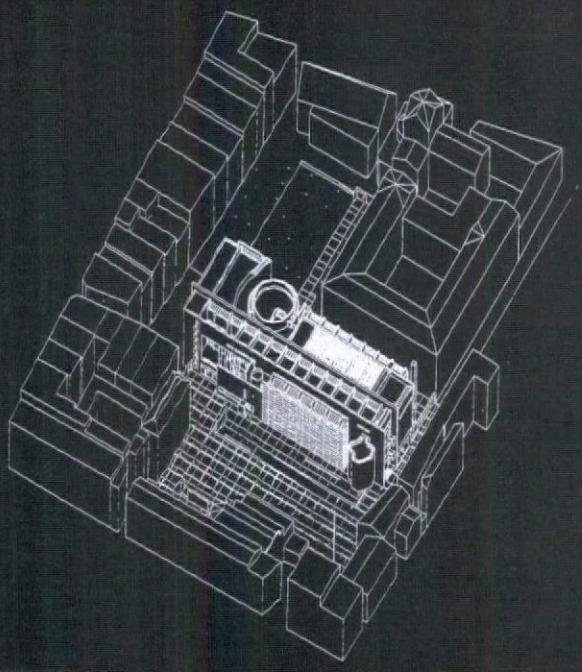
big buildings

Our survey of big buildings begins with Richard Meier's Museum of Contemporary Art (here and p34), a dazzling, monumental insertion into Barcelona's Barri Gótic. Two buildings by Denton Corker Marshall embody extremes of height and length; the Melbourne Exhibition Centre (p57) is a bold handling of scale, light and colour, while the Melbourne Tower (p60) is a bravura proposal for the tallest building in the world. Also included is Niels Torp's new bus station in Gothenburg (p63), which humanises a dreary building type.

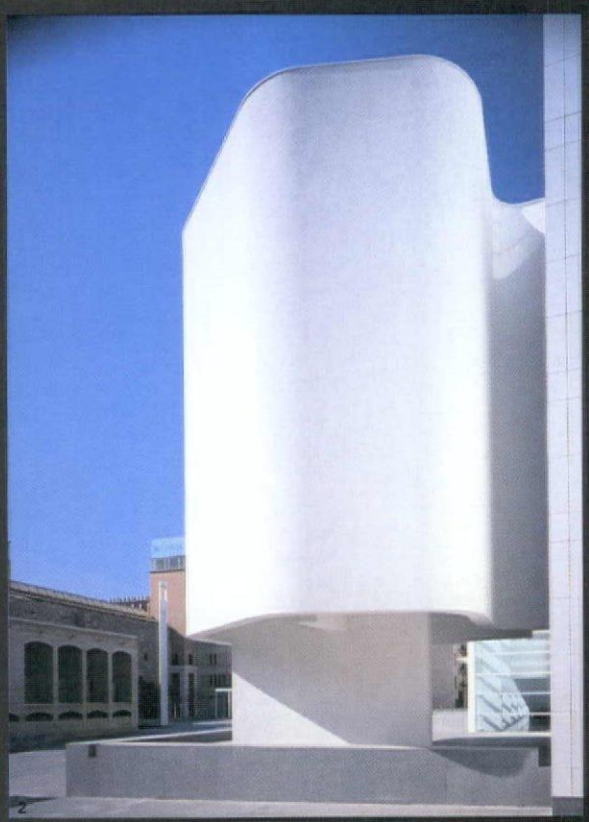


Photograph: Scott Frances/Esto





axonometric of site



2



3

WHITE CITY

A dazzling, monumental presence in the dense urban texture of Barcelona's Barri Gótic, Richard Meier's Museum of Contemporary Art is a fluidly responsive synthesis of space, light and crisp planar geometries.



Art gallery, Barcelona, Spain
Architect
Richard Meier Architects
Criticism
Ivor Richards

1
The articulated drum on the north elevation. The drum contains the entrance lobby on the ground floor and special exhibition galleries above.
2
A quasi-Corbusian undulation (again housing special exhibition spaces) is expressed on the main south elevation.
3
Detail of the cleft-like passage next to the entrance, which links the new square with the Casa de la Caritat on the north side.
4
The monumental south elevation, its great glazed wall revealing the internal ramp.

The origins of the urban framework for the Barcelona Museum for Contemporary Art lie in the urban design policy of Oriol Bohigas and his Catalan colleagues, which established a series of small-scale initiatives for the renewal of decayed city fabric (as opposed to a larger scale masterplan), following the end of the Franco dictatorship in the 1970s.[1] Bohigas's policy included the establishment of new small-scale piazzas and the revision and rehabilitation of significant buildings such as churches and convents within the fabric of the former monastic cloister and the labyrinthine *paseos* and buildings of the Barri Gótic. The detailed urban planning proposals for the area, which includes the Casa de la Caritat[2] and the Casa de la Misericordia, were subsequently carried out by Lluís Clotet and his architect collaborators. These interventions, which included considerable demolition, suggested a design response that would create five linked public squares of different local character.

In 1987 the museum commission was awarded to Richard Meier in a flamboyant gesture by the Mayor of Barcelona Pasqual Maragall.[3] The typology is Meier's favourite – a contemporary art museum. At the same time, it presented him with the most complex and demanding urban fabric in which to place his inevitably startling and pristine project. The Barcelona museum is Meier's most monumental to date, within the European context. It is both assured and heroic, and has (especially of the magnificent internal ramp-hall) a towering and cavernous nature. Its tremendous extended length signals a departure; it is a wall building, the first of a new type in Meier's vocabulary of forms. But, it is also, essentially, a response to the requirements of reconstituting the urban site-plan.

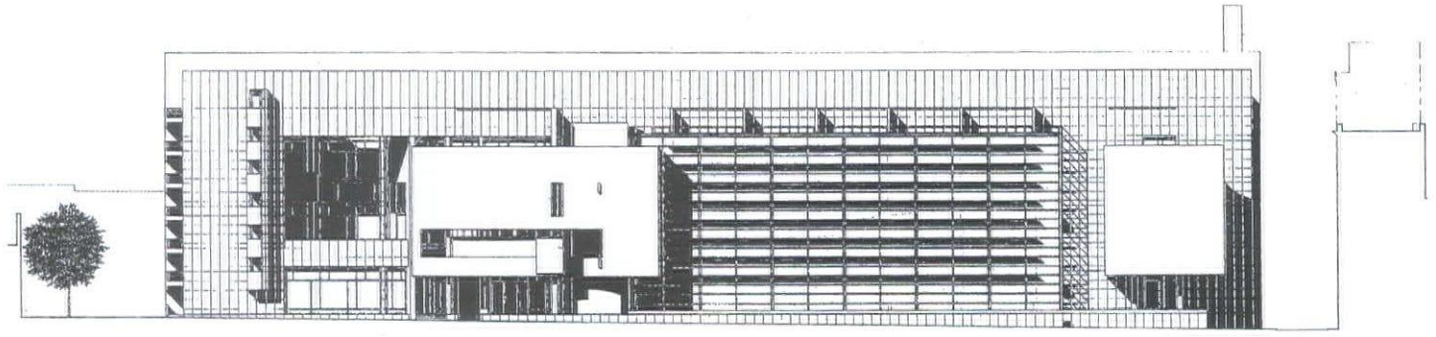
Meier describes this response as follows: 'The museum creates a dialogue between the quarter's historic urban fabric and the contemporary art within. The labyrinthine nature of the site's existing paths and routes is reflected in the building's organisation, most notably in the main entry, which is paralleled by a pedestrian passageway between the museum's rear garden, and a newly created plaza in front of the museum.[4] This *paseo* will join a pedestrian network running throughout the old city. The gentle fold of this circulation path emphasises the centrifugal movement of the cylindrical lobby and describes a fifth facade, connecting the geometries of the museum to an urban context characterised by skewed intersections and the domes of ancient churches.'

From the early designs in 1987, it is the disposition of the rotunda which dominates Meier's sketches. At this point, two early drawings propose a reversal of the built version, in that the voided rotunda forms the transitional courtyard between the piazza and the northern garden, and the ramp-hall is set against the curved half-circle of the rotunda itself. In this way the ramp itself engages with the *paseo* transition. Further sketches elaborate the development of smaller urban squares to the north of the Casa de la Caritat, and an alternative roof-plan suggests an embedded rotunda with a shallow-curved ramp-hall facing the piazza. Yet more variations, in January and July 1988, fluctuate between variants of a huge circular trace, off-centre of the gridded plan, carrying an outboard ramp-hall and yet another with a skewed ramp-hall in the otherwise present position.[5]

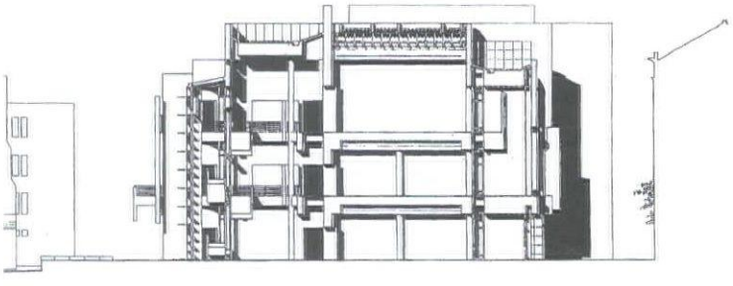
The overall project finally comes to rest within the matrix of two nine-bay squares agitated to the left of the central axis by the rotunda and its reciprocal scallop-form *paseo* wall to the west. The whole ensemble is elevated onto a massive plinth and the structural diagram, in particular, reveals the supremacy of the planar geometries which both define the plan and the major systems of movement and space.

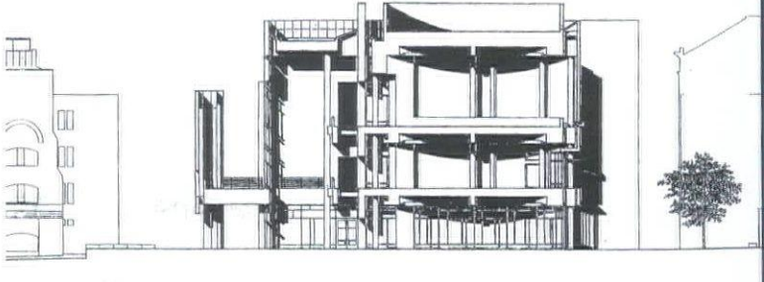
In studying the plan, there can be no doubt about its modernity and the lineage of such Corbusian projects as the Cité de Refuge, to which it may also refer, but there is another reading that arises – that of a reassessment of Schinkel and the Altes Museum in Berlin. If this is seen as a model, both the monumental columnar structure and the rotunda immediately yield much deeper resonances. Similarly, the parallel of the Schinkel loggia, with staircases addressing a public square, and Meier's ramp-hall is suggested, with the more private spaces of the galleries layered behind this great public vestibule – an atrium which in turn gives spectacular views of the new piazza from both the ramps and the access *passerelles* that feed the linear gallery spaces.

Meier has said that 'The whole formal basis of the Modern Movement, fostered a new kind of volumetric exploration, one that still

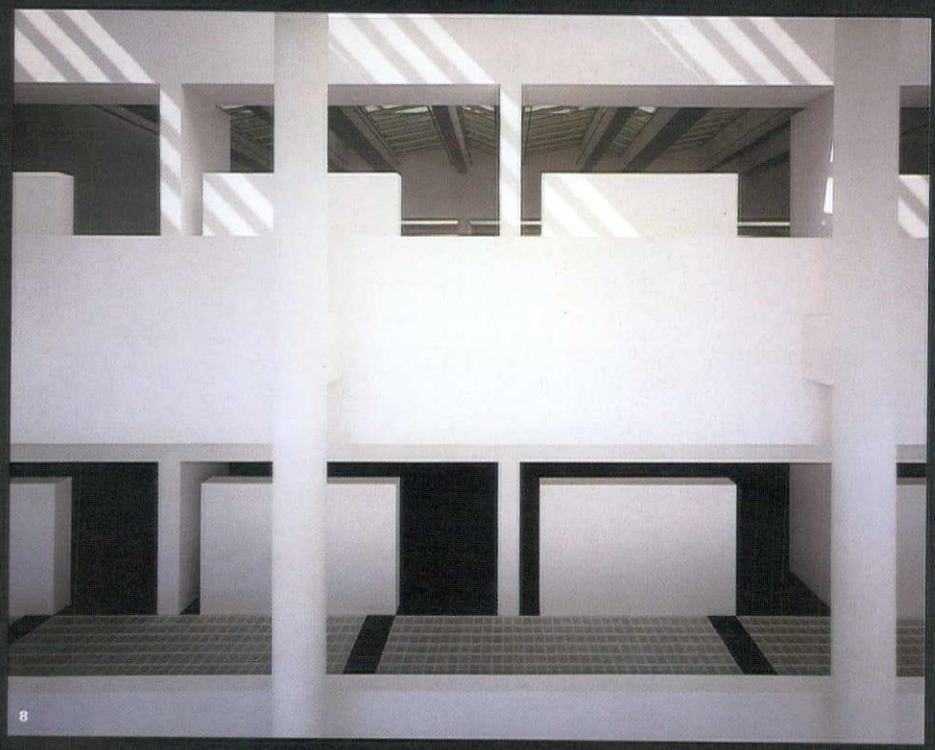


south elevation to the Plaça dels Angels





cross sections



8



11



9



12



10

Through its ingenious and poetic application of technology, Thomas Herzog's new exhibition hall in Hanover – site for Expo 2000 – provides a paradigm of how such very large buildings might develop humanely in the twenty-first century.

WAVE MOTION



1



2

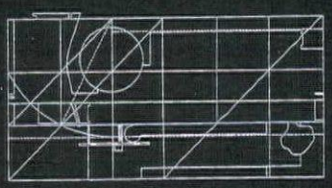
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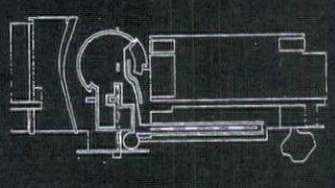
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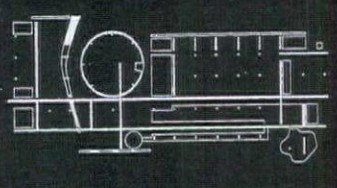
5
Terrace at the west end of the building. Inside and outside fluidly interpenetrate.
6
The complex layering of the ramp and the great glazed wall on the south elevation.
7
The towering set-piece space of the ramp-hall, with its marvellous play of light.



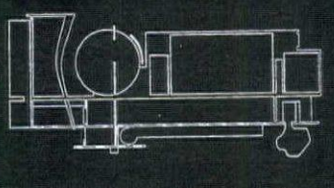
geometry



entry circulation



structure



programme

seems to hold many possibilities. I am still taken with the poetics of Modernism'.[6] In this case the volumetric exploration and the spectacular presence of natural daylight extend Meier's own tradition, begun in the seminal Frankfurt Museum of 1985 (AR November 1985). And while the Frankfurt plan is secured by a singular planar gesture that stabilises the ramp, the route and the cubic galleries, the Barcelona project is even more wonderfully incised by the major planar gestures that, in turn, may signal a private homage to the planar legacy and poetry of Mies, which is so poignantly present in Barcelona in the reconstructed German pavilion.

Approaching the museum from the tight streets that lead in from Las Ramblas, to the east, the sudden exposure of the vast grid of granite pavement that covers the new Plaça dels Angels, with its brilliant southern orientation, also comes as a shock. The equally vast white wall of the pristine museum and its array of forms, heightens this moment to a dramatic, dazzling spectacle. But, set against the splendid azure-blue of the Mediterranean skies, Richard Meier's predilection for the clarity and abstraction of a sublime whiteness can be nowhere more appropriate than in Barcelona.

The array of forms on the ramp-accessed plinth of the building's main southern frontage begins with the sculpture gallery. Next, the horizontally articulated and sun-shaded glass screen of the vast linear ramp-hall and atrium extends westwards and is terminated by a pure cylinder enclosing a spiral public-staircase. This element is oversailed by a final gesture marking the main entrance – an outrigged wall-plane which is both sliced and pierced with a balcony from a terrace above – the whole signalling a kind of villa theme which reduces the scale of the architecture at the public entrance, one metre above the plaza. This entry movement is in turn controlled by a further wall plane at 90 degrees to the main geometry, and leading into the circular lobby.

At this point of arrival, which is articulated with a beautiful, simple curvilinear counter in white marble, it is also possible to see out into the *paseo* and across into the western wing of the museum and vice versa. From the entrance lobby, the abrupt rotation of movement from the rotunda, through the preliminary atrium is again breathtaking – with the prospect of the great linear attenuation of the ramp-hall ahead. As you go up the ramps, an ever-widening panorama of the surrounding medieval city is revealed. The ramp-hall itself, and its plan depth, serves to filter the natural light and protect the northern run of gallery and exhibition space. The main circulation to the art galleries is in the form of a glass-lensed edge of the main structural floor, a threshold of light, that has to be crossed in order to access the art, in the north-facing, flexible exhibition halls. This powerful linear device and the presence of the great planar spine-wall (the decisive east-west ordering device of the plan), are both further articulated by stretched-edge top-lighting from linear roof-lights. The same device is used to highlight the upper third level of loft-like galleries, which also have full roof monitors in the eastern wing.

Thus, the inner movement is very clear. The gracious ascent of the ramps is complemented by the stretch of illuminated pathway, which in turn is articulated by the special exhibition in the rotunda and in the double-height free plan sculpture vessel.

The galleries have restricted views, mainly through slotted openings in the metal clad north facade, with full height doors at ground floor. All are fully controlled with simple, discreet, manual fabric sunshades. The overhead monitors at roof-level are also fully adjustable with louvres above inner lay-lights, and the artificial lighting and air-conditioning systems are generally extremely well addressed with minimum intrusion.

What is provided, quite simply, is a wide range of flexible gallery and exhibition spaces, with facilities to display very large pieces of artwork, if required. As the present collection, together with its archive and associated educational activities,[7] develop, the needs of a growing art centre should be comfortably accommodated. The present fit-out is in the form of deep section 'floating' screens, to accommodate the hanging, the character of the galleries is shown in the polished granite floors and the plain white stucco walls.[8] Service entrances and offices are all accommodated in the western end of the plan, as are the museum shop facing the piazza near the entrance, and the café which faces onto the northern garden.

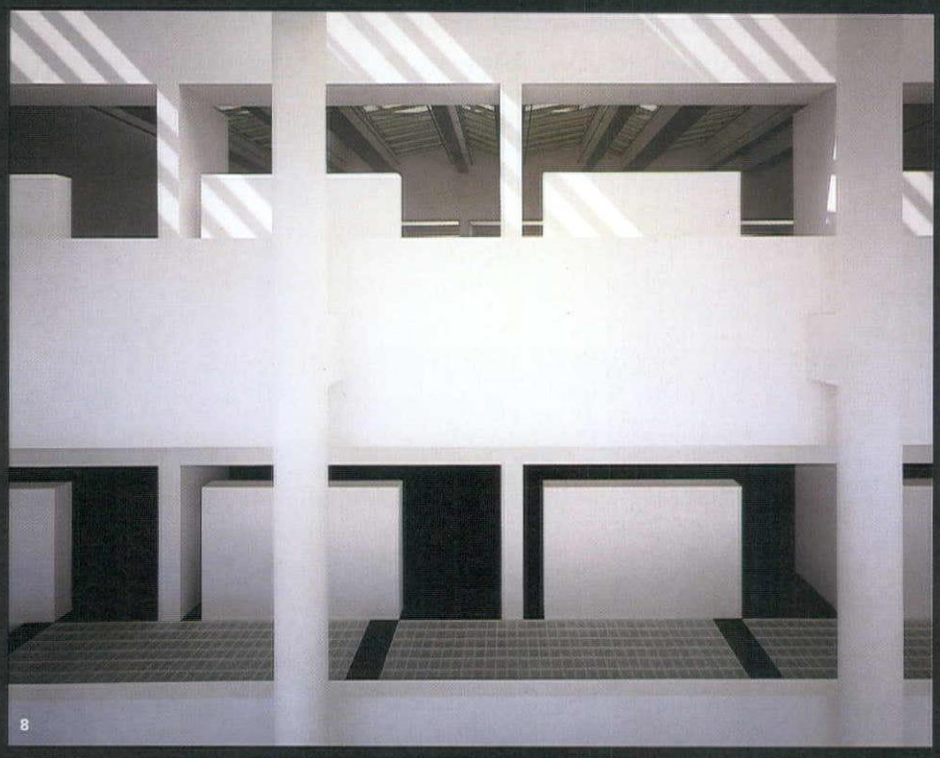
The great flexibility and connected openness of the interior will demand careful management to retain the dignity of its strict order of finishes and detail, and to operate the environmental systems to maximum effect. But it is the splendid monumental scale of the columnar procession within the ramp-hall and its atrium, and the experience of this wonderful space from all levels, that must remain the inspired memory of each visit to this extraordinary addition to Barcelona.

Art gallery, Barcelona, Spain
Architect
Richard Meier Architects

8
The gallery spaces are partly screened off from the ramp-hall.
9, 10
The special exhibition spaces within the drum.
11
The cavernous main galleries. Light filters through glass blocks in the floor.
12
The heroically scaled ramp-hall, gorgeously illuminated.

1 For an account of the urban design initiative for the notorious El Raval district of the old town and the evolutionary form of urban site plan see 'Minimal Architecture in Barcelona', Ignasi de Solà Morales, *Lotus International*. See also 'The Prodigious Decade', Ignasi de Solà Morales, in *Building in a New Spain*, pp91-99, Art Institute of Chicago and GG, 1992, for further background to the emergent condition surrounding Spanish architecture from 1975 onward.
2 The Casa de la Caritat was converted into the Centre for Modern Art by Albert Viaplana and Helio Pinon. The reduced form of the original structure retains a square courtyard with the contemporary intervention by Viaplana and Pinon within it. This building is punctured by archways which provide an east-west route. It effectively forms the northern boundary to Meier's site.
3 See *Richard Meier Architect* vol. 2 Rizzoli 1992, p279, for Meier's account of the award of the commission.
4 The Plaça dels Angels is named after the Convent dels Angels, south of the site, which was converted by Lluis Clotet and Ignacio Paricio into a function centre.
5 For the progression of Richard Meier's conceptual sketches see *Richard Meier – Frank Stella Arte e Architettura*, Electa 1993, pp122, 124, 125 & 128.
6 AR 1154 April 1993, p29.
7 The MAC-BA has fully established departments, including an educational programme.
8 *Museum of Contemporary Art Barcelona, Spain 1987-1995*, notes by Richard Meier explain that 'Traditionally resonant materials, such as granite paving and stucco, describe the public signposts of the plaza, sculpture garden and sculpture gallery, while gently reflective materials such as glass, wood flooring and aluminium panels are used to encapsulate areas characterised by motion and light.'

Architect
Richard Meier Architects
Project team
Richard Meier, Thomas Phifer, Renny Logan, Alfonso Pérez-Méndez, Daniel Brown, Steve Dayton, Patrick Flynn, Raphael Justewitcz, Jonathan Marvel, Gilbert Rampy Jr, Madeline Sánchez, Thomas Savory, David Shilling
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Mechanical and electrical engineer
Estudi d'Arquitectura GL, Francesc Labatida i Azemar
Lighting consultant
Fischer, Marantz, Renfro & Stone
Contractor
Comsa
Photographs
Scott Frances/Esto



8



11



9



12



10

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WAVE MOTION



1



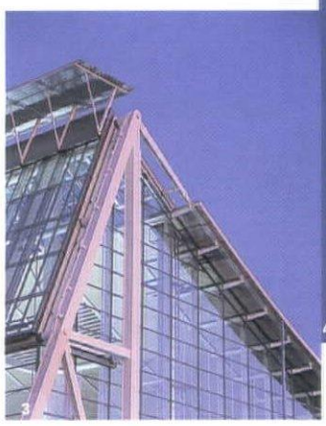
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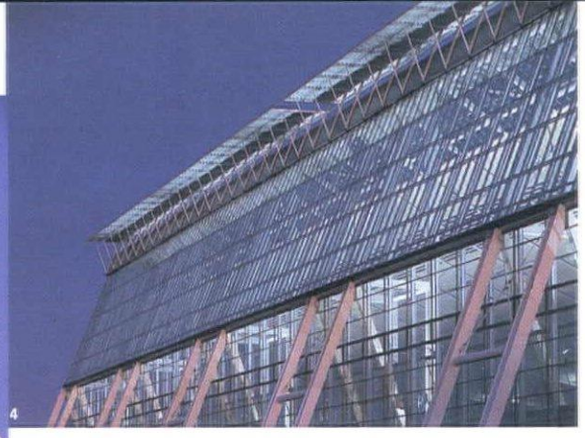
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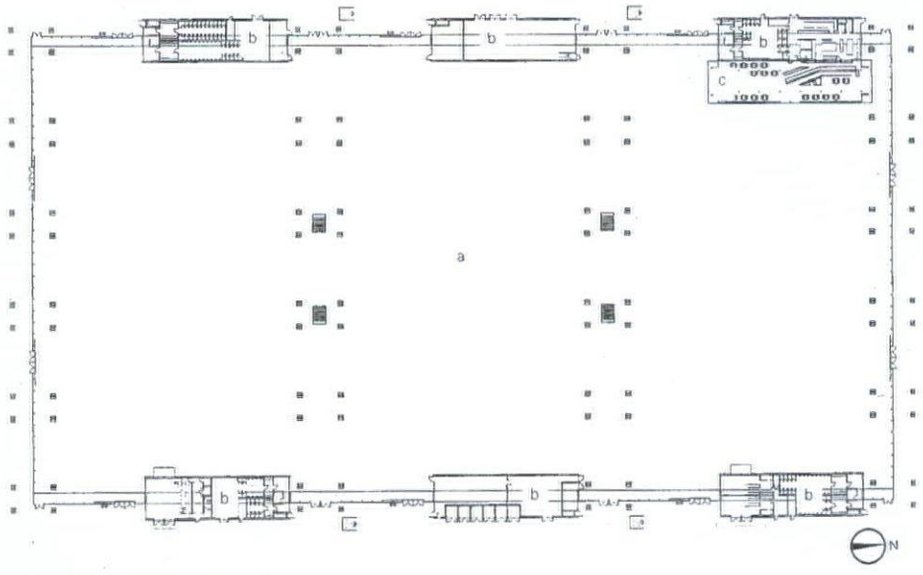


Trade fair hall, Hanover, Germany
Architect
Thomas Herzog

1
The sensuous undulations of the roof create a flamboyant silhouette.
2
The glacial ridges soar up to 29m. The serrated roof is a highly sculptural abstraction of traditional north-facing roof lights.
3
Detail of one of the ridges.
4
The glazed north elevation.

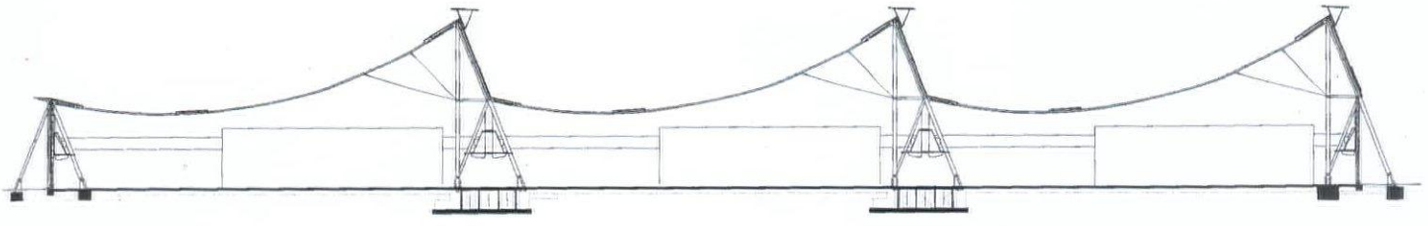


Trade fair hall, Hanover, Germany
Architect
Thomas Herzog

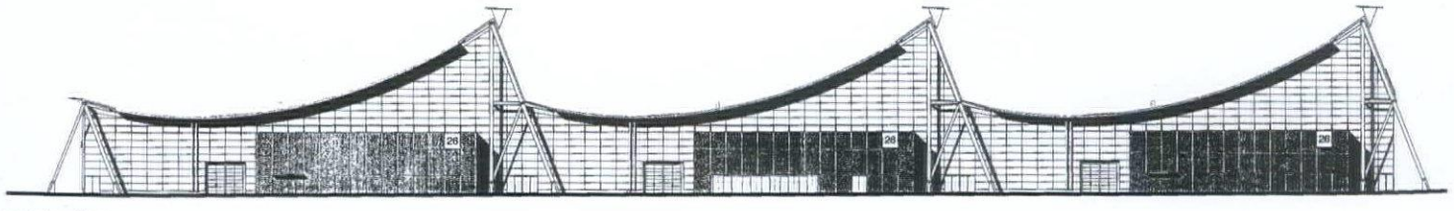


a exhibition hall
b service pods
c café

ground floor plan (scale approx 1:2200)



longitudinal section



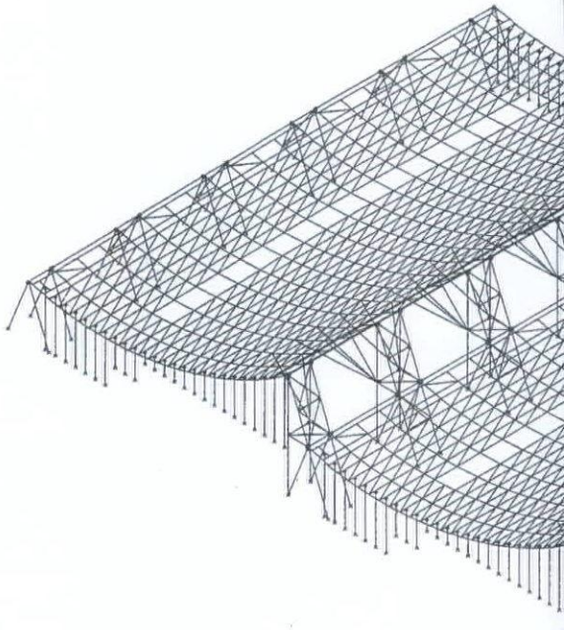
east elevation

Herzog has incorporated ribbons of north-facing roof glazing for optimum daylight. The determining factors in the form of Hall 26 were the tensile roof structure, together with a requirement for energy saving lighting and climate control systems.

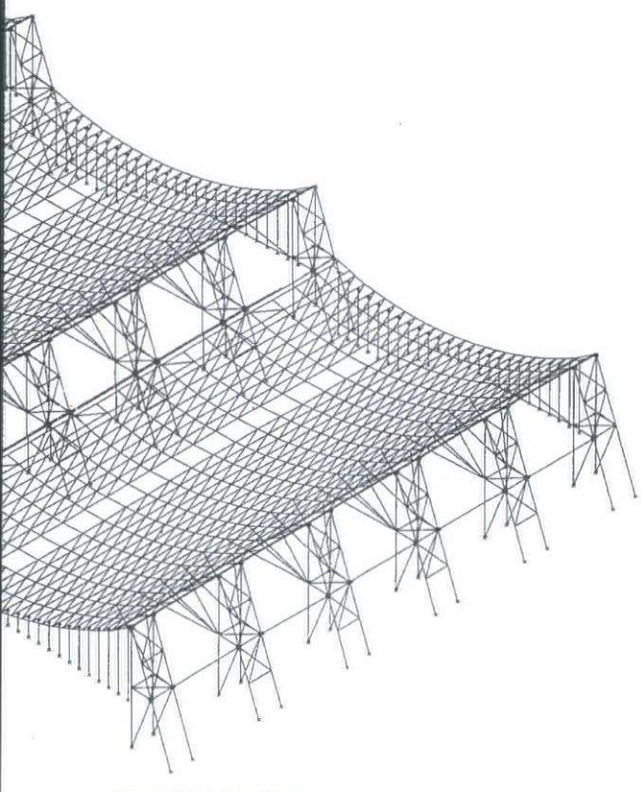
Overall dimensions of the hall are 220m x 115m, with six independent box pavilions (housing sanitary, catering and building services) protruding from the rectangular plan. Inside the hall these pavilions are concrete faced, but externally they are clad in wood, similar to the timber facades Herzog has used before on residential and industrial buildings. Paradoxically, for all its apparent emphasis on steel and glass, the building uses a large amount of wood. Prefabricated timber sandwich panels filled with gravel cover the roof, spanning between steel girder sections. Their undersides form the ceiling soffit internally.

Despite its size, the building is awash with light. The rhythm of the roof silhouette, the easily understood structural principal, and the transparent curtain walls create lively views at all times of the day and night. There is a physical sense of the weight of the hanging roof, but also the strength of the slender steel sections of the masts. It is rather like watching a circus juggler effortlessly balancing a twirling ball on one finger. The structure seems weightless, an impression reinforced by the optimum use of natural light internally and artificial lighting at night, which makes the building look like an ocean liner floating in the dark. Direct daylight cuts through the glazed strips at the apex of each roof ridge, but in the centre of each suspended roof section another band of glass panels is triple glazed with retro-reflecting grids to deflect direct sun. On the ceiling soffit, six rows of polished steel panels distribute daylight within the volume. Artificial light comes from fittings mounted under the trestle masts and from suspended lighting strips under the belly of the hanging roof soffit. The convex surfaces of the ceiling diffuse both artificial and natural light.

The cost of mechanical ventilation has been halved, following computer simulation and wind tunnel trials, by using natural thermal movements. Floor outlets are impractical because of the load requirements in an exhibition space where forklift trucks or lorries deliver exhibits and heavy machinery is displayed. Fresh air has therefore been introduced at a relatively low level, 4.7m above the floor, from glass ducts in the circulation zones. At first the cool air drops to



5



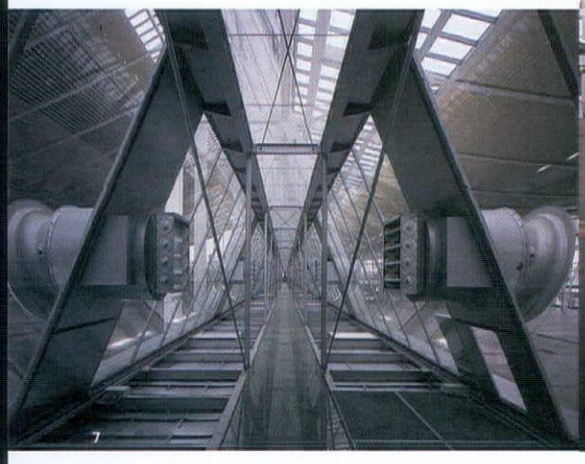
axonometric of structure

5
The convex bellies of the roof diffuse natural and artificial light.
6
Detail of one of the massive structural trestles.



Trade fair hall, Hanover, Germany
Architect
Thomas Herzog

7
Inside one of the glass ducts.
8
The trestles and ducts break up the vast interior.
9
The space can be colonised by different types of exhibitions.
10
Small insertions like this café are somewhat dwarfed by the immense scale of the building.





the floor, but as it is warmed by people and equipment in the hall, it rises and is expelled at the three roof ridges. For this chimney effect, a continuous strip of adjustable flaps with roof caps on the three ridges can be individually orientated depending on wind direction to ensure no back flow into the hall. In winter pre-heated air is injected via adjustable long range nozzles from the same glass ducts.

Internally, the function of the covered space is marked out and divided by the walkways under the trestle masts, from which the glass air ducts hang. In between, the area can be colonised by all types of exhibitions, ranging from streets of individual stands to free form spaces. The basic purpose of a trade hall is to provide a mechanically serviced large volume, neutral enough for every use. They are an inheritance of the early industrial age, in which machines and trade had a higher value than the humans who serviced them, and a rethink of their design is long overdue. In Herzog's case it is interesting to see that both his Linz Design Centre exhibition hall and Hanover's Hall 26 have been compared with Paxton's Crystal Palace, the first trade fair building. Environmental responsibility may be leading us back to light and airy buildings.

LAYLA DAWSON





Architect
Herzog + Partner, Munich
Project team
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Schlaich Bergermann
Mechanical services engineer
H.L.Technik
Aerodynamics, natural ventilation, energy simulation
Design Flow Solutions
Lighting consultant
Bartenbach Lichtlabor
Fire protection consultant
Hosser, Hass + Partner
Photographs
Dieter Leistner/ARCHITEKTON



1

SPATIAL SYMBIOSIS

This addition to a sprawling Japanese campus breaks down and humanises a large faculty into a series of teaching blocks and communal facilities linked by a meandering walkway.



2

3



Institute of Environmental Science, Shiga, Japan
Architect
Tadasu Ohe/Plantec

1
The large institutional mass is broken down into a series of medium scale linear blocks.
2
The blocks are connected by a curving, elevated walkway.
3
A covered bridge (a modern version of a traditional Japanese element) links the institute with the rest of the campus.

Shiga Prefecture University occupies an entirely new campus, adjoining Japan's largest freshwater lake, near the foot of Mount Arakami. As is generally the case, a masterplan defined the locations of specific departments, and imposed unifying restrictions on building mass, height and external materials. Tadasu Ohe/Plantec was commissioned to design the Institute of Environmental Science, comprising the faculties of Environmental Planning, Environmental Ecology and Environmental Resources Management. The disciplines studied across these broad headings range from laboratory-based biological sciences to studio-based design, with a shared ambition of finding symbiotic relationships between what have traditionally been regarded as heterogeneous subject areas.

As Ohe points out, the prefix *inter-* is common to many of the characteristics of his client institution. Shiga Prefecture University's mission is both interdisciplinary and international and Ohe's design responds with a concern for intermediary space; places in which informal relationships can be established, and information can be spontaneously exchanged. The planning strategy for the awkwardly elongated site is deceptively simple. Whereas some of the adjoining faculty buildings are distributed around courtyards, creating homogeneous and monumental

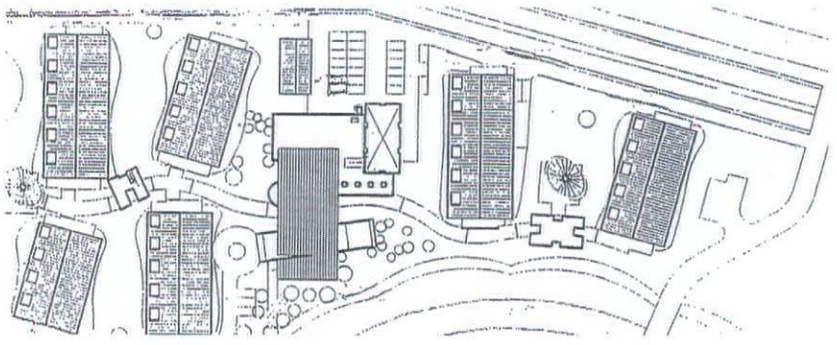
Institute of Environmental Science, Shiga, Japan
Architect
Tadasu Ohe/Plantec

external facades, and large but introverted outdoor spaces, Plantec's strategy has been to break down the institute into a series of linear blocks, linked by a meandering, elevated walkway.

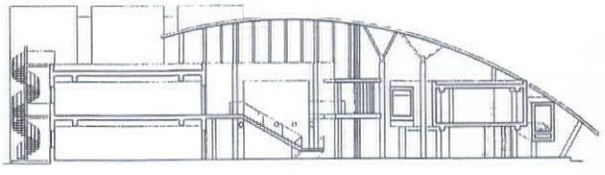
Many of the design's apparently irrational features can – for those who subscribe to such principles – be explained in terms of abstract references to local topography and biology. Curves in a circulation route may, indeed, be river-like – referring to the nearby waterways; irregularly raking columns may resemble indigenous bamboo forests. To some extent, however, these interpretations are a distraction, for the strengths of Plantec's work are, as in other projects (AR September 1996), founded in a thorough analysis of the programme in the context of Japanese culture and social conventions, and a skilful manipulation of form and space.

With an area of 14 440 sq m, this is one of Plantec's largest completed buildings, yet its scale is unassuming, and its organisational clarity is exemplary. Following the logic of its client institute's constitution, there is a single, central entrance foyer, recessed (in a manner slightly reminiscent of Le Corbusier's Swiss Pavilion) beneath the elevated spine and principal meeting room of the building complex. The director's (rather grandiose) office suite is expressed as an autonomous pavilion, slid away from the entrance foyer, but enveloped by a unifying, asymmetrically vaulted roof. This gesture recognises the administrative importance of the director, placing him at the interface of the private community and the public realm, yet attempts to distance managerial functions from academic activities, recognising the latter's creative autonomy.

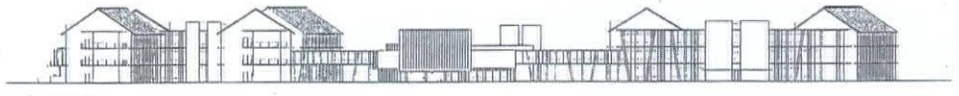
From the central entrance block, all teaching, administrative and social facilities are most easily reached at first floor level.



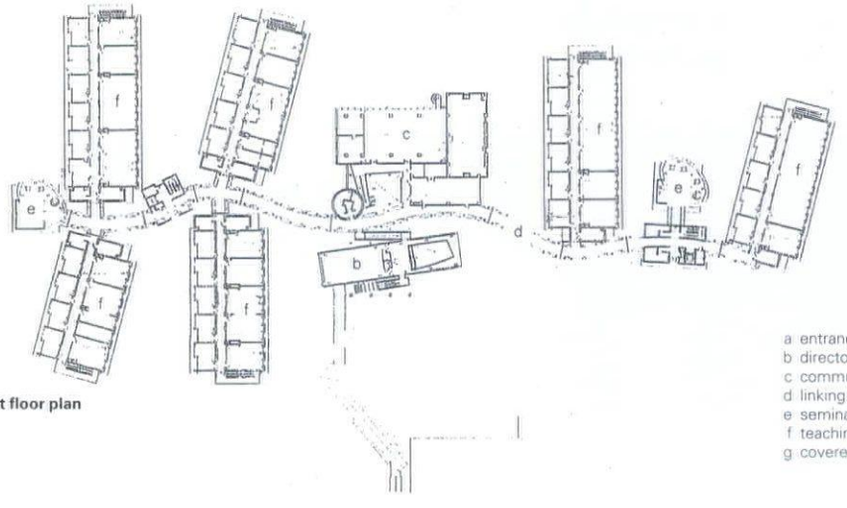
site plan



cross section through entrance pavilion

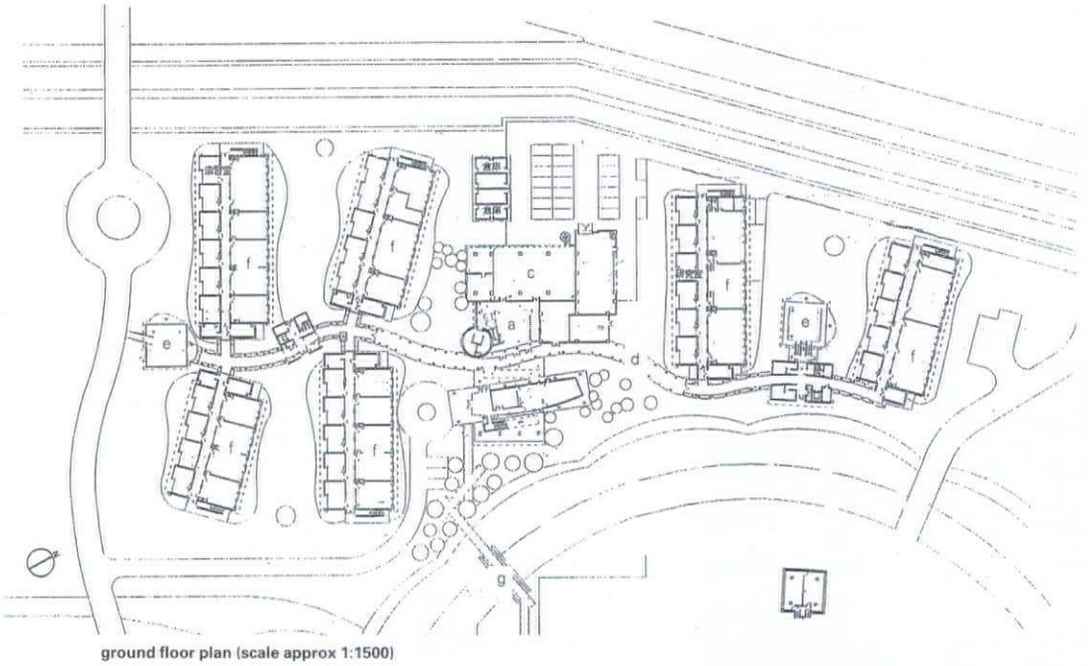


east elevation

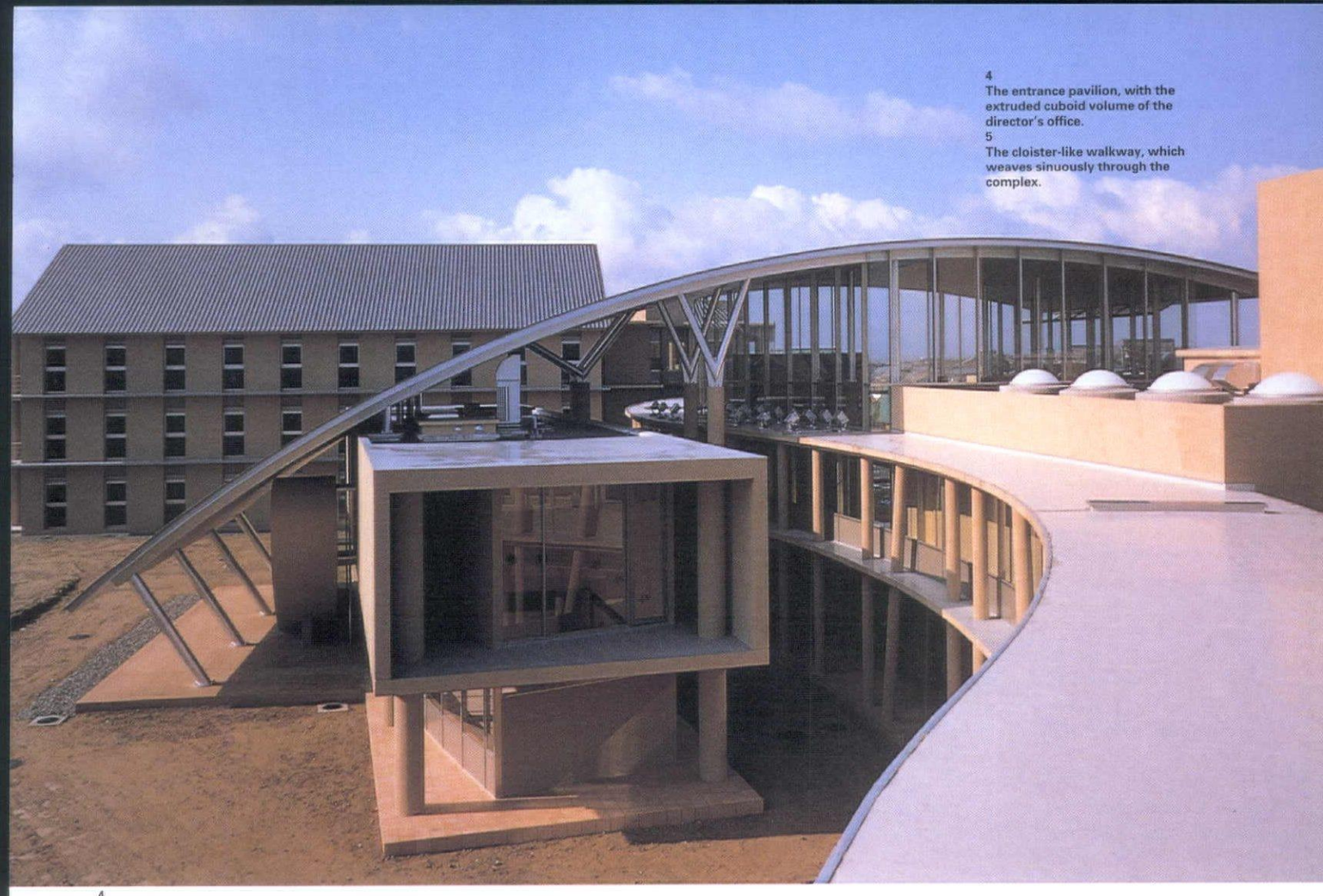


first floor plan

a entrance pavilion
b director's office
c communal facilities
d linking walkway
e seminar rooms
f teaching blocks
g covered bridge



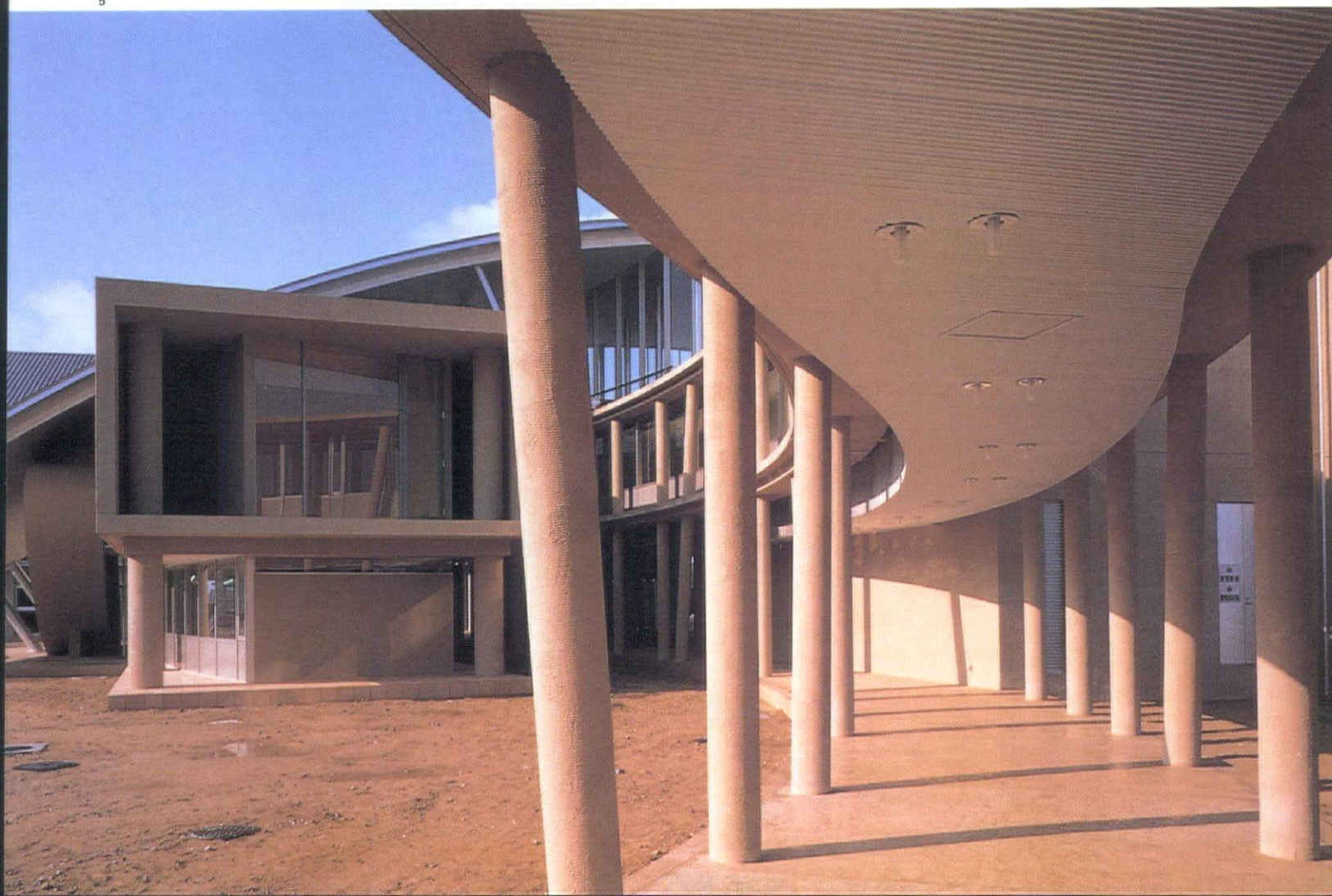
ground floor plan (scale approx 1:1500)



4
The entrance pavilion, with the extruded cuboid volume of the director's office.
5
The cloister-like walkway, which weaves sinuously through the complex.

4

5



Institute of Environmental Science, Shiga, Japan
Architect
Tadasu Ohe/Plantec

6
Interface of walkway and entrance pavilion.
7
Detail of the oversailing barrel vault that envelops the entrance pavilion.
8
Typical teaching blocks.

Walking along the meandering corridor, a clear pattern emerges, with a rhythm of transverse teaching wings punctuated by free-standing pavilions containing spaces for seminars and common rooms. The skews in orientation of each block are designed to open up the quite narrow courtyards towards the landscapes beyond the building. Even on a dull winter's day, despite the density of accommodation provided on the institute's restricted site, every part of the complex enjoys ample daylight and external views.

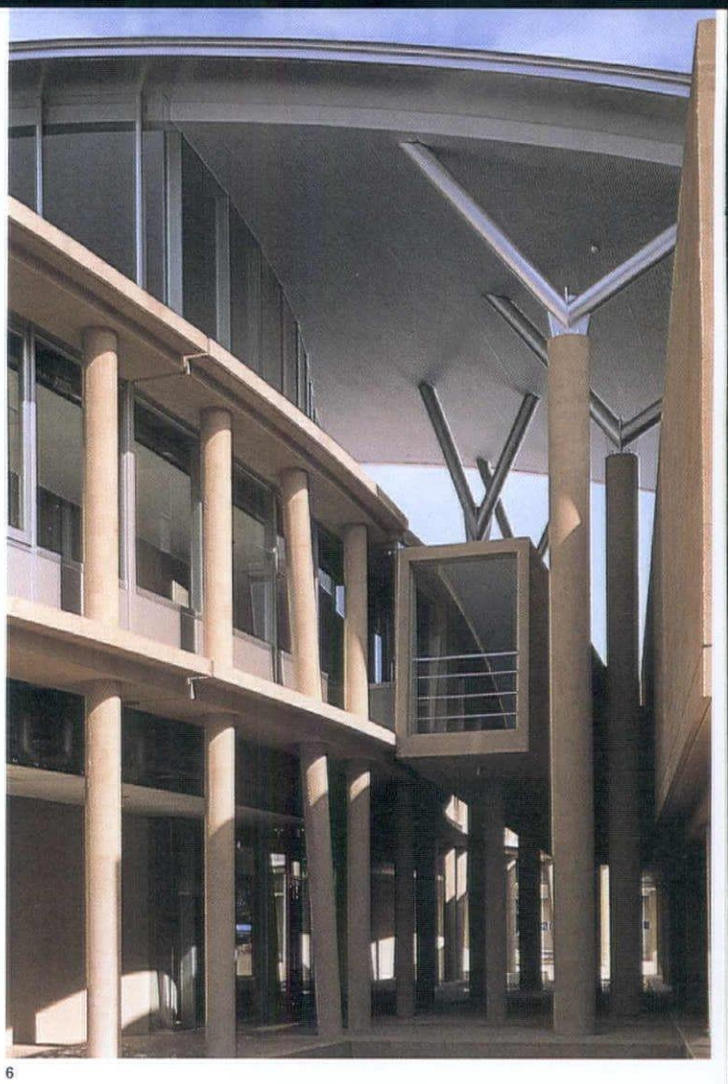
The construction of each teaching wing is necessarily pragmatic, with a concrete frame (inevitably substantial, to resist earthquakes) allowing flexibility in planning. The accommodation is distributed asymmetrically about the corridors, with large classrooms, laboratories and studios opposite narrower offices and tutorial rooms. Finishes inside the building are hard-wearing and utilitarian, with exposed precast concrete panels, cork linings to walls (allowing for pin-ups in studios) and corrugated, galvanised steel ceilings. The architects wisely assumed that students and staff would take possession of their spaces, and make them more comfortable for their own purposes. The limited budget was therefore channelled into a higher standard of finishes in selected areas, such as the seminar-cum-common rooms. In deliberate contrast to the robust and generally repetitive detailing of the complex, a few, carefully chosen elements stand out within these areas, such as the compact but beautiful, curved plywood service core in the first floor common room. Externally, materials are combined from the range prescribed in the campus masterplan – such as the locally manufactured ceramic roofing tiles with finishes familiar from previous projects. Self-coloured textured render is applied externally and in selected internal circulation areas, reinforcing the notion of the internal corridor as an inside-outside street.

In discussing his recent projects, Tadasu Ohe employs the term 'Protocols of Spaces', used to describe the kind of gradation of thresholds between public and private realms, and the (often casual and unpremeditated) reciprocity between form and habitation, which has long been a preoccupation of European architects such as Herman Hertzberger and Günter Behnisch. The informal use of space takes on a particular importance in the context of Japanese society. Ohe makes much of the apparent etymological similarities between the English words information and informal. 'By adding "in" to form', he notes 'a meaning of "not formal" is given. This suggests that information should primarily be conveyed in informal contexts.'

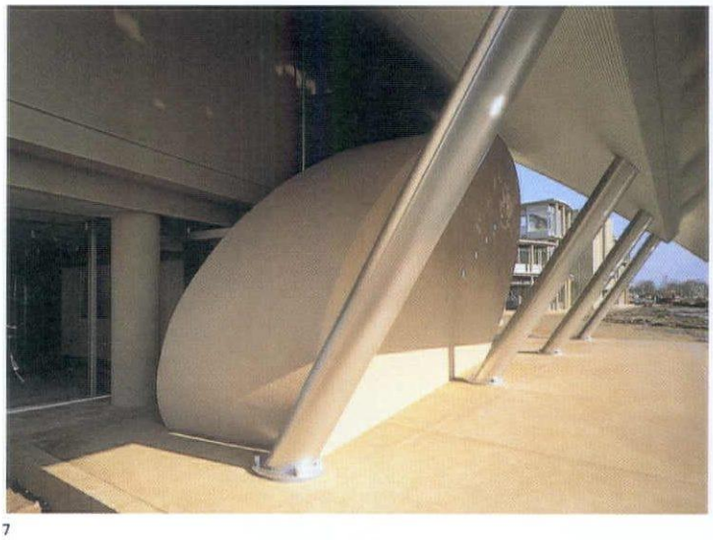
While one might question the importance Ohe attaches to such etymological exercises, his interest in making places for human interaction is informed by an understanding of the synergies between Japanese and Western traditions, strengthened by Plantec's recent global exposure through exhibitions and projects in the United States and Europe. Contrary to the commonly held view that much of new Japanese architecture is superficial and stylised, Plantec's work shows how eclecticism in principles of architectural organisation is more potent than eclecticism of architectural style.

PETER WISLOCKI

Architect
Tadasu Ohe/Plantec, Tokyo
Photographs
Koji Kobayashi/Spiral



6

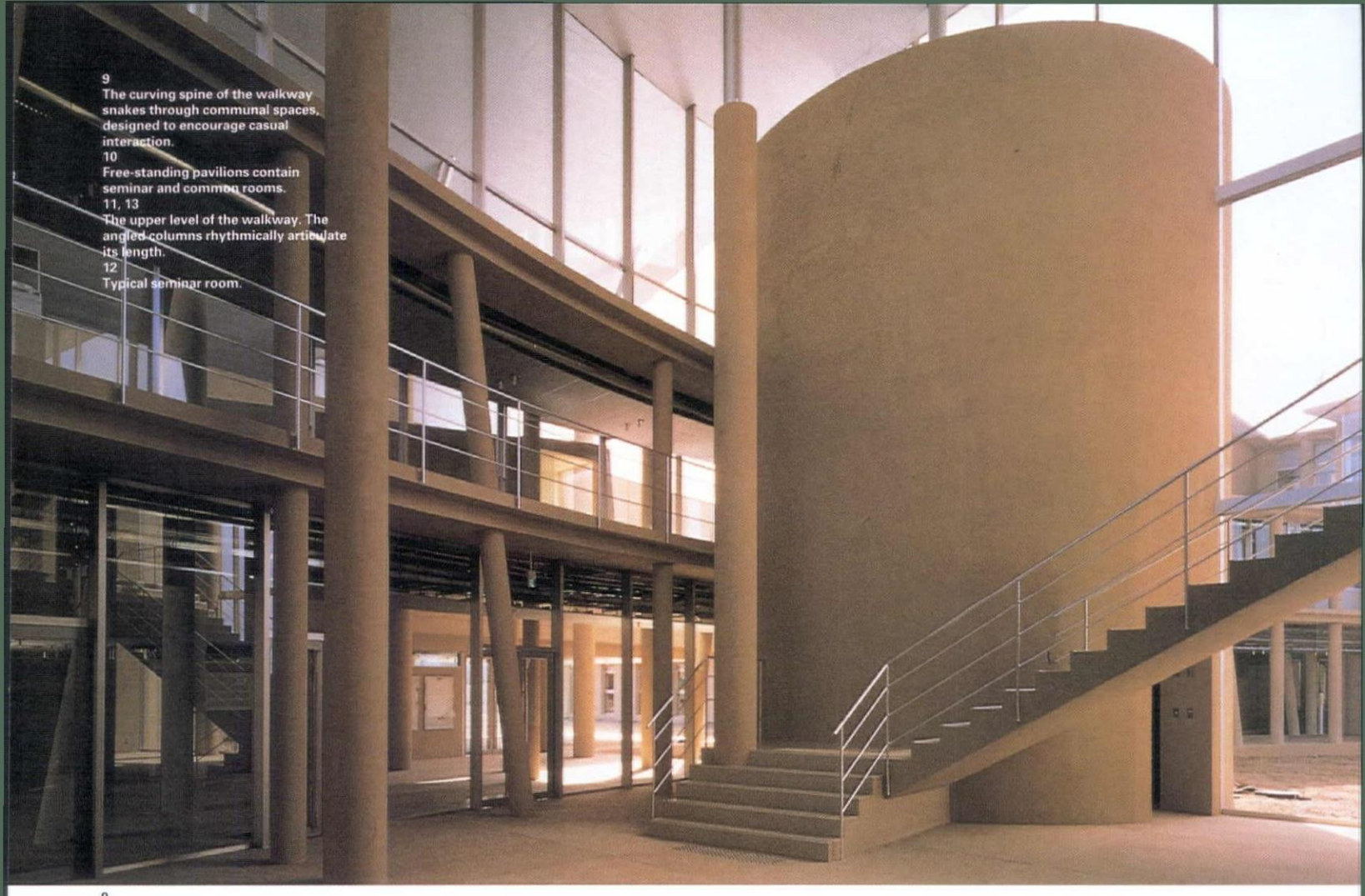


7

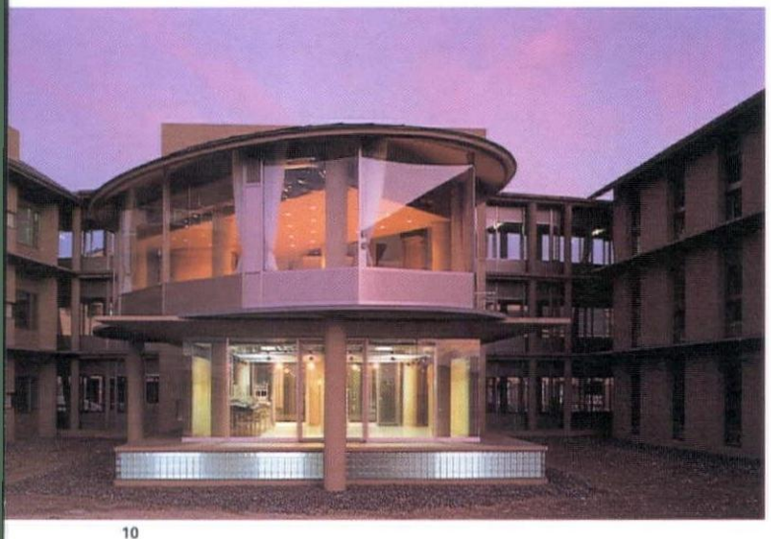
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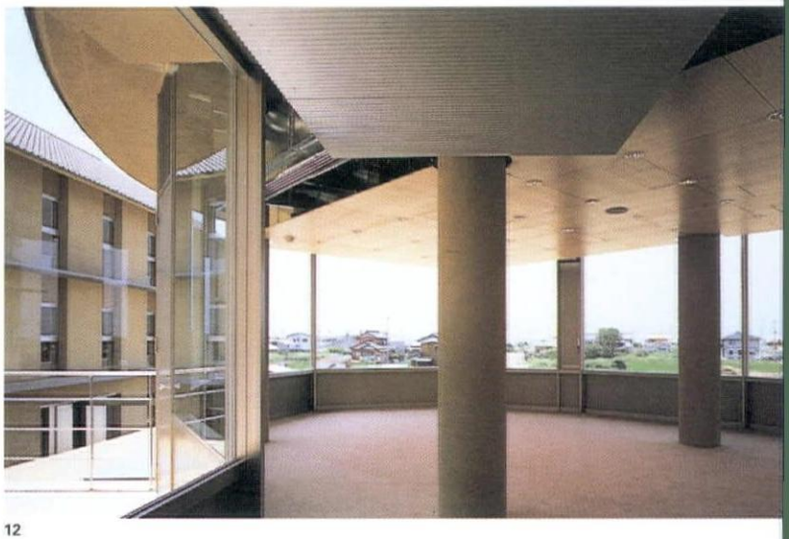
9
The curving spine of the walkway snakes through communal spaces, designed to encourage casual interaction.
10
Free-standing pavilions contain seminar and common rooms.
11, 13
The upper level of the walkway. The angled columns rhythmically articulate its length.
12
Typical seminar room.



9



10



12

11



13





1
2



MUNICIPAL ASSURANCE

Juan Navarro Baldeweg's refined local government complex in Mérida shows how a large building can be sensitively inserted into a historical city fabric.

Extremadura is the huge region of heathland and forest south-west of Madrid extending west to the border of Portugal and south to the Sierra Morena. The capital of Extremadura is Mérida on the Guadiana River. It was once the capital of the Roman province of Lusitania and contains more important remains than any other town in Spain. To the Roman bridge of 64 granite arches that spans the river has been added a bridge by Santiago Calatrava, the curves of which structure echo those of distant hills. The horizontal nature of the rolling landscape and the subtle setting of the town within it makes Mérida particularly vulnerable to insensitive development; for it must be immediately visible, destroying the delicate harmony between the natural and the man-made.

Juan Navarro Baldeweg's regional government offices are set on a sloping site on the river bank, extending out along the line of the old city wall. The site is a crucial piece of the fabric of the town. It links the Alcazaba – a Moorish citadel of Roman origin – and the Roman bridge in front of it, with an important crossroad leading to Calatrava's bridge in one direction and into the town in the other.

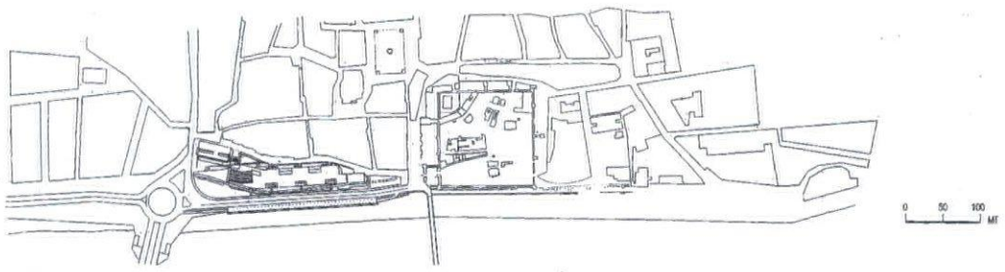
Since the building would form an integral part of the city skyline, particularly when seen from the opposite bank of the river, the architects had to grapple with a number of conflicting problems. The size of the scheme was large; for as well as containing the Governor's and Deputy Governor's offices, the building had to provide offices for the four departments that make up the regional government of Extremadura. At the same time, it had to respond to the sweeping countryside and slow breadth of the river while respecting the scale, mass and antiquity of the



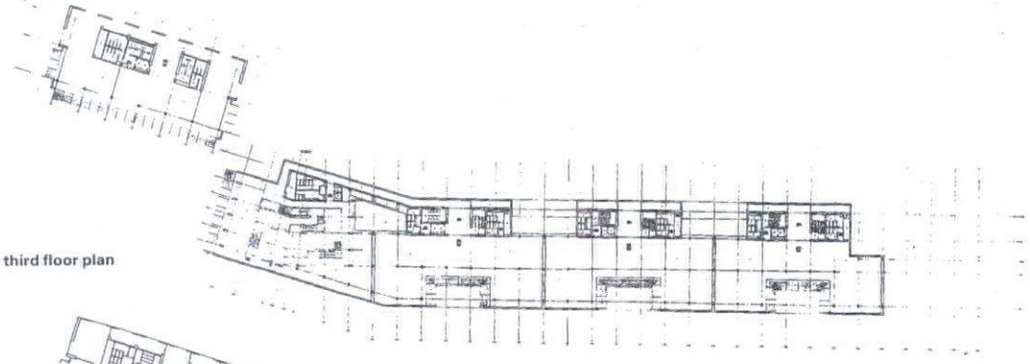
Government offices, Mérida, Spain
Architect
Juan Navarro Baldeweg

1
Despite its size, the new government building respects the antiquity of the city.
2
The bulk of the offices is dissolved by being stretched out horizontally over the site.
3
The building lightly straddles extensive archaeological remains.

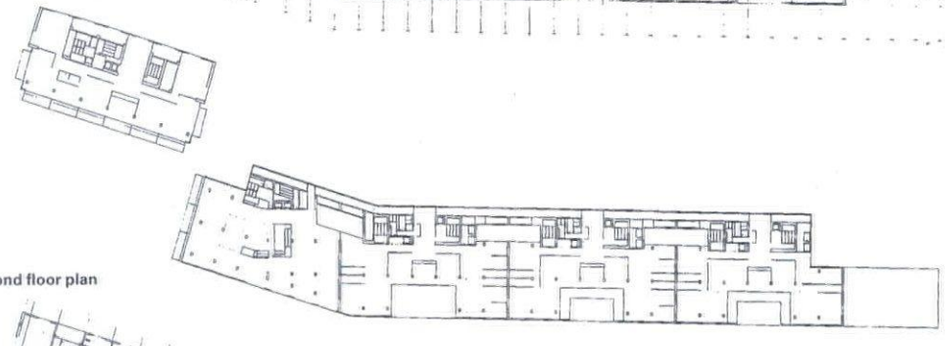
Government offices, Mérida, Spain
Architect
Juan Navarro Baldeweg



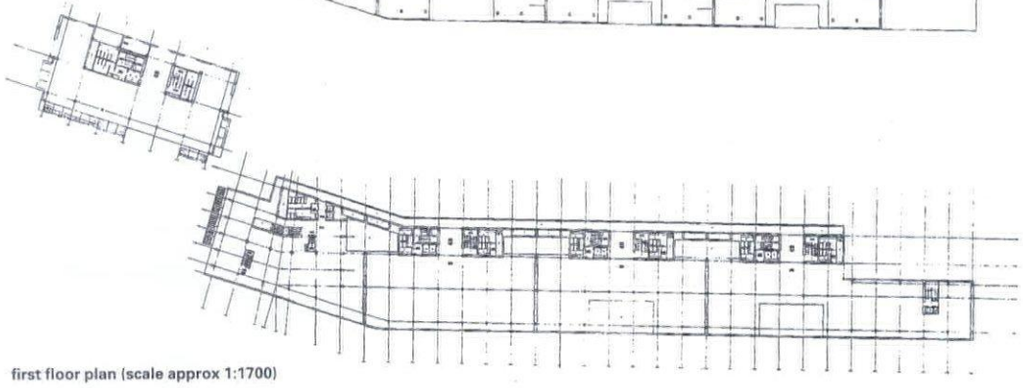
location plan



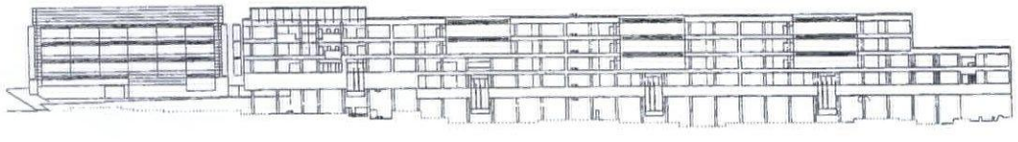
third floor plan



second floor plan



first floor plan (scale approx 1:1700)



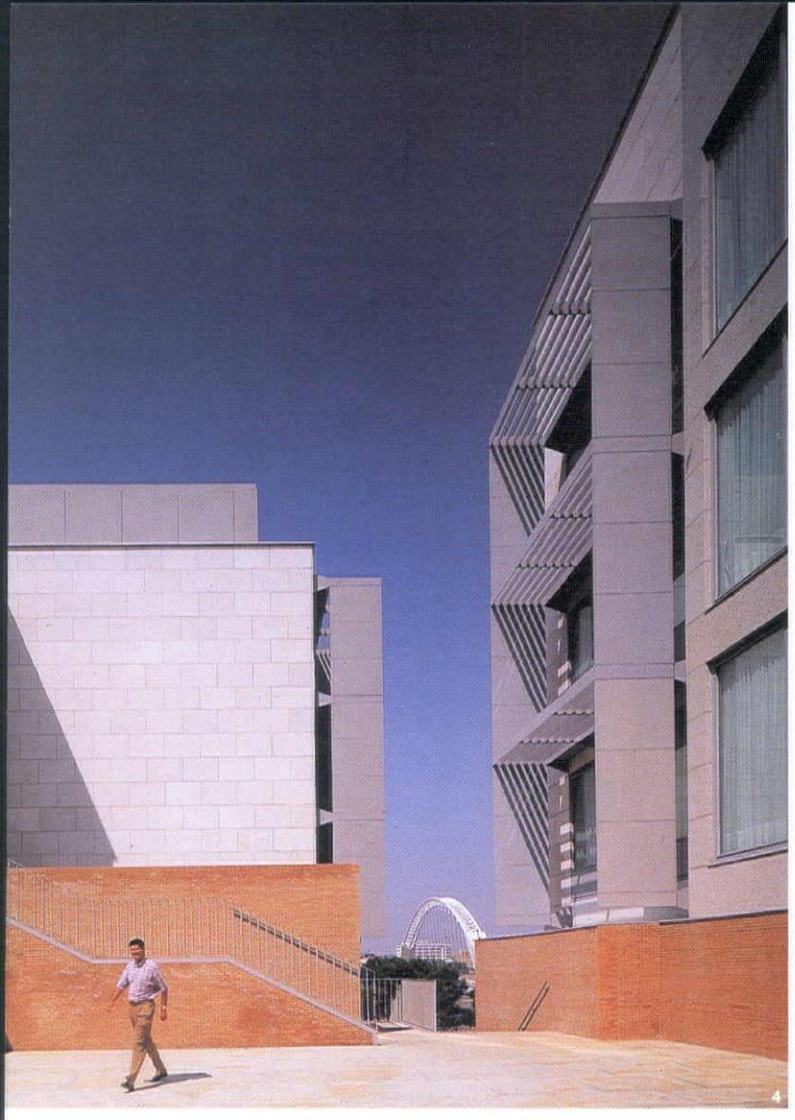
longitudinal section

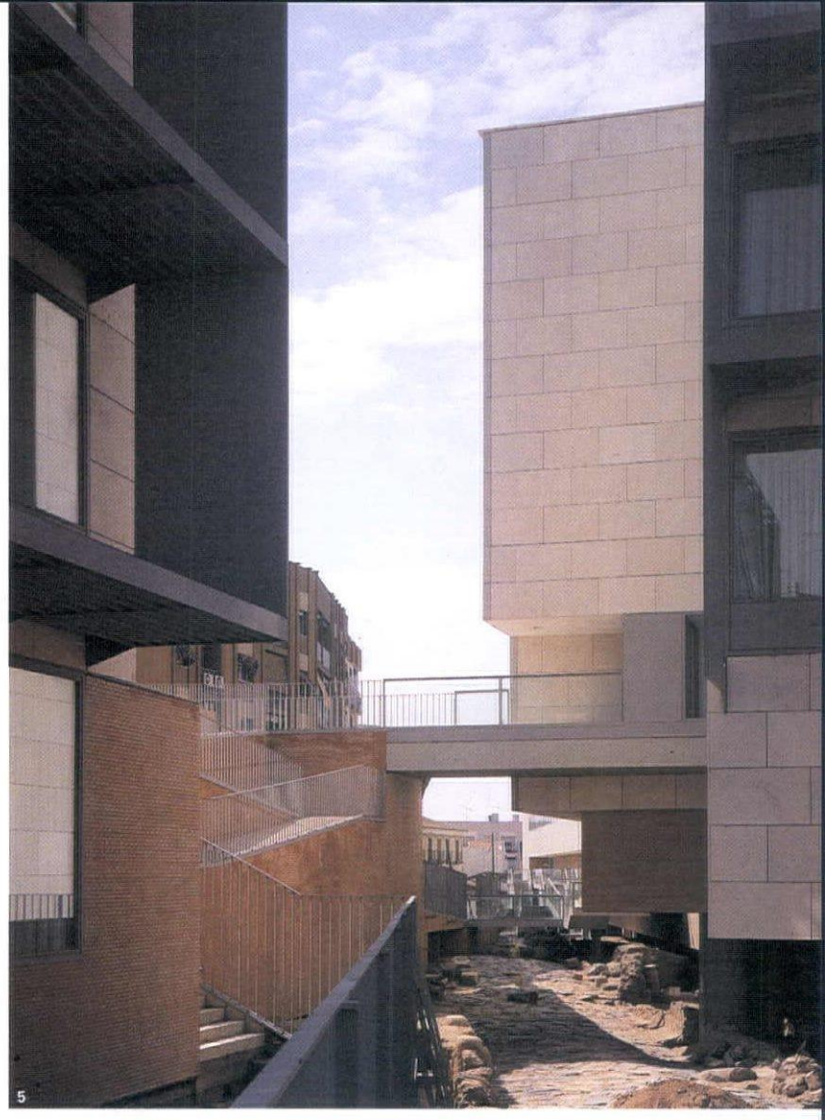
city. The building – really a complex of different departments – had also to straddle an extensive and precious archaeological site.

Navarro Baldeweg's contextual sensibilities have been frequently remarked (see ARs May 1986, January 1990, July 1990). He trained as a painter and has, it is said, a painter's regard when placing buildings. Certainly here in Mérida he has managed a difficult task cleverly, dissolving the bulk of the scheme by stretching it out horizontally, stepping it down and across the uneven site while maintaining a constant roofline, and cutting into the mass to reveal an apparently transparent core. Where the scheme approaches Calatrava's bridge and traffic, he has chopped the end off to form a separate building linked by a handsomely detailed courtyard and presenting a diaphanous public front. It is set back from the main line of the building so as not to overshadow entrance to the bridge and to leave room, visually speaking, for the swirl of a roundabout. With all of this, Navarro Baldeweg has created a restrained, dignified presence.

In contemplating the scheme from the other side of the river, some resonances become plain. The rhythms and scale of the ruined citadel are echoed in the facade of the new building; the indentations and constant roofline stir memory of a city wall and ancient fortifications. More prosaically, the recessed bays visually and physically depict the separate government departments, the transparent walls lining their interiors admitting daylight to the various offices. The orientation of the bays is west, and interiors are shielded from late sun by metal sunshades.

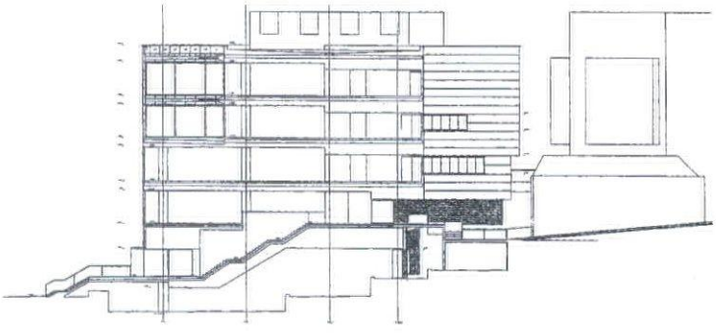
The way the structure meets the ground over Roman remains,





4
Crisply defined courtyard, with Calatrava's bridge over the Guadiana River in the background.
5
An intricate system of bridges and ramps traverses the excavated archaeological site.
6
The finely honed quality of the new buildings contrasts with the delicacy and fragility of the Roman fragments.





cross section

Government offices, Mérida, Spain
Architect
Juan Navarro Baldeweg









unearthed when construction began, has been treated with care. The building floats above the excavations, with the minimum of structural supports. Bridges span newly created 'archaeological heritage sites', platforms project over the works for the purposes of contemplation, and flights of steps finely detailed with glass balustrading lead up to entrances at first floor level. Lightwells at the rear of the building trace the path of a Roman road and shed light over the ruins.

Materials are handsome and intended to relate to those of the town massed up behind. The building is faced with grey granite and white stone. Those parts of the lower section in contact with the ruins are of rosy/ochre brickwork, reminiscent of the Roman.

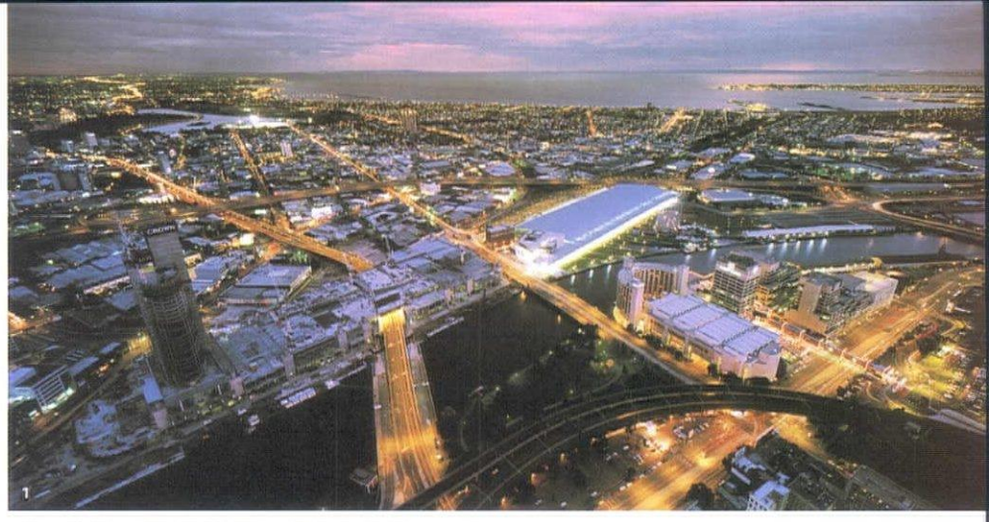
Navarro Baldeweg was not responsible for the design of the interior – unfortunately, as it has turned out. For this is a subtle and supple scheme that expresses the intellectual rigour of the architect. The forms and materials that make up the ensemble anchor it in time and space – it is inescapably a modern work of architecture that at the same time respects its context – yet floating as it literally does above evidences of more ancient civilisations, it has considerable metaphorical force.

PENNY MCGUIRE

7
The building sensitively integrates ancient and modern.
8
Detail of *brises-soleil*.
9, 10
The spare interiors.

Architect
Juan Navarro Baldeweg
Project team
Franz Bucher, Rolf Brülisauer, J. Joaquín Lizasoain Urcola, Verónica Scortecci, Pau Soler Serratosa, Lorenz Baumann, José María Gutierrez de Churtichaga, Enrique Pujana Bambó, Miguel Rodríguez González, Jorge Meijide Tomás, Christopher Guest, Andrea Lupberger, Alvaro Galmés Cerezo
Photographs
Duccio Malagamba

Exhibition centre, Melbourne, Australia
Architect
Denton Corker Marshall



ON THE WING

Through bold handling of scale, light and colour, Denton Corker Marshall invigorate the daunting volume of Australia's largest exhibition centre.



Historically, Melbourne's central city core has developed on the north bank of the Yarra river, east of the downstream port area. Over the years, changes in shipping practices and increasing containerisation have gradually shifted the focus of Melbourne's port activities further downstream, freeing up the southern side of the river adjacent to the city centre. Redevelopment of the south bank of the Yarra began during the mid 1980s, with the creation of new arts, entertainment, commercial and residential facilities along the spine of a riverside promenade.

The most recent addition to this complex is the Melbourne Exhibition Centre, designed by

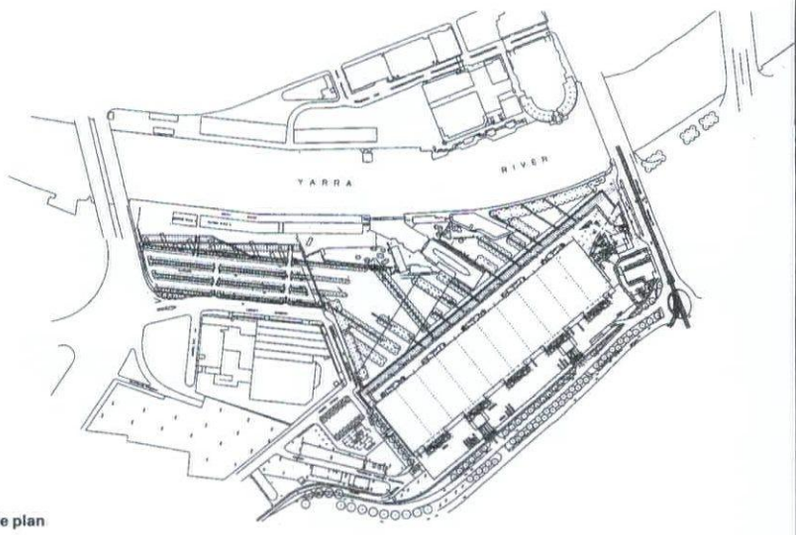
1
The exhibition centre in its throbbing Melbourne context. The upper banks of the Yarra have been extensively redeveloped as industry has progressively moved downstream.
2
The building extends the riverside promenade.
3
The fractured volume of the gatehouse contrasts with the sleek aerofoil profile of the main roof.



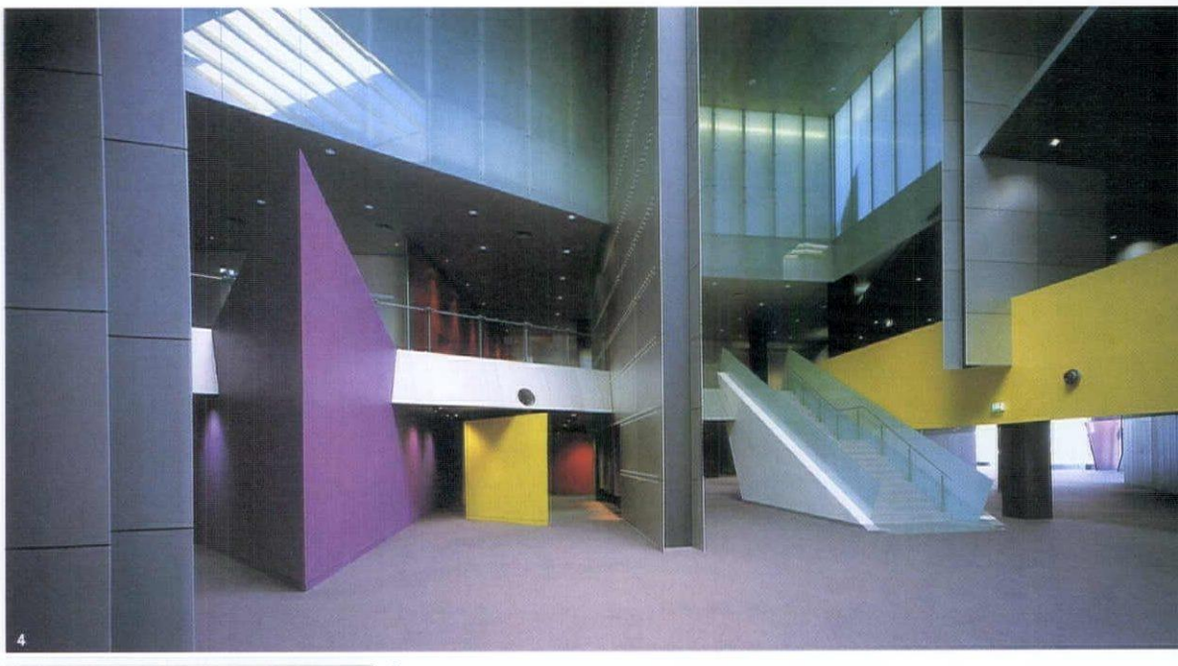
Denton Corker Marshall. Weighing in at 30 000 sqm, it is Australia's largest indoor exhibition facility. The building is simply planned as an extruded linear shed, echoing the bald functionalism of the original port warehouses. Yet the sleek, aerofoil profile of its roof clearly identifies it as a modern intervention. The 380m long rectangular volume is set at a slight angle to the river, creating an intermediate park-like space, which is partly occupied by the converted cargo sheds and dry docks of Melbourne's Maritime Museum. At the exhibition centre's north-east end (where it meets Clarendon Street), the monolithic volume is fractured into a jazzy, attention-seeking collage of angled planes, colliding in an exuberant gesture of welcome.

A colossal metal fin, 10 storeys high, dominates this ironic, southern hemisphere homage to Constructivism. (As one Australian commentator put it 'Melnikov would blush'.) This splintered agglomeration forms the gatehouse to the complex, housing reception, meeting rooms, an auditorium and various public amenities. Behind its fashionable freneticism, the whale-like bulk of exhibition hall calmly undulates into the middle distance.

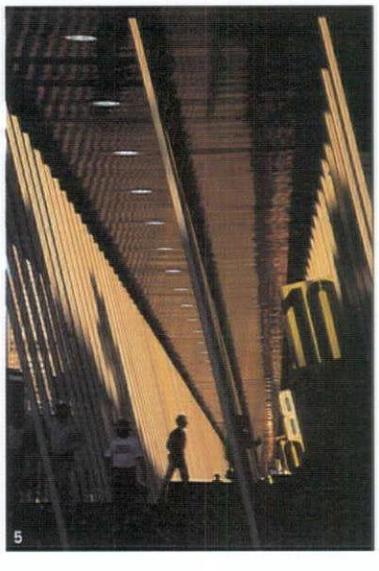
The huge volume of the exhibition hall can be subdivided into configurations of various sizes by four sliding walls, thus generating immense flexibility. Ancillary spaces are housed in a series of self-contained pods located on the perimeter of the exhibition spaces. The 84m wide hall is enveloped by a gently swooping, convex roof, like a giant aircraft wing. A smaller concave roof covers the double-height concourse that runs along the riverside edge of the building, providing both access and breakout spaces to the exhibition halls. The generously proportioned concourse is animated by cartoon-like, superscale elements and colourful graphic devices, designed to orientate visitors. A sloping glass wall gives views over the park and river beyond. The curved roof overhangs to create a verandah, supported on a multitude of slim steel posts, like reeds along a riverbank. Reflecting a theme common in traditional Australian architecture, the verandah reinterprets the notion of public ante-space. Its forest of delicate columns diffuses the light and softens the public edge of the building, transforming it into a shady and welcoming promenade. Through a bold yet assured handling of scale, light and colour, Denton Corker Marshall have succeeded in enlivening a dauntingly large building volume in an invigorating and accessible way. C. S.



site plan

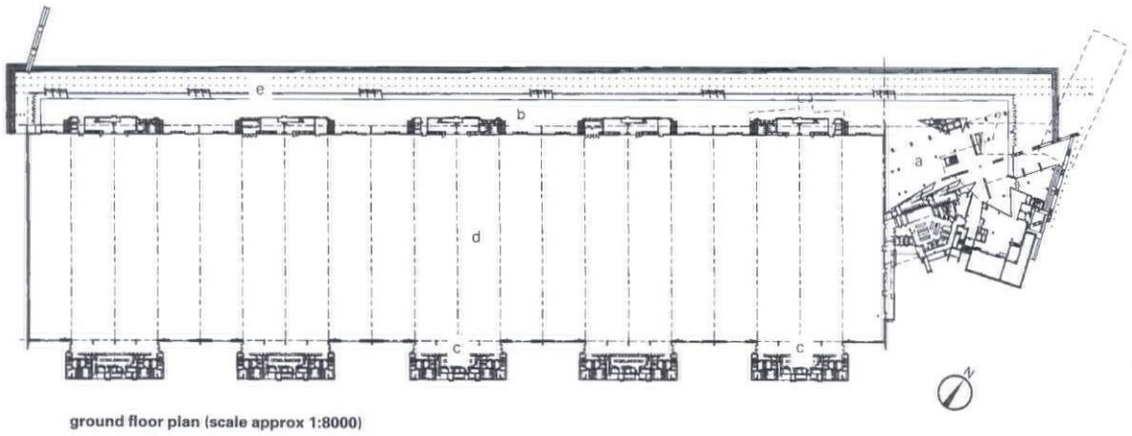


4



5

4
The angular freneticism of the gatehouse.
5
The generous verandah, supported on an apparently interminable series of slim posts, like reeds along a riverbank.
6
The concourse is animated by bold, cartoon-like graphics.
7
The vast exhibition space, which can be subdivided into various configurations by means of four sliding walls.



ground floor plan (scale approx 1:8000)



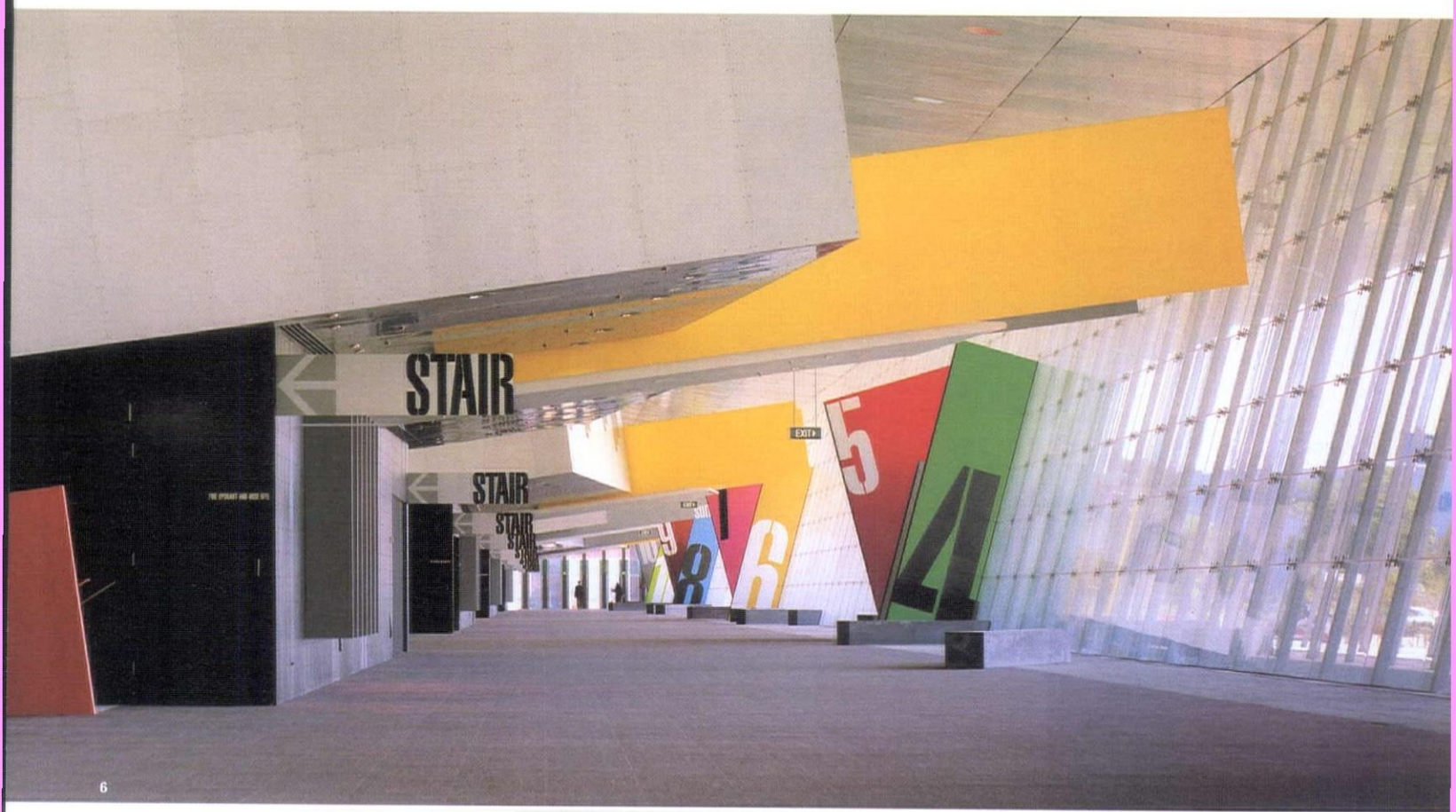
cross section

Exhibition centre, Melbourne, Australia

Architect
Denton Corker Marshall

a gatehouse
b concourse
c service pods
d exhibition space
e verandah

Architect
Denton Corker Marshall
Structural engineer
Ove Arup & Partners
Mechanical and electrical engineer
Connell Wagner
Quantity surveyor
WT Partnership
Photographs
John Gollings





BIG IN MELBOURNE

Tower, Melbourne, Australia
Architect
Denton Corker Marshall

1
Montage of the proposed Melbourne Tower in its urban context, a soaring pinnacle that unites city and suburbs.

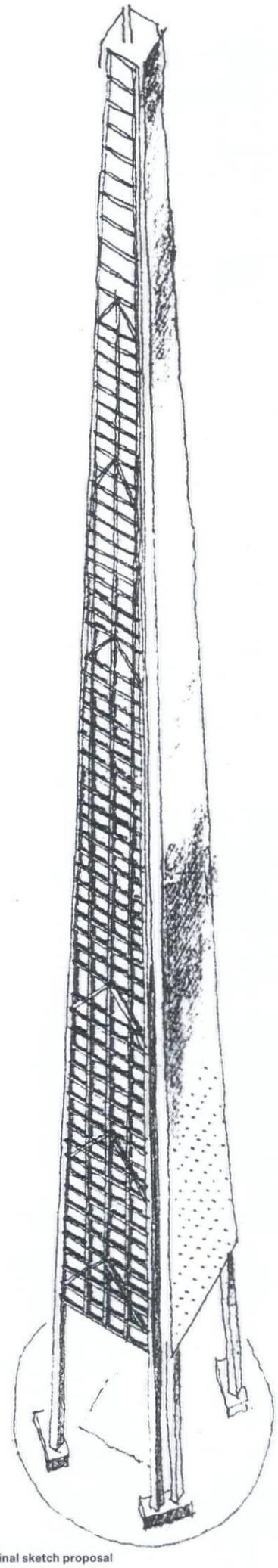
This proposal for a giant tower in Melbourne combines a variety of uses in an elegantly tapering structure that unites the city and its surroundings.

In Melbourne there was a surge of high building in the 1980s, when 'big' meant up to 60 storeys or thereabouts. The inhabitants of Melbourne first abhorred the concept, then grew to like the way the most elegant, the Rialto, glimmered and flickered in the fickle Melbourne weather. By then Collins Street was changed forever anyway. The towers clustered around the Central Business District were visible a long way off, over the undulating landscape that provides a carpet for Melbourne's suburbs. A relationship then occurred between centre and suburban realm that has the simple diagrammatic meaning of the city crown.

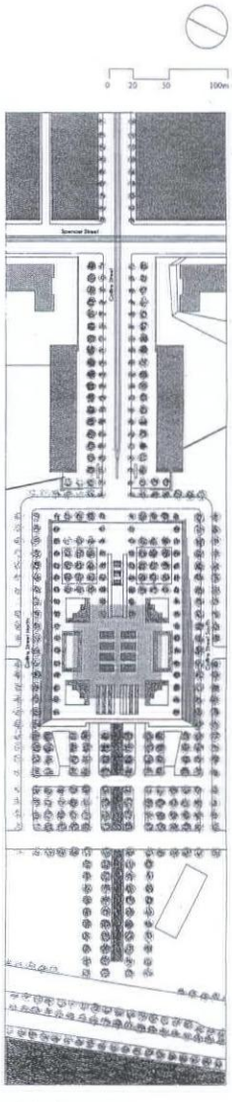
Now the part-developers of the Rialto, Grollo, have appointped Denton Corker Marshall to design a single, Big Building, bringing the whole ensemble to a dramatic climax with a planned 137-storey tower, in the millennial mode of today. This however has to be the ultimate tower, and terminates Collins Street with a massive extension to the harbour edge. The Melbourne Tower will be the ultimate monument in a city of monuments.

DCM's Melbourne Tower, as proposed, is a silver-blue, light-reflective obelisk tapering elegantly to its summit from its formally landscaped shoreside base. Here it is rooted in the antithesis of a podium: a 35m high open parkscape, where ordered ranks of trees, as with Melbourne's renowned boulevards, emphasise the simple grandeur of the eight massive columns (four pairs) which thrust down through an eight-level cylindrical car park to the bedrock below.

In planning terms, the building is essentially three superimposed towers, each of which is separated by triple level sky lobbies, served direct by shuttle lifts. Tower One (Offices) has three banks of double-deck lifts from the ground lobby: express lifts go to Sky Lobby One, at the base of Tower Two. Here, access is given on to three banks of six lifts. Tower Three (Hotel) is served by four shuttle lifts. The Hotel and related apartments are themselves reachable by four

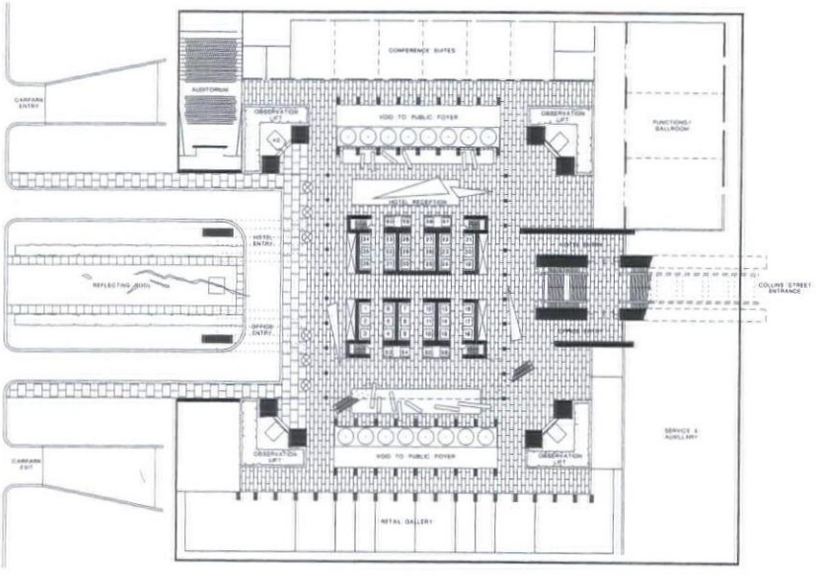


original sketch proposal



site plan





plan of ground floor lobby (scale approx 1:1850)

shuttle lifts, rising from their separate lobby at ground level, plus two shuttle lifts for the apartments. The Hotel itself has a complete and fully equipped conference and business centre, plus 17 levels of accommodation providing up to 350 hotel rooms. Above Tower Three are two multi-level sky lobbies with public observation areas (a Melbourne innovation since the 1980s), and shopping and restaurant/ recreational facilities. The climax of the building is the soaring Light Pinnacle. This glazed structure, 111m tall, is stacked with telecommunications and satellite equipment. The very summit is tipped with an open panorama deck, accessed by internal lifts from Sky Lobby Three. Like a contemporary Eiffel Tower, this could be one of the great experiences of the twenty-first century.

An appealing characteristic of the Melbourne Tower is the absolute clarity of its elegantly tapering structure. As John Denton's diagrams show, the core, rising from an independent pad at bedrock level, is strengthened by transfer slabs at intermediate points above. The four pairs of corner columns rest on independent pads at bedrock level. A glass skin is layered over the face of the perimeter structure so created, extending two metres beyond on all four faces. The perimeter frame of the tower is simply structured with four ladders transferring diagonal loads through to the corner columns at the plantroom levels.

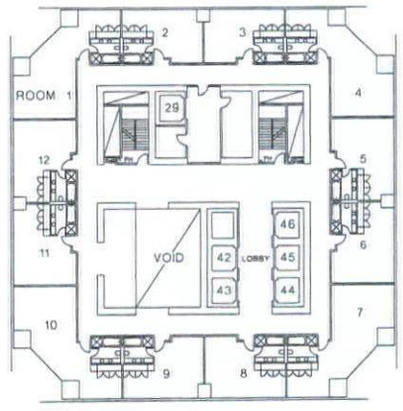
The structural clarity will be evident from long distances, as expressed by the paired columns and the diagonal bracing trusses at plantroom levels. The corner condition is further enhanced at the climacteric level above Tower Three by the public observation lifts externally tracked on each corner of the building, between the paired columns as they reach the summit Pinnacle. This Pinnacle acts as a great beacon glowing by day and night, far out to sea, to Tullamarine Airport, or the outlying communities in the Dandenong hills, at Geelong, or Mornington and the Heads at the entrance to Port Phillip Bay.

After the clambering excesses

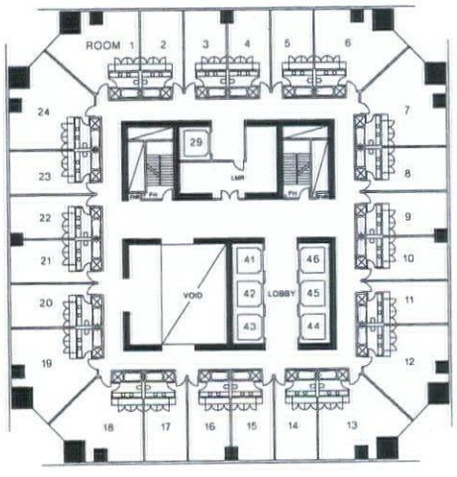
of the 1980s, it might be claimed that Melbourne could not readily accommodate further high buildings. The presence of a 680m tall tower on the Collins Street extension must be the exception. When in the 1850s, St Patrick's Cathedral close to the opposite end of Collins Street was redesigned by William Wardell, the church authorities had decided that the building which it was to replace may have been sufficient for a provincial town, but was 'entirely inadequate as a cathedral for the most thriving city of Australia'. So Wardell gave them the greatest ecclesiastical building in the Southern Hemisphere. The citizens of Melbourne, and of Victoria, have long recognised the threat to their civilised pre-eminence from Sydney. In a recent survey of opinion about the Melbourne Tower, over 85 per cent of the sampled population supported its construction, which has political and civic support. So now a rather provincial cluster of '80s towers awaits redemption by the millennium.

DCM's tower provides the ultimate elegant 'bigness' for a global presence that Melbourne seeks to symbolise in the top league of competing world cities. Contrary to current trend rhetoric which claims that 'bigness' creates wholly new criteria in urban design, so devaluing even cancelling, established precepts of visual correlation between buildings, DCM's tower abides by the existing Melbourne city grain, respects tradition, grasps triumphantly at the elusive symbolism bonding city centre and surrounding landscape and seascape and fulfils aspirations in a handsome, elegiac manner. Melbourne will have its Pharos: but as John Denton readily admits, there is only room for one such monument here. The proposals await final ratification this year. MICHAEL SPENS

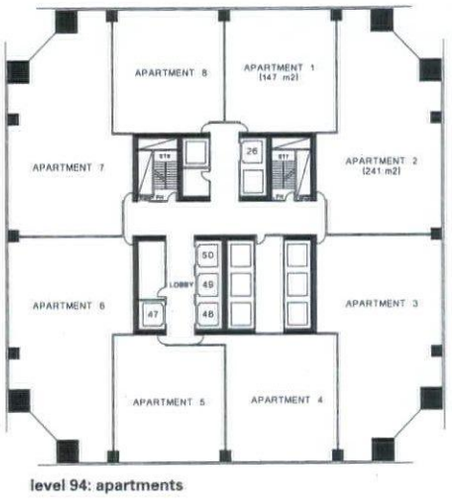
Architect
Denton Corker Marshall, Melbourne
Structural engineer
Bonacci Winward
Building services and vertical transportation
Norman Disney and Young
Quantity surveyors
Rider Hunt
Builder and developer
Grollo
Photographs
John Gollings



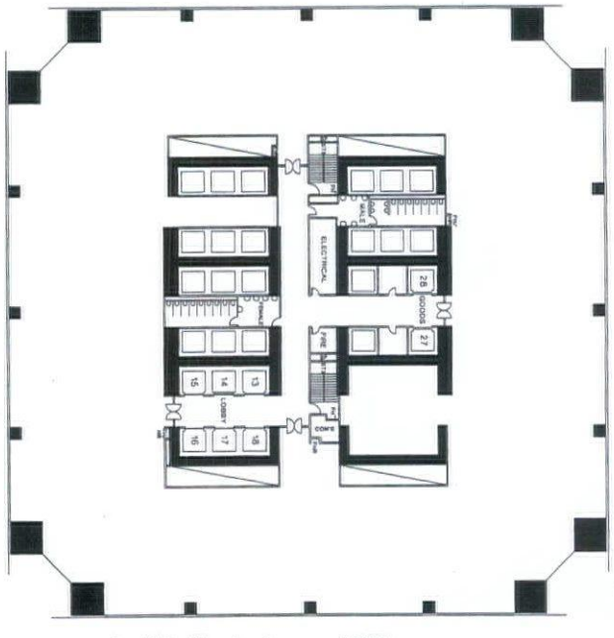
level 129: hotel



level 113: hotel

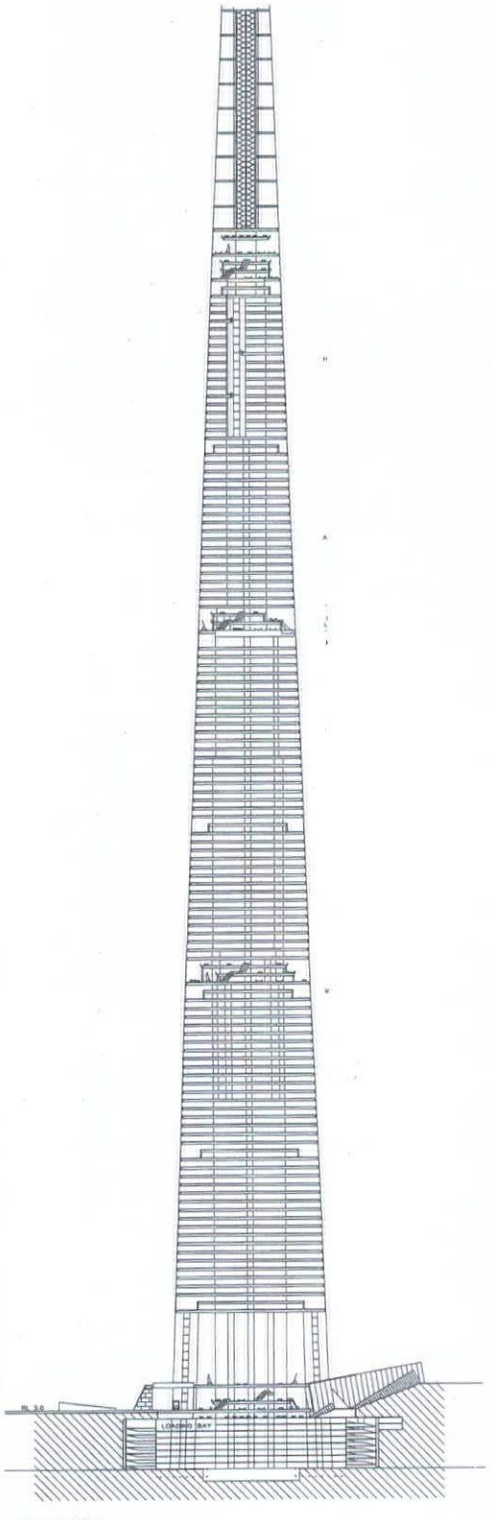


level 94: apartments



level 53: offices (scale approx 1:1000)

Tower, Melbourne, Australia
Architect
Denton Corker Marshall


cross section

Bus station, Gothenburg, Sweden
Architect
Niels Torp Arkitekter

BUS STOP

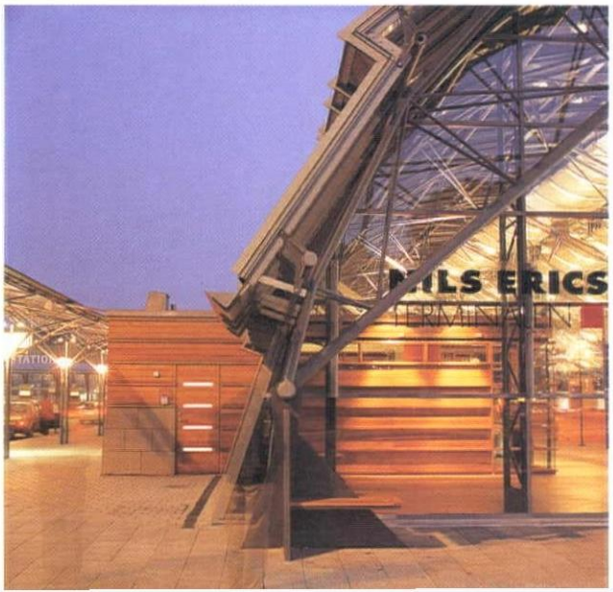
A successful attempt to moderate and humanise the scale of a very large structure for a normally inhospitable and unpleasant building type.



1

1
The north end, where the roof structure and cladding project over the glass wall to signal shelter and welcome.
2
North-east corner: note comparatively understated pin and bracket truss bearing.

2



Niels Torp's design that won the competition for the Nils Ericson Terminal at Gothenburg had a bold and simple *parti*. A long glazed gallery stretched due north from Edelsvärd's elegant nineteenth-century Gothic railway station; it ran between the car park to the east and the bus manoeuvring area in Nils Ericsonsplats. The axis of the gallery was continued in a new railway terminal, then across Edelsvärd's station concourse to the tram stop in Drottningtorget (Queen's Market Square): all terrestial forms of transport were united in one bold move. The section of the new terminal building (which was to contain offices as well as booking hall, restaurant and so on) was carefully organised to avoid being seen over the old train shed from Drottningtorget. Nils Ericsonsplats was to be simply landscaped as an extension of Gothenburg's complex of green urban spaces.

In fact, only the bus-station gallery has been built so far. And, as Torp says, 'For some unknown reason, the intention to refurbish Nils Ericson square as a well-defined urban space and a prominent forecourt to the terminal ... proved hard to achieve. The design process was taken over by other architects, and the original concept was lost in the interplay between several actors'. Yet another case of an architect from one Scandinavian country (Torp is Norwegian) finding difficulty in executing his competition-winning design in another? Equal difficulties faced the creation of the terminal block, intended to link the gallery to the railway station. So the gallery, vestigially connected to the station, exists as phase one of an uncompleted and partly botched grand design.

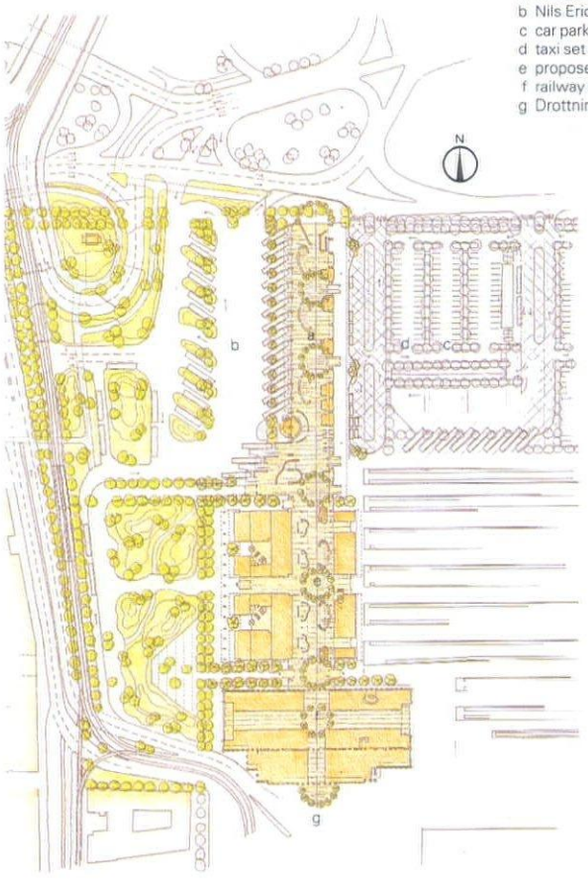
But what *has* been made amply justifies the jury's decision to give Torp the first prize. The building has great clarity, and makes an important contribution to the city's urban spatial network. Several people have suggested a relationship to Grimshaw and Hunt's Waterloo Channel Tunnel Terminus (AR May 1993), and they are right in some respects, for the basic structures of the two are very

similar: eccentric three-pinned arches formed of two bow-string trusses. But the Gothenburg structure is very much more simple because it does not have to taper and curve in two planes, nor flex to cater for the dynamic loads of extremely heavy trains. And it avoids Waterloo's only obvious problem – having the large truss within the envelope with most of the small one exposed, a solution which (for all the breathtaking refinement of the general idea and detailing) has a certain clumsiness.

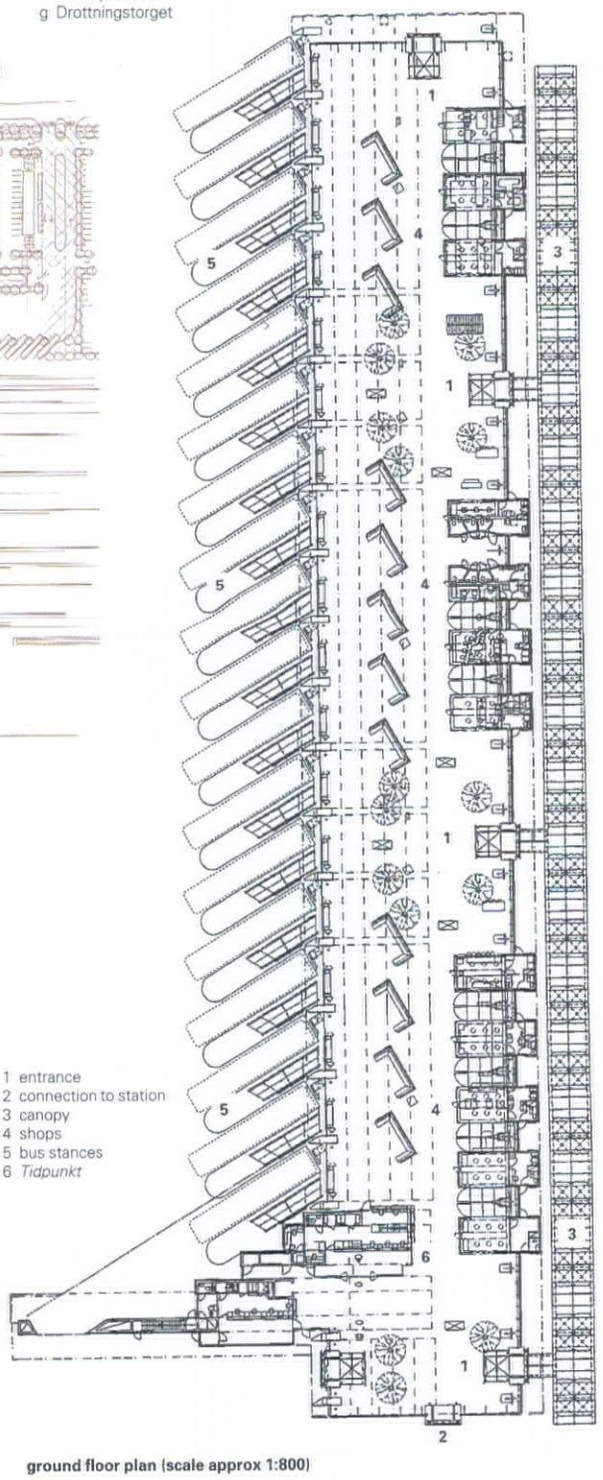
Unlike the great train shed, Gothenburg's bus station has to be sealed against the elements – at Waterloo all the ticket purchase, waiting and shopping is below platform level in an efficient but not very inspiring layer, squashed between the tracks and the top of the viaduct; the only times when travellers are actually in the glazed volume on the platforms is when they bustle between trains and subterranean purlieus. At Gothenburg, all activities take place on the same level, and travellers wait in the glazed space, so it must provide equable internal conditions in Gothenburg's climate (gentle for Sweden, but wet, windy and harsh compared to most of the rest of Europe).

The roof is handled in two different ways. Over the shorter eastern trusses on the entrance side, the glazing roughly follows the curve of the compression boom (which is on the upper side here); an ingenious bracket detail links the frames of the stepped cascading glass to the structure. The longer, western trusses, with straight tension booms on their upper sides, carry strips of flat roof separated by clerestories. Below the roof strips are curved panels of perforated metal which deflect downwards some daylight, act as diffusers for artificial illumination and give a detailed sense of scale.

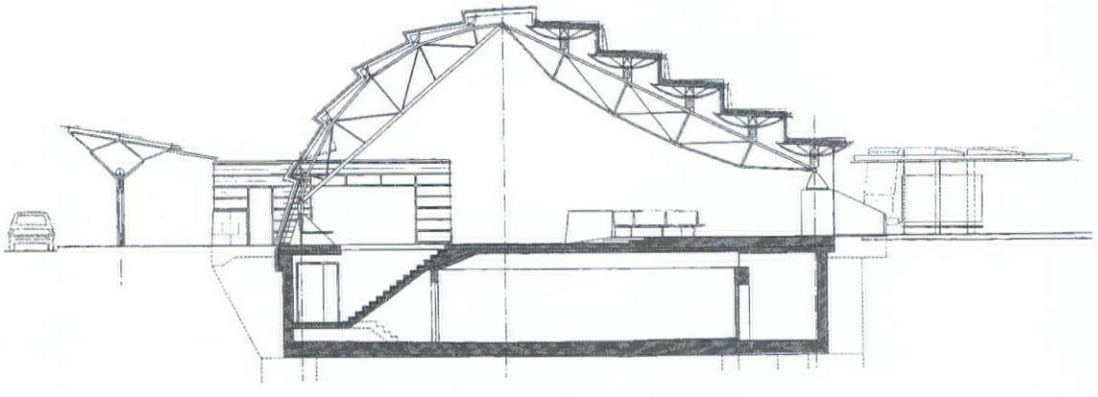
One of the architects' central concerns has been to give the great length of the building (in a way it could be endless) a sense human scale and place (or rather linked places). The basic rhythm of the building is of course given by the 6.6m bay structure, with



site plan



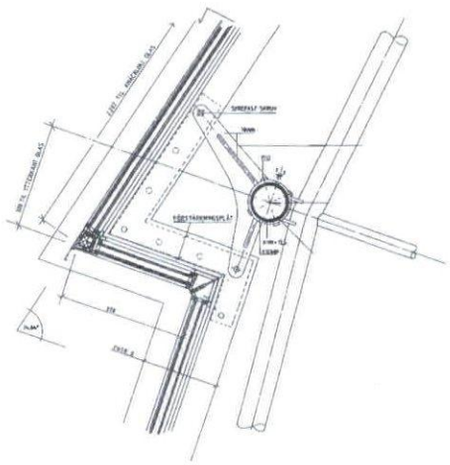
ground floor plan (scale approx 1:800)



east-west section

Bus station, Gothenburg, Sweden
Architect
Niels Torp Arkitekter

3



junction of glazing and structure, east side

3
Scale of the long space is broken down by the concrete plinths supporting west truss bearings which set the rhythm for bus gates. Other devices carefully grade scale to semi-intimate level of seating.
4
Entrance in east wall: note use of rough granite in entrance portal to give building human (as opposed to mechanical) feel in part that most people come close to.



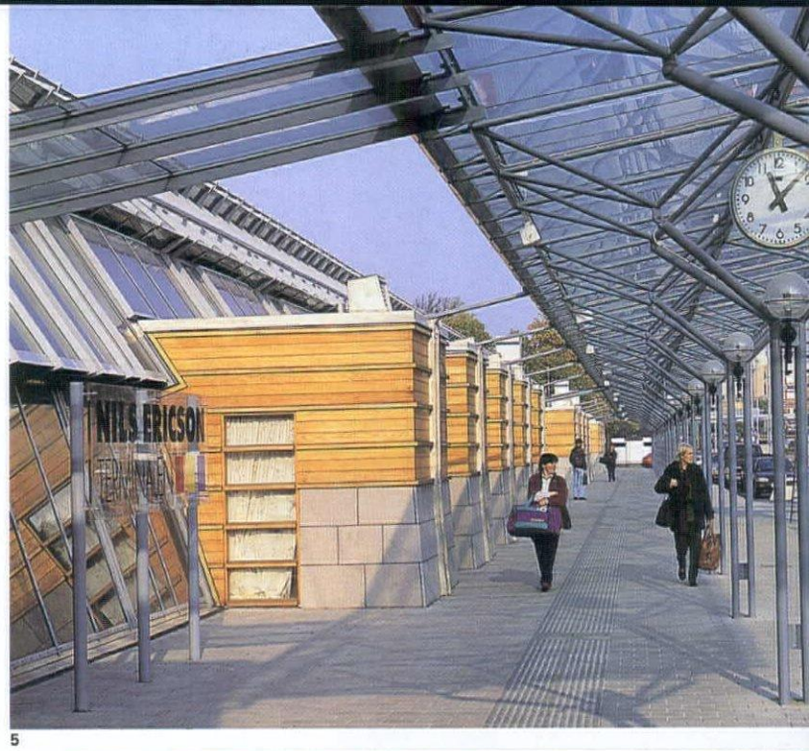
4

the western trusses bearing onto massive in-situ concrete plinths that are projected outside to give a horizontal rhythm that orders the bus stances, and internally clearly demarcates the boarding gates. The eastern trusses bear on much less obtrusive supports. On this side, the length is broken up by inserting small shop units in the middle of the structural bays. The shops are grouped in banks, and between these are the three eastern entrances.

You come in on this side from the car park and taxi set-down area. The aim is to make the process of transition into the big glass shed as agreeable and undaunting as possible. A long, almost free-standing canopy of glass and steel shelters visitors from the elements; the mass of the building is broken down by projecting the shop units out through the machine-made aluminium and glass skin. Each projection has a slightly battered grey granite base topped with solid warm wood, divided almost into courses by raised horizontal strips. There are obvious abstracted echoes of rusticated masonry pylons (without any vulgar flavour of PoMo); the handling and strong modelling of materials introduces a human measure into the big structure, as the Ancients did with their great buildings. The entrances are trabeated granite portals, made of huge almost primitive slabs with their long sides (the ones you go past and touch) left rough. These lead to the frameless glass boxes of the wind-porches that give you a first taste of the big volume.

The exit gates to the buses are similarly made in traditional materials; here heavy and welcoming wood, similar in detailing to the structure of the shops opposite. The luminous gallery space is informally divided by permanent light wood seating and large indoor trees, set in a rhythm that counterpoints that of the structure. The chain of places is without distinct focus, but at the southern end, the arcade widens at the *Tidpunkt* (time point), a volume enclosed in sheer glass, where tickets are sold and information can be obtained. The punkt seems absurdly small for a building that caters for 20 000 people a day, but of course, most of them use bus passes, and the area is supposed to be only the connection to the (as yet) unbuilt terminal link. When (if?) it is completed, Gothenburg's bus station will rival in elegance and understanding of travelling humanity the one built in Stockholm some years ago by Ralph Erskine and others, which demonstrated how this usually dismal twentieth-century building type can be made into a decent and enjoyable part of the city (AR December 1989).

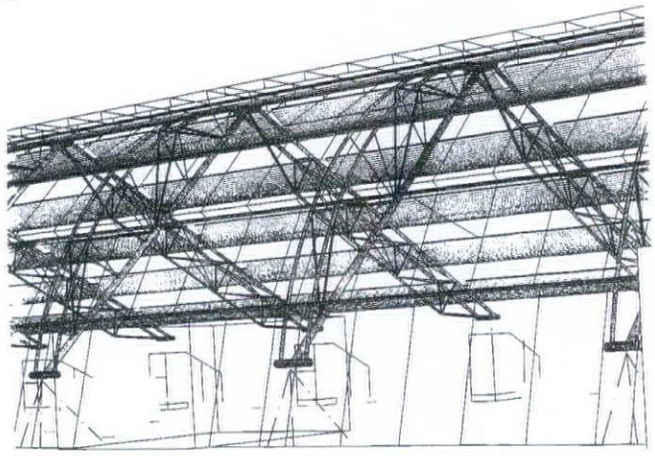
All public travel interchanges tend towards the condition of airports, and this is not entirely a bad thing, for it keeps the pollution and unpleasantness of big engines as far as possible apart from the intimate human world. The problems of most airports are confusion and formlessness. The clarity of the Nils Ericson bus station avoids this, yet it also escapes the monotony and institutionalism that curse many big public buildings of simple *parti*: architectural skills of a high order have been at work. HENRY MILES



5



6


structural sketch

Bus station, Gothenburg, Sweden
Architect
Niels Torp Arkitekter



7

5
East side with entrance canopy to protect travellers arriving by taxi and car. Rusticated projecting shops articulate scale of large glass wall.
6
Short canopies protect passengers between building and buses.
7
The *Tidpunkt* for tickets and information is intended to link to as yet unbuilt terminal building which will join bus area to nineteenth-century station.

Architect
Niels Torp AS Arkitekter MNAL
Project team
Niels Torp
Stein Halvorsen
Halvor Eliassen
Sigrid Aarønæs
Kari Anne Aukan
Supporting architects
ABACO Arkitektkontor AB
VBB Arkitekter
Landscape architect
VBB Markplanläggare
Technical consultants
VBB Bygg
Wickstrøms Ingenjörsbyrå AB
KM Akustikbyrån
Linné Trafikksystem AB
Photographs
Hans Wretling

MEGA STRUCTURE

The idea of the megastructure has been around for a long time, but very few have been built. Here, rather surprisingly, is one that brings a university together.

Graz, the capital of Styria, is a delightful small city which has thrived more-or-less undisturbed for several centuries and so displays a marvellously rich texture in which Gothic, Baroque, Romanticism and Modern are woven together with respect for each other and for the urban spaces, but with no craven emulation (AR October 1995). One of its main industries is education, and it has no less than three universities: a technical one, a little one for music and drama, and the big, venerable Karl Franzens Universität with nearly 30 000 students.

Being the oldest, Karl Franzens grew up in many different premises scattered through the university quarter and in 1985 a competition was held to make a building, the RESOWI Zentrum to house the faculties of law, economics and social science.[1] In a field of 49, the winners were Domenig & Eisenköck. To some extent the site predicated their building. A long thin strip of land lay to the east of the old university centre on Geidorfgürtel, a mainly residential street, one of the last on this side of the city to be lined with a high wall of flats before the nineteenth-century suburban pattern of individual villas in gardens takes over. It is not one of the city's most distinguished thoroughfares; the apartment wall on its east side is an ungainly mixture of late nineteenth-century buildings with slightly taller 1960s insertions.

Now it is faced by Domenig & Eisenköck's RESOWI megastructure, about the same height but nearly 300m long. The proposal is a daunting one, but the result not as fearsome as the dimensions suggest. Though the great attic cornice remains at the same height throughout, the length is divided by six stair towers. Out of the lower storeys emerges a series of events: three lecture theatres, separate structures, bulge out of the mass. In the middle of the block is the main entrance, three bays punched right through the slab up to the attic storey and signalled by the faceted crystalline glass envelope of the main stair. The entrance is reached by a languorous ramp that runs between the trees and the great wall and it offers a generous and welcoming portal into the world of the university behind the great wall. Hovering above the aperture is the flowing volume of the refectory, while to the left (south) is the gently curved wall of the



1



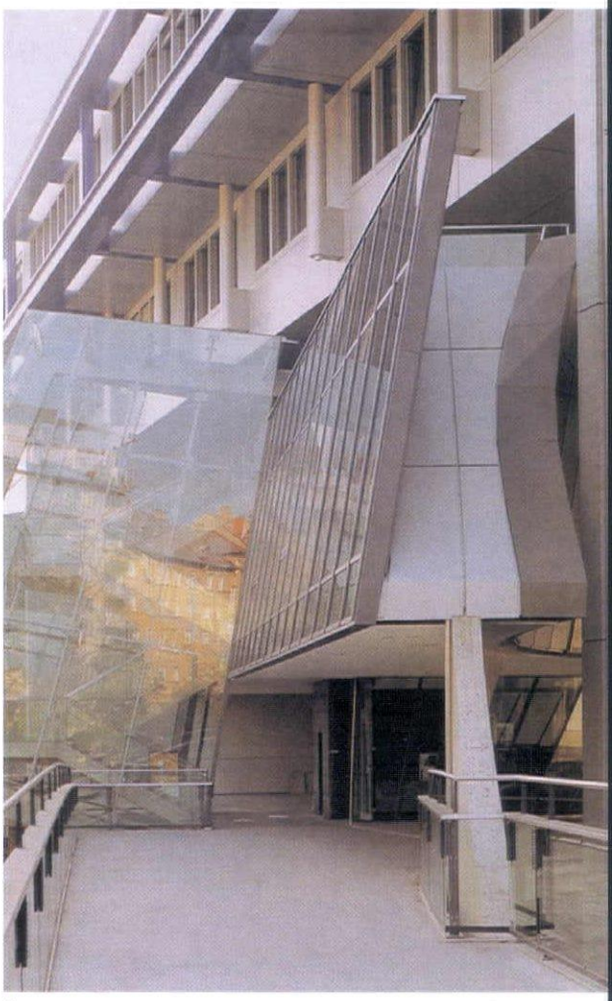
2

1
West side of new block with curve of departmental library, left, echoed by concavity in extension to main library, right.
2
East elevation. Upper two floors are suspended, allowing possibility of more events below like the lecture theatres.
3
Ramp up to main entrance from Universitätsstraße. Refectory which hovers over entrance can be glimpsed beyond departmental library, right.
4
East side of entrance is signalled by crystalline glass housing of main stair.

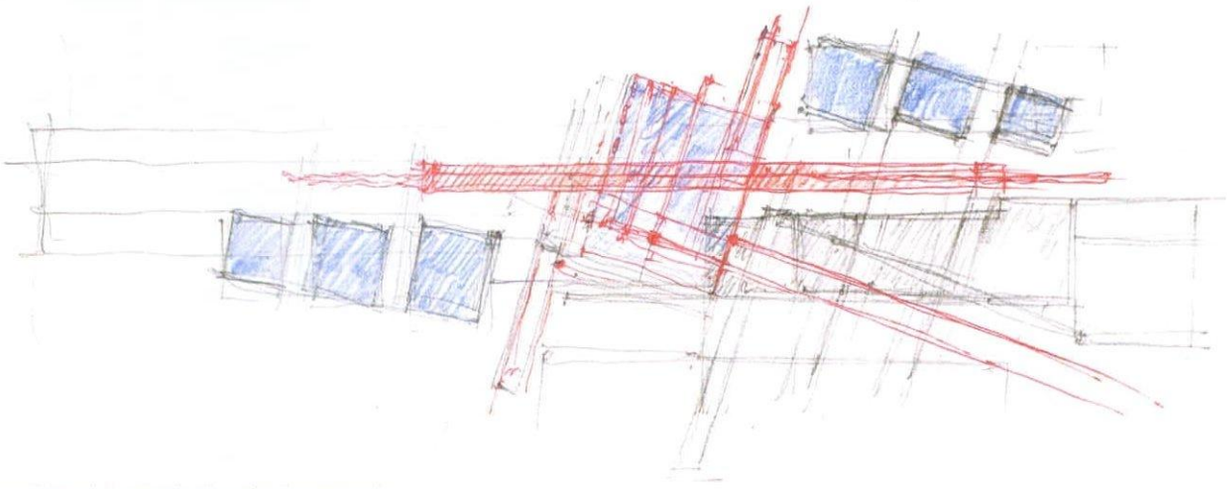
University building, Graz, Austria
Architects
Domenig & Eisenköck



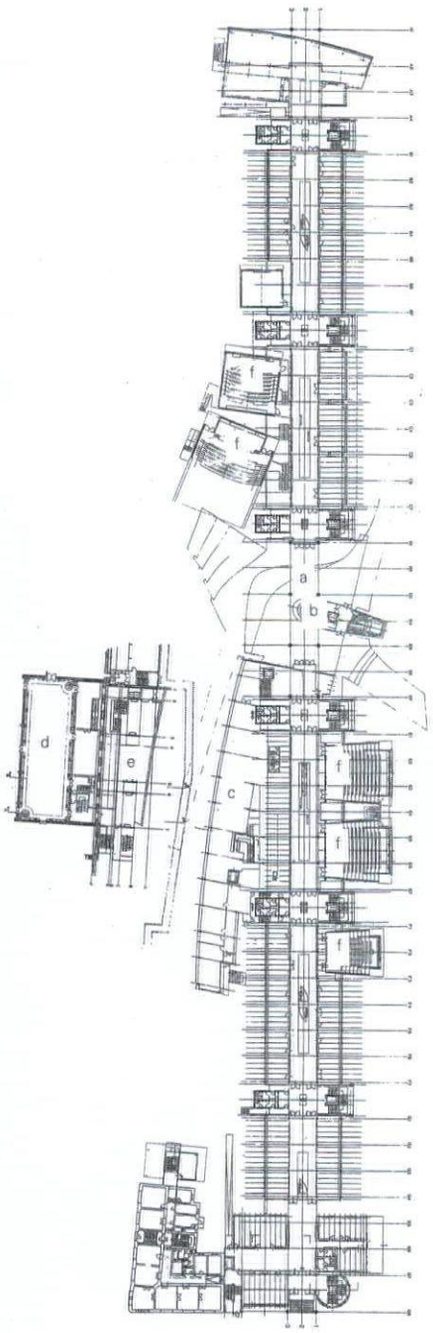
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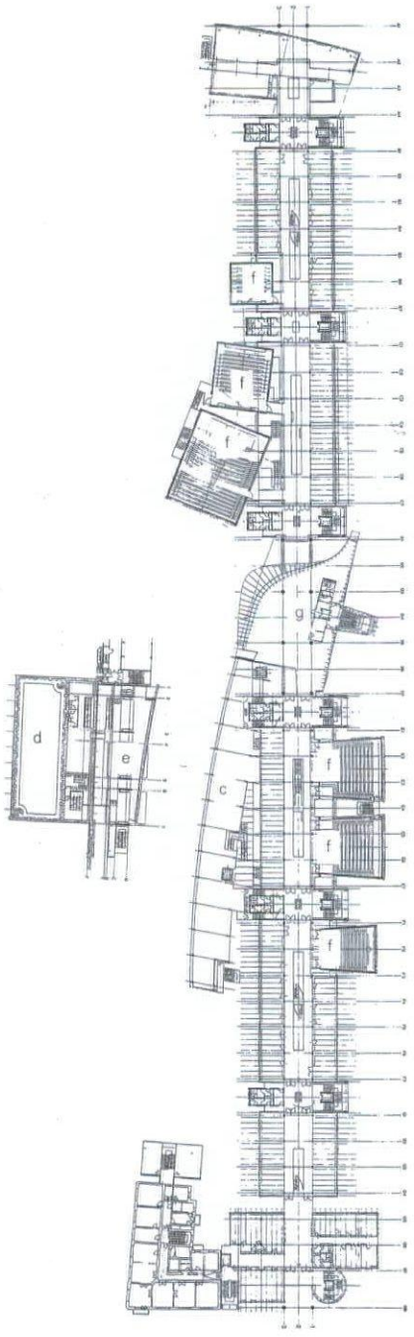
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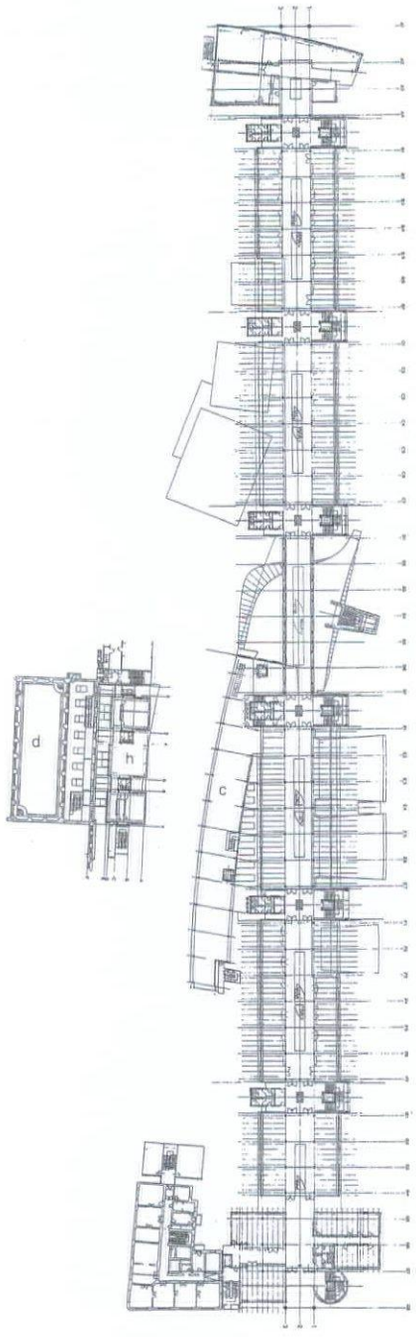
one of Domenig's early sketches, showing axes and events



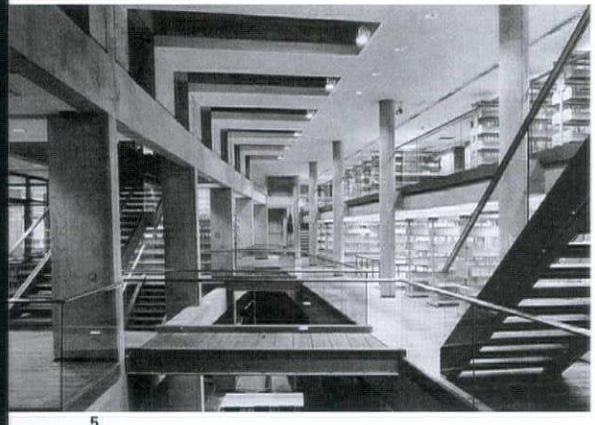
ground floor (scale approx 1:750)



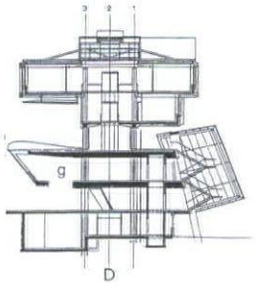
first floor



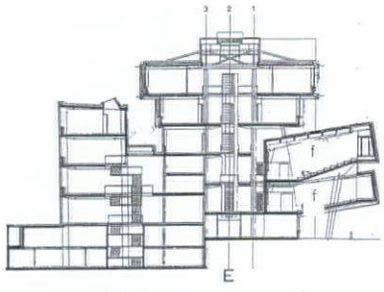
second floor



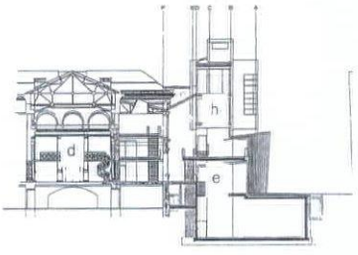
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D



E



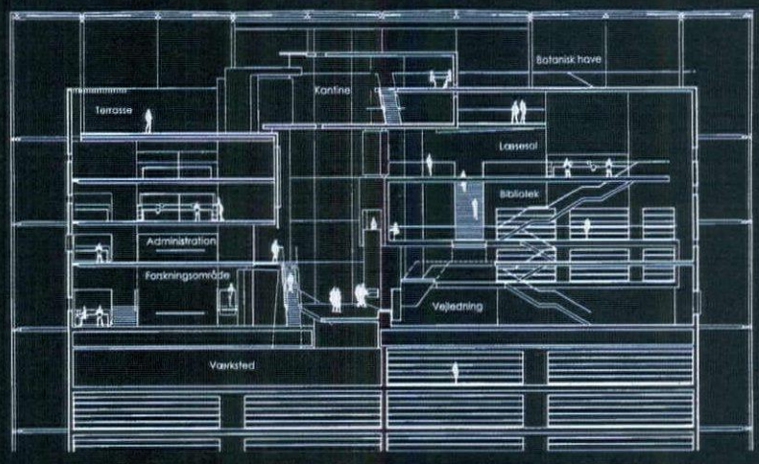
a entrance
b shop
c departmental library
d old university library
e new reading area
f lecture theatre
g refectory
h library offices

cross sections

Archives institute, Copenhagen, Denmark
Architects
Matthew Priestman Architects + Boje Lundgaard & Lene Tranberg



location plan



cross section through public levels on the upper floors

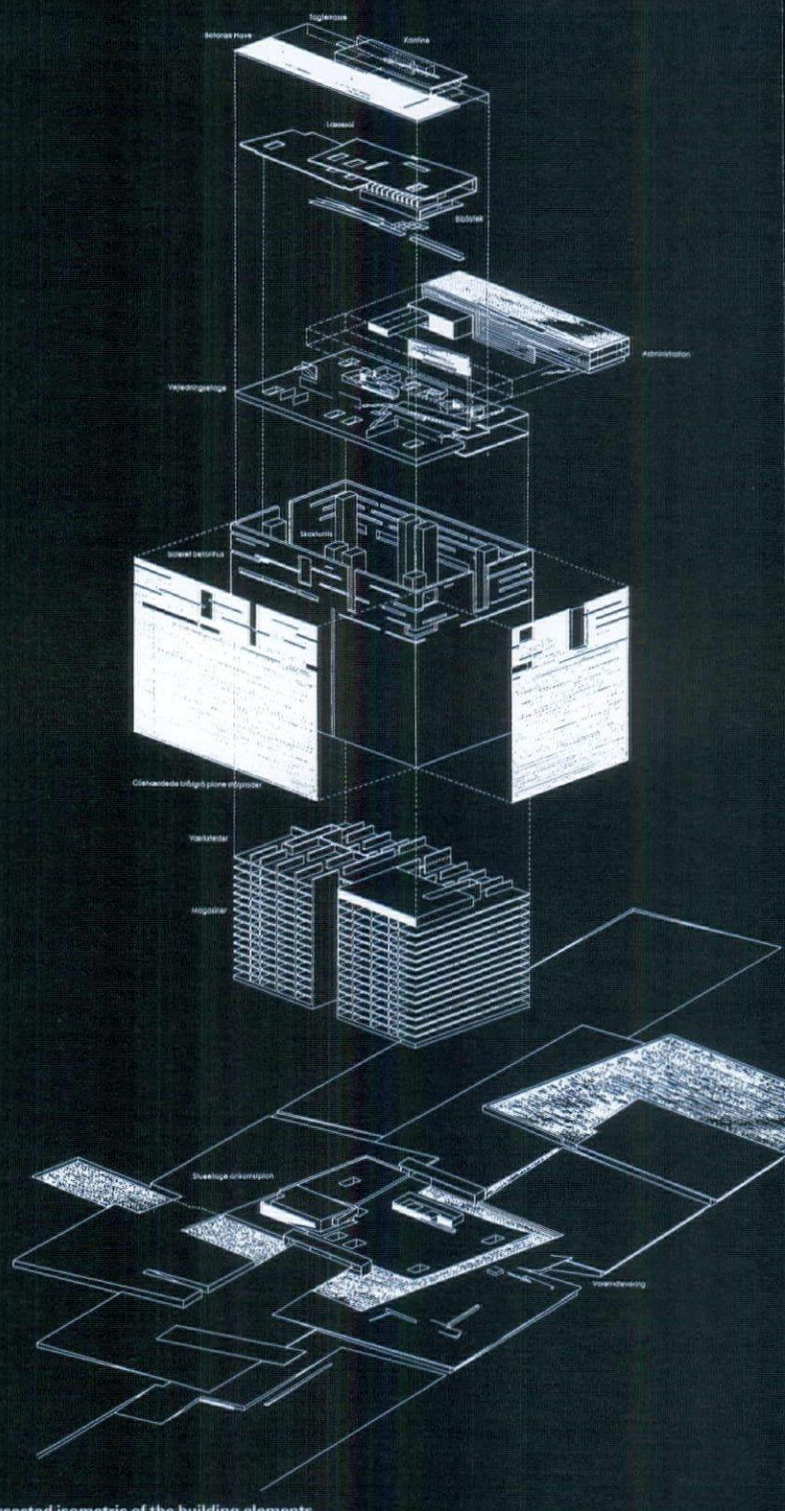
ØRESTAD MONOLITH

This proposal for a huge new archives institute in Copenhagen inventively exploits the building's mass.

The redevelopment of the Ørestad district of Copenhagen (AR June 1995) aims to implant a lively and predominantly urban mixture of activities to a long finger of land on Amager island, just south of the city centre. Now the individual components of the overall masterplan are beginning to take shape, with architectural competitions being instigated for the development of specific sites. The first such competition was recently organised by the Danish Ministry of Culture for a major state and provincial archives institute on a site immediately to the east of the planned Grønjordsveg city line station. The building will protect and preserve a large quantity of irreplaceable material, as well as making it accessible to researchers, government administrators and the general public. Both the scale and institutional importance of the new building make it a key element in Ørestad's future evolution. The brief also raised the issue of how such a large building can relate to the city in a distinct manner without dominating the skyline. (The most visible building in the vicinity is the slab of Jacobsen's Royal Hotel at the north end of Amager.)

Ten practices were invited to take part in the competition. One of the more interesting proposals came from Matthew Priestman Architects in collaboration with Boje Lundgaard & Lene Tranberg. Their design seeks to express the building's mass as an elegantly proportioned monolith (not unlike Jacobsen's hotel block). The archives are contained in a central core enclosed by a dark casing of oiled steel. Wrapped around this brooding shrine is a glazed skin, set 5m apart from the archive core. At ground level is an entrance volume containing the building's reception, together with a lecture hall and exhibition area. This connects vertically with public levels at the top of the block; between them are 15 storeys of archive stacks. Like a 'building within a building', the library, reading rooms, offices and staff facilities are organised around a toplit four-storey atrium, within a dissolved interior landscape of ramps and mezzanines. Elevated on the podium of the archive core, all the public and staff levels enjoy panoptic views of Copenhagen. Symbolically, as the building rises, its mass is gradually fragmented. The steel carcass is split and penetrated, fracturing into lighter, glazed upper levels. The proposal has a calm, refined intensity, embodying a thoroughly modern Danish sensibility. C.S.

Architects
Matthew Priestman Architects, London and Boje Lundgaard & Lene Tranberg, Copenhagen
Structural engineer
Ove Arup & Partners
Mechanical and electrical engineer
AS Wissenberg
Consultants
Keld Fuhr Pedersen, Olav B. Underdal

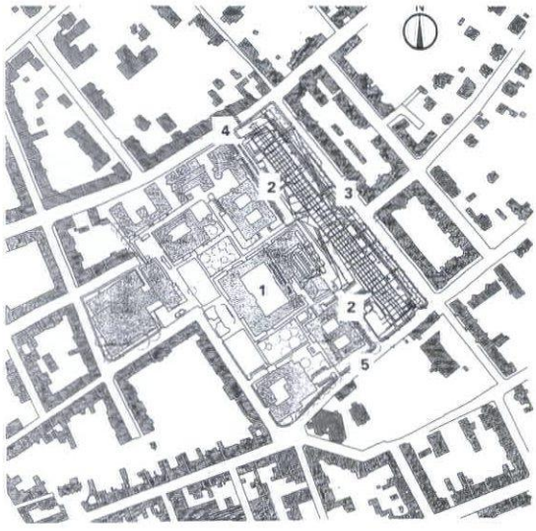


dissected isometric of the building elements

University building, Graz, Austria

Architects
Domenig & Eisenköck

1 old university building
2 Universitätsstraße
3 Geidorfgürtel
4 Heinrichstraße
5 Schubertstraße



site plan



6

RESOWI library, the smooth glass facade of which is heavily striped by bands of *brises soleil*.

Between the megastructure and the back of the old university central building is a new road, Universitätsstraße. This is much more full of incident than Geidorfgürtel facing the town on the other side. The convexity of the RESOWI library is echoed by a concavity in the lower two floors of Domenig & Eisenköck's extension to the general university library on the other side of the street. The move emphasises the long ramp to the entrance which rises above a pool (intended to be an ecological test-bed); the other approach to the entrance is up a bridge of curved, almost baroque stairs. The vista in this direction is partly terminated to the north by the inflected end of the largest lecture theatre, the beginning of a reef of forms projecting from the slab, the interstices of which offer small quiet places which the ingenuity of students will doubtless put to good use.

The design allows for this variety of events on the lower floors to be elaborated as the building changes in time. The upper two floors are hung from huge steel trusses, themselves propped on pairs of columns that define the central circulation system: this is after all a megastructure, a bit like a bridge in concept. In theory, and perhaps in practice, the structural *parti* will allow the lower floors to be varied as demands alter.

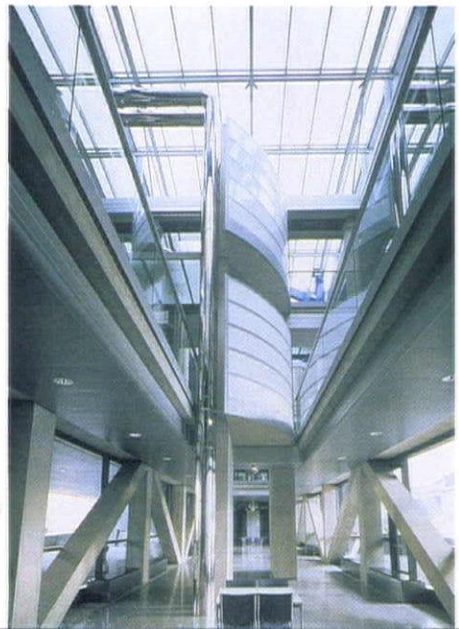
And, of course, the structure determines that the top two floors are more rigid in organisation. They consist of perimeter teaching rooms and offices enclosing long central corridors. Again a bald description seems more daunting than reality. The circulation spaces are made luminous by large skylights and voids which allow daylight to penetrate deep into the heart of the building. Their length is divided by the stair and lift towers, and by the curved 'tea kitchens' which hover in the voids and provide social foci for groups, so the circulation spaces ought to be less institutional than they look on plan.[2]

The huge building may turn out to be the last of its kind. (And indeed perhaps first, for though many megastructures were suggested in the '60s and '70s few were built at this scale, none with the delicacy and wit.) It will probably be the last investment of state funds in university building on this scale. Now, some Graz academics are arguing that the need for such a large building with traditional places like lecture theatres and seminar rooms is becoming outmoded by the advance of personal computers. They are wrong. Education is as much about interactions between people as acquisition of knowledge. And the RESOWI centre tries to demonstrate this on an almost impossibly large scale. ANTHONY PAINE

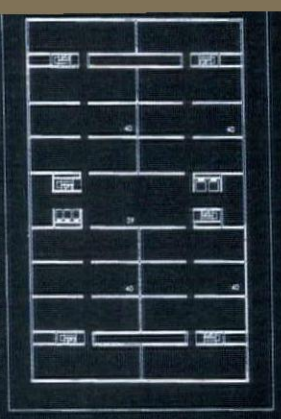
1 RESOWI is the (welcome) acronym for the Rechtswissenschaftliche Fakultät, Sozial- und Wirtsschaftswissenschaftliche Fakultät.
2 This is a preliminary account of the building, where occupation started some months ago. We hope to return when it is fully in use. ED.

5
Library interior during fitting out.
6
Refectory hovering in great entrance portal.
7
Sharp-shaped tea-kitchens hovering between upper floor double-banked corridors.

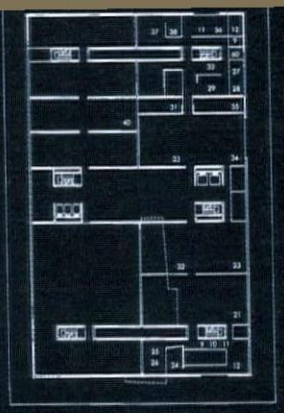
Architects
Domenig & Eisenköck
Günther Domenig, Hermann Eisenköck
Competition team
Peter Zinganel, Hans-Peter Abler-Troyer, Norbert Müller, Gerhard Wallner
Project leaders
Johannes Hiebl, Renate Gaisser, Bibiane Seidinger
Services
T. B. Pickl & Partner
Structures
Gerhard Tomberger
Landscape
János Koppándy
Photographs
Helmut Tezak



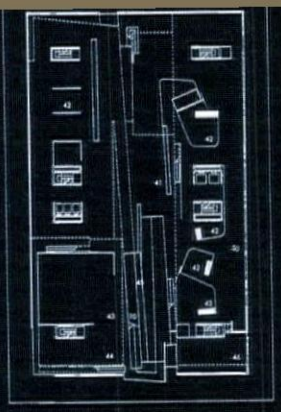
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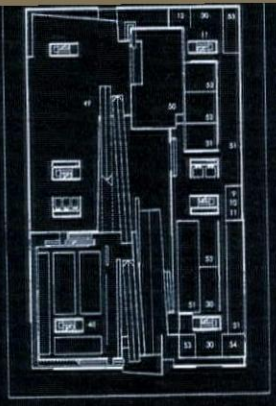
floors 1-14: archives



floor 15: archives and preservation facilities



floor 16: research and copying department



floor 17: reading room and offices

1
Model showing the contrast between the massive, inner core containing the archives, and the delicate, glazed, outer skin. The inset drawing shows the public spaces on the upper floors.

Durban, South Africa
Architect
Protekon

Essentially a variation on the typology of the big shed, this robustly detailed railway canopy is part of a wider scheme to improve truck washing facilities in Durban.

INDUSTRIAL MUSCLE

The archetype of the big shed is an enduring one. Factories, stations, aircraft hangars, farm buildings and exhibition halls have all, historically, made a virtue out of heroic scale, repetitive structure and functional necessity. A curious synthesis of engineering muscle and architectural vision, the enigmatic big shed still retains its power to surprise.

Here in Durban, it is reinterpreted as a 300m long canopy, the focal point in a scheme to provide improved facilities for 140 railway workers who wash and clean freight trucks, in shifts, 24 hours a day. Essentially, the building is just a very long roof, but it has moments of subtlety and incident, and more importantly, it makes the grimy business of washing dirty freight trucks a good deal more palatable. (Previously, the trucks were simply cleaned in the open and the associated workers' facilities were in a neglected condition.)

The building is 17m wide and encloses three parallel lines of track. Its extruded form resembles the clanking processions of freight trains that rumble through its length. It also responds to the climate, its partially open sides encouraging natural ventilation in Durban's hot, humid conditions. Steel trusses rhythmically articulate the shed's immense length, dividing it into 40 bays. The trusses are curved at one end, tempering the huge building mass by giving it a vaguely aerodynamic profile.

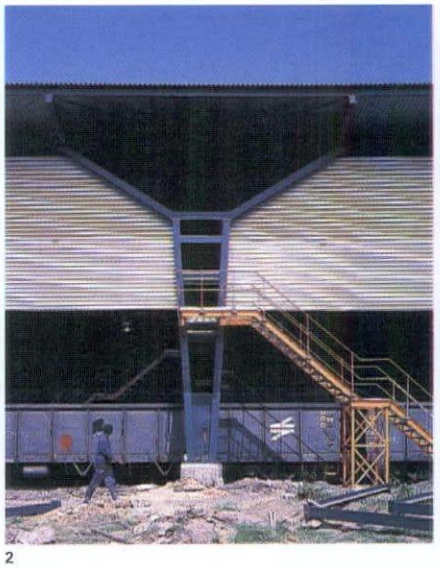
Gantries with retractable stairs provide overhead access for workers and equipment. The stairs are also expressed externally on the vertical north-east elevation, their positions marked by a series of bifurcated columns. The bifurcations expand to form Y-shaped gaps in the horizontally ribbed cladding. The crisply incised geometry of the Y-shaped apertures makes a bold pattern along the building's horizontal flank. The elevated gantries run through the bifurcations to connect with the external stairs. A narrow strip of translucent sheeting, inserted in the roof of the canopy, brings daylight into the vast tunnel-like interior.

Clustered along the north-east side of the washing shed, like tugboats around an ocean liner, are the various workers' facilities. The complex includes an office, laboratory, mess and ablution building. Their arrangement creates an outdoor recreation area, shaded and shielded from the harsh, industrial processes that take place in the shed. C. S.

Architect
Protekon
Project architect
Joy Bräsler
Structural engineer
John Mugglestone
Civil engineers
Allan Telfer, Jaco Heyl
Project manager
Dave Stromberg
Photographs
Dennis Gilbert



1

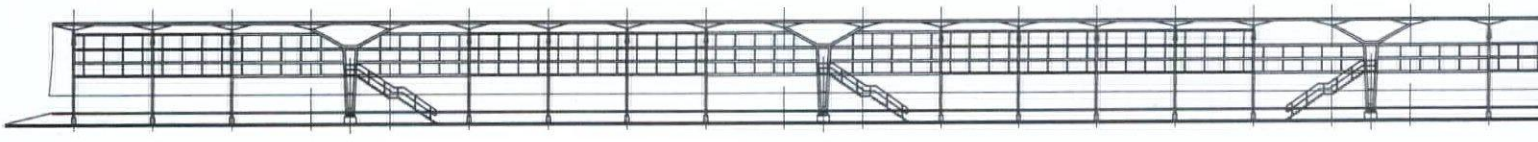


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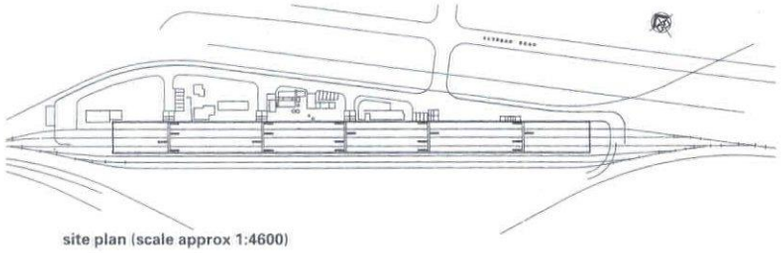


3

north-east elevation

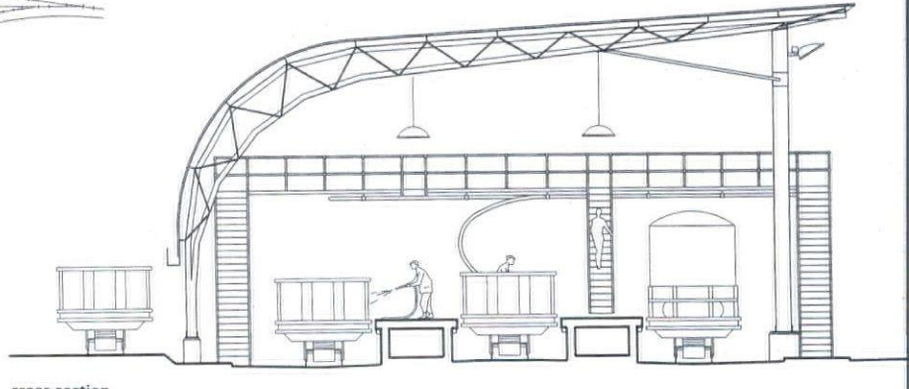


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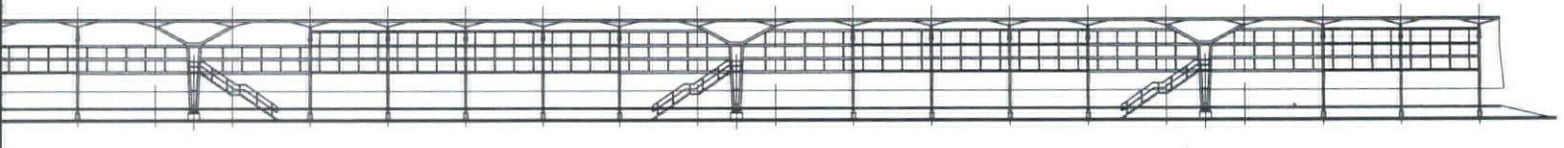


site plan (scale approx 1:4600)

1
The great volume of the washing shed is articulated by its structure.
2
Detail of a bifurcated column.
3
The overhead gantries connect with the external stairs through the bifurcated columns.
4
The tunnel-like interior. The building's partially open sides assist natural ventilation.



cross section



Tower, Shanghai, China
Architect
Norindar-Hamzah-Yeang Architectural Engineering Design

THINKING BIG

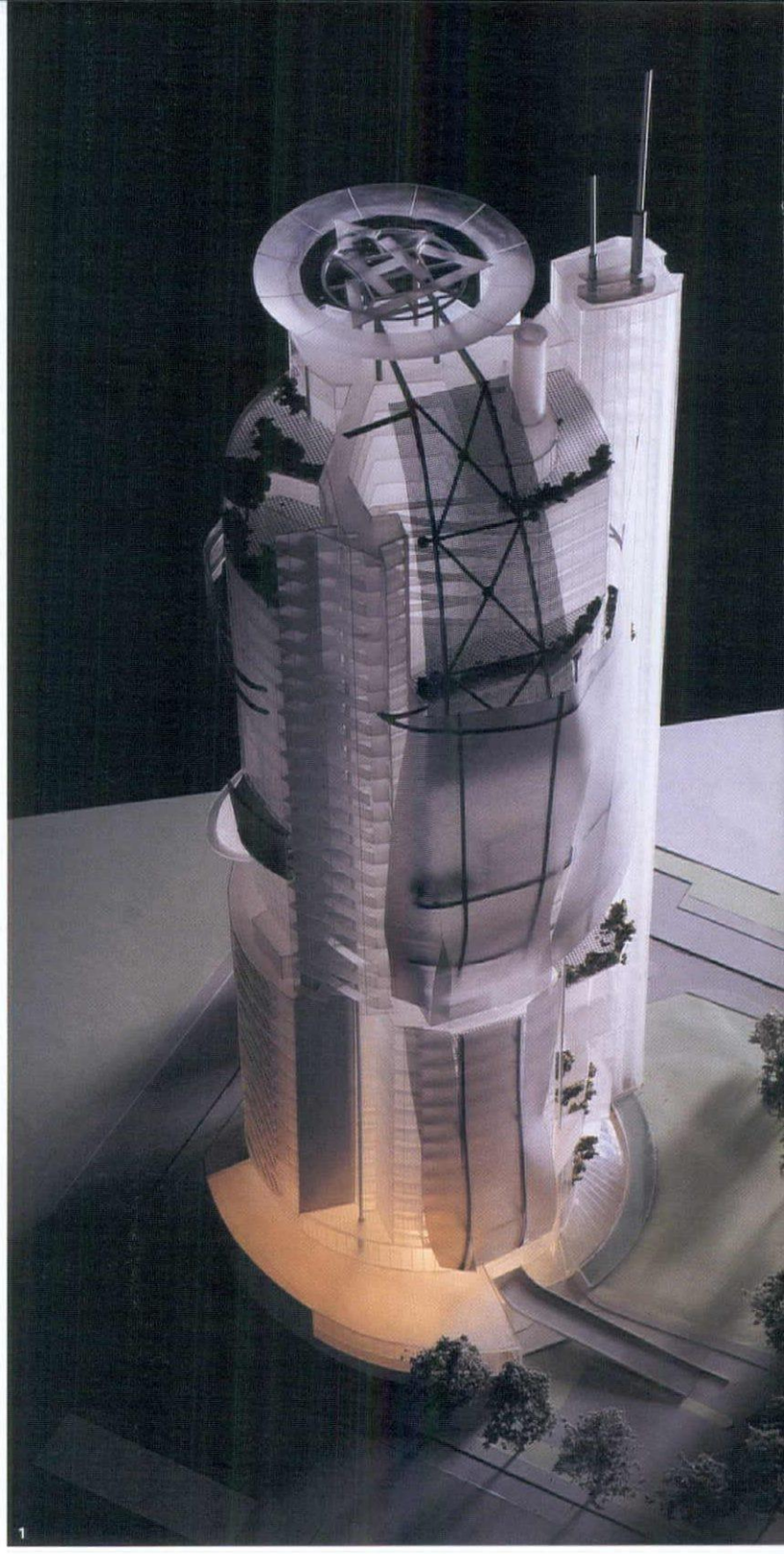
A prototype for high-rise ecologically aware buildings, this mixed-use tower in Shanghai suggests ways of marrying green concerns with commercial viability.

Kenneth Yeang is already well known for his experiments with ecologically appropriate towers, some of which have been shown on these pages (ARs February 1993 and September 1994). Up to now, he has not built anything more than 15 or so storeys high, but this new proposal for Shanghai has 36 floors and, though far from being very tall, carries his 'bioclimatic' ideas further than before, both in scale and complexity. It suggests ways of extrapolating the ideas to higher structures, which have been thought by many to be impossible without a totally air-conditioned sealed envelope. Yeang does not suggest that air-conditioning can be done away with completely, but that his proposals will temper the need for it, and hence reduce fuel use and carbon dioxide production. The tower houses a hotel topped by offices, with an exhibition hall and auditorium for 300 people slung in at levels 17 and 18. It is one of those stacked Chinese urban buildings in which functions are piled above each other – the sort that used to give Hong Kong such vitality.

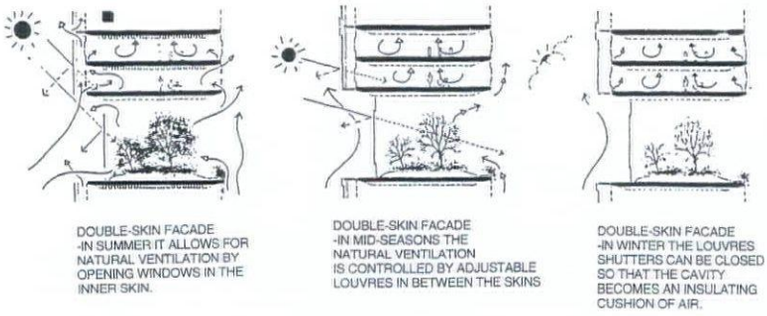
Shanghai has a maritime climate with quite cold winters and hot summers. A heat exchanger will enable the mechanical ventilation system to minimise energy loss from exhaust air in extreme periods. Mass and insulation will be used to exploit the thermal fly-wheel effect. A double skin facade with movable horizontal louvres between the layers will moderate the internal climate by providing an insulating jacket of still air in winter and a stack effect in summer on to which windows can be opened (the outer skin acts as a sun modifier). In summer, spring and autumn, central vertical atria linked to planted (hence oxygenating) sky courts will provide the main driver of the ambient energy system, acting as a thermal chimney assisted by the venturi effect, and allowing cross ventilation in the hotel corridors and offices. A big external wind-breaker will deflect cold north-west winter winds, and in that season the building's skin will be largely sealed to prevent heat being wasted.

The Armoury Tower is intended to evoke resonances with traditional Chinese military kit. For instance, the metallic screens refer to armour; the solar panel on top, a helmet and, Yeang thinks, 'the stair plan suggests the trigger of a gun'. The building, he says, 'is intended to create a modern urban icon for the client's progressive and valiant march into the twenty-first century'. P. D.

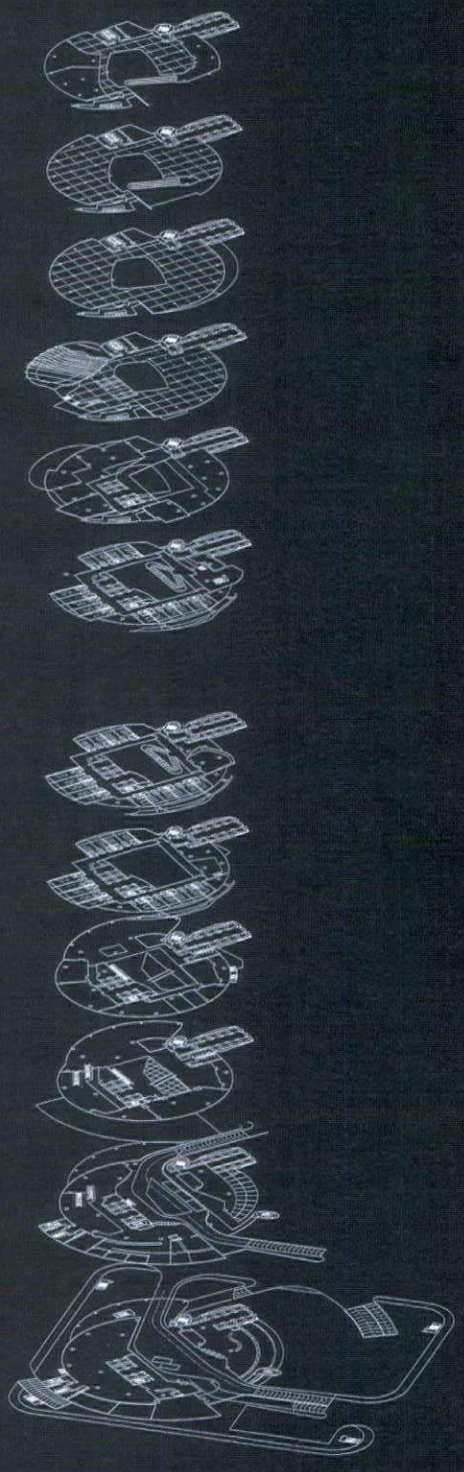
Architect
Norindar-Hamzah-Yeang Architectural Engineering Design
Project team
Kenneth Yeang, Song Guofu, Dang Wei Dong, Eddie Chan, Ridzwa Fathan, Yvonne Ho, Roshun Gurung, Margaret Ng
Consulting engineers
Battle McCarthy
H. P. Lee dan Rakan-Rakan



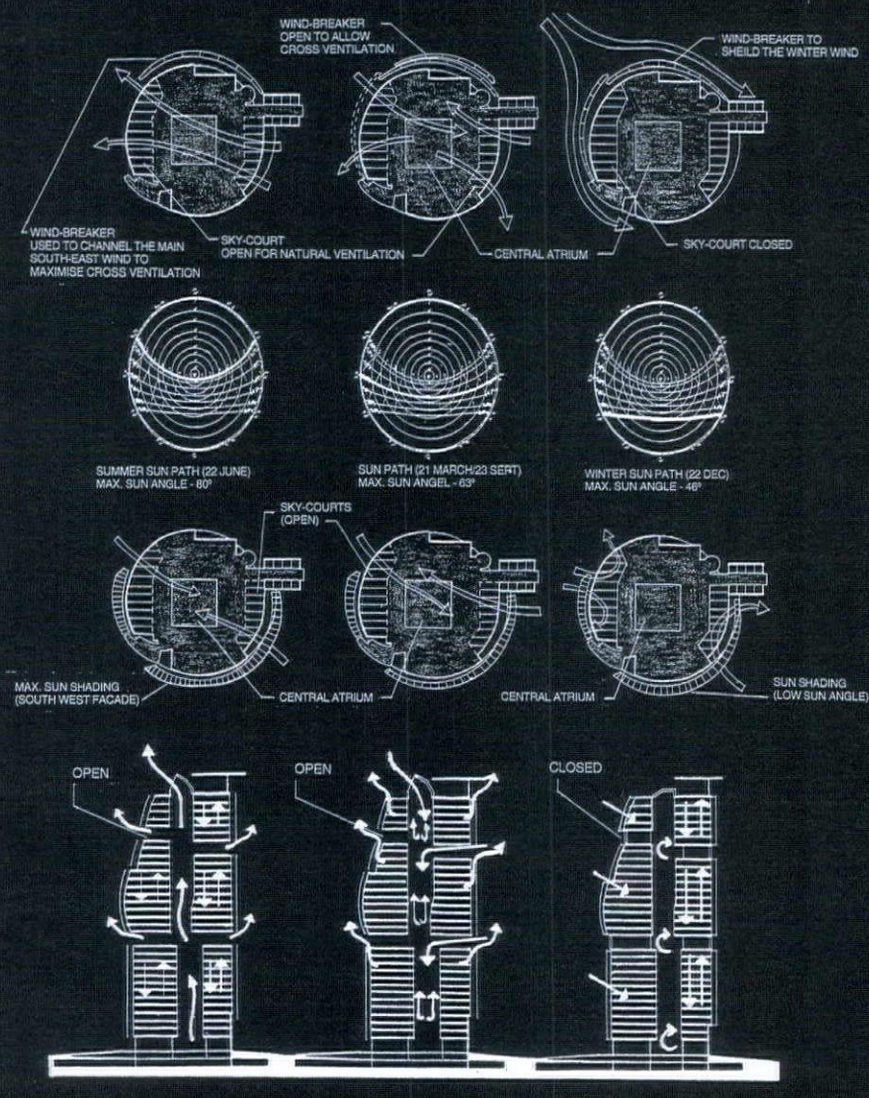
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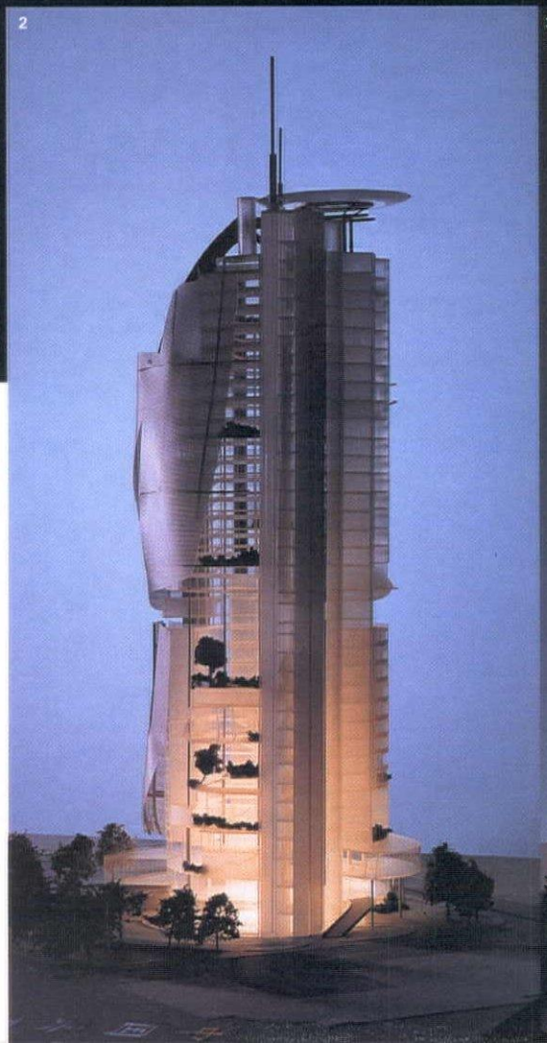
details of sectional moves according to season



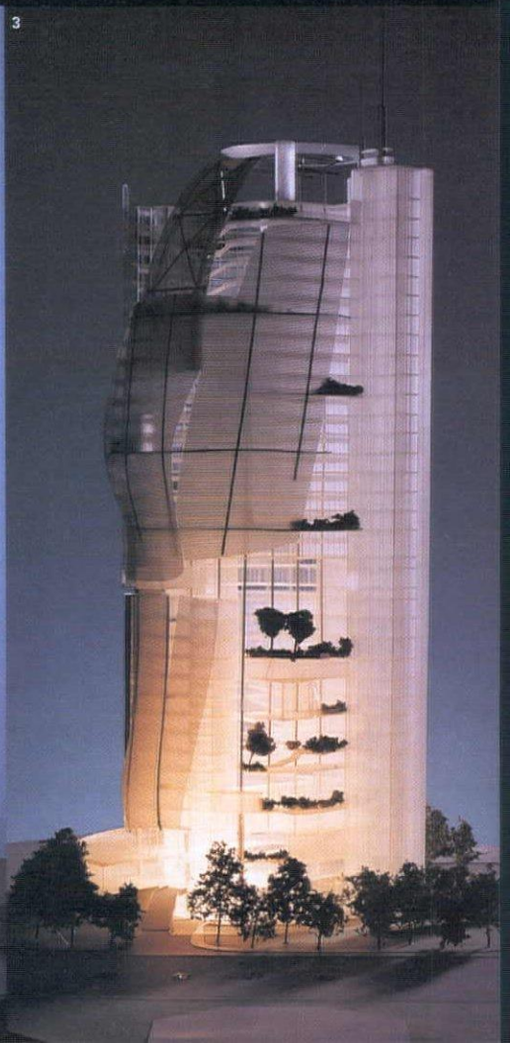
the stacked plans



plan and sectional moves according to season



2



3

1
The layered skins of the tower will change and respond to seasons.
2
The great mesh mask of the external wind-breaker is an evocation of traditional Chinese war-dress ...
3
... and, the planted sky courts show the building is at cutting edge of ecologically-aware invention.



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North light

A sequence of luminous spaces is hewn into the shell of a nineteenth-century warehouse, to create a combined gallery and living quarters for a painter.

A scheme recently completed south of the Thames in London bears John Pawson's imprint, though his involvement was somewhat at a distance.

Pawson provided the outline plan for the conversion of a three-storey warehouse in Bermondsey into a private gallery for the painter, Kitty North and London *pied-à-terre* for herself and her husband, Roger Tempest.

Kitty North's gallery has been inserted into an old warehouse south of Tower Bridge. The area is mixed. Cut by busy traffic and scarred by huge blighted housing estates, it yet has one of the few seventeenth-century terraces left in London and some remnants of nineteenth-century industry. North's warehouse was built in about 1885 as a tannery, the legacy of that industry being thick walls designed to contain ammoniacal fumes. When acquired, the derelict building had been empty for over 15 years.

Kitty North lives and works in Yorkshire and her abstract



Warehouse conversion, Bermondsey, London
Architect
John Pawson

1
The converted warehouse, which was originally a tannery.
2
The austere white interior acts as a cool backdrop to Kitty North's paintings.

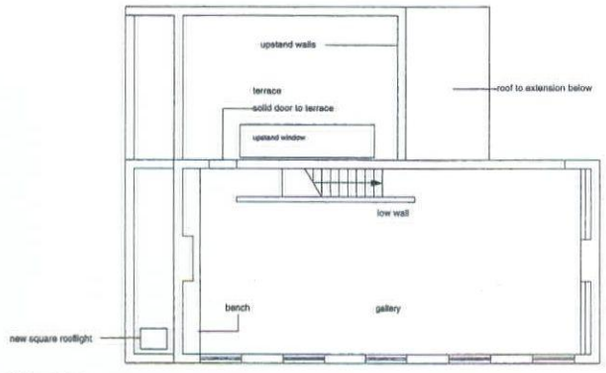


atmospheric painting is inspired by the corrugated textures, colours and abstract forms of landscape around her house. Aware of Pawson's work and in particular, the series of pure spaces he has created for gallery owners in Cork Street, she felt he would be sympathetic to the building and the idea of creating a cool light-filled background for her paintings.

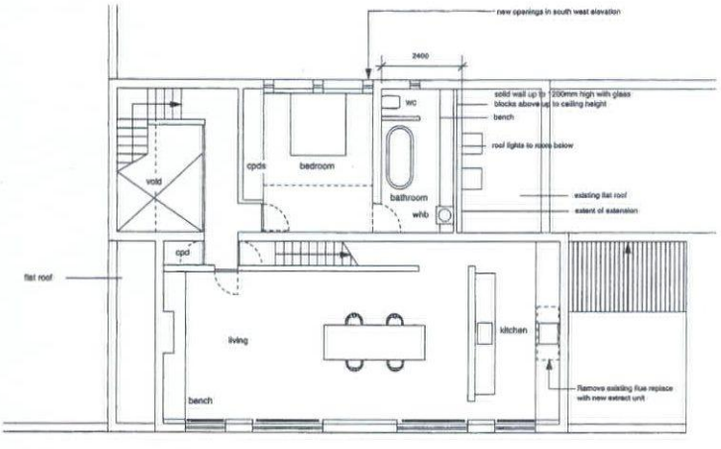
Coincidentally, Pawson's provenance is Yorkshire and he too admits to the influence on his work of his native landscape, and the simple massive forms of its industrial buildings.

The warehouse faces north-east onto the street. Pawson's plan maintained the repaired shell of the building, keeping an existing gantry on the first floor, and at the back proposed a small extension westwards with a roof terrace at second floor level. The interior was to be stripped out, the floor reinstated and walls dry-lined with reinforced plasterboard strong enough to take the weight of paintings. A new double-height entrance hall was to be created on the ground floor, together with two galleries, a garage, bathroom and storage space. Upstairs, on the first floor Pawson provided a living room and kitchen and a bedroom and bathroom at the rear.

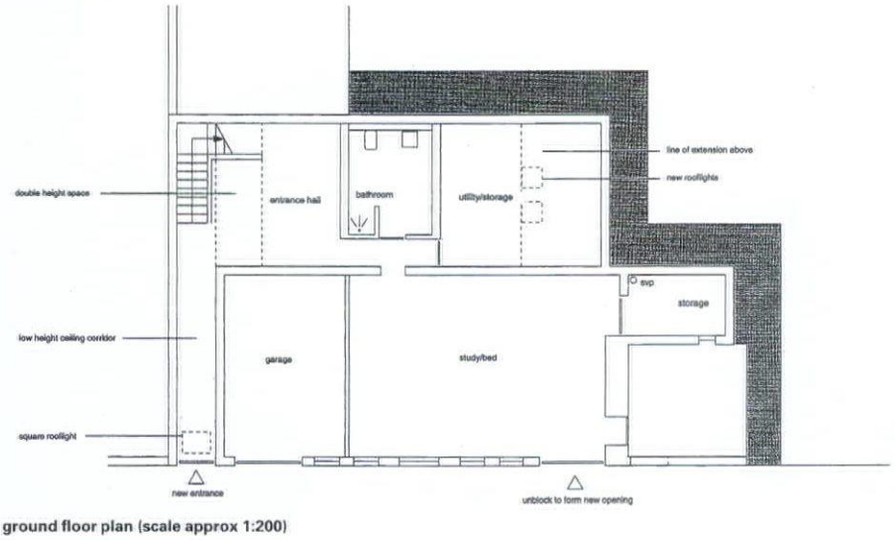
Having adopted the plan, the clients took over building works and supervision of the site. The detailing in places is quite deplorable, but the scheme possesses the kind of light-filled simplicity and grace that Pawson



second floor plan

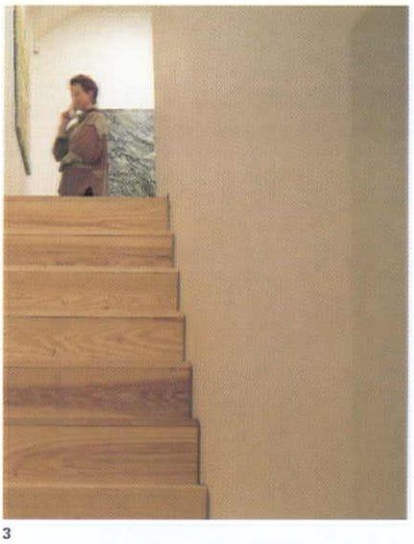


first floor plan

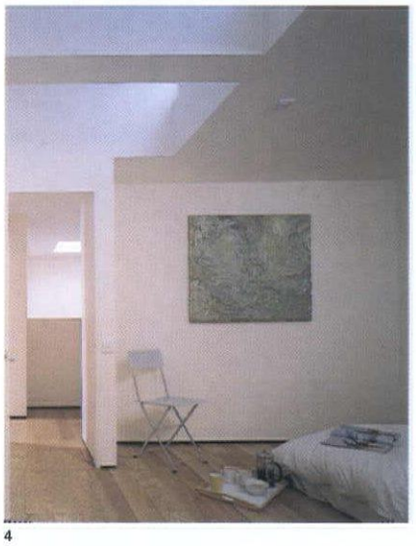


ground floor plan (scale approx 1:200)

3
Detail of staircase.
4
Bedroom, illuminated by big square rooflights.
5
The simply appointed kitchen.



3



4



5

strives for in his work. Walls are white and the big galleries, floored in pale stone at ground level, in wood above, are bathed in cool northerly light from existing windows. Elsewhere, in the double-height entrance hall and ground floor gallery, light pours down from Pawson's square rooflights while the bedroom is illuminated by more square openings cut into the wall. Artificial lighting is discreet, a combination of wallwashers and downlights from Concord Lighting, and some gallery lighting from Erco Lighting. Fittings, like the marble covered monolithic units designed by the Pawson office for the kitchen, are generally austere; and instead of Douglas Fir, floorboards are of kiln-dried ash cut from trees felled around the North's Yorkshire home. PENNY MCGUIRE

Architects, outline plan
John Pawson, Vishwa Kaushal, Hiroshi Yamazaki
Builders
Keith Blades
Photographs
Peter Cook
Hardware
Vola, C P Hart
Kitchen equipment
Smeg

Warehouse conversion, Bermondsey, London
Architect
John Pawson



6
The voluminous living room with its floorboards of kiln-dried ash.

Warehouse conversion, Clerkenwell, London
Architect
Brookes Stacey Randall Fursdon



Poised like a light-filled eyrie above central London, this modern urban loft is dramatically colonised by a series of immaculately crafted insertions.

Bohemian rhapsody

In spite of their romantic associations – with New York lofts, Bohemia, cheapness, youth and so on – warehouse spaces are often amorphous, expensive, draughty and in inimical surroundings, requiring imagination and money to make them habitable, and a car to take you away from the area in the evening.

In making a flat for one person out of an empty half-converted shell at the top of a London warehouse, Brookes Stacey Randall Fursdon has demonstrated considerable inventive powers as well as poetic sensibilities. The client is Chris Lowe (of the pop group Pet Shop Boys) who having trained as an architect has an eye for space and detail. He loved the views across London and of the skies, but required a measure of privacy and security.

The space itself is not particularly large on plan, but it is airy and glazed on two sides. The roof of the existing shell is a half arch curving over a long rectangle, flanked by a smaller room and barely separated from a roof terrace by a glazed wall. A spiral staircase on the terrace leads to an upper one on the north side of the building. In designing a civilised dwelling, the architects' main concern was to enhance the warehouse's spatial qualities while at the same time providing the usual domestic facilities.

The single volume was retained, with space only minimally interrupted at the entrance by the insertion of two full-height curving walls. The device has a dual function. One has to do with the drama of emerging from a dimly lit passage into an expanse of light-filled space; but more practically, the passage becomes a fire lobby in an emergency. When the alarm goes off, a full-height fire door swings across the passage.

With the living area naturally overlooking the terrace, the other end near the entrance became the kitchen/dining area. The smaller room was divided into a light-filled bathroom and storage area, and a sleeping gallery was built at mezzanine level. Cantilevered out from the base of the arch towards the upper terrace, it was connected to it by an elegant glass bridge.

The surprise and invention present in the planning and detailing of this flat is a constant source of delight – and one of wonder at the amount of time that is incorporated in each detail, that must have been spent simply on research.

The inflexibility inherent in a single space has been solved in a particularly ingenious way – the result of a happy collaboration between the architect, engineer and contractor. Three large pods built into the storage room between the kitchen and living area slide smoothly out of the wall on cantilevered runners, in principle similar to those of filing cabinets and eliminating the need for tracks in the floor. One contains kitchen and dining equipment – cooking utensils, crockery, glasses – and stores; another has hanging and shelf



1
Light is diffused into the generous space by translucent panels, like Japanese *shoji* screens.
2
A slender glass staircase rises to an elevated sleeping platform.

Warehouse conversion, Clerkenwell, London
Architect
Brookes Stacey Randall Fursdon

Architect
Brookes Stacey Randall Fursdon
Project team
Nik Randall, Matthew Bedward, Clair Mellor, Richard Blackwell, John Aspinal, Matthew McGrory, Shane Lincoln
Structural engineers
Dewhurst Macfarlane
Mechanical and electrical engineers
David Beattie Associates
Lighting consultants
Konu & Morrow
Contractor
Pat Carter Contracts
Quantity surveyor
Boyden & Company

3
Birch-faced screens infuse the space with a warm glow.
4
The sleeping platform is connected to an external terrace by a delicate glass bridge.
5
The space can be subdivided by a series of sliding pods.
6
Detail of the staircase.

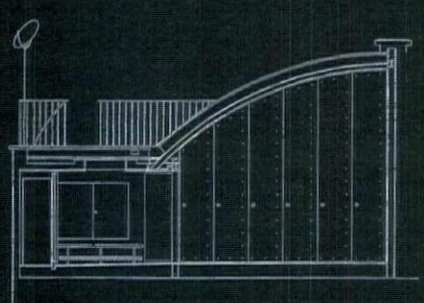
space for clothes and bedding; the third provides room for hi-fi equipment, record storage and mixing deck. In an instant therefore, the kitchen can be screened off, the main room can become a music and recording studio, or a dressing room. The pods are completely interchangeable: the storage boxes, shelves, rails and work surfaces have common fixings so that as the client's needs change, the elements can be unbolted, replaced or changed.

There is evidence of other interdisciplinary collaboration. The staircase to the gallery has glass treads and risers and has been designed to be as light and transparent as possible. The glass has been used structurally to form a folded plate in one direction and a truss in the other; no other structure is needed to hold the treads in space.

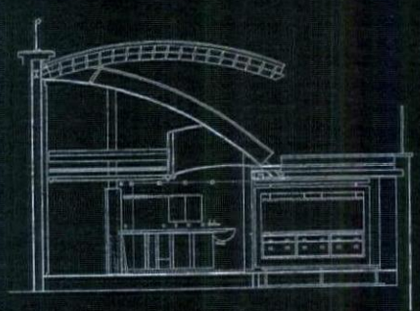
Above the sleeping gallery, a double-glazed rooflight inset into the curve of the roof opens on hydraulic arms. You can lie in bed under the stars and see St Paul's Cathedral; but the rooflight is also the door to the upper terrace at the end of the curved glass bridge. By such means, the terrace outside becomes an extension of the interior, an outer room illuminated at night by a specially designed standard lamp, a disc of reflected glowing light like the moon.

Light, dark and privacy are constant themes in the design. Irregular hours are part of life in the music industry, and the client needed to be able to shut out light during the day in order to sleep. The rooflight and glazed walls can be screened by automatically pivoting aluminium louvres; and the end glazed wall rendered private by rows of tall swivelling glass fins faced with a thin veneer of birch wood. The effect of this is magical, for much as thin sheets of alabaster were once used like *shoji* screens to transmit light, the sheets of birch are translucent and shed gold light over the interior. Kitchen and dining areas are screened from public view by panes of acid-etched glass, held from behind by a slim stainless-steel support so that the translucent panes appear to float.

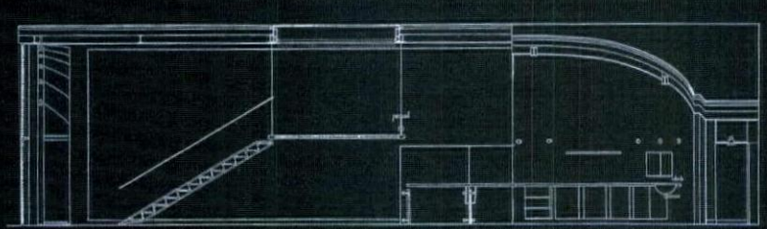
Other touches of delight are present: in the immaculate detailing of a kitchen counter in laminated beech or the slender oven hood, specially designed to eliminate the usual monstrosity; or finally, in the shower, where a fibre-optic light inserted into the showerhead shines through the drops of water in celebration of invention, and of water. P. M.



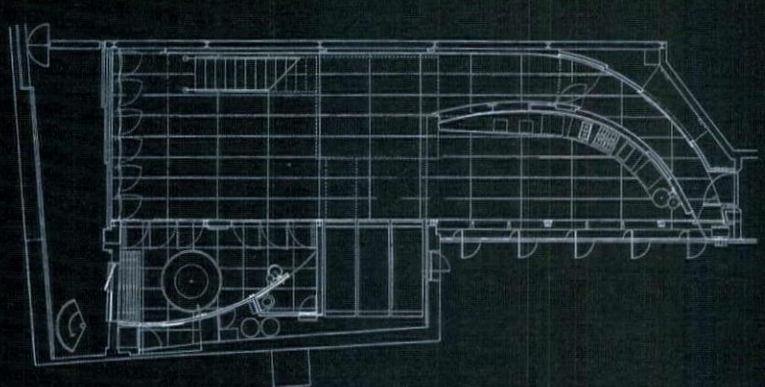
cross section



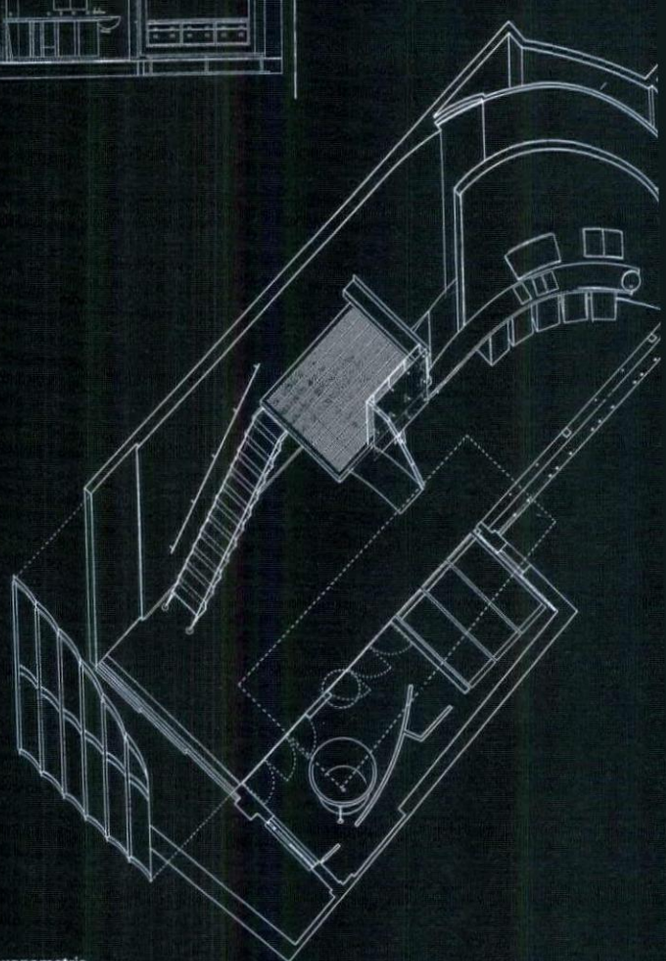
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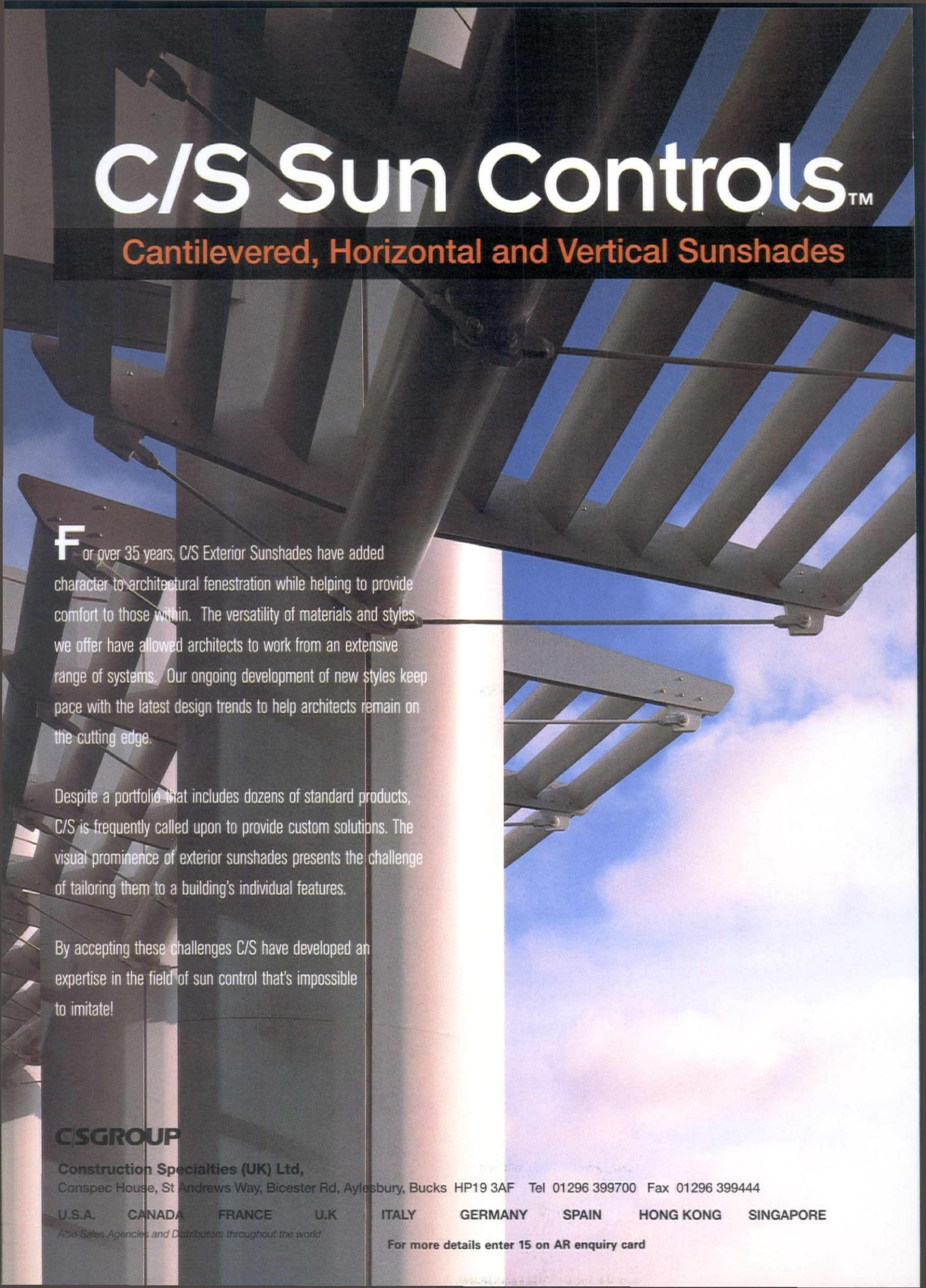
longitudinal section



lower level plan (scale approx 1:200)



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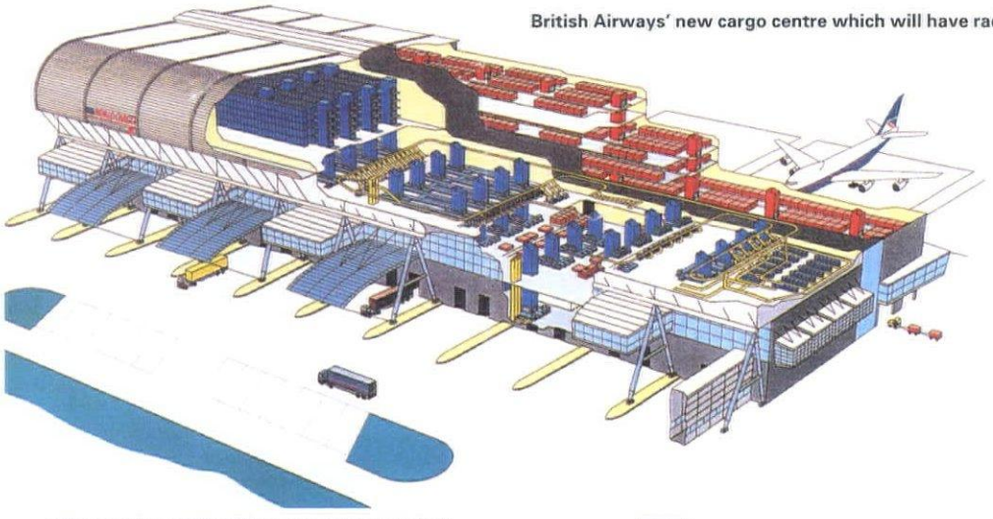
5



6



British Airways' new cargo centre which will have radar absorbent cladding on the north and east elevations



cut-away isometric of the new cargo terminal

External envelope

501

One of the problems faced by air traffic controllers when tracking aircraft is interference caused by radar beams bouncing off nearby buildings and registering ghostly images on the screens. This is potentially dangerous. Using the principles of Stealth technology, BTR Material Systems and EDM Spanwall have developed a new cladding panel, called Ramclad, which deals with interference by reducing the reflective properties of buildings. Being stationary objects, buildings pose a somewhat different problem from aeroplanes, but in devising a solution, Ramclad's designers were able to make the assumption made in Stealth technology – that radar energy can be neutralised.

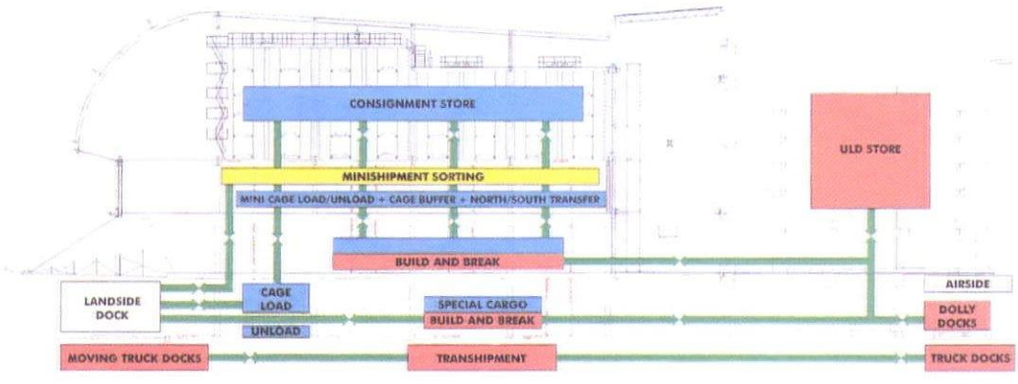
The new panel absorbs the signal, dispersing it within its bulk which is composed of layers of various materials, including aluminium, pvc, rubber and rock fibre insulation. Its internal construction, density and composition correspond exactly to the wavelength of radar frequency. Manufacture of the panels has to be to exacting tolerances.

The new cladding should make airports safer, and may revolutionise their design, for it should now be possible to build closer to runways without affecting air traffic control and to construct taller buildings closer to radar aerials.

The first building to incorporate Ramclad is the World Cargocentre now under construction on the southern perimeter of Heathrow Airport, London. The client is British Airways World Cargo and the centre was designed by W. S. Atkins Consultants. When completed in January 1999, it is expected to constitute one of the most sophisticated automated cargo-handling systems in the world. The centre will be four storeys high, about the size of six football pitches on plan, and only 450m from the south runway.

In the face of concern by the Civil Aviation Authority that reflections from such a large structure would interfere with the airport's radar systems, Wing Commander Ramsay Browne – who is a civil aviation radar reflections expert – was asked to draw up a cost-effective scheme for reducing the reflective properties of the building. As a result, the radar-absorptive cladding will be installed on the critical eastern and northern elevations.

EDM Spanwall
Tel: +44 1232 815303
Fax: +44 1232 815449



cross section

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502 ØK's headquarters Copenhagen with Saint Gobain glazing

502

ØK's headquarters at Company House, Copenhagen, by PLH Arkitekter, stands at the end of the central pier in the southern part of Copenhagen Free port. The complex consists of a central curving building, 12 storeys high, enclosing a glass atrium, and two flanking six-storey wings. With wide views over the harbour, a great deal of the building envelope is composed of glass. Saint-Gobain's Cool-Lite KN 155 with low reflectivity and colour distortion was used along the wing buildings and for the outer skin of the atrium roof. The firm's Contrasplit glazing forms the inner one, the combination providing solar control. The triple-glazed envelope of the semi-circular block is energy efficient and is lined internally with Saint-Gobain's Parsol green insulating glass.

Saint-Gobain
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Fax: +44 171 499 6269

503

The starter complex at Völkermarkt in Carinthia, Austria by Günther Domenig (AR April 1996) is the gateway building to a new industrial zone. Its extraordinary steel and glass superstructure is cantilevered floors from concrete columns and reached by means of a staircase tower. Schüco's FW50 system has provided FW50 aluminium profile facades with projecting top hung windows, and thermally insulated mullions and transoms with a narrow 50mm face width.

Schüco
Tel: +49 521 783 233
Fax: +49 521 783 182
Schüco UK
Tel: +44 1908 282111
Fax: +44 1908 282124

504

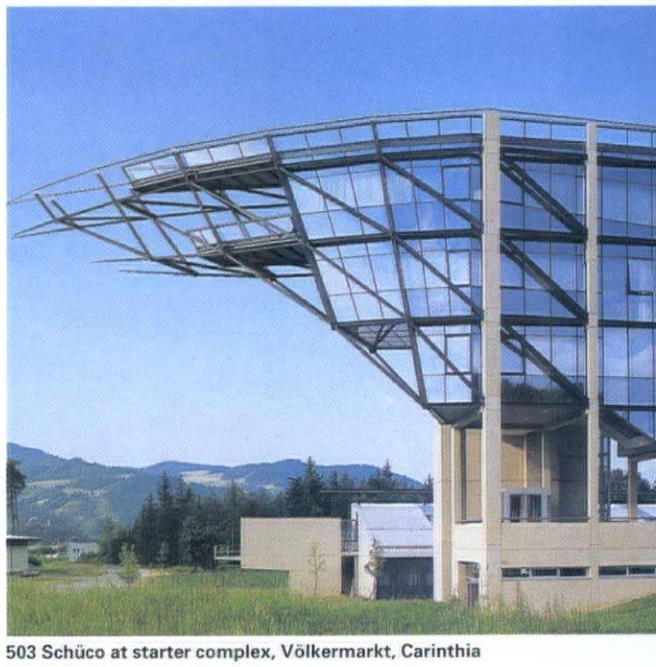
Rheinzink's standing seam zinc roofing, including drainage and flashings, was specified for the roof of the Nationale-Nederlanden, Prague, by the architects Frank O. Gehry & Associates with Studio Vlado Milunic.

Rheinzink
Tel: +49 23 63 605 15
Fax: +49 23 63 605 215
Rheinzink UK
Tel: +44 1276 686725
Fax: +44 1276 64480

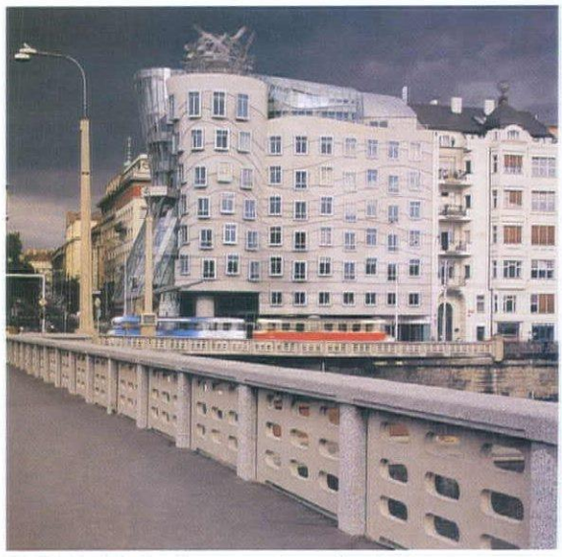
505

Flachglas supplied the structurally-glazed envelope of six-storey offices for an advertising agency in Frankfurt am Main, Germany, by Schneider + Schumacher (AR September 1996). The building was designed to be green. The north facade is a winter garden buffer zone that modifies sound and temperature inside the offices, a spectacular crystal box enclosed by roof-hung insulating and security glazing. Each glass sheet is clamped in a butt joint with its neighbour and hung on stainless-steel cables running from ground to roof level. Wind forces are taken up by steel props fixed back to the main reinforced-concrete structure. Glass panels on the roof are fixed to a steel frame; while those cladding the narrow sides are connected, by steel triangular back, to the main structure.

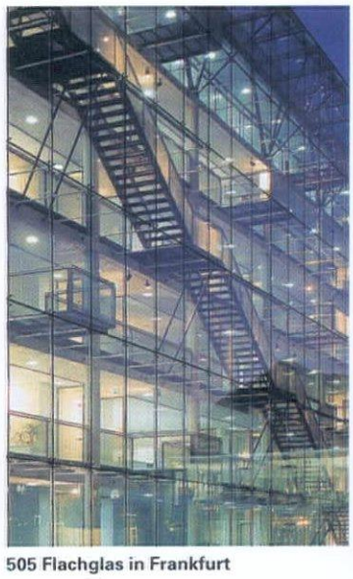
Flachglas
Tel: +49 209 168 0
Fax: +49 209 168 2053



503 Schüco at starter complex, Völkermarkt, Carinthia



504 Rheinzink standing seam zinc roofing in Prague



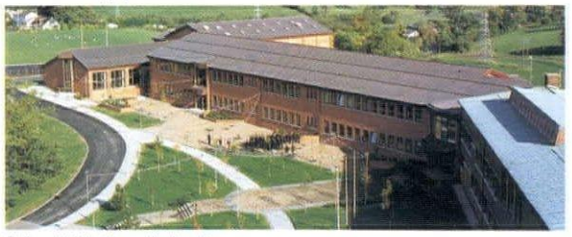
505 Flachglas in Frankfurt

If you would like to obtain more information on these products, please enter the relevant numbers (**501** etc.) on the reader enquiry card at the front of this issue.

If you think copper is just too costly for many roofs



Police College, Scotland



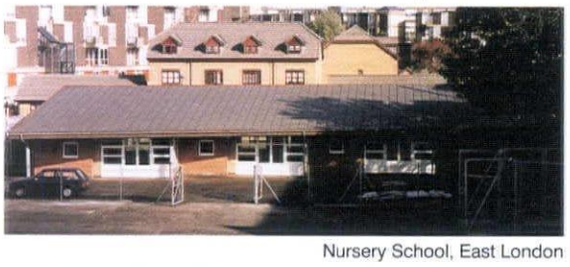
School, Northern Ireland



House at Futureworld, Milton Keynes



DHSS Laboratories, Northern Ireland



Nursery School, East London



Retail Store, Cardiff

think again

A report on recent research from leading independent consultants shows the real costs of copper roofing today compared with other materials. Looking at total structure, a copper roof costs nearly 25% less than lead and about the same as zinc, aluminium or stainless steel. Life cycle costings reveal copper as one of the most cost effective roofing materials over the life of a building.

Up-date your thinking on roof costs: use the response card or fax 01452 381154 for your copy of the cost report and other information on copper roofs.

european copper roofing campaign

Re-evaluate Copper

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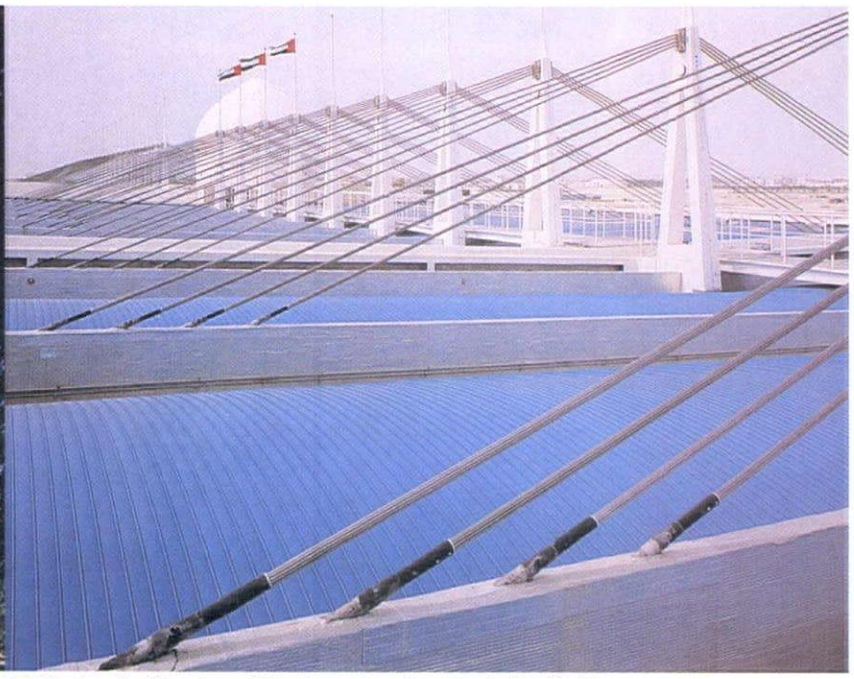
SPECIALTY PRODUCTS

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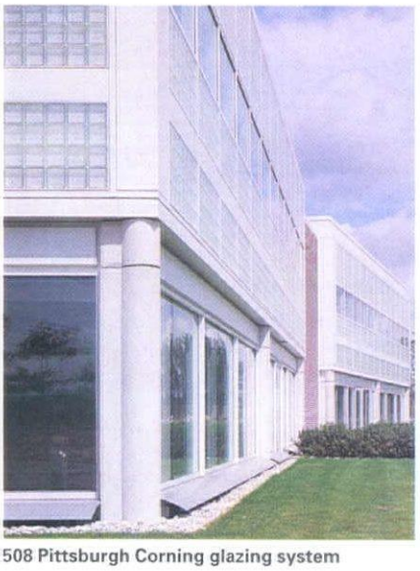
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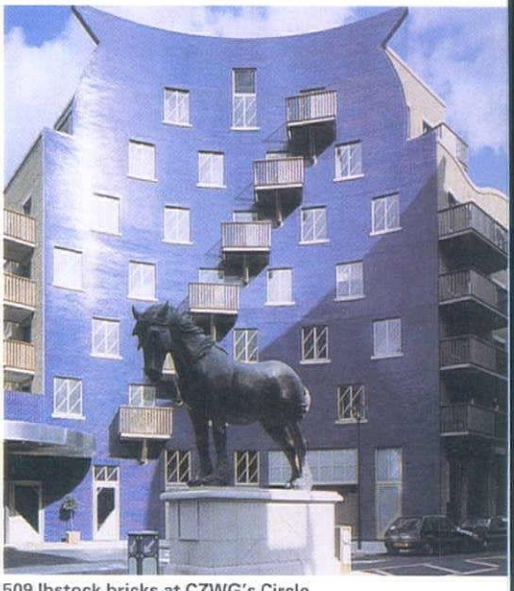
506 Alucobond cladding in Bochum-Wattenscheid housing



507 Plastmo Profiles at grandstand over camel racetrack, Abu Dhabi



508 Pittsburgh Corning glazing system



509 Ibstock bricks at CZWG's Circle

506
Alucobond cladding ventilated from the rear stops moisture and prevents energy loss. Ecoclad, a special system developed by Alu-Swiss, has been used to clad existing housing in tower blocks at Bochum-Wattenscheid in Germany. The system makes it possible to use conventional tools for clean exact detailing around panel joints, windows and corners, and includes individual roof edgings, fascia and balcony cladding.

Alu-Swiss
Tel: +49 7731 802498
Fax: +49 7731 802845
Alu-Swiss UK
Tel: +44 1902 31 06 10
Fax: +44 1902 29 160

507
The main grandstand looking over the camel racetrack in the heart of Abu Dhabi, United Arab Emirates, has a barrel-vaulted roof of blue Everlite, manufactured by Plastmo Profiles. Everlite is composed of triple-skinned, extruded polycarbonate tubes which are joined to form light flat or thermo-formed curved panels. Plastmo was the first company within the Danish plastics industry to get the international 9001 Quality Assurance certificate. The grandstand was designed by Fitzroy Robinson Partnership with Jan Bobrowski & Partners as consulting engineers.

Plastmo
Tel: +45 57 66 66 66
Fax: +45 57 66 66 69
Everlite Division, Plastmo Profiles, UK
Tel: +44 1604 790 780
Fax: +44 1604 492 936

508
In the early '90s, Pittsburgh Corning developed, with Dow Corning in the UK, a silicone bonding system for PC Glassblocks. It was first used at Stockley Park, near Heathrow, by Eric Parry, but is now marketed by the firm, with Dow Corning, as the Pittsburgh Corning Structurally Glazed Silicone Frame System. The 3mm clear silicone joints enhance the appearance of glassblock, and the structure is thermally efficient and sturdy. Silicone bonded panels have been independently tested for wind loading at Ceram Research in the UK, and have withstood testing for the effects of weather. Photograph: Martin Charles

Pittsburgh Corning
Tel: +44 1734 500655
Fax: +44 1734 509019

509
Ibstock's brickmaking dates back to the early part of the nineteenth century. Today the firm is an international brick and forest products group, selling over a billion bricks a year in Europe and North America. Using new technologies, its factories produce over 250 brick types, special shaped bricks, clay paving, terracotta and faience, industrial ceramics and architectural cast stone. Ibstock Shaws glazed bricks were specified by Campbell, Zogolovitch, Wilkinson, Gough, in their design of The Circle, a residential block in London's docklands. The bricks are frost resistant, easy to clean, light reflective, colour fast and vandal resistant.

Ibstock Building Products
Tel: +44 1530 261999
Fax: +44 1530 261888

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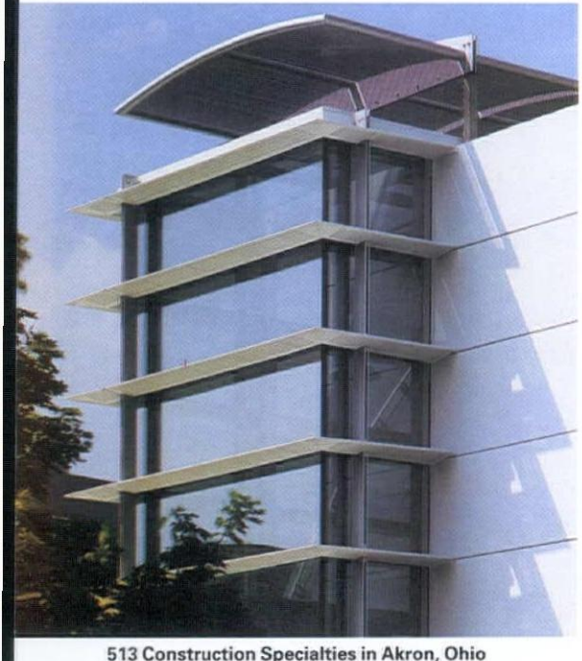
510 Riggarna glazing for Richard Rogers



511 Robertson's Formawall cladding at Severn crossing, Rogiet



512 Gasell Profiles' strip steel roofing/cladding



513 Construction Specialties in Akron, Ohio

510

Founded in 1981, Riggarna was first involved in the marine rigging market having invented the CR4 cable stay adjuster which permitted easy adjustment under high loadings. It was followed by development of the CR4 based rigging system which broke new ground in the design of fatigue and corrosion resistant tensile structures. Today the firm's tensile systems make use of a range of materials including all standard steels, high performance bright steels and composite materials. The firm also supplies fabric based tensile structure, will design, manufacture and install glazing systems, and provides engineering services. Shown here, Riggarna's architectural system used for the glazed exterior of the Kabuki-cho office building in Tokyo, designed by the Richard Rogers Partnership.

Riggarna UK
Tel: +44 1202 480481
Fax: +44 1202 479899

511

Robertson's Formawall cladding system and single skin roofing sheets were used in the construction of the Toll Plaza and Control Building, which forms part of the new Severn crossing, at Rogiet, South Wales, and which was designed by the Percy Thomas Partnership. The single-storey structure is clad externally with Formawall composite panels, including special curved ones, in Sterling Silver. The panels were laid horizontally and to the full height of the building. Vogue, the firm's silver-coated louvred screen conceals mechanical and ventilating plant on the roof. The canopy spanning 13 lanes of traffic and sheltering toll booths, coin bins and traffic equipment is composed of Robertson's single skin roofing sheets with a trapezoidal profile. These, like the Formawall panels, are coated with Versacor protective coating.

H. H. Robertson UK
Tel: +44 151 355 3622
Fax: +44 151 355 1276

512

Gasell Profiles' strip steel roofing/cladding, called Gasell Gax, was specified by Jean Louvera for cladding the College of the Future at La Villeneuve, Grenoble. Supplied in France by Force Metal, some 16 000 square metres of the material was used in 23 metre spans with standing seam joints. The material was coated externally with Shine, a Kynar 500 based finish which incorporates metallic pigments and is iridescent. The pigments change colour with the light, in this case from blue to coppery red. Some of the Shine colours available simulate the patina of copper and lead.

Gasell Profiles
Tel: +44 1452 421234
Fax: +44 1452 421155

513

The American firm, Construction Specialties, produces various kinds of sun control devices, including cantilevered, horizontal and vertical sunshades, fixed and mobile, and skylight shutters. Shown here, the firm's Trellis Sunshade and horizontal Demi Fins at Inventure Place in Akron, Ohio by Polshek & Partners. Standard extruded aluminium blades are generally ordered, but hollow aerofoil blades can be specified if large spans are required. There are five kinds of frames available.

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Fax: +1 908 272 5844
Construction Specialties UK
Tel: +44 1296 399700
Fax: +44 1296 399444

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Prince raises interest at Alliance & Leicester



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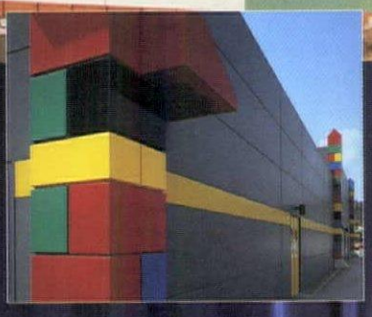
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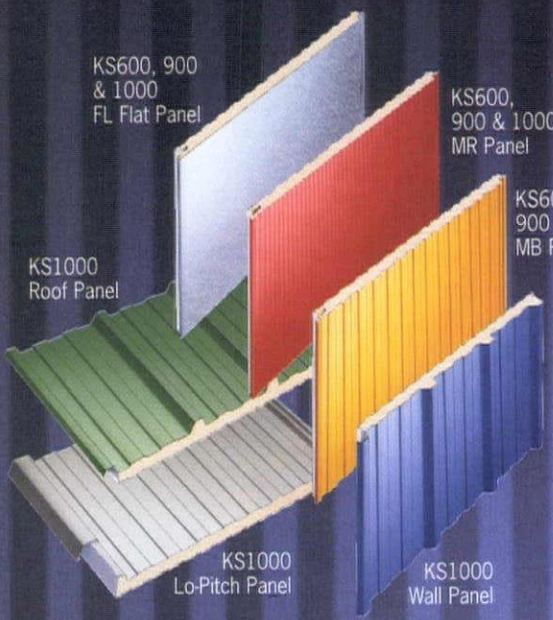
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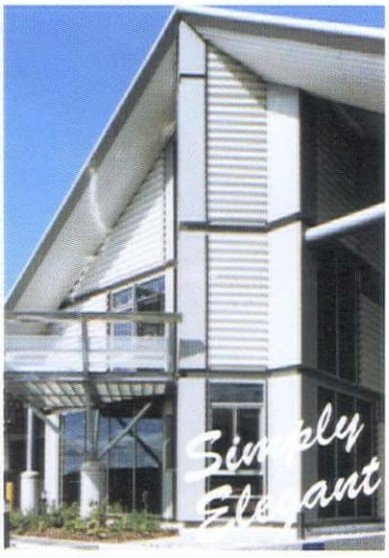
For further information please contact:-
Kingspan Building Products Limited
Greenfield Business Park No.2, Greenfield, Holywell,
Flintshire N. Wales CH8 7HU
Telephone: (01352) 716100 Fax: (01352) 710161
Tech hotline: (01352) 716101
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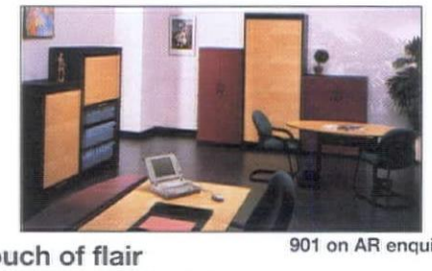
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New Cladding and Roofing system from the States

Stoakes Systems, well known for Astrawall and other systems, have been appointed UK agents for the supply and fix of Kalwall.

Widely used in the States, Kalwall is an insulating translucent system for cladding and roofing. This unique product is made by permanent bonding of reinforced fibreglass to both sides of an aluminium I-beam grid core. The sandwich panels transmit diffused light, maximise thermal insulation and control solar heat gain.

New brochure and information on the latest UK projects are now available.
Contact Martin Day, Stoakes System Ltd
Tel: 0181-660 7667 Fax: 0181-660 5707



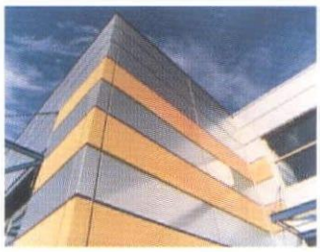
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A touch of flair

In February 1997 Flexiform launched a new range of storage units which will add a touch of flair to any office. 'Flexiflair' uniquely combines high capacity storage with a stylish looking finish. It will be the most efficient wooden unit on the market and is competitively priced.The design and finish of Flexiflair not only complements Flexiforms chess desking range but its flexibility also enables it to be suited in with any other furniture range

For further information, please contact Nicola Dunlop at Flexiform.
Tel: 01274 65601 Fax: 01274 660867

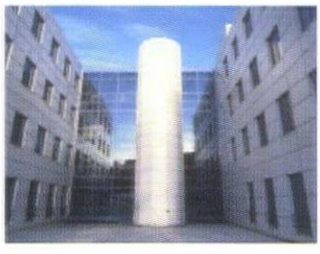
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email:gasell.profiles@mail.internexus.co.uk



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Declaration of independence

THE ARCHITECT RECONSTRUCTING HER PRACTICE

Edited by Francesca Hughes. London: The MIT Press. 1996. £24.95

This is the sort of book which leaves you wondering why was it written. In searching the introduction I pulled out the following 'A need ... for women to declare themselves as "woman" in order to make changes for women; just as there is a need to refer to real women's experience in order to evolve this hypothetical "woman"'.

There follow 12 essays by women, six of whom are academics, theoreticians or journalists, active in the sphere of architecture. It is the want of connection with real experience which lends much of this work its predominant tone of self-absorption, narcissism, and an obsession with the accident of gender. Honourable exceptions to this are three women most deeply and urgently engaged in teaching or practice.

Françoise-Hélène Jourda writes of an endless search for greater spatial and geometric liberty; of creating volumes so complex they discovered them as they were built; designing operational rules rather than precise spaces. Of exploiting contradictions.

Christine Hawley writes of her fear that ideas atrophy in the development of the skill of the critic and reflects on the problem of maintaining creativity in the worlds of academia and practice in the face of bureaucratic and commercial pressures.

Margrét Hardardóttir (who practises from Reykjavik) gives a description of the design process which is among the clearest and most brilliant I have ever read. Does it perhaps indicate that a more confined society, with fewer choices, less intense and conflicting pressures, is likely to allow the sort of concentration of dedicated effort which gives rise to fine architecture.

The three essays I think warrant special mention deal with issues of concern to all serious architects. It is for this reason that they will be of greater interest to women than some of the other contributions. KATE MACINTOSH

Landscape artists

ARCHITECTURE AND LANDSCAPE

By Clemens Steenbergen and Wouter Reh. Munich: Prestel. 1996. DM68

Steenbergen and Reh state 'the aim of the study is to penetrate the dynamics of creative and experimental thought in landscape architecture'. One of an increasing number of discourses which develop theoretical bases for landscape design, this dense book for scholars and academics analyses the prototypical great European landscapes (sixteenth-century Italian villas, seventeenth-century French Baroque gardens, the eighteenth-century English picturesque) in their roles as innovators in culture-driven changes of structure and vocabulary of design.

The authors project a 'rational matrix laid over the natural landscape' as the theoretical link between architecture, landscape and urbanism. The differences of the three typologies are read as the 'interplay between architectonic design and landscape pattern' – the imposition of man-made geometry on the natural landscape in varying degrees, which creates the rational villa, the formal chateau or the geometry of the picturesque.

Architecture and Landscape's strength lies in the clarity of structure and the carefully compiled and developed graphic material. This includes a wealth of plans, maps, sections, photographs and drawings (old and new material), of many of the best known historic villas, palaces and country houses within their local and regional landscapes. Detailed comparative analyses are made. Undulating computer-generated topographic grids help clarify spatial relationships. Fascinating three-dimensional architectonic topological, visual and spatial links are traced in countryside and city.

In *Architecture and Landscape*, Steenbergen and Reh present a whole new range of concepts and theories to pore over, investigate and travel with. The next step would be to make this material available on an interactive computer programme. ELSA LEVISEUR

Structural support

BUILDING THE NINETEENTH CENTURY

By Tom F. Peters. London: The MIT Press. 1996. £32.50

This well produced and beautifully bound book is a fascinating history of buildings and structures of the nineteenth century and the technology that enabled them to be created. It describes in detail the growth of technological thinking that led to the major developments in Europe and the United States and details not only structural and civil engineering projects but the mechanical engineering developments behind these projects and the close relationship between structures and machines.

Tom Peters has obviously carried out a huge amount of research which has resulted in the most detailed analysis of certain structures that I have ever seen – for instance his investigation of the 1851 Crystal Palace in Hyde Park where, contrary to general belief, all did not go smoothly and a number of experts had serious doubts about the overall stability of the structure. For an engineer reviewer this is fascinating material.

There are detailed histories of some of the major civil engineering projects of the nineteenth century including the Panama Canal, the Galerie des Machines and the Eiffel Tower – all well known, but also several unknown to this reviewer – the most interesting and spectacular being the proposal for a 1000ft high tower for the Philadelphia Centennial Exhibition in 1876. This design used ideas which would still be appropriate today as an approach.

In his conclusion section the author talks about the thinking process, hybrid thought form, combining analysis and design. He defines this hybrid as 'matrix thinking'. He says interestingly that designers are matrix thinkers combining scientific and empirical methods, thus often achieving innovative solutions to problems.

This book is fascinating, with its very readable text and superb illustrations and is a must for anyone interested in the history of building engineering and technology in the nineteenth century. It is the best book on the subject to have been published for a considerable time. TONY HUNT

Oeuvre incomplète

ODILE DECQ BENOIT CORNETTE

By Clare Melhuish. London: Phaidon. 1996. £29.99

Odile Decq and Benoît Cornette were still school-children in Brittany (she 13, he 15) when, in the wake of the 1968 Paris riots, the architecture section of the Ecole des Beaux-Arts was closed down and its revolting students dispersed to newly created Unités Pédagogiques d'Architecture. Ensuing measures introduced by successive governments to promote young architects in France, notably through architectural competitions for public sector commissions, have played no small part in shaping Decq and Cornette's career to date.

They graduated at Unité Pédagogique 6 in Paris (Odile in 1979, Benoît in 1985 after medical training in Rennes), worked in collaboration throughout the 1980s and won several competitions for the design of refurbishments, refits, exhibitions and the like. In 1986, their work was illustrated in one of the government-sponsored *Albums de la Jeune Architecture* and, soon afterwards, they were appointed architects for a housing block forming part of the Manin-Jaurès redevelopment in eastern Paris (1987-1989, cf AR March 1992, pp30-34).

Their continued participation in competitions has resulted in other commissions, notably as architects for the Banque Populaire de l'Ouest in the outskirts of Rennes (1988-1990) and as masterplanners (since 1994) for the redevelopment of the Gennevilliers docks just outside Paris. The parallel rise and rise of Decq and Cornette's celebrity culminated with their being awarded a Golden Lion at the 1996 Venice Architecture Biennale (at which they were responsible for the design of the French contribution, "Fracturing the monolith", cf AR November 1996, p11).

Decq and Cornette's *oeuvre complète* (to the beginning of 1996) is presented in this Phaidon monograph: 10 pages are given over to chronological lists of their projects, awards and suchlike, and no less than 130 pages are devoted to images and captions illustrating 24 buildings and projects. Conversely, Frédéric Migayrou's preface and Clare Melhuish's introduction are crammed into 15 pages, in minute type, and there is no index.

We learn from Migayrou (among other things) that Decq and Cornette's work 'proposes a sequential vision, it is dynamically organised, simultaneously material and virtual', and that it is 'an architecture of transfer, translation, "tangential shifts", to quote the architects'. Melhuish makes a valiant attempt to describe their career and to explain shifts – tangential or otherwise – in French government policies towards architecture. Sadly, the provenance of Odile's remarkable hair style is not revealed, nor does this book offer any inside information on whether, at 40-something, Decq and Cornette are planning to re-invent their *image de marque* and/or their strategies for procuring commissions.

CHARLOTTE ELLIS

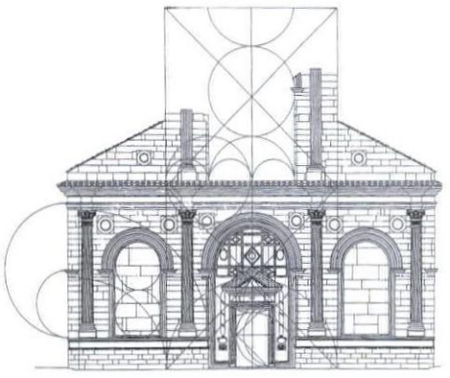
Missing extracts

LEARNING FROM HOLLYWOOD

By Hans Dieter Schaal. Fellbach: Edition Axel Menges. 1996. £38

'Learning from Hollywood' appears to have been published as a complement to an exhibition called 'Kino – Movie – Cinéma' designed by the author and held in Berlin in 1995. Given the vastness of the subject, so slim a book with its various illustrations of architectural 'effects' in films – largely American and German – is inevitably disappointing. While noting that Poelzig and Mallet-Stevens were the only significant designers to have worked for the cinema, Schaal appears to have overlooked those real buildings which have been major part players. Some films of the '60s, particularly John Schlesinger's, made strikingly active use of buildings: think of Paternoster Square (of all places), where Laurence Harvey cavorts with Julie Christie in *Darling*; and a Peter Hall film of 1969 called *Two into Three Won't Go* ends with an exterior shot of a modern house, all frame and windows, lit up at night: the various scenes visible inside form domestic pictures that counterpoint the exploded climax of the departing lover. That type of sparse, poised architecture evidently once carried with it enormous emotional tension, and contemporary directors with an architectural eye caught it. And even Schaal ought to have picked up on the closing scene of Mackendrick's *Mandy* of 1952, with its extraordinary vision of Hammersmith Bridge stretching out heroically over the bombed-out city.

In spite of the book's title, there is no reference here to the rather more interesting question of the influence on film design on architecture, rather than the other way round. There is too much missing. TIMOTHY BRITTAIN-CATLIN



Alberti believed a building is an organism compounded of lines and matter, in which the lines spring from the spirit of man, matter from nature: a concept succinctly demonstrated in this facade proportion study from Italian Renaissance Architecture, from Brunelleschi to Michelangelo *(edited by Henry Millon, Thames & Hudson, London, 1996, £29.95). This is the book of the brilliant exhibition at the Palazzo Grassi, Venice (AR August 1994, pp9-10) now issued in paperback at a reasonable price. Superb images and essays by fine scholars including Ackerman, Krautheimer and even O. M. Ungers make it invaluable.*

Burlington opacity

LORD BURLINGTON: ARCHITECTURE, ART AND LIFE

Edited by Toby Barnard and Jane Clark. London: The Hambledon Press. 1995. £37.50

In his preface Howard Colvin identifies one of the main arguments of this book of essays – that Lord Burlington, the great patron of architecture and a leading Whig nobleman, was an eighteenth-century Anthony Blunt masquerading as a loyal courtier while concealing a record of treasonable Jacobite activity. This is the thrust of Jane Clark's own contribution and her scrutiny of the real significance of letters and meetings is the stuff of *Spycatcher*, lacking only a good thumping proof that Burlington was actively campaigning for the installation of King James III. Colvin is properly respectful of the value of new research but understandably dubious about a proposal which would entail a radical reappraisal of one of the icons of Palladianism. True meaning is also the theme of Richard Hewlings's essay on Chiswick House which accounts for nearly half the text. In this case it is the appearance and significance of the architecture which is scrutinised. The building is first anatomised feature by feature and an origin assigned to each. It transpires that very little was taken from Palladio but much from other Italian sources, both buildings and books. A shorter second section on meaning demonstrates how Burlington distanced himself from the rude business of building by providing an intellectual and symbolic programme for the works, much as Lord Cobham did in his garden at Stowe.

Again there is a suggestion of Jacobite and Masonic sub-text to the decoration and on this notion too Colvin sprinkles cold water, unwilling to see Chiswick House bracketed with Thomas Tresham's Triangular Lodge at Rushton as a work of arcane symbolism. Other contributors to the book flesh out Burlington's political career, his relationship with Alexander Pope and his Irish connections; Edward McParland's article on Edward Lovett Pearce, architect of the Dublin Parliament House is noteworthy as a stimulating piece of creative deduction. But the end result of all these writings is opacity not clarity: a luxuriant undergrowth of contextual information with no path through. NEIL BURTON

Station platform

THE MODERN STATION

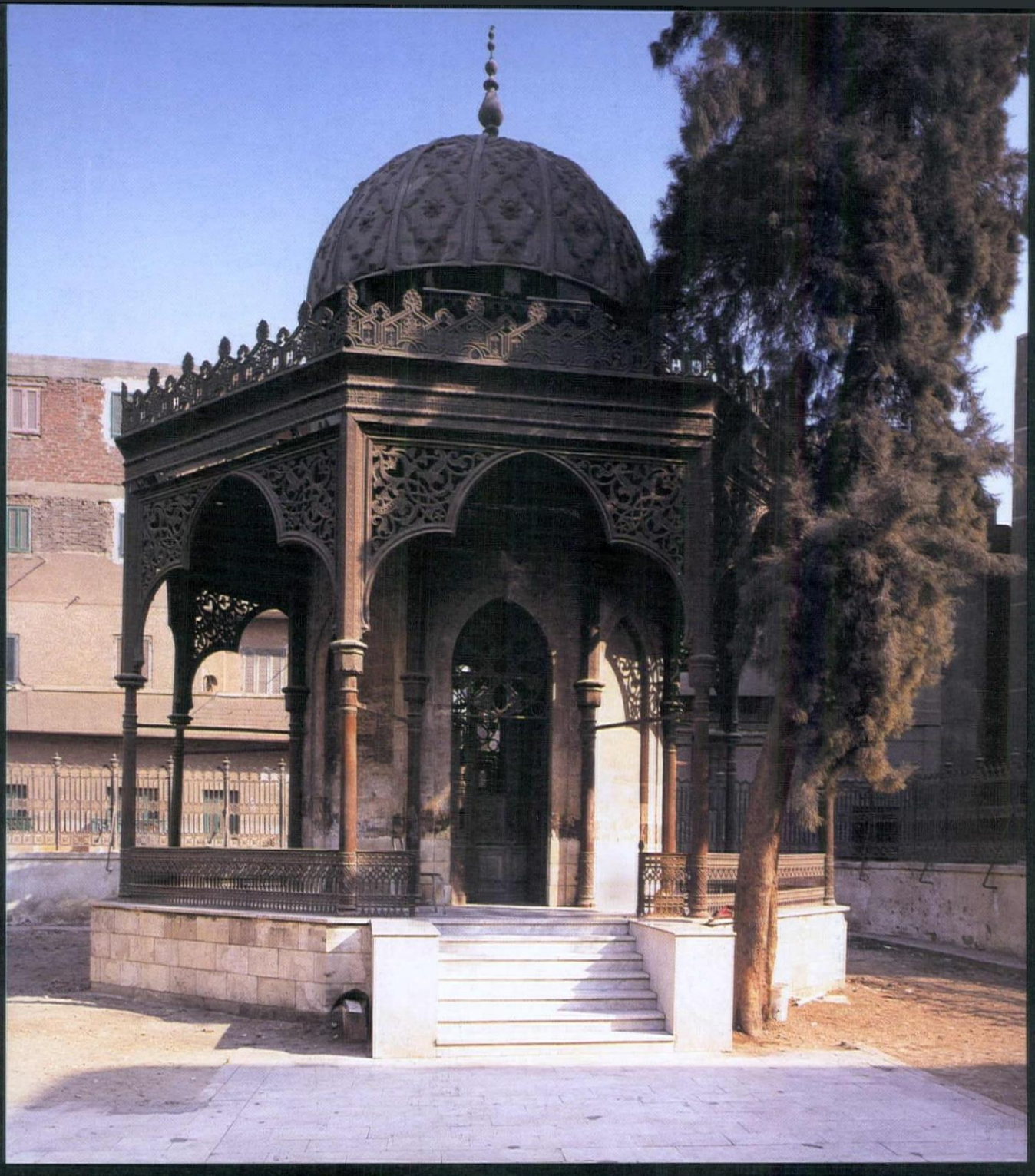
By Brian Edwards. London: E & F N Spon. 1996. £45

This book celebrates the rebirth of European railways and their new stations and is lavishly illustrated with drawings from leading architects.

Stations today are about interchange and depend on good access, not just on foot but by other modes of transport. The stations shown all do this but it is not enough to reproduce plans and sections, as given, greatly reduced, without scales (only two have), no annotation and minimal captions to help explain how the stations actually work. Diagrams too would have helped show how access by bus, tram car, cycle or on foot is handled in each case and affects the overall plan.

Underground stations are only superficially covered and cost often 20 times that of surface stations so lavish stations are impossible. This is not mentioned. Such stations hinge around engineering requirements, usually due to soil conditions. However the importance of architects being in control is rightly stressed if imaginative results are to be achieved. Light rail at ground level has only platform canopies for architects to design. But when elevated, light rail design is more complex, with lifts and bridges. More could have been shown of the excellent kit of parts evolved in Docklands Beckton extension.

This is an interesting read for railway enthusiasts but gives little useful information to those embarking on the design of a station. Hopefully it will encourage UK authorities to raise their standards of station design. BRIAN RICHARDS



Photograph by Marq Bailey

Tucked into Cairo's back streets, this jewel-like mausoleum houses the remains of the swashbuckling French soldier who founded the modern Egyptian army.

Standing among the six hundred or so magnificent monuments in the Egyptian city of Cairo, the Mausoleum of Soliman Pasha El-Franzawi is perhaps the only monument to have been designed by a European architect and yet warrant listing as an Islamic monument. Prussian architect Karl von Diebitch designed and built the mausoleum to house the body of the gallant and charismatic French soldier Soliman Pasha in 1862, in the garden of what was formerly his palace, near the old city of Fustat in Cairo.

Born Joseph Anthélme Séve in France in 1788, he joined the French Navy as a boy aged 10, serving as a Hussar conscript and later as an officer in the Imperial army led by Napoleon Bonaparte. He fought in Russia, Germany and France up to 1814 and took part in the Waterloo campaign of 1815. He first came to Eygpt in 1820, and became entrusted with setting up the modern Egyptian army by Mohammed Ali, the first viceroy of Egypt. He converted to Islam in 1824, taking the name of Soliman Bey, and was elevated to the rank of Pasha in 1833. He subsequently became the army's Commander in Chief, until his death in 1860.

His mausoleum is located in Old Cairo opposite Roda Island, two streets in from the Nile corniche. The domed limestone structure is octagonal in plan, with delicate wrought iron decorations and Arabic calligraphic inscriptions. It is surrounded by a form of verandah, also decorated with Islamic patterns. Like most Islamic monuments in Cairo, maintenance was entrusted to a private *waki* (a religious and charitable trust) set up in 1912 by Soliman Pasha's eldest daughter. However, from 1953 the mausoleum suffered extreme neglect and it was not until 1980 that the Department of Islamic Antiquities undertook some restorative measures to the interior. After much private campaigning, Mahmoud Cherif Adel Sabil (fourth generation Soliman Pasha) was, in 1995, officially appointed trustee of the mausoleum and new restoration plans are now under way.

ELEANOR CURTIS