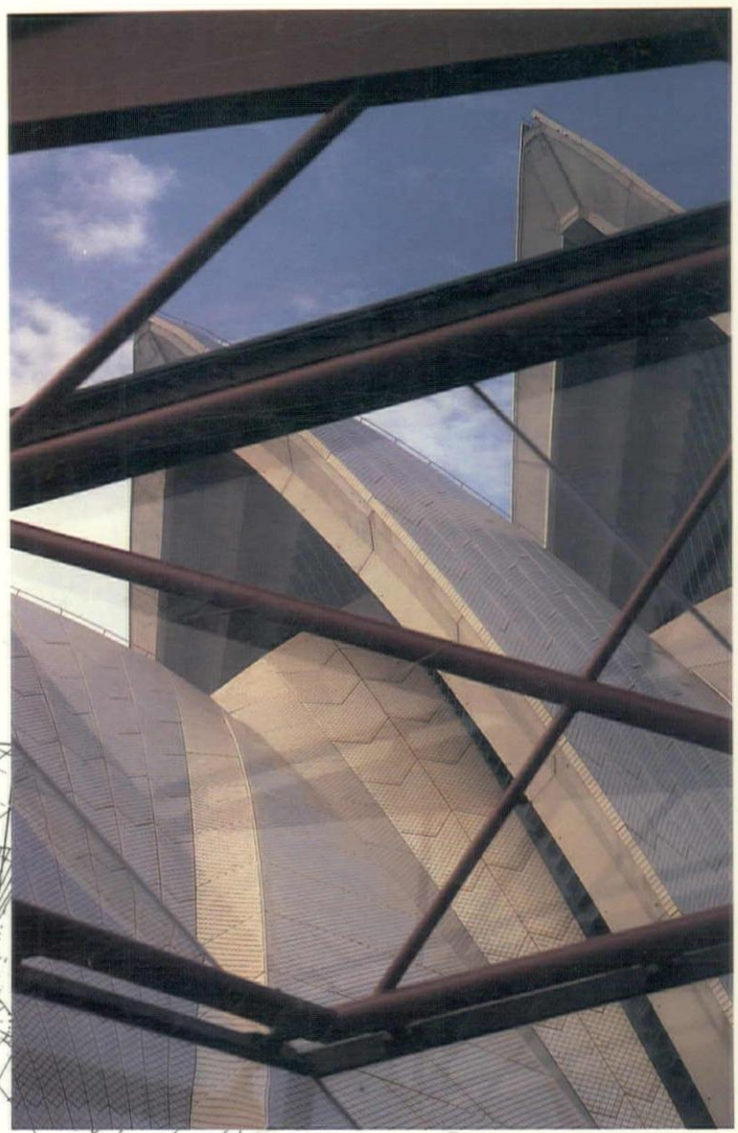
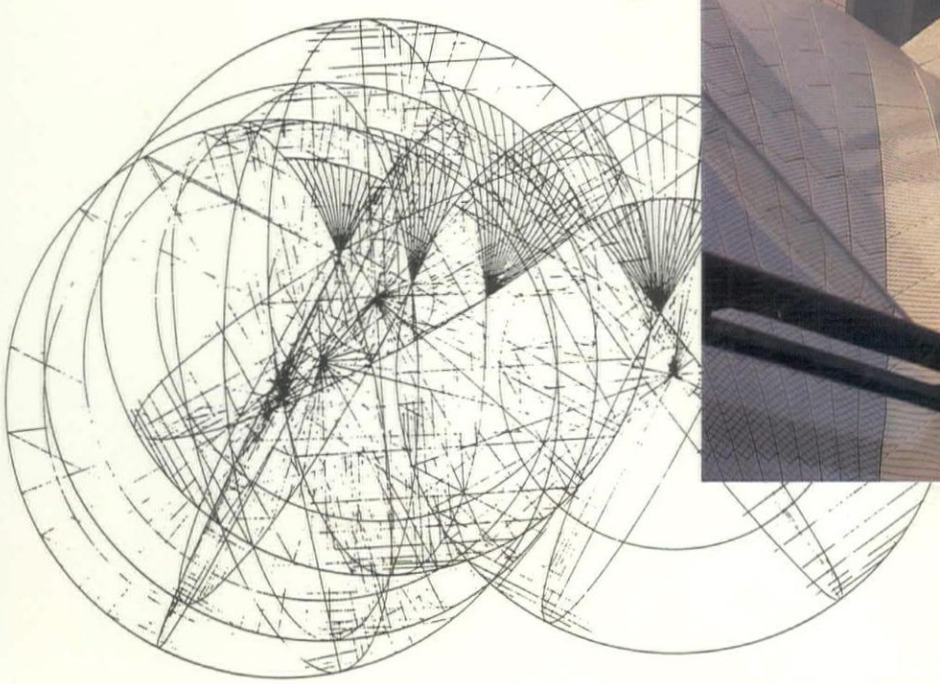
WORLD ARCHITECTURE





JØRN UTZON

GEDDES AND AMERICAN THEATRE
THE LOWE HOUSE
DISNEY'S VISUAL LANGUAGE

THE INTERNATIONAL ACADEMY OF ARCHITECTURE

Functional Architecture.

Spanning space and heights. – O&K/KONE passenger transport systems are more than functional building elements. They direct the flow of passengers and contribute towards architectonics.

Escalators, autowalks and lifts by O&K and KONE are a safe and comfortable way to travel for customers and personnel, visitors and guests, tenants and tourists.

Outstanding design and technical quality have made O&K and KONE trademarks known throughout the world.

Escalators and autowalks from O&K/KONE. In more than 80 countries worldwide. No.1 in Europe.

O&K Rolltreppen GmbH
Postfach 80 06 47
D-4320 Hattingen, Germany
Fax (23 24) 20 52 15, Telex 8 229 971

In the U.K.: O&K Escalators Ltd.
Worth Bridge Road
GB-Keighley, West Yorkshire BD21 4YA
Fax (5 35) 68 04 98, Telex 517 208

O&K/KONE
Escalators & Autowalks

WORLD ARCHITECTURE

THE OFFICIAL MAGAZINE OF THE INTERNATIONAL ACADEMY OF ARCHITECTURE (IAA) NUMBER 15
EDITORIAL BOARD: PIERRE VAGO (CHAIRMAN); CARL AUBOCK; DENNIS SHARP; GEORGI STOILOV; A IKONNIKOV

Consultant Editor
Sir Norman Foster
Executive Editor
Dennis Sharp
Associate Editor
Peter Dormer
Managing Editor
Jeremy Myerson
Art Director
Bob Bateman
Art Editor
Naomi Russell
Account Director
Michael Delaney
Production Manager
Belinda Estall
Circulation
Peter Gilbert
Sales Manager
Paul Townsend

WORLD ARCHITECTURE
is published by Grosvenor Press International Ltd. The views expressed in World Architecture do not necessarily reflect those of Grosvenor Press International or the International Academy of Architecture

All editorial matter should be addressed to:
Jeremy Myerson,
Managing Editor, World Architecture,
c/o Design Intermedia, 20 Arlington Road, London W13 8PE, England.
Tel: 081-998 5072
Fax: 081-997 6935

All advertising and subscription enquiries to: Grosvenor Press International, Holford Mews, Cruikshank Street, London WC1X 9HD, England.
Tel: 071-278 3000.
Fax: 071-278 1674.

© Grosvenor Press International Ltd 1991
All rights of reproduction reserved

RATES:
UK rate: £6 + £3 post & packing.
US $10 plus $5 post & packing;
Elsewhere prices inclusive of post & packing in local currencies are as follows: Subscriptions of six copies are available for the price of five, that is, five times the local currency rate shown below
AUSTRALIA A$17
AUSTRIA S197
BELGIUM F585
CANADA $18
DENMARK Kr108
FRANCE 95F
HONG KONG HK$117
IRELAND Ir£22
ITALY Lir20322
JAPAN Y1908
MALAYSIA M$41
NETHERLANDS 32F
NORWAY KR100
PORTUGAL E2280
SINGAPORE S$29
SPAIN P1740
SWEDEN KR95
WEST GERMANY DM28

STUDENT RATES:
US$6 + $2 p&p or
£3.50 + £1 p&p. Only bankers drafts accepted with proof of student status.

World Architecture is published bi-monthly (6 times a year) by Grosvenor Press International Ltd. Subscription is US£60 per year. Second Class Postage Pending at Rahway N.J. Postmaster send address corrections to World Architecture, c/o Mercury Airfreight International Ltd. Inc, 2323 Randolph Avenue, Avenal, New Jersey 07001.

PROFILE

JØRN UTZON

The Vision of Nature. In the latest of WA's profile series on Academicians of the International Academy of Architecture, Tobias Faber explores the motivating forces in the career of Danish architect Jørn Utzon. 28

The Ubiquitous Monument. Sydney Opera House remains Jørn Utzon's professional masterpiece, despite causing the architect so much personal grief. Dennis Sharp looks at the building's artistic significance. 32

The House that Utzon Built. Many of Jørn Utzon's strongest design beliefs are embodied in his own courtyard-style home on the island of Majorca. By Christian Norberg-Schulz. 36

Religious Conviction. Utzon's Bagsværd Church near Copenhagen is one of the most outstanding examples of church architecture this century, says Christian Norberg-Schulz. 38

The Next Generation. Utzon's architect sons Jan and Kim have taken up their father's baton. WA looks at recent projects by Utzon Associates. 40

FEATURES

ESSAY: Norman Bel Geddes: Architect of the Modern Theatre. William Faricy Condee argues that the contribution of American designer Norman Bel Geddes to modern theatre architecture should not be forgotten. 48

PROJECT: The Lowe House. Architect-trained pop musician Chris Lowe of the Pet Shop Boys has commissioned an uncompromisingly modern London house-cum recording studio. Alan Brookes Associates are the architects. 52

PRACTICE: The Spirit of Competition. In the latest of WA's practice management series, Roger Watson visits the Hamburg offices of leading German architects Von Gerkan Marg & Partner. 56

FACE TO FACE: The Fantasy Business. The Disney Corporation is the first name in entertainment architecture, commissioning many of the world's best known designers. Wing Chao, Disney's senior vice president of architecture, planning and design, gives the client view. 66

INTERIORS: Spain's Social Settings. Guy Julier reports on the cultural phenomenon of Barcelona bar design and selects two choice interiors for closer examination. 73

DEPARTMENTS

Editorial. Introducing the theme of architecture, entertainment and people. 27

Concept. The International Forum of Young Architects presents the conceptual projects of Soviet artist Yuri Avvakumov. 62

Books. WA critics assess new works on the Bauhaus and Vico Magistretti. 69

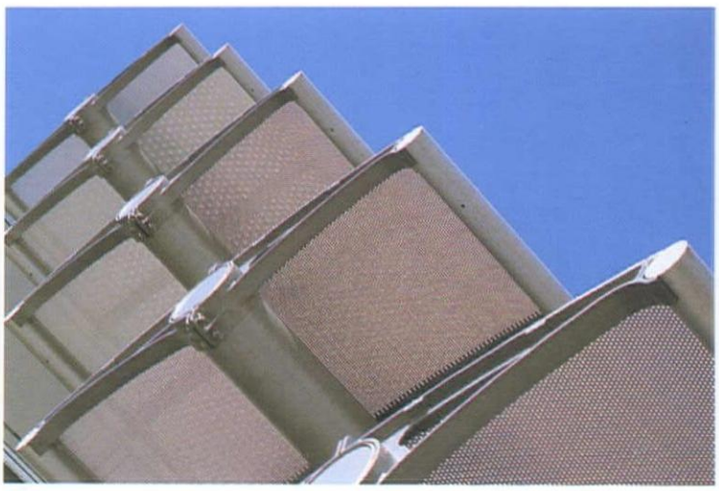
Technical. The capabilities of steel in construction demonstrated by two new Belgian projects, both designed by Brussels architects and civil engineers Samyn & Partners. 70

Academy. News and views from the International Academy of Architecture, including a report on a French workshop exploring the relationship between the university and the city. 78

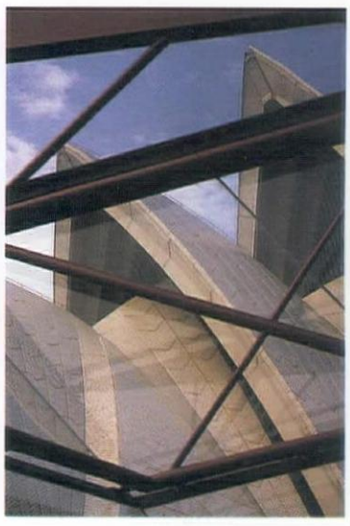
Polemic. Pierre Vago casts an acerbic eye over the bungling bureaucrats at the heart of institutional life in international architecture. 79

Product Update. Eight pages of international flooring products for architecture and interior design are prefaced by an assessment of current developments. 83

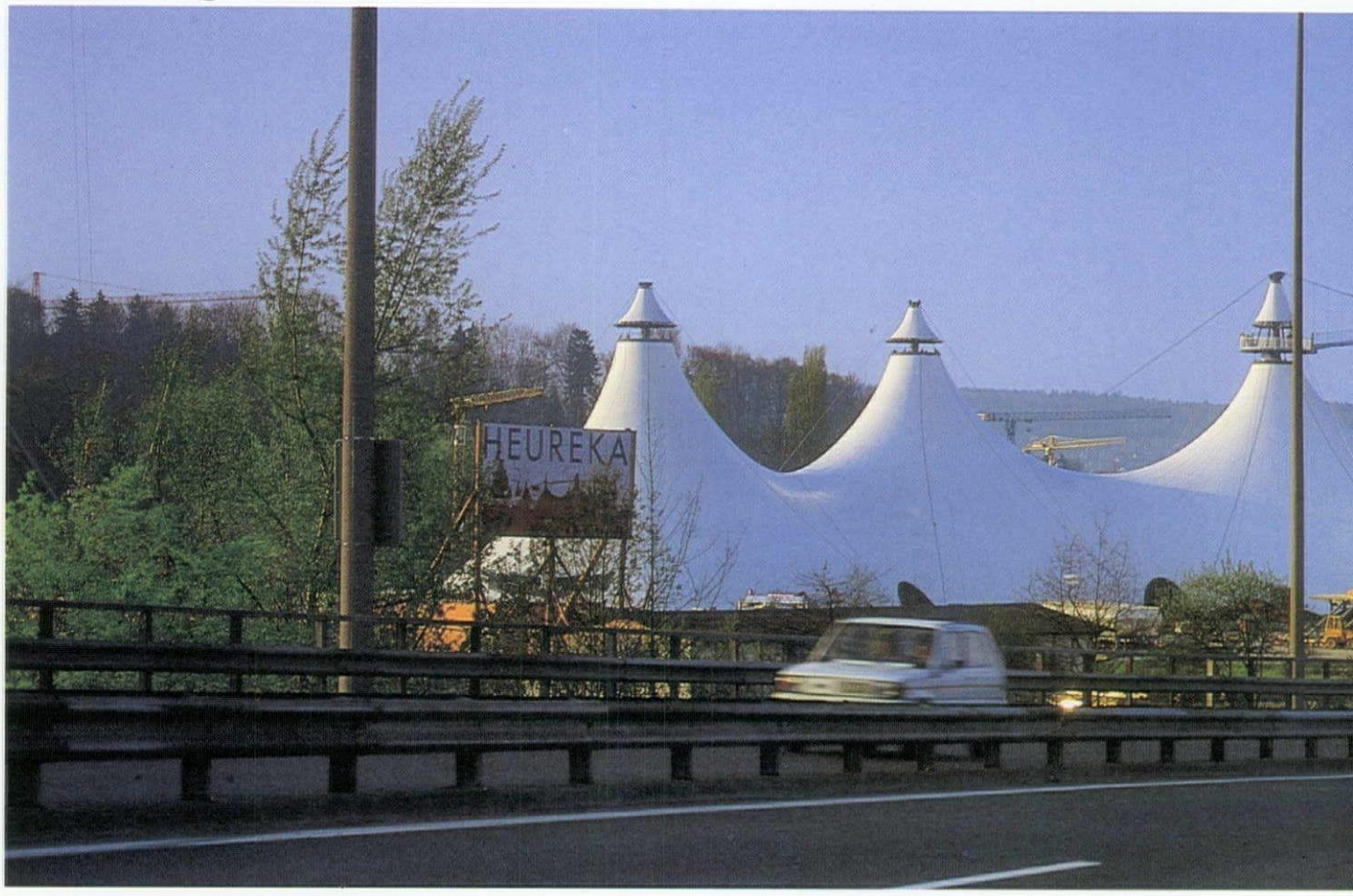
Cover photograph: Sydney Opera House revisited. Photograph by Dennis Sharp. Jørn Utzon is the subject of the major profile in this issue.



Stuttgart airport terminal designed by Von Gerkan & Marg. See Practice.



®Hoechst High Chem



Coordination: Arch. P. Angst-Obi, Zurich. Consulting engineers: IPL Ingenieurplanung Leichtbau GmbH, Radolfzell; Plüss + Meyer, Lucerne. Weavers: Conze & C

"HEUREKA", NATIONAL RESEARCH EXHIBITION 1991, ZURICH

SUSPENSEFUL PRESENTATION: THE EVOLUTION OF PROGRESS

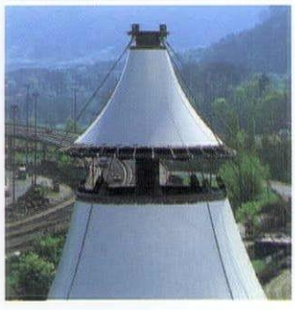
TREVIRA® HIGH TENACITY

The "Heureka", erected on the Allmend Brunau in Zurich to mark the 700th anniversary celebrations of the Swiss Confederation, demonstrates the feasibility of setting up very large textile structures even under adverse conditions. Severe frost reduced the already short construction time, ice and snow covered the laid-out roof membranes. They were finally raised within half a day. The large annular roof, some 40 m high, is accessible up to the mast tips. The evolution of science and progress up to robotics and cymatics is suspensefully presented on a textile covered area of around 30,000 m².

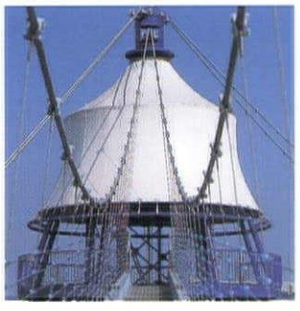
The 23,000 m² membrane is made up of coated TREVIRA HIGH TENACITY fabric widths approx. 2.50 m broad. It is the exhibition's landmark and at the same time its largest exhibit.

FT 1103 GB

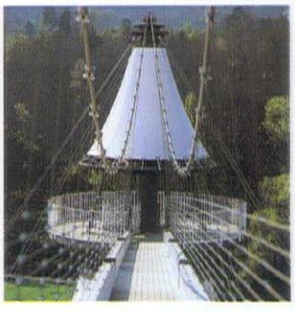
ert-Langenberg. General planners and membrane manufacturer: Sarna Kunststoff AG, Sarnen.



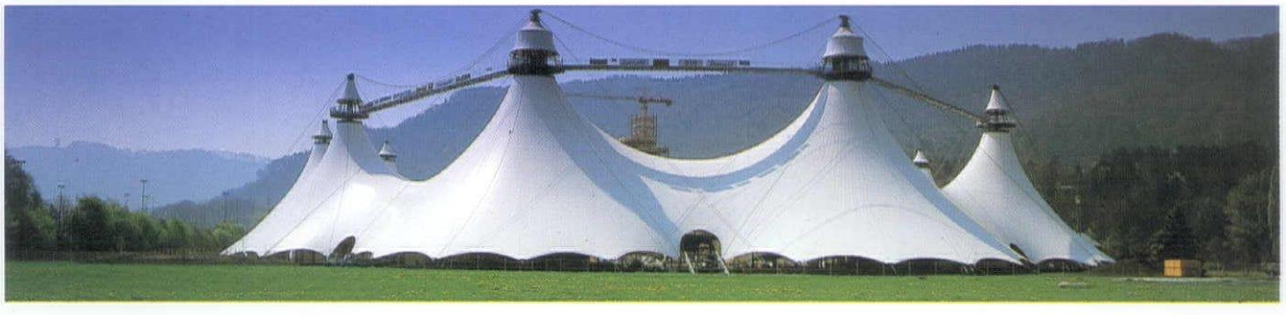
The four centre masts of the annular tent are connected at the top by suspension bridges, which together with spiral stairways and lifts provide access to the observation platforms.



Each of the four masts has its own individual roof, showing how attractive the combination of high tech and textile construction can be.



The sculptor Johannes Peter Staub defined the rough shape of the annular roof with a stocking model. The actual design work, however, was carried out using the latest CAD and CAM techniques. Membrane forces and cut-outs were developed by special software. The data were transferred straight to the production process and drawn by a large-scale plotter directly on the coated TREVIRA HIGH TENACITY fabrics.



Hoechst Aktiengesellschaft, FIBRES DIVISION, D–6230 Frankfurt/Main, Telephone (069) 305 58 33

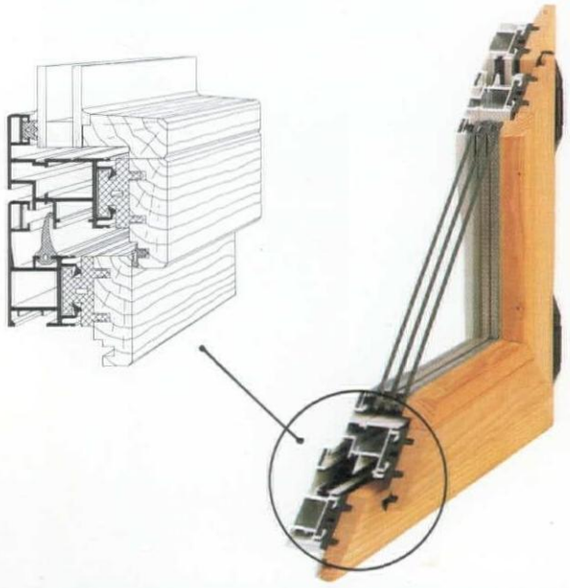
Hoechst

CLIMA

La fantasia alla finestra

high performance
aluminium – wood windows and doors

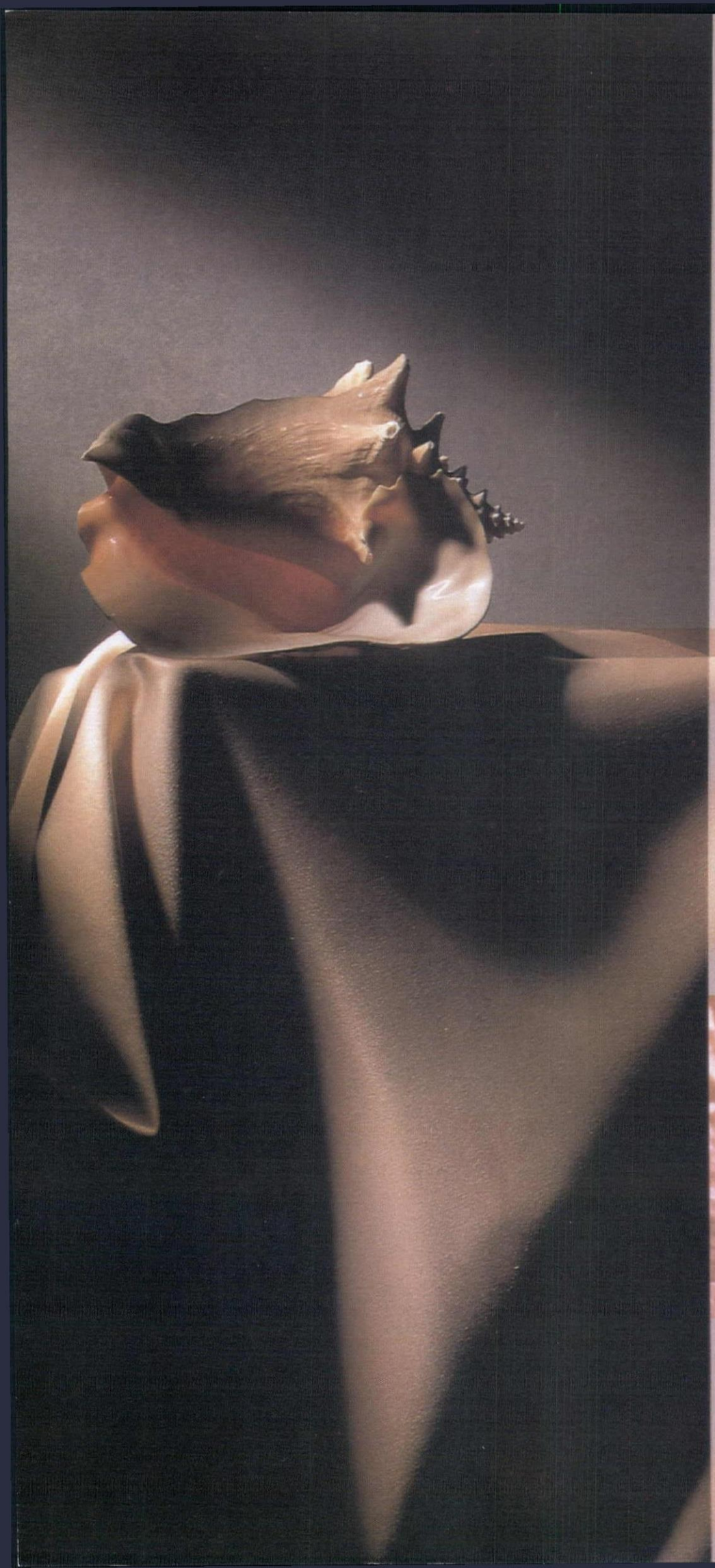
CLIMA is an exciting new concept in window design, developed to meet the challenge posed by the desire to create perfect harmony between functionality and aesthetics.
We have found the ideal solution by uniting two traditional materials, timber and aluminium, exploiting the advantages of both whilst at the same time eliminating their inherent deficiencies.
Thanks to this daring combination of materials CLIMA is able to adapt to both the interior and exterior design of a building. Internally the timber harmonises perfectly with decor and furnishing schemes whilst externally, the functional properties and architectural flexibility of aluminium come into their own.



The high quality of CLIMA elements coupled with the new architectural possibilities created by this innovative use of materials have made CLIMA a popular choice among specifiers throughout Europe. CLIMA enjoys a high level of acceptance above all in the refurbishment sector and has been installed in hotels, restaurants and administration buildings.

For further information about CLIMA contact:-

metallkommerz S.r.l.
Via Campi della Rienza, 41
39031 S. Giorgio/Brunico (BZ)
ITALY
Tel: 0474/30853 Fax: 0474/30747



We prize the unseen treasure within as highly as we value outward beauty.

"The form determines the function" claimed a celebrated European designer. Nature repeatedly demonstrates the opposite.

Friedrich Grohe bathroom fittings brilliantly combine both principles - their inner quality, engineering excellence and utter dependability complementing an outward design that is both aesthetically striking and ergonomically sympathetic.

Conceived and crafted in Germany, they exemplify perfect harmony between form and function.

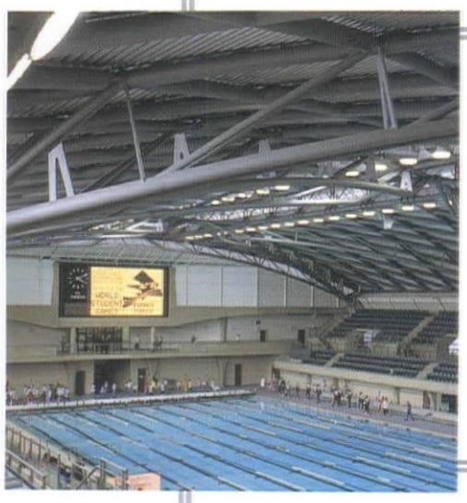
Luxury fittings from

FRIEDRICH GROHE

AWARD WINNING SUCCESS ACHIEVED WITH TOP QUALITY SUPPORT

McCalls Special Products have supplied the top 1991 British Construction Industry Awards winners (Building Category) with key components. Stansted Airport Terminal, Ponds Forge International Sports Centre and Charing Cross Redevelopment have all taken advantage of our specialist structural tying systems.
MSP has a long established reputation as the leading supplier of high quality threaded bar systems used throughout the world in commercial building and civil engineering applications.
Our portfolio includes MACALLOY prestressing bars, high strength precision ties and an extensive range of anchorage products.

Get the support of MSP quality products behind you! Telephone us now for your complete information pack.



Highly Commended | Ponds Forge International Sports Centre.

The Supreme Award
Stansted Airport Terminal Building.

Charing Cross Redevelopment | Runner up.

MSP

McCalls Special Products

P.O. Box 71, Hawke Street, Sheffield. S9 2LN
Tel: (0742) 426704. Fax: (0742) 431324.

BS 4486

A DIVISION OF ASW CONSTRUCTION SYSTEMS LTD.

PEP Shopping Centre Munich · Architect: Kraemer, Sieverts & Partner GmbH, Cologne

One of Europe's Largest Glass Domes: Kept in Top Condition with a Zarges Travelling Gantry.

The ability to maintain the modern architectural elegance of such large glass constructions has to be guaranteed, too.
For the purpose of cleaning and maintaining the interior surface a Zarges travelling gantry was installed, which as a stylistic element blends harmoniously with the architecture.
More and more often, architects and clients include Zarges facade cleaning units in their planning. They are convenient for cleaning and maintenance purposes as well as for installation jobs.
Whether for glass domes, sloped glazings, facades or whatever, Zarges facade cleaning units meet one other requirement as well: They provide absolute safety for maintenance personnel.

Headoffice
Federal Republic of Germany
ZARGES LEICHTBAU GMBH
D-8120 Weilheim, Department: SKV
Tel.: 08 81 / 6 87- 245 · Telex: (17) 881800
Fax: 08 81 / 6 87- 2 81

G.B. + North Ireland
KOBI CRADLES LIMITED
Head Office:
Kobi House, Alpine Wag, London E 6 4LA
Telephone: 4 47 14 74 34 64
Telefax: 4 47 15 11 23 06

Italy
M C M S.R.L. Construzione Metalliche
38014 Lamar di Gardolo (TN) n. 60
Tel.: 0461-99 03 47 · Fax: 0461-99 03 00

USA, Mexico
VERTA Corporation
Scaffold Systems Division
Headquarters: 10921 Valley View Road
Eden Prairie, Minnesota 55344
Tel.: (612) 944-05 16 · Fax: (612) 944-68 99

France
CME Constructions Métalliques Evronnaises
Boulevard du Général Leclerc · 53600 Evron
Tel.: (43) 01.61.87 · Fax: (43) 01.76.10

Hongkong
BOAG Building Supplies Ltd.
7th Floor, Cavendish Centre
23 Yip Hing Street
Wong Chuk Hang, Hong Kong
Tel.: (852) 5 55 56 66 · Fax: (852) 8 73 06 25

Switzerland
Conrad Kern AG
Althardstraße 147 · 8105 Regensdorf
Tel.: (01) 8 40 21 21 · Fax: (01) 8 41 11 93

Austria
ZARGES-LEICHTMETALLBAU Ges.m.b.H.
Leberstraße 96, A-1110 Wien
Tel.: (222) 7 49 15 53 · Telex: 131168
Fax: (222) 7 49 83 25

ZARGES

since 1950

FISCHER ATRIUM ROOFS

Achievements in Roof Glazing Technology from standard rooflights to glazed structures

DESIGNS **FABRICATION** **ERECTION**

structural steelwork – cleaning gantries – air/smoke vents – solar shading

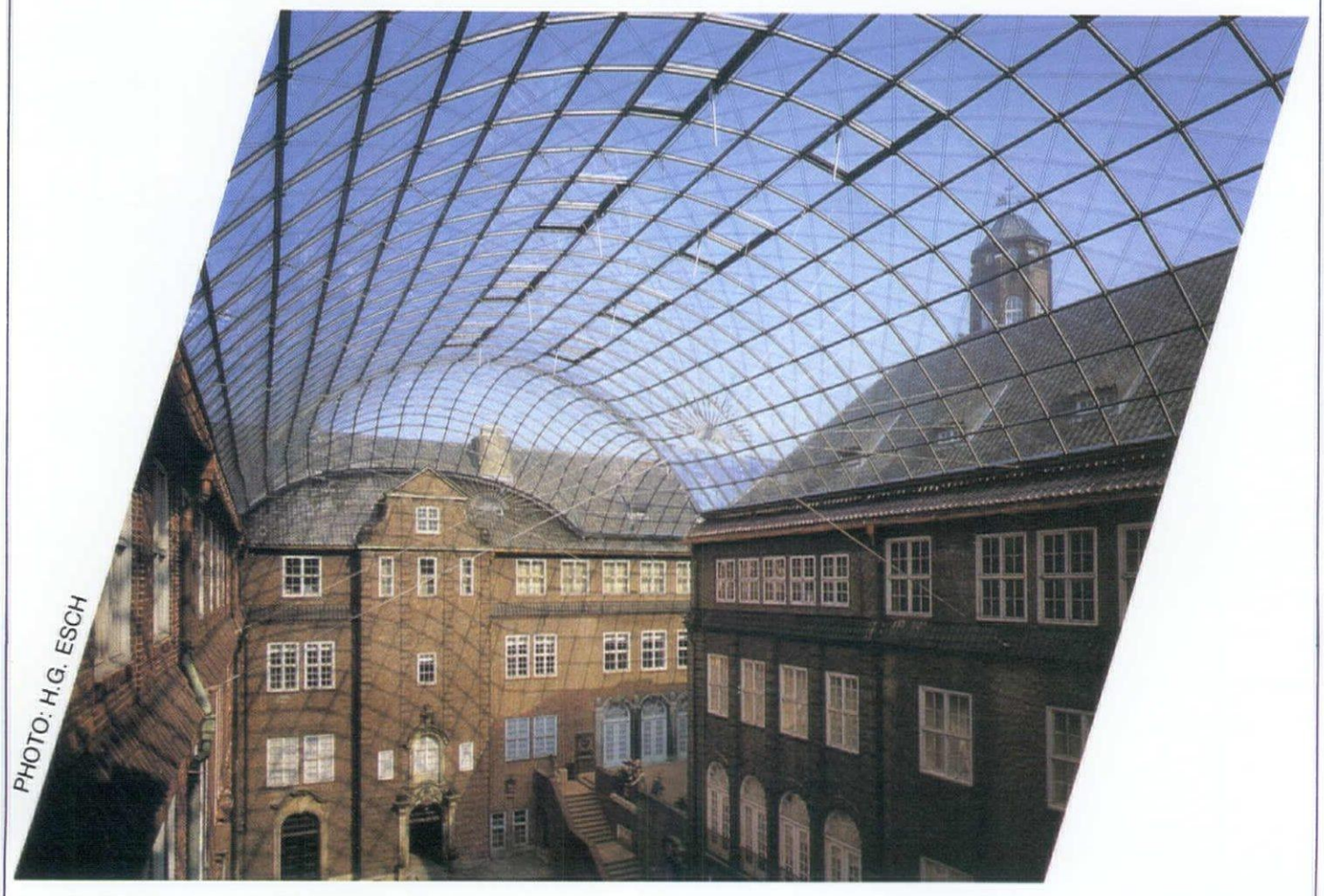


PHOTO: H.G. ESCH

Since 1950

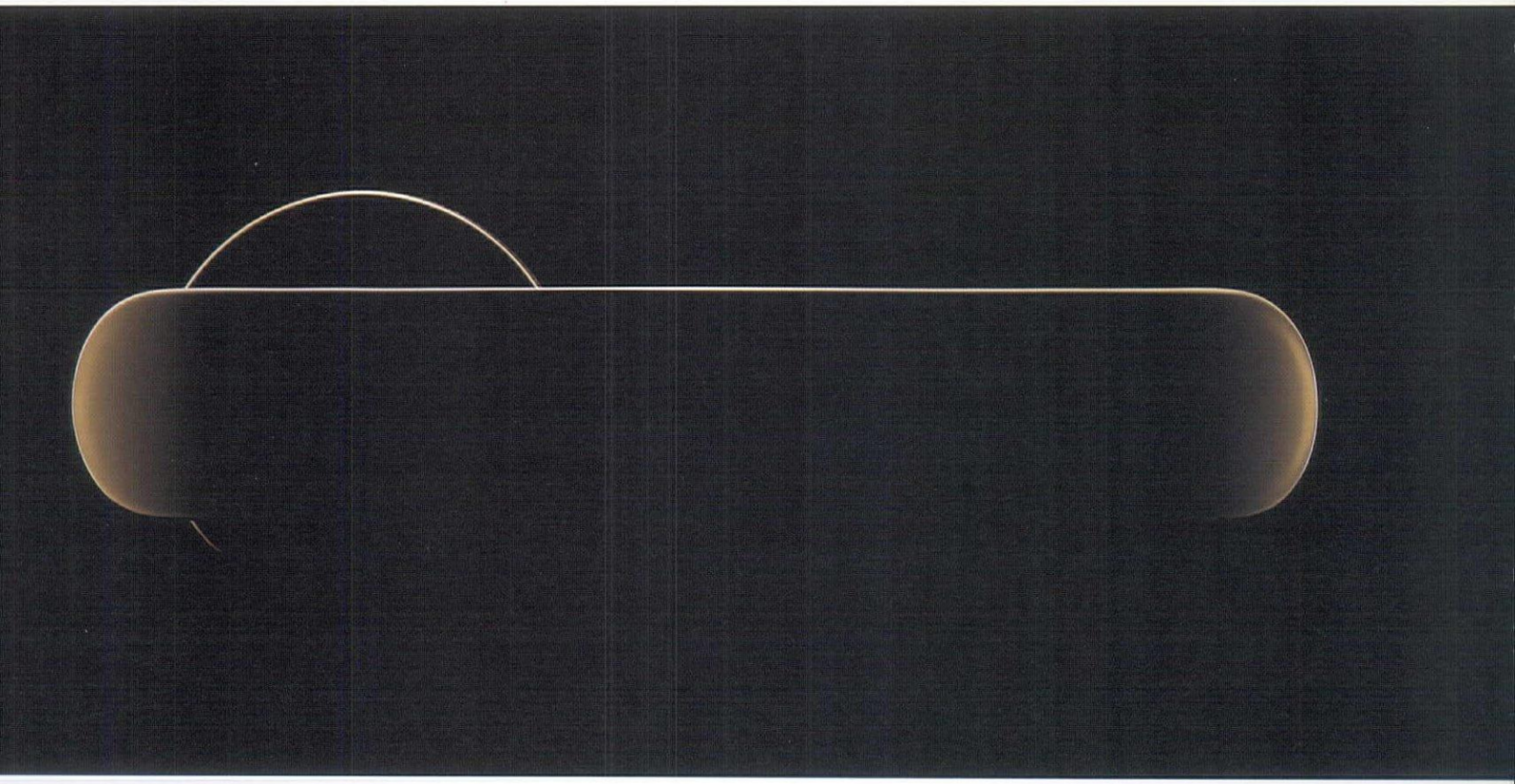
For Prestigeous Building

FISCHER
GLASS CONSTRUCTION LTD.

Hereford House, Hereford Gardens
Pinner, Middlesex HA5 5JR
Tel: 081-866 2992

Helmut Fischer GmbH
7129 Talheim
W-Germany

High profile. Vico Magistretti



Serie Quattro M in ottone

Le maniglie Fusital
sono disegnate,
oltre che da
Vico Magistretti,
anche da:
Gae Aulenti
Mario Bellini
Cini Boeri
Achille Castiglioni
Antonio Citterio
Gianfranco Frattini
Gregotti Associati
Sottsass Associati
Marco Zanuso.

Le maniglie Fusital:
design d'autore.

Fusital
DESIGN D'AUTORE

VCRINTERNATIONAL S.r.l.
20055 Renate (Mi) Italy
Telefono 0362-982260
Telex 322192 VCRINT I
Telefax 0362-924455

Show-room:
Milano - Via Sant'Andrea, 8
Telefono 02-795574
Firenze - Via Felice Fontana, 53
Telefono 055-351217

AUSTRIA - SVIZZERA
Valli & Colombo Gesellschaft m.b.H.
Tel. (0662) 661746/7
Telex 632580 VACO A
Telefax (0662) 662024

GERMANY
Valli & Colombo GmbH. & Co. KG.
Tel. (07063) 7035
Telefax (07063) 6623

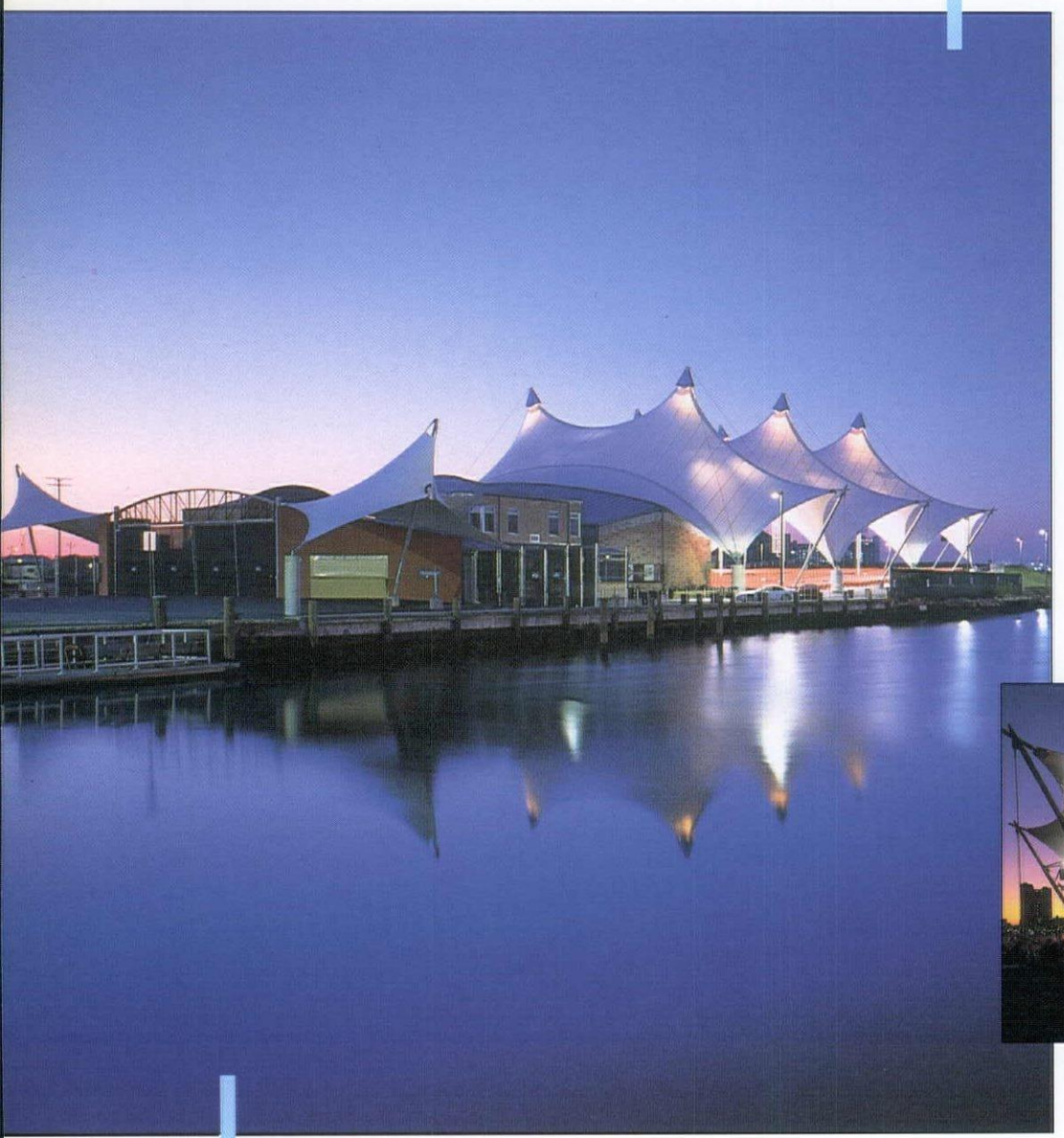
BENELUX - FRANCE - SCANDINAVIA
Valli & Colombo N.V.
Tel. (03) 4573517
Telefax (03) 4570828

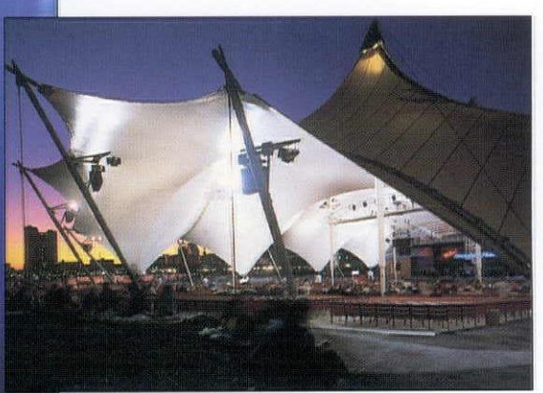
GREAT BRITAIN
Valli & Colombo Ltd.
Tel. (0827) 63352
Telefax (0827) 53626

IRELAND
Valli & Colombo Ltd.
Tel. (01) 536255
Telefax (01) 537973

U.S.A.
Valli & Colombo (U.S.A.) Inc
Tel. (818) 359-2569
Toll Free (800) 423-7161
Telefax (818) 3580743

New Ideas for Music Lovers





The new pavillion at Pier 6 Baltimore harbour erected by Clyde Canvas is a uniquely designed Tensile Structure.

The double curved roofs and single curved walls of the hard structure respond to the forms and spaces of the structure which allows for supreme amplification of musical events for the 4,000-00 capacity audience and provides a distinctive visual feature on the city's skyline.

Clyde Canvas can offer a complete design, fabrication and installation package to provide co-operation between old and new architecture using advanced quality fabrics to develop design ideas.

If interested please give us a call.

CLYCAN

For further information please ca
Mr. Brian Nicholson at
Clyde Canvas Ltd.,
Wharton Road, Winsford,
Cheshire. CW7 3BY
Tel No: 0606 594224
Fax No: 0606 592379

MAKE LIGHT WORK

In the beginning there was, and still is, light.

Our most valuable resource.

A pity then, that so many glazing systems seem to do their best to exclude it.

Thick, heavy glazing members not only work to detract from your design, but they also exclude that which you would admit, Light.

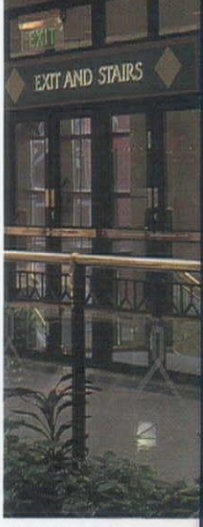
Not so with VITRAL.

VITRAL is a complete, integrated glazing system of slim, ultra light, self supporting panels which may be installed as fixed or opening lights – with no additional framing.

VITRAL panels are manufactured to your specification and may be single or double glazed with any type of glass or solid infill, making the VITRAL system suitable for all atria, pitched roofs and vertical cladding.

Our technical design service can assist with advice, design detail and detailed load and stress calculations, and can also recommend suitable contractors for estimating and installation.

Specify VITRAL. – And make light work, for you.



Schofield Centre, Leeds.
Architects: Crampin & Pring.

A vital and integral part of the design is the fail-safe smoke ventilation system which meets all the current stringent requirements for smoke control. And as you would expect from VITRAL the automatic actuators are also slim and stylish and will not hinder your design.

The Grange Nursing Home, Bottisham.
Architects: Cambridge Architects Partnership.

VITRAL®

Vitral U.K. Ltd., 94, Regent Street, Cambridge, CB2 1DP

Telephone: (0223) 356662, Fax: (0223) 460193.

A Combination of Technology and Design

Cooling Ceiling System VKS 60

The challenges to be met today by a cooling ceiling system include architectural design features, flexibility, high requirements to comfortability and low operating costs.

Reduced room air velocities and supply air volumes, the feeling of well-being in a room, uniform temperature distribution in the cooling ceiling, low temperature differences between cooling medium and ceiling surface, low energy costs, selection of any geometrical shape and low installation heights: these are the most significant characteristics of the VKS system.

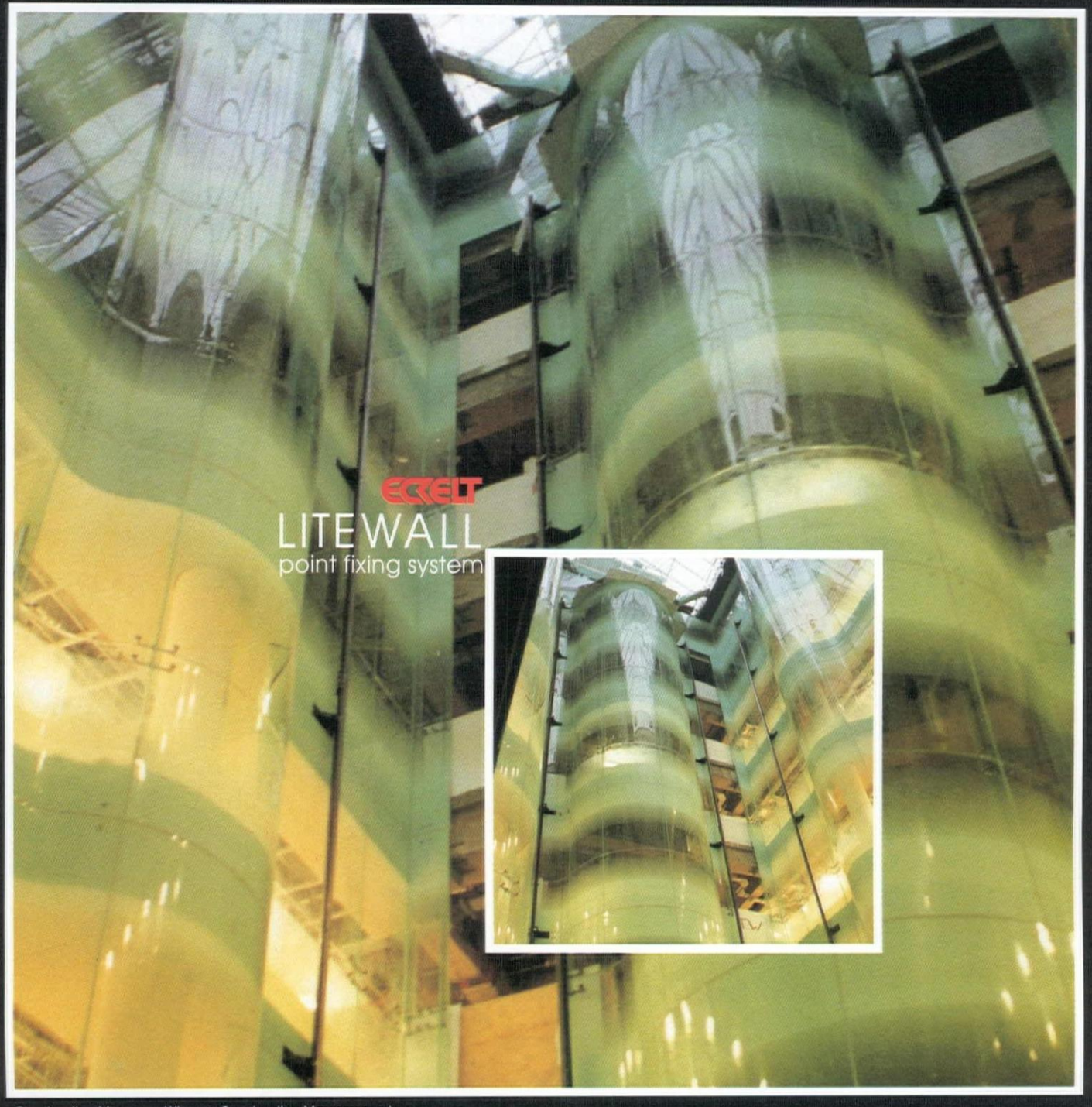
TKT

Turbon-Tunzini Klimatechnik GmbH
Am Stadion 18-24, D-5060 Bergisch Gladbach 2
Tel. (0 22 02) 12 50, Fax (0 22 02) 12 53 24, Tlx. 17 220 236

Branch Offices:
Austria, Poland, Spain, Nigeria, Egypt, USSR, Iran, Saudi Arabia, Singapore, Hong Kong, P. R. China

CRITERION-PICCADILLY - LONDON

An Architectural Highlight in the centre of London. This seven-storey Structurally-glazed Atrium, which froms the focal point of new headquarters offices, expresses a unique atmosphere of light and ambience. A quality befitting such a prestigious project in a major city.



Construction Manager: Wimpey Construction Management.
Architect: Renton Howard Wood Levin
Project Manager: Arnold Project Services
Client: Mountleigh/Sogo

The curved toughened glazed units are coated to varying degrees through slab edge to eye level, and supported structurally with the LITEWALL flush-faced point fixing system - giving the atrium its impressive and striking aura. Quality made a reality.

Think clearly about glass.

ECKELT GLAS

Brüder Eckelt + Co Glastechnik GmbH A-4400 Steyr, Resthofstraße 18
Tel. (0 72 52) 67 7 71, Telex 02-8166, FAX (0 72 52) 63 30 324

Design Flexibility

The architectural brief for this new office building in Manchester's Piccadilly conservation area centred on the building design integrating with the existing environment. Wicona was selected after an extensive review of curtain walling products against three main criteria: quality, cost and flexibility. The Wicona system was also able to accommodate the multi-faceted glazing elements, particularly the bay window features on the facade and curved sections for the building's corner.

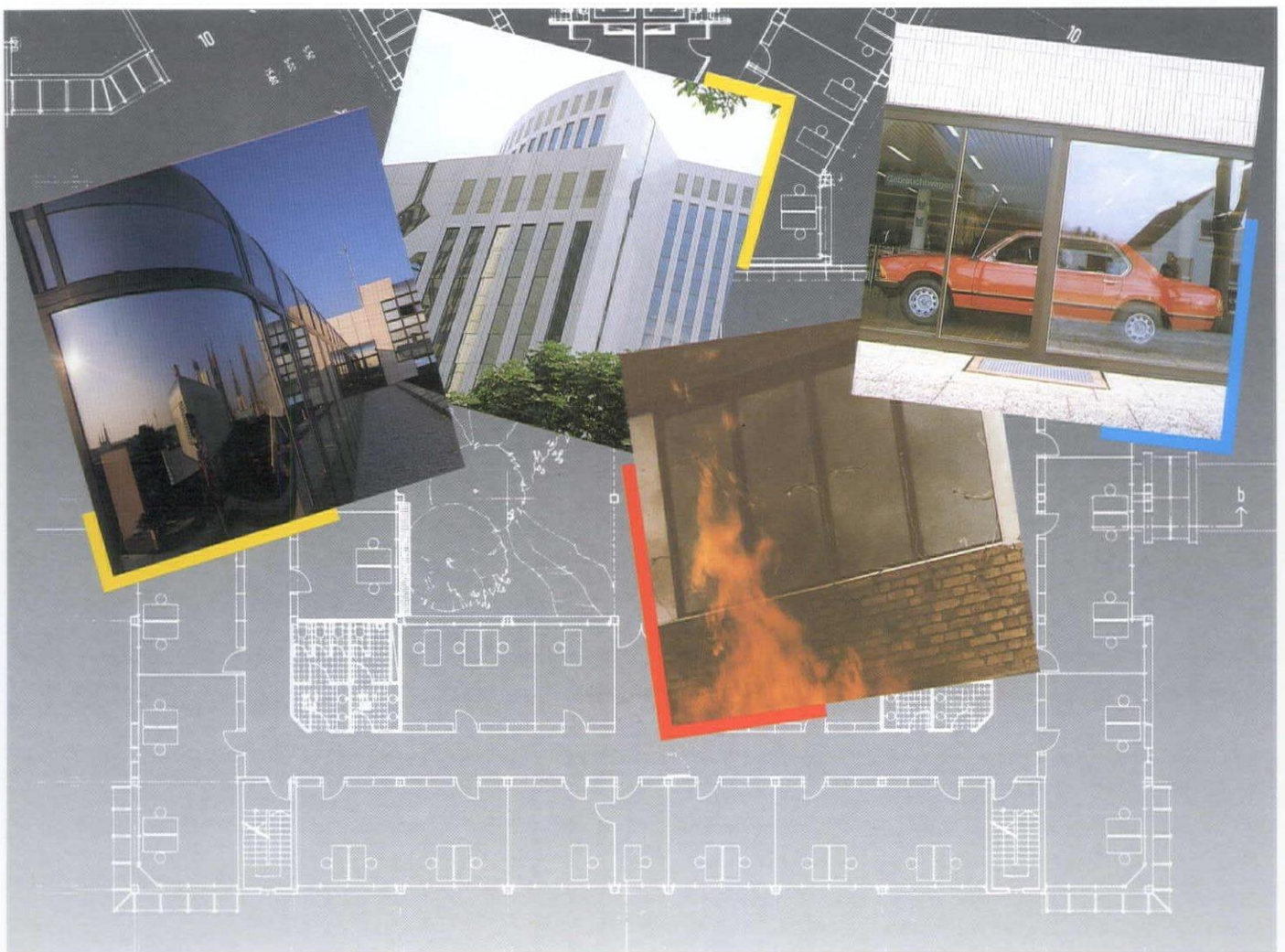
WICONA®

...WHEN QUALITY COUNTS

Client: Nationwide Anglia Property Services Ltd. Architect: Holford Associates. Fabricator: Kayesse Cladding.

Hydro Aluminium Systems UK Ltd. Wicona Division, Titan Business Centre, Tachbrook Park, Warwick CV34 6RS. Tel: 0926 887 666. Fax: 0926 887 665.

Special applications call for special glass ... and Schott



These days there are many architectural applications where any old glass just won't do. If the application is special, the glass must be special too. And SCHOTT, Europe's leading manufacturer of special glass, has three architectural glasses that are really very special.

IROX® is a reflective solar control glass. Its surface coating is beautifully uniform and everything is reflected in it in its natural colour over the whole face of the building. Windows and spandrels alike. That's a special feature of IROX. Also the coating is fired on to give it outstanding weathering properties. In fact IROX solar control glass looks so good on the outside that it would be easy to forget that it lowers air conditioning costs, creates a pleasant environment inside the building and lets people inside see the outside world in its natural colours.

PYRAN® is a fire-resisting glass that allows architects to give free rein to their imagination while still complying with the requirements of fire protection. PYRAN provides transparency with no wires attached. Even when there's a fire. It's been tested to various national standards and achieved fire ratings from 30 minutes to over two hours. All with one thickness. 6.5 mm. So PYRAN's the answer both for looks and fire resistance.

AMIRAN® non-reflecting shop window glass opens shoppers' eyes to window displays. Now they can actually see the goods without having to dodge the reflections. Large areas can be glazed and reflections cut to less than 1%. Designers can forget about complicated and costly ways to combat reflections. AMIRAN does it for them. And it's available now.

IROX, PYRAN, AMIRAN – three special glasses for three special applications.

Schott Glaswerke
Optics Division – Flat Glass Sales
Postfach 2480, 6500 Mainz, West Germany
Tel: (0 61 31) 66 29 69

SCHOTT

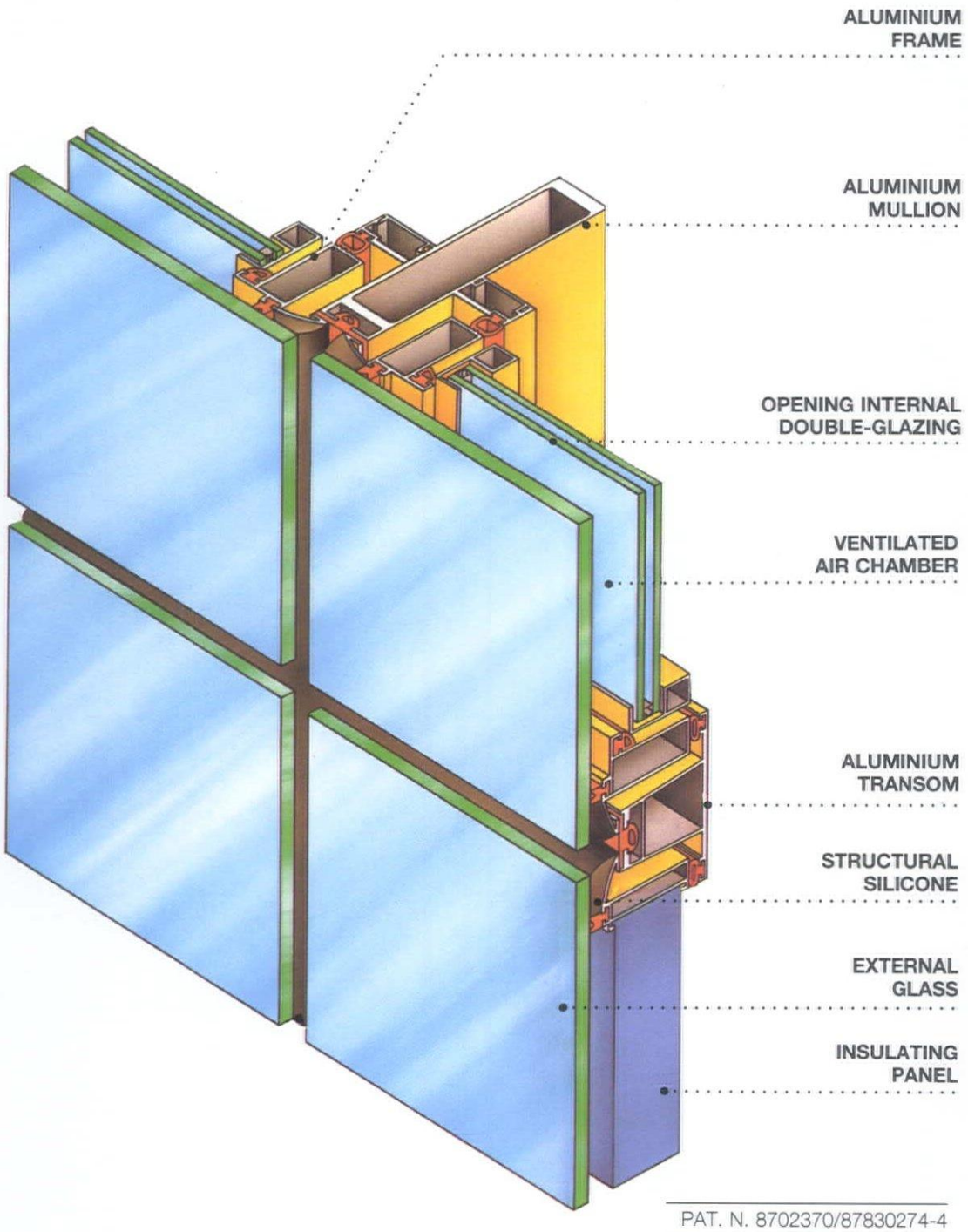
No. 1 in Europe for Special Glass.

FOCCHI PANORAMI®
achievements in architecture

PAUL DAY INPACE X

QUAY WEST PROJECT, TRAFFORD PARK, MANCHESTER — Architect: The Ratcliff Partnership Ltd

The advantages of PANORAMI®	
FOR THE ARCHITECT	Freedom of expression in an innovative system
FOR THE CONTRACTOR	Clean site, rapid installation, no scaffolding
FOR THE CLIENT	Quality and image Easy maintenance Resistance to water and air penetration Energy savings and acoustic comfort



PAT. N. 8702370/87830274-4

PANORAMI® SYSTEM

Prestigious glass walls of modern architecture have become the fundamental means of expression. Exposed metal structures are gradually disappearing as the result of technological innovation of components, glass, aluminium and associated products.

This trend has been carried to its extreme with the all glass curtain wall, a transparent envelope, visibly unsupported by metal frames and broken only by narrow lines surrounding each sheet of glass.

Focchi researched and developed the new PANORAMI® system combining the typical merits of silicone technology, with advantages to perform economical installation, easy maintenance, thermal and acoustic standards.

PANORAMI® utilizes a single reflective glass panel on the exterior thus creating an external ventilated air chamber, accessible from inside for cleaning by means of an internal opening double-glazed unit.

FOCCHI

Focchi UK Ltd
p.o. box 646
Padbury
Buckingham
MK18 2AF
Telephone 0280 823344
Telefax 0280 823301

Project:	Airport Stuttgart
Client:	Flughafen Stuttgart GmbH
Architect:	V. Gerkan, Marg und Partn
Planning + Site Supervision:	Arbeitsgemeinschaft Fluggastgebäude
Projektmanagement:	Drees & Sommer

fassadentechnik rudolph gmbh

F. R. (U.K.) LIMITED

F.R. (UK) Limited, Curtainwall Technology
10/12 Parkfield Street • London N 1 OPS • Phone 071-359 59 73 • Fax 071-704 80 56
Directors: L.A.W. Rudolph, W.F. Rothemund B.C.E., • P.E. • Reg. No. 1921325

MEMBERS OF THE GÖTZ GROUP

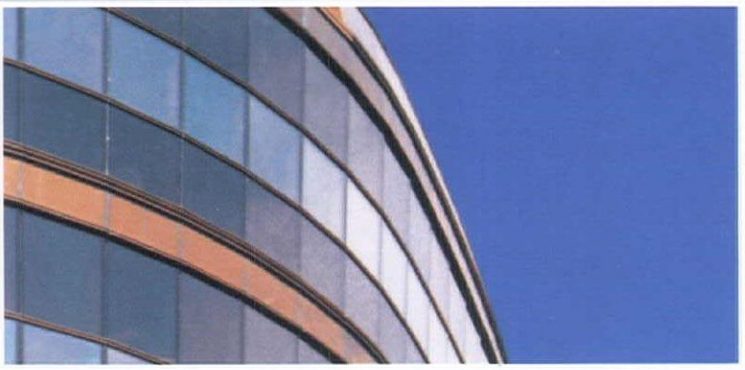
specialist for
curtainwall technology

4 WAYS THAT HALLMO HAS TOPPED THE COMPETITION.

V. Regattin

1. QUALITY

With its unique specifications for appearance and performance, the project requires total quality for the curtain wall, which must offer maximum thermal performance, acoustic performance and weather resistance (to both air and water).



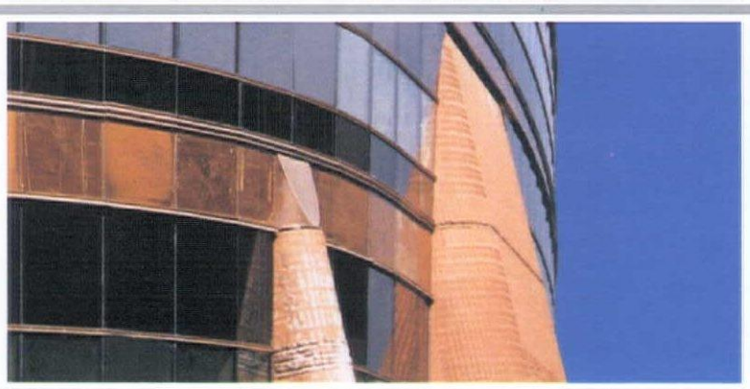
HALLMO has succeeded in all its design objectives and all tests have been passed without any difficulty whatsoever.

2. PRECISION

No tolerances are allowed for this project; indeed, the greatest precision is required in the execution of all its elements. The clarity and detail of HALLMO's design have been decisive factors in solving the problems involved in the project.

3. ON-TIME DELIVERIES

HALLMO and the other companies involved in this project have made on-time deliveries a primary goal, thus achieving proper coordination of all the intricately-connected elements involved.
The facade system, which was specially designed by HALLMO, has allowed the work to proceed in strict accordance with the original timetable.



4. ASSEMBLY SYSTEM

The modular design of the elements in the project, and the assembly system for the facade (onto special iron supports) have allowed all elements on the inside of the building to be assembled without an external crane system, which would have caused undesirable problems for the building yard and would have interfered with the other jobs in progress.

In this 4 ways, HALLMO has won the top spot in its field.

6000 sq.mt. of Structural Glazing and Facade Cladding installed to varying curves and inclined from the vertical axis. The challenge to find the technical and production solution was met autonomously by the design team at HALLMO, making it one of the most prestigious projects undertaken.

"Noah's Ark" - Office Development, Hammersmith, London - Project: Arch. Ralph Erskine, Rock Townsend, Lennart Bergström - Property: Pronator AB, Ake Larson Byggare AB - Project Management: Ake Larson Ltd, London

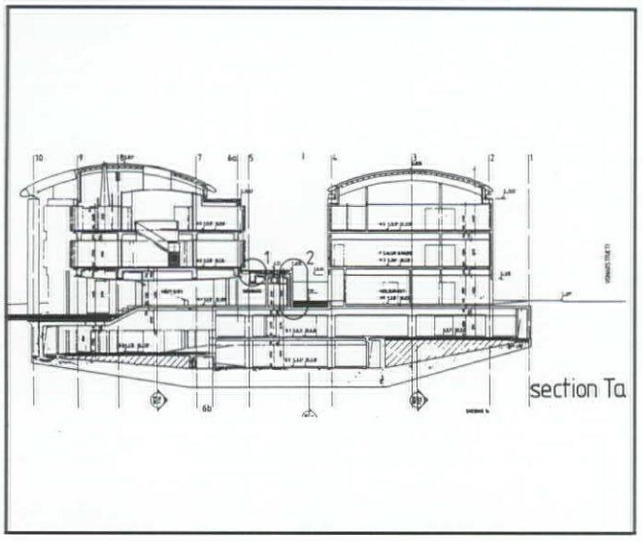
hallmo

Structural glazing - Curtain walls - Modular cladding - Architectural metal works in brass, copper, bronze, stainless, steel to suit individual requirements, Aluminium windows and doors.

Hallmo srl - 33082 Azzano Decimo (PN) - Italy - Via Fiumicino, 11 - Tel. (0434) 640444 - Fax (0434) 640188

KEMPER SYSTEM

DICHTES DACH | DICHTE BRUCKE
DICHTE PLATTE | DICHTE MAUER



CITY HALL REYKJAVIK - ICELAND

An extraordinary construction
an important town.
a special island.

Individual considerations and solutions to the given requirements are a must for successful realisation.

Requirements of the sealant:
non-slip compound - easiest possible maintenance and care, crack-resistant and deep penetrating, long-life elasticity, temperature stability, withstands pedestrains and vehicles, breathes, resistant to: UV-rays, biological, physical and chemical influences: waterproof.

The choice of those deciding fell on Kemperol.

A sealant which, with its high quality properties as an all-purpose material and non-slip compound, can be considered as one with the substrate.

A sealant without sealing and welding seams, fitting exactly to the structure, both vertically and horizontally.

For 20 years, this material has been used internationally in building work covering, so far, over 10 million square metres.

Only specialist installers trained by the manufacturer process this quality product, which is subject to the UAEtc agreement.

Building work is no hazard when the innovation, experience and reputation of the partners involved are taken into consideration.

Architects: Studio Grands, Reykjavik
Chief engineer: Rikhardur Kristjanson (doctor of Engineering)
Sole entrepreneur: ISTAK, Reykjavik
Execution: Björnson, Reykjavik
Technical application supervisor: KEMPER SYSTEM/Sigurdsson
Sole agency Iceland: Sigurdsson, Reykjavik

Hôtel de ville de Reykjavik, Icelande

Un bâtiment extraordinaire
Une ville importante
Une île spéciale

Des considérations et des solutions individuelles aux exigences stipulées sont une condition essentielle à la réussite de la réalisation d'un projet.

Exigences auxquelles le matériau d'étanchéité doit répondre:

composé anti-dérapant - le plus facile qui soit satisfait aux exigences en matière de maintien et d'entretien, résistant aux fissures et capable de pénétrer en profondeur, d'une élasticité durable, stable à la température, endurant aux piétons et aux véhicules, perméable à l'air, inerte aux: rayons UV, aux facteurs biologiques, physiques et chimiques: étanche.

Ces aspects ont conduit à choisir Kemperol.

Un matériau d'étanchéité universel et anti-dérapant aux propriétés excellentes, qui se fond parfaitement avec le substrat.

Un matériau d'étanchéité sans joints de scellement ou de soudage qui se fixe exactement à la structure, aussi bien sur le plan vertical qu'horizontal.

Ce matériau s'employe dans le monde entier depuis 20 ans pour le revêtement des édifices de construction, et plus de 10 millions de mètres carrés ont été posés à ce jour.

Seuls des installateurs spécialisés formés par le fabricant effectuent la pose de ce produit de qualité, qui est sujet aux accords UAEtc.

Rien n'est laissé au hasard lorsque l'on prend en considération l'esprit d'innovation, l'expérience et la réputation des partenaires impliqués.

Architectes: Studios Grands, Reykjavik.
Ingénieur en Chef: Rikhardur Kristjanson (Ingénieur Diplômé)
Entrepreneur exclusif: ISTAK, Reykjavik

CITY HALL REYKJAVIK - ISLAND

Ein außergewöhnliches Bauwerk, eine bedeutende Stadt, eine besondere Insel.

Individuelle Berücksichtigung und Lösung der formulierten Anforderungen sind ein Muß für die erfolgreiche Realisierung.

Anforderungen an die Abdichtung: kraftschlüssiger Verbund - möglichst wartungs- und pflegeleicht, rißüberbrückend und wurzelfest, dauerelastisch, temperaturbeständig, begeh- bzw. befahrbar, diffusionsoffen, und:

UV-Einstrahlung, und biologische: physikalische und chemische Einflüsse, wasserdicht.

Die Wahl der Entscheidungsträger fiel auf Kemperol.

Eine Abdichtung, die mit ihren hochwertigen Eigenschaften als ein alles überdeckendes Material, mit kraftschlüssigem Verbund, zu einer Einheit mit dem Untergrund wird.

Eine Abdichtung, ohne Kleb- und Schweißnähte, dem Baukörper angepaßt, senkrecht, wie waagerecht.

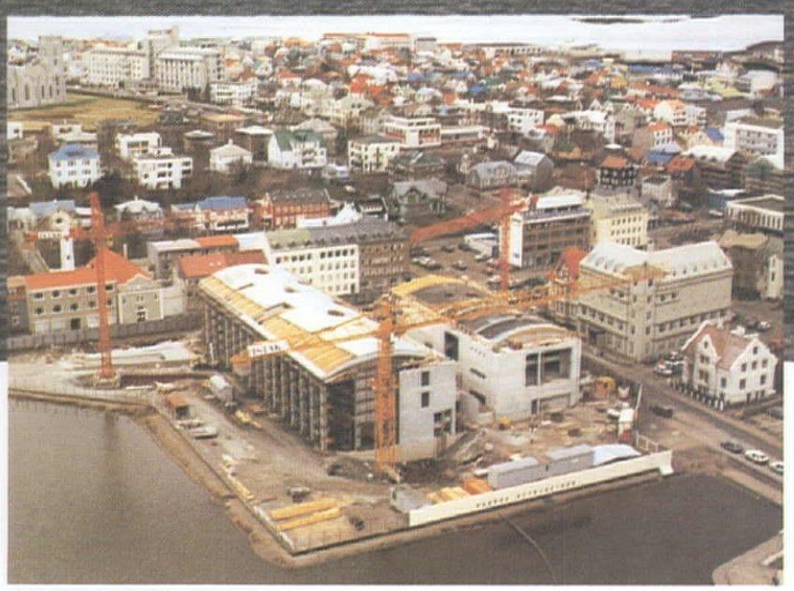
Dieses Material wird seit 20 Jahren mit bislang über 10 Millionen Quadratmetern international verbaut.

Nur vom Hersteller geschulte Fachverleger verarbeiten dieses Qualitätsprodukt, das dem UAETc-Agreement unterliegt.

Bauaufgaben sind kein Wagnis, wenn Innovation, Erfahrung und Reputation der beteiligten Partner Berücksichtigung finden.

Architekten: Studio Grands, Reykjavik
Chefingenieur: Dr. Ing. Rikhardur Kristjanson
Generalunternehmer: ISTAK, Reykjavik
Ausführung: Björnson, Reykjavik
Anwendungstechnische Kontrolle: KEMPER SYSTEM / Sigurdsson
Generalvertretung Island: Sigurdsson, Reykjavik
Hersteller: KEMPER SYSTEM, 3502 Vellmar FRG

Partner für professionelles Abdichten, Veredeln, Gestalten hochsensibler Bauwerkteile.

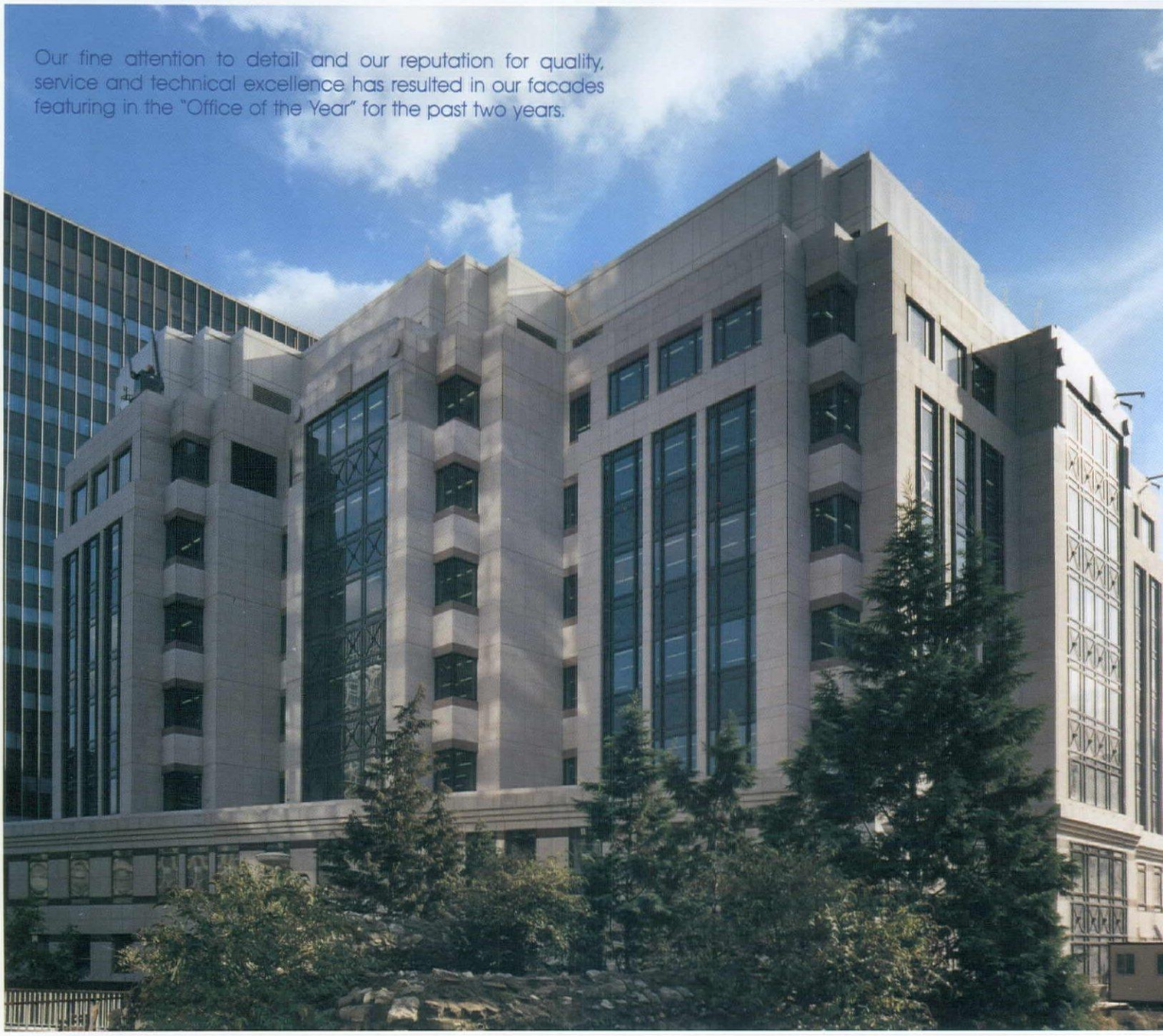


CITYHALL REYKJAVIK

ARCHITECT:	STUDIO GRANDA, REYKJAVIK
STRUCTURAL ENGINEER:	ALMENNA VERKFRAEDISTEFAN
SPECIAL CONSULTANT:	DR. ING. RIKHARDUR KRISTJANSON
RESIDENT ENGINEER:	ING. BALDUR JAHANNESSON
GENERAL CONTRACTOR:	ISTAK, REYKJAVIK
CONTRACTOR:	THETTING, REYKJAVIK
TECHNICAL APPLICATION CONTROL:	KEMPER SYSTEM/SIGURDSSON
REPRESENTATIVE ICELAND:	SIGURDSSON, REYKJAVIK
MANUFACTURER:	KEMPER SYSTEM, 3502 VELLMAR/GERMANY
PRODUCT:	KEMPEROL V 210

KOLLER

METALLBAU



City Place, London EC2

Acknowledgements: Clients: Wates City of London Properties Plc, Kowa Fudofan (UK) Ltd, Prudential Portfolio Managers Ltd. Architect: Swanke Hayden Connell. Main Contractor: Mowlem Building.

Facade scope: windows, curtain walling, main entrance screens with automatic doors, plantroom cladding and louvres, atrium walls and atrium roof.

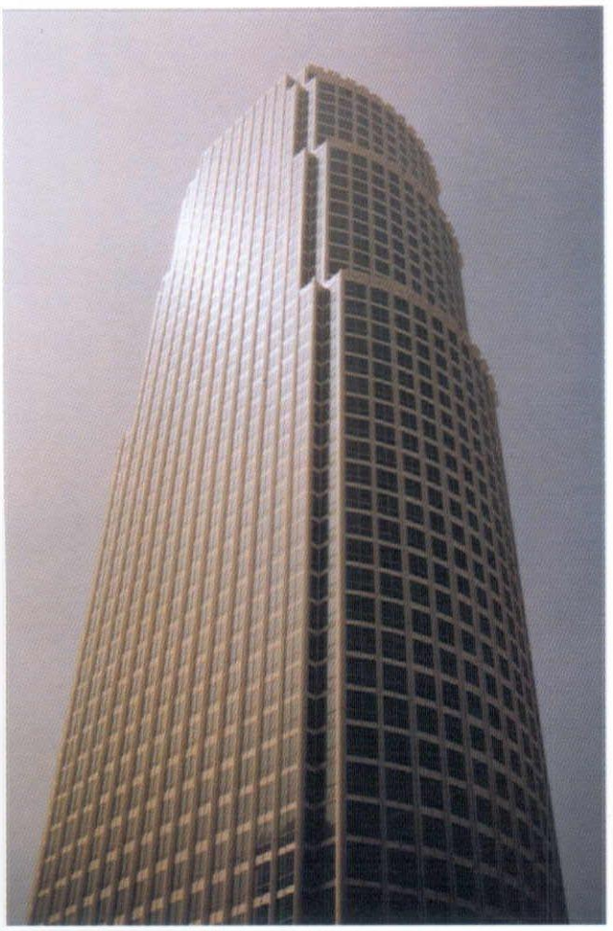
KOLLER (UK) LTD
Telephone 081 940 1636
Fax 081 948 8238
96 Lower Mortlake Road
Richmond, Surrey TW9 2JG

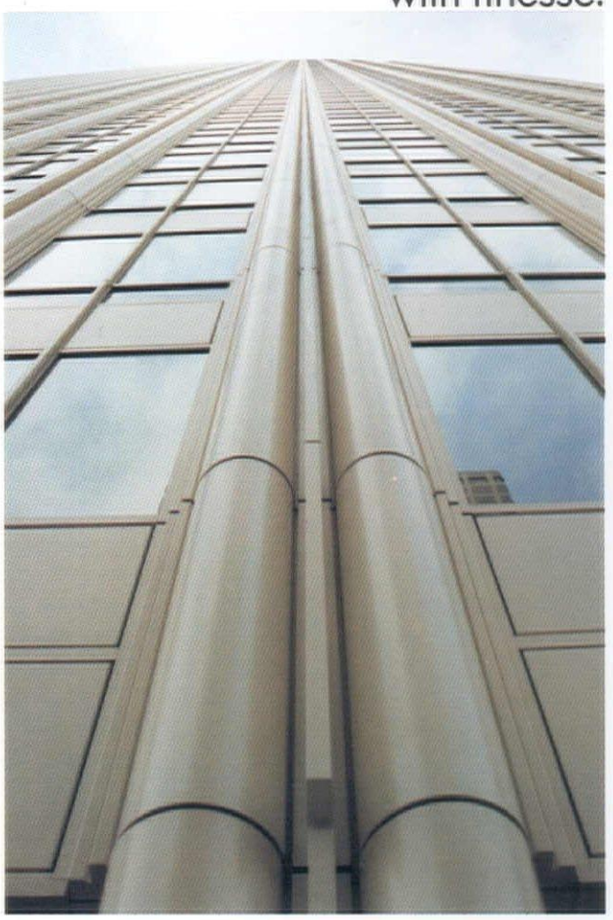
CURTAIN WALLING, WINDOWS & CLADDING

DESIGN, BUILD & INSTALLATION
THROUGHOUT THE WORLD

POHL

Bending technology
with finesse.

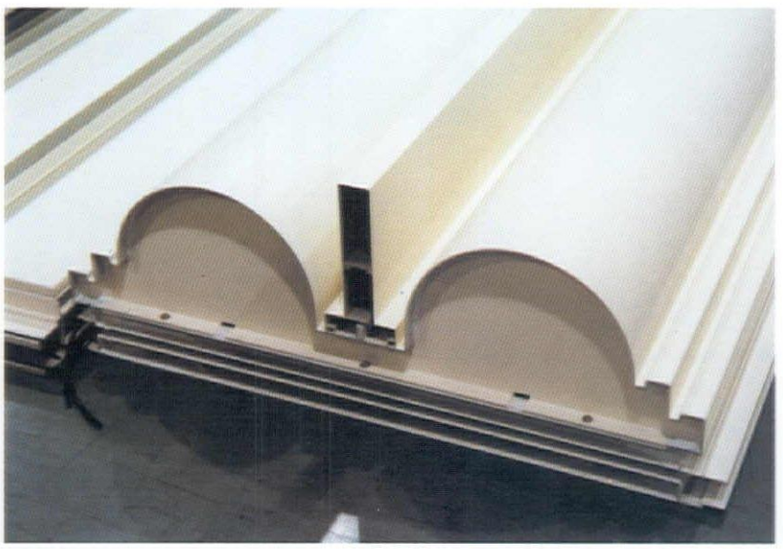




777 Tower
Los Angeles, California

Cesar Pelli Assosiates
Design Architects

Metal custom-formed aluminium cladding with Kynar paint finish



CHRISTIAN POHL GMBH

Head Office
Robert-Bosch-Straße 6
D-5000 Köln 71 (Fühlingen)
Phone: (0221) 70911-0
Telefax: (0221) 7001501
(0221) 7089123

CHRISTIAN POHL GMBH

- Division UK -
67 Victoria Road
Northampton NN1 5EQ
Great Britain
Phone: 0604-34155
Telefax: 0604-34077

POHL INCORPORATED

- Division US -
Opportunity Way
Newburyport, Massachusetts 01960
USA
Phone: 508-462-9755
Telefax: 508-465-1476

CHRISTIAN POHL GMBH

- Division Spain -
c/Regoyos, 18-20
08397 Pineda de Mar (Barc.)
Spain
Phone: 93/7625684
Telefax: 93/7625684

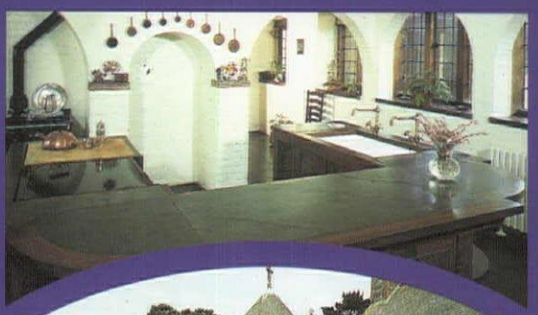
POHL

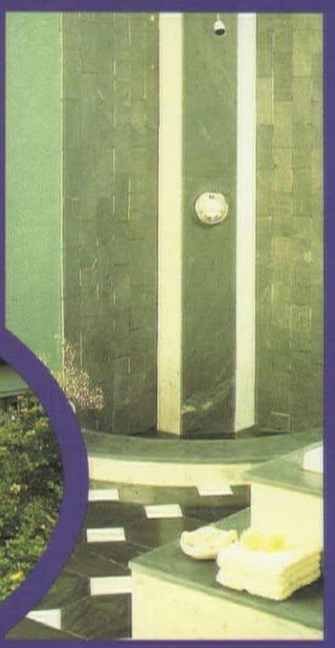
Bending technology
with finesse.

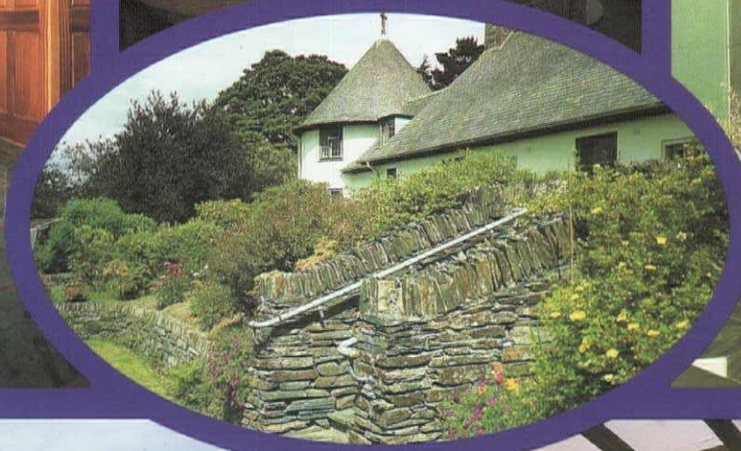
DELABOLE

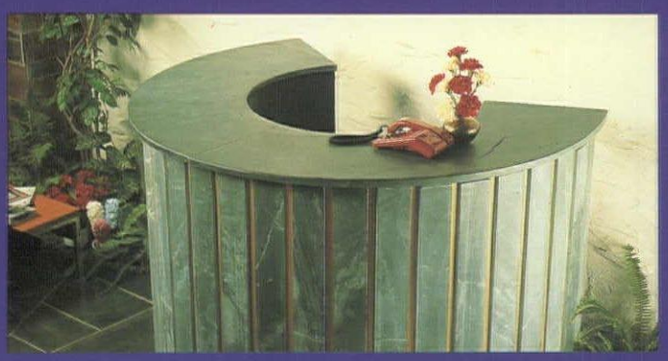
SLATE

• FIREPLACES • WORK SURFACES • PAVING • BUILDING STONE • FLOORING • NAMEPLATES • ROOFING • SILLS •









• FIREPLACES • WORK SURFACES • PAVING • BUILDING STONE • FLOORING • NAMEPLATES • ROOFING • SILLS •

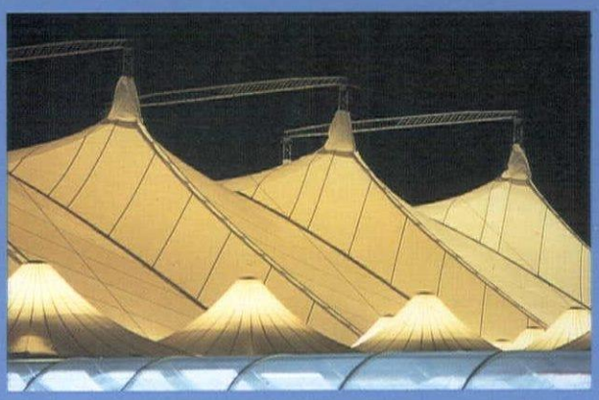
• FIREPLACES • WORK SURFACES • PAVING • BUILDING STONE • FLOORING • NAMEPLATES • ROOFING • SILLS •

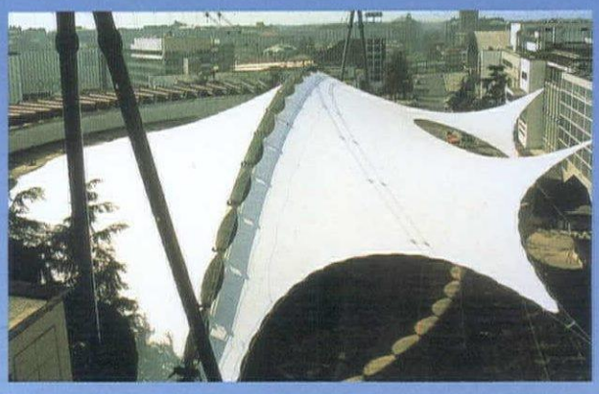
FOUR CENTURIES OF QUALITY CRAFTSMANSHIP

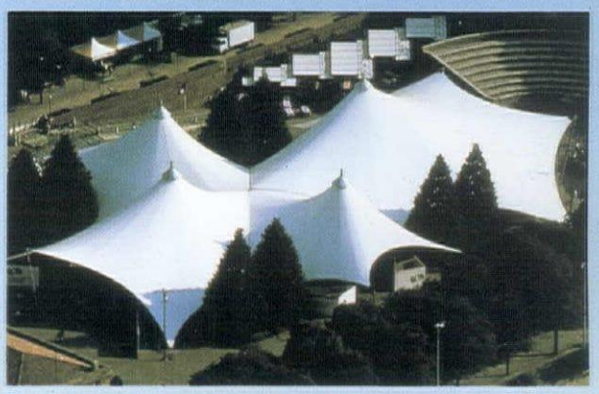
Delabole Slate Division of RTZ Mining & Exploration Ltd.
Pengelly Road, Delabole, Cornwall. PL33 9AZ.
Telephone: 0840 212242 Fax: 0840 212948

Circle Reader Reply 6

CANOBBIO covers the whole world







STILE ADVERTISING - GDG

Since 1926 Canobbio S.p.A., the leading company in the field of light coverings, has installed numerous sophisticated coverings using Tensioned Structures, Air Structures, Geodetic Structures and Lamellated wooden Structures for sport, industry, entertainment, exhibitions, architectural purposes, fair and transport, thanks to the cooperation of highly reputed designers, architects and engineers, as well as to their skilled staff and the use of advanced technologies.

The Palatrussardi, the tensioned structure covering Piazzale Italia at the Milan Fair and the Tent Theatre in Monte Carlo are some examples of Canobbio's large production.

CANOBBIO

THE TECHNOLOGY OF COVERING

CANOBBIO S.p.A.
ia Spartaco, 23 - 20135 MILANO - Tel. (02) 55188168 ric. aut. - Telex 340093 CANTEL I - Telefax 55183182

solarsiv

British Telecom Headquarters
Maurice L. Fielding & Associates Architects
Structural Curtain Wall "Symphony"
Internal Demountable Partitions "Fire"
By
Permasteelisa Group
Architectural Components

Space for Active Glass

When functionality and energy saving are top priorities, when comfort and usefulness go together with aesthetics and design means both innovation and creativity, solar control glass Solarsiv is a leader. Solarsiv as guarantee of environmental comfort: it can be realized for safety, sound-proofing, anti-vandalism and any other special purposes.

siv
Società Italiana Vetro

SOCIETÀ ITALIANA VETRO S.p.A. - Special Products Sales Department - Via G. De Grassi, 8 - 20123 Milano - Tel. 02/88061 - Fax 02/8806222
UK Representative Office - Bruno Lauria - 24 Beverly Gardens, Wembley Park, Middlesex HA9 9QZ. - Tel. 081/9044457
Witting Brothers Limited - The Teardrop Centre, London Road, Swanley, Kent BR8 8TS. - Tel. 0322/614641 - Telex 917135 - Fax 0322/615139

WORLD ARCHITECTURE EDITORIAL

THE POPULAR TEST

One of the greatest tests of modern architecture is in relation to people and places of entertainment. Can the methodologies of Modernism subtly adapt to the psychological needs of those seeking leisure and relaxation? During the heroic phase of the Modern Movement there was little emphasis on the cultural places of entertainment (in comparison with community centres, colleges and clubs for workers) – and even less opportunity for modern architects to bring their new visual language to bear on these public institutions.

But the post-war generation of building designers, whose task it has been to redefine Modernism, extend its potential and bring its meanings to a wider audience, have thoroughly and successfully explored the modern ideal of the entertainment venue – none more so that Jørn Utzon, subject of the major profile in this issue.

The stunning and unswerving popularity with the public of Utzon's Sydney Opera House – now a potent symbolic image of one of the man-made wonders of the world – is testament to the strength and integrity of Utzon's Modernist beliefs which are filtered through a unique personal vision. That vision remains very much alive and alert today.

As this issue of *World Architecture* reveals, Utzon continues to work with his two architect sons, Jan and Kim. New schemes by Utzon Associates for hotels, art museums, congress centres and urban regeneration, including an ambitious project to develop Copenhagen's famous Langelinie promenade (home of the Little Mermaid statue), demonstrate a continuing commitment to skilfully meeting the needs of leisure and relaxation within a modern tradition.

Indeed this issue of *WA* largely concerns itself with the Modernist intervention in architecture for entertainment. We look back to the theatre designs of the American Norman Bel Geddes; though largely unbuilt, they have exerted a great influence on the evolution of the contemporary auditorium. We look ahead to plans for a new London home-cum-recording-studio designed for architect-trained pop musician Chris Lowe of the Pet Shop Boys.

We talk to the Disney Corporation, colourful pioneer of a distinct brand of "entertainment architecture", about its patronage of Graves, Isozaki and other world-renowned names. And we visit the bars of Barcelona nightlife, which are not only cultural icons for Spanish interior design creativity but the latest chapter in *Modernisme,* Catalonia's regional variant on Art Nouveau.

If Modernism is to retain its relevance beyond this century then it must meet the challenge of people and entertainment. As this issue demonstrates, many of its most thoughtful and forceful exponents are doing just that – and often in the most unexpected ways.

Jeremy Myerson

CONTRIBUTORS TO THIS ISSUE . . .

Tobias Faber is an architect, critic and one of the best known authorities on Danish modern architecture. Among his publications is the definitive biography of Arne Jacobsen.

Christian Norberg-Schulz enjoys a high international reputation as an architectural critic and historian. A former Dean of Oslo School of Architecture, his books include *Intentions in Architecture* (1963) and *Meaning in Western Architecture* (1975).

Dennis Sharp is Executive Editor of *World Architecture* and the author of a new book, *Twentieth Century Architecture: A Visual History.*

William Faricy Condee is Chair of Undergraduate Studies at Ohio University and is currently writing a book on creative use of theatre space.

Nik Randall is a partner in London architectural practice Alan Brookes Associates.

Roger Watson is a project consultant with Metal and Glass Design who works with architects throughout Europe.

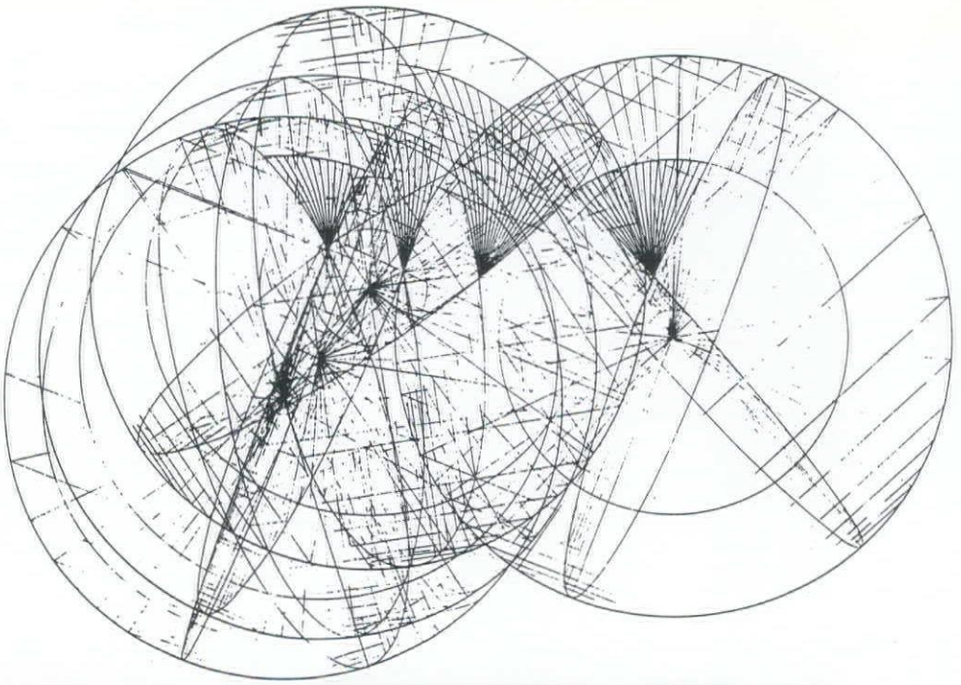
Michael Govan is Assistant Director of the Solomon R Guggenheim Museum, New York.

Fay Sweet is a British design journalist and writer. She is the co-author with Rod Hackney of a book on community architecture.

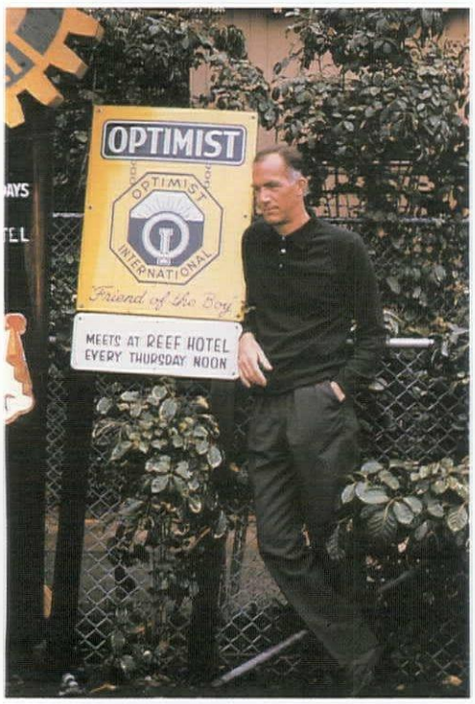
Guy Julier is a design historian, writer and lecturer. He is the author of *New Spanish Design.*

Pierre Vago is a distinguished French architect and critic, founder of the UIA (International Union of Architects) and chairman of the editorial board of *World Architecture.*

Jørn Utzon is one of the most enigmatic and inspiring architects of the modern age, drawing on the forms of nature and human perception to produce work of outstanding originality. Sydney Opera House is his epic masterpiece, yet controversy still surrounds his withdrawal from the scheme. Tobias Faber worked with Utzon in the early years, collaborating on a number of pioneering projects. In the latest of our profile series on Academicians of the International Academy of Architecture, Faber charts the motivating forces which have shaped the career of a Danish architect who is both revered and reclusive.



JØRN UTZON
THE VISION OF NATURE



ARUP

Jørn Utzon, photographed in Australia during work on the Sydney Opera House. (Top) All elements of the building were cut from spheres – "It's very simple. If you imagine a big ball . . . the ball could be divided like pieces of an orange."

Jørn Utzon is the most original and talented Danish architect of this century. Yet the idea of being an architect never seriously entered his head until he was 18 years old. Utzon was born 1918 and grew up in the Danish provincial town of Aalborg, where his father was director of the local shipyard and a brilliant yacht designer. The young son made frequent visits to the shipyard to help his father draw up the final plans for new yachts. Utzon contemplated a life at sea as a naval officer but was introduced to the arts by meeting a few artists. They observed the personal influence on young Utzon of the environment and saw his interest in people's relationships with their dwellings and their neighbours. They recommended that Utzon should try to enter the Academy of Arts School of Architecture in Copenhagen where he was accepted due to excellent freehand-drawings.

It is remarkable that Jørn Utzon never developed an interest in architecture in his youth by meeting other architects, by visiting architectural monuments or by studying architectural books. Even later in life his approach to architecture was never intellectual, but always a direct feeling for the unconscious and registered human reactions to visual and human surroundings.

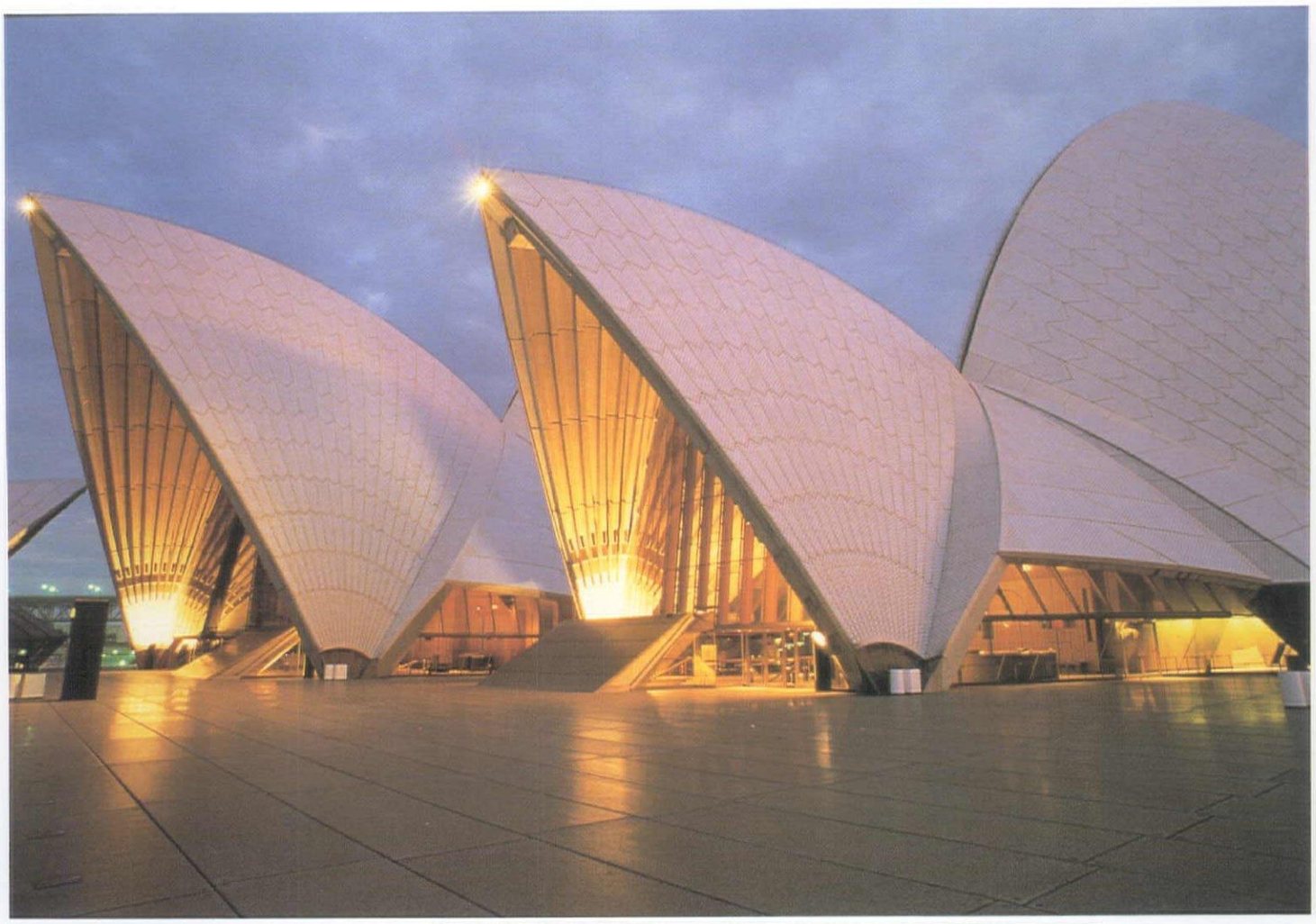
After finishing his thesis, Utzon went to Stockholm in 1942 to work in an architect's office. In Stockholm he competed successfully for the Danish Royal Academy Gold Medal. In helping him draw up the final plans, I began a close collaboration with Utzon on the first of seven or eight architectural competitions.

I think it was useful for Utzon to test his many ideas on a colleague of about the same age. For me, it was a marvellous opportunity to observe the creation of great ideas at close quarters. Throughout our collaboration Utzon was enthusiastic, open-minded, sensitive, loyal and the most inspiring human being I ever met.

Supported with refined detailing

We studied the works of Gunnar Asplund, admiring his dominating main ideas, always supported by the most refined, subordinated detailing. At a time when all architects were impressed by Japanese architecture, we studied books about Chinese monumental and vernacular architecture as the basis for Japanese building traditions. We studied the books of Frank Lloyd Wright and his organic approach to architecture, and we looked at fascinating photos in German books about *Wunder der Natur* – all due to Utzon's intuitive feeling for what would be essential to the architecture of the future.

Our competition projects didn't win any first or second prizes, but they attracted attention and were published. Reacting against the indifferent quality of most of the output of the Modern Movement at that time, we collected our views for an article in the Danish magazine *Arkitekten* in 1947. We found



ARUP/PAUL SIMCOCK

inspiration in the structures and textures of nature, in vernacular buildings and the fundamental greatness of monumental buildings of the past in Mexico, India, Greece and China.

Shortly afterwards, as an introduction to a small exhibition, Jørn Utzon explained his ideas for a new approach to architecture based on a training in personal sensitivity, an understanding of the laws of nature, and on the need for imagination and dreams.

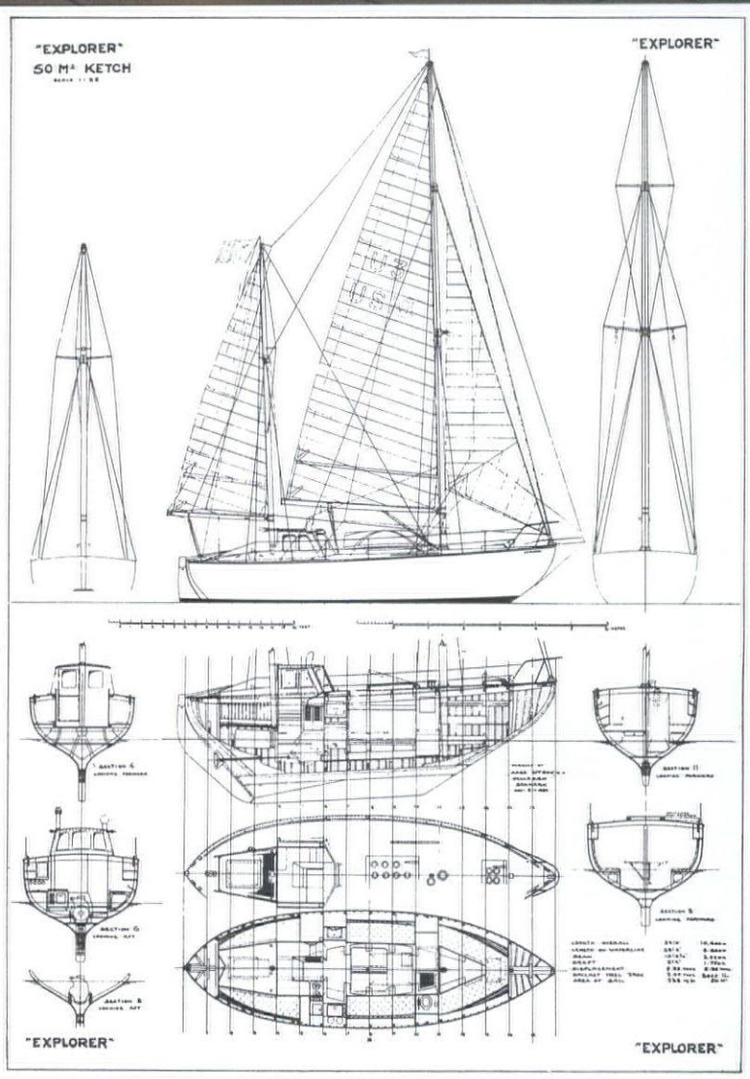
In the following years, Utzon spent a period with Alvar Aalto and visited other great architects and artists of the time: Le Corbusier, Mies van der Rohe, Frank Lloyd Wright and Henri Laurens. He also forged a close friendship with the Norwegian architect Arne Korsmo.

On his travels, Utzon was impressed by the artificial plateaux of the pyramids in Mexico. In Peking's Forbidden City he admired the harmony created by contrasts between the heavy platforms and the elegance and tension of the roofs, covered by glazed tiles.

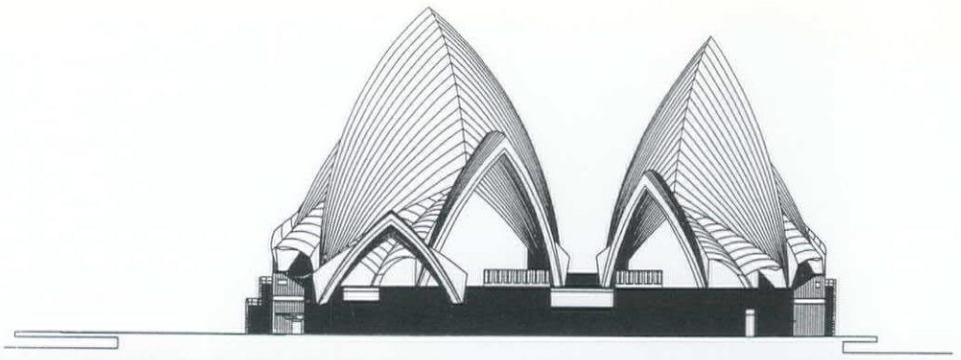
He studied a thousand-year-old Chinese book for craftsmen, showing highly developed prefabrication in wood: the refined Japanese houses appeared as pieces of furniture with the recessed floors as tables.

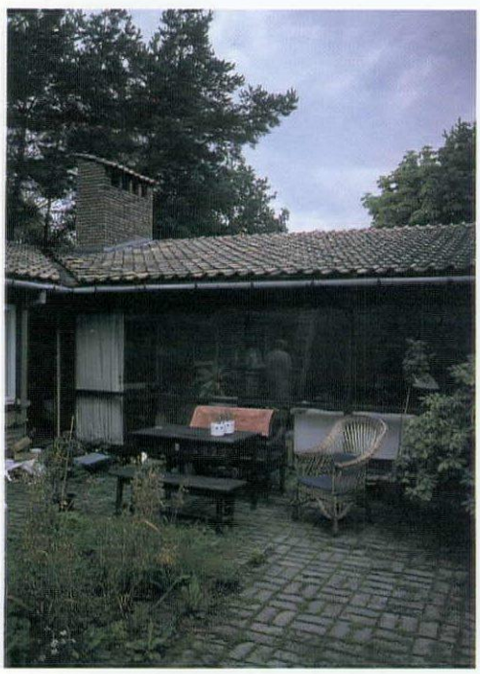
And he visited the villages of Morocco with their unity in clay of earth and dwellings.

All impressions were registered, but Utzon never copied or directly transferred the ideas.



(Left) Utzon grew up in close proximity to naval architecture: he often helped his father, an accomplished yacht designer, draw up plans for new yachts.





DENNIS SHARP

ARUP/PAUL SIMCOCK

(Top right) Sydney Opera House, section and general view. (Above) Utzon's Courtyard Houses at Elsinore, Denmark. (Right) Interior of the Bagsvaerd Church, new Copenhagen.

DENNIS SHARP

He has always managed to convert his impressions into personal, imaginative projects through a kind of metamorphosis.

Even his architectural works and projects are all very different to each other. However it is possible to find dominating characteristics related to studies in his youth. Platforms or artificial plateaux as essential elements recur in many fascinating projects, which have never been realised.

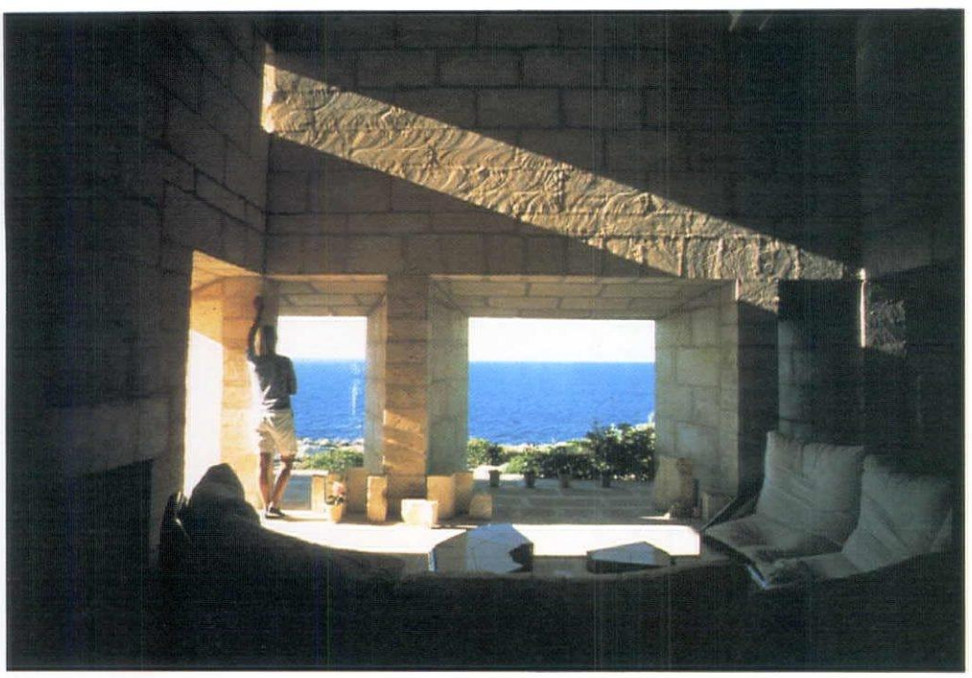
Creating impressive structures

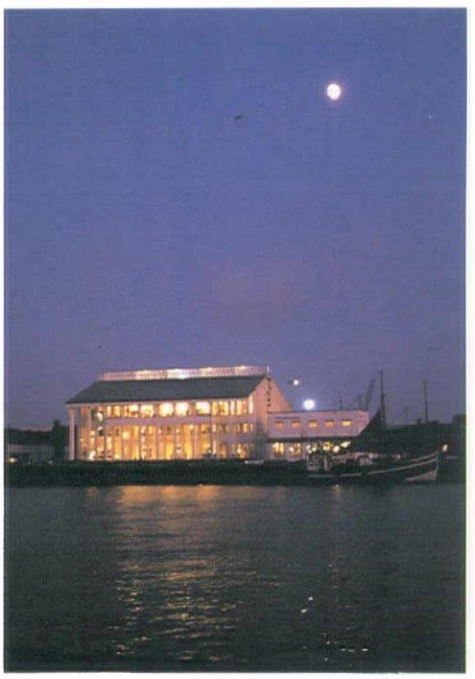
Utzon's interest in prefabrication is an attempt to utilise industrialisation for more than rational reasons. Composing elements of different form, size and material can create rich and impressive structures. On Sydney Opera House, Utzon worked with pure geometry and sterometric forms in order to have all calculations under control. From a sphere he cut all elements of the 60 m-high shells.

Prefabrication also informs the Kuwait Assembly Complex, 1972. The huge columns of the dominating lobby support the hanging beams of the roof which is formed like a canopy of canvas. The building's grandeur is similar to the temples of Karnak.

Spatial experiences from nature can also be seen in Utzon's fantastic project for an underground museum in Silkeborg, 1964. This was inspired by the caves in Tatung in China, where all the walls of the cave are covered with thousands of carved Buddah-sculptures of

(Left) Jørn Utzon's own house on Majorca with its extraordinary and different views of the sea. (Below) Paustian furniture showroom, Copenhagen: creative impulse taken from the patterns of sun and sky in a Danish wood of beech trees.





different sizes, sparingly lit from outside via holes in the wall.

More recently, the interior of the Paustian furniture showroom, 1986, takes its creative impulse from a Danish beech wood with sun and sky glimpsed between planes of leaves and firm trunks. The poetic transformation of the interior is achieved by a system of prefabricated columns and beams with a wide variety of heights, spans and rhythms.

The Bagsværd Church of 1976 has a simple rectangular plan, but the very high interior space is covered with beams, varied in height. This allows the sun to penetrate and reflect, providing a continuously changing light. The inspiration was the variation of drifting clouds on a sunny day on a beach.

Specific situations always give Utzon inspiration for specific solutions. Sydney Opera House is placed on a pier in Sydney harbour, surrounded by mountains and slopes from which the inhabitants of the city look down. The roof had to be an essential fifth elevation. The building is a sculpture with its many shells clad with tiles reflecting the sky and the clouds.

Utzon's early interest in human habitation led him to experiment with his own house in Hellebæk in 1952. It was first erected as a full-scale model in wood and canvas. With that house Utzon introduced open plan to Denmark.

Twenty years later he built a supplementary house for himself on the island of Majorca. The specific site on high cliffs on the edge of the ocean determined the cubic elaboration of four minor, separate buildings, all with extra-ordinary and different views to the Mediterranean Sea.

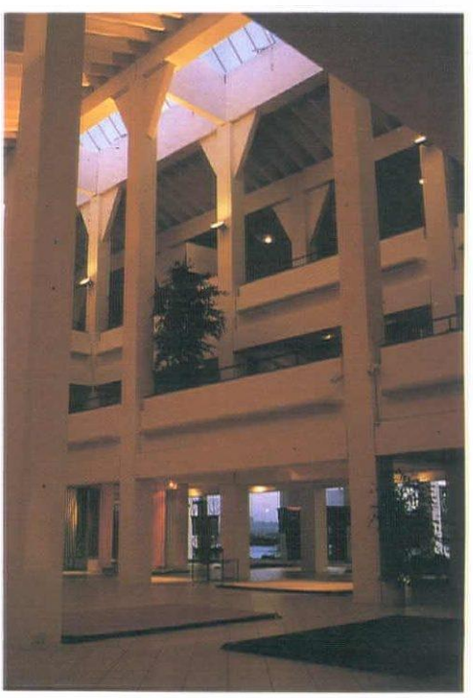
Utzon's ideas on developing one-family courtyard-houses emerged in the Romerhouses of 1956 and the Fredensborg Houses, 1963. Each house is an element, a square closed by walls on four sides. Inside the walls the families enjoy privacy in interior and exterior spaces.

In both cases the houses are placed in rows, recessed to each other to take maximum advantage of sunlight and view. Yellow brick walls and roofs give the developments a unique, strong character.

Basis in Danish tradition

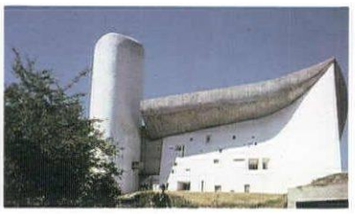
Utzon is an international architect, able to work anywhere in the world. Yet he has a basis in Danish building tradition, a modest soberness which makes all his buildings free from sentimentality and pomposity. His sons, Jan and Kim, are both talented architects, and his daughter Lin Utzon collaborated successfully with her father to create all the textiles for the Bagsværd Church.

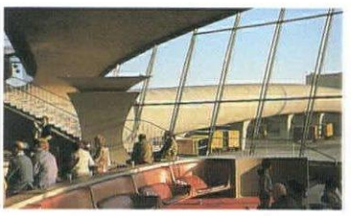
A few years ago Utzon and his two sons established the firm Utzon Associates. The Kuwait National Assembly Complex and the Paustian Building are their first realised projects. The sons have been loyal and successfully

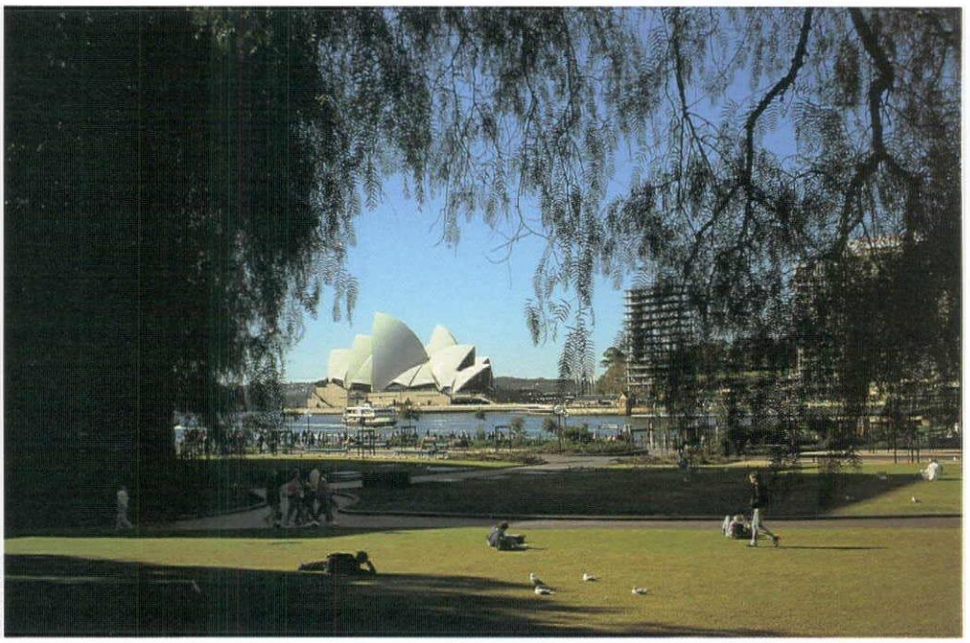


supported and developed the ideas and methods of their father.

In a period of superficial Post-Modernism, Utzon is a remarkable personality. His imaginative architectural works are, of course, too personal to copy. But his respect for the architectural laws of the past and his serious, progressive working methods ought still to inspire imaginative young architects today. □



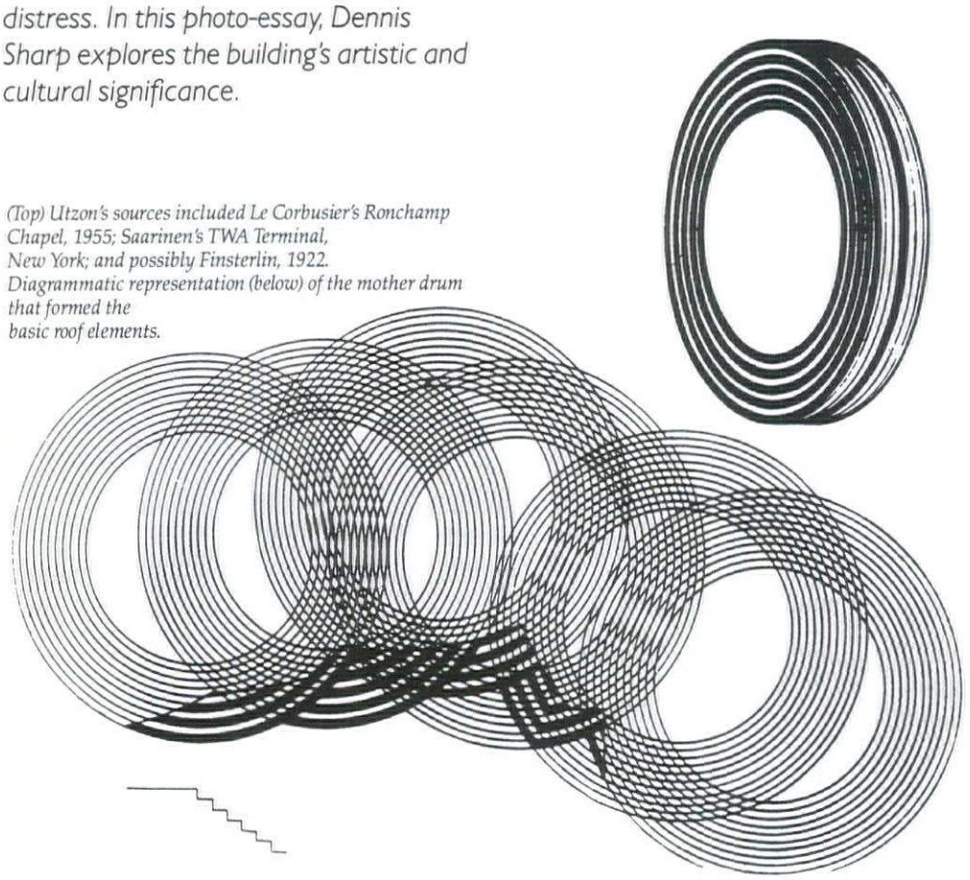




DENNIS SHARP

THE UBIQUITOUS MONUMENT

Sydney Opera House remains Jørn Utzon's masterwork, a successful testbed for his professional philosophy despite causing him so much personal distress. In this photo-essay, Dennis Sharp explores the building's artistic and cultural significance.



(Top) Utzon's sources included Le Corbusier's Ronchamp Chapel, 1955; Saarinen's TWA Terminal, New York; and possibly Finsterlin, 1922. Diagrammatic representation (below) of the mother drum that formed the basic roof elements.

Sydney Opera House, Jørn Utzon's masterpiece, was recently voted one of "the wonders of the twentieth century" by readers of *The Times* newspaper. During construction it was nothing of the sort. The architect himself left the site in 1966 and the complex was completed by others before its official opening in 1973. The Opera Hall, the key original element, was reduced from a major to a minor hall. Altogether it was an unholy compromise and Utzon has never been back. Furthermore, a longstanding disagreement with Ove Arup was only healed at the time of the presentation of the Royal Gold Medal at the RIBA in 1978.

So what is it that has now brought such a distant building into prominence to make it second to none in the modern world? It can only be its overall dramatic appearance on its shelf of a site, set – as so many saw at the time of the Bicentennial celebrations on TV – like a greater mother vessel around which all others appeared to revolve: a locus with a focus in one of the most breathtakingly beautiful harbours anywhere.

Most people who voted for it have never seen it. It is a case of architectural excellence judged – as ever? – by influence and illustration.

The original drawings for the Opera House

ARUP/MAX DUPAIN

Competition in 1956 were diagrammatic but profound. Utzon said: "I had to visualise five to six thousand people going out to that peninsula, which is perhaps 600 by 300 feet so automatically I made this peninsula into a 'rock' and put everything to do with preparation (rehearsal rooms, workshops, etc) underneath the big 45 ft high platform . . . finished plays were presented to the audience on top of this 'rock' covered by the big sails . . . People were separated from daily life by this fantastic building."

Sheer design virtuosity

For Utzon the Opera House was a testbed for many of his later architectural ideas, a moment of sheer design virtuosity and – as it later proved to be – also a profoundly distressing and unhappy experience.

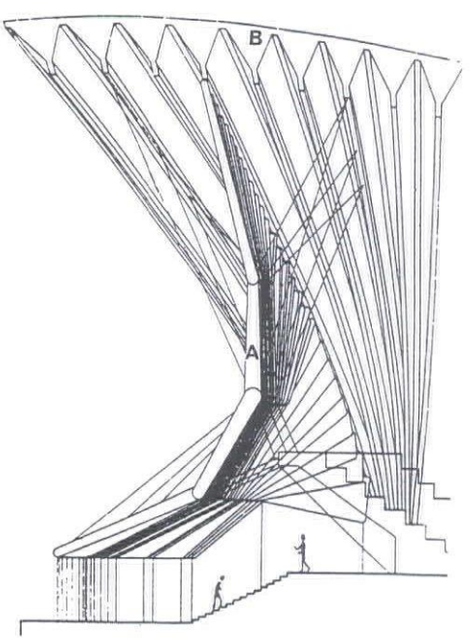
Although he claims to have developed a built-in resistance to his many politically motivated and philistine critics, he nevertheless retained a profound faith in the integrity of his original concept.

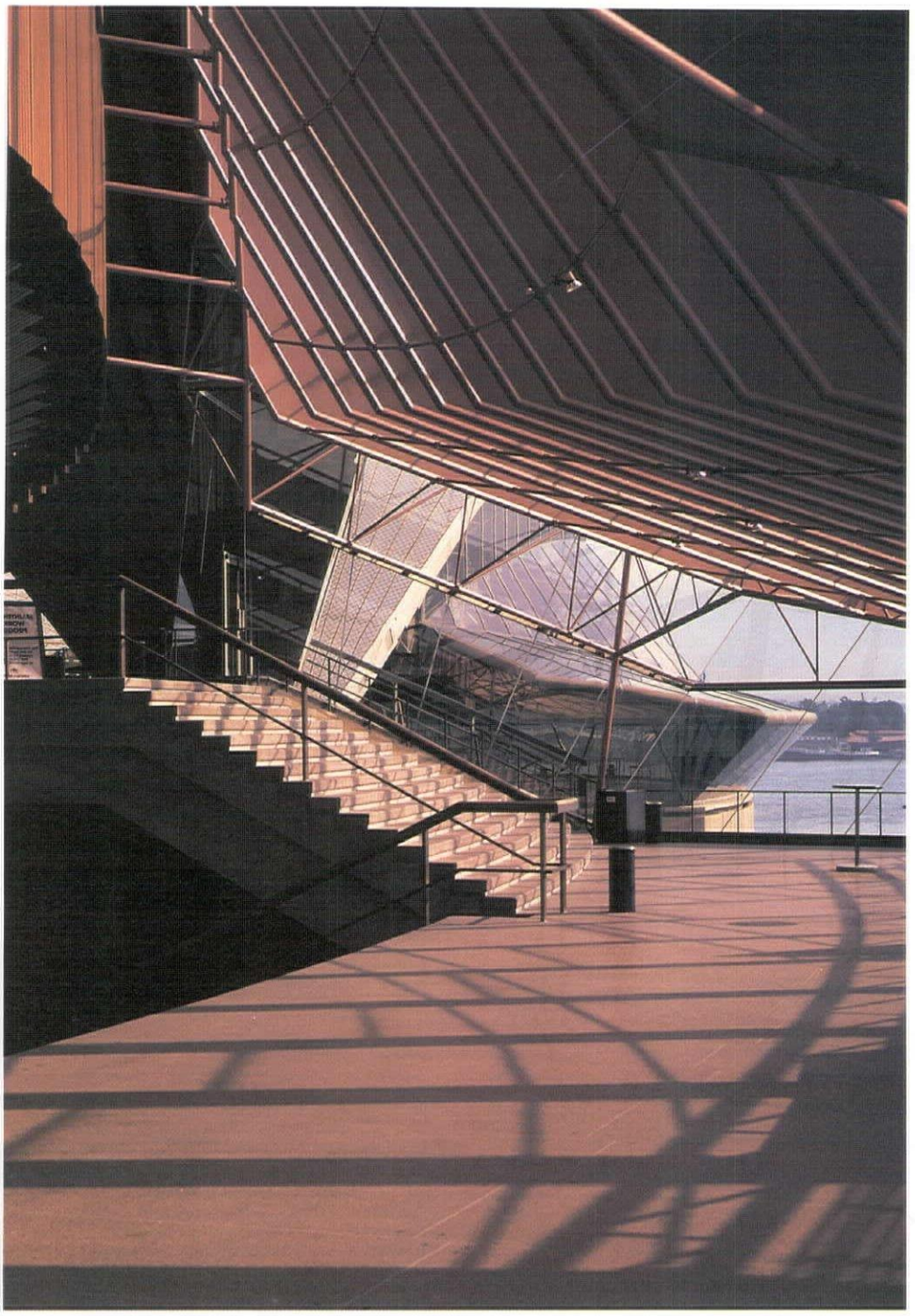
It proved right and fortunately was so strong a visual idea that it has mollified and subsumed the additional completed work by other hands. The recent enhancement by 'civic planning' to the entrance to the site from the city itself has also paid off.

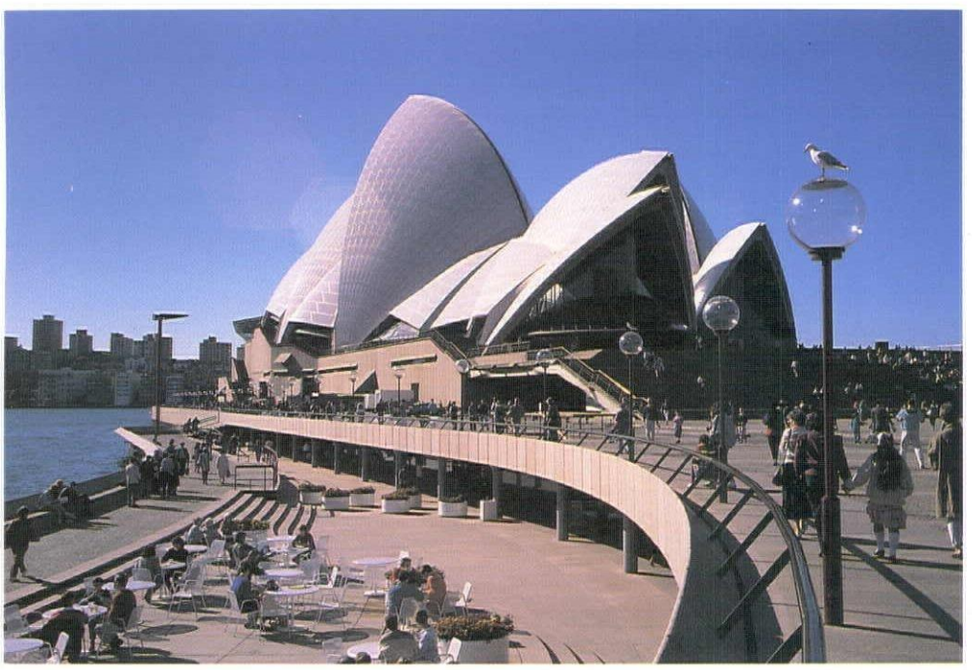
Sydney Opera House is now probably the best sited as well as the most famous modern building in the world. It is seen as, and remains a powerful and comprehensive complex, one that is indelibly tied to its dramatic site, a voluptuous, exciting, unique cultural flume sitting astride a bedrock of granite on Bennalong Point.

Additionally, it is basically a nautical solution which fits in well with the harbour echoing the many analogies associated with ships and sails, hulls and berths. Here Utzon's background too is important: it should be remembered that he is the son of a naval architect and that much of his youth was spent messing about in Danish shipyards. There he soon discovered there was "nothing that could not be done".

The concept of the Opera House was immensely daring and to some it initially appeared unbuildable. However it was not an entirely novel design but a unique product of the current architectural *Zeitgeist*. It was still very much a Modernist building of the romantic or even organic sort. It certainly was not one of the then popular Rationalist type. It was undoubtedly a 1950s structure if somewhat

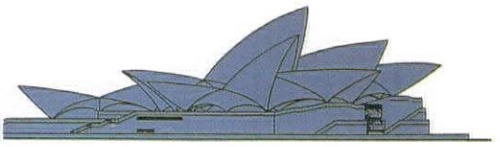






PHOTOGRAPHS BY DENNIS SHARP

The ubiquitous monument: (below) Utzon's original competition design; (below left) interior completed by others; (bottom left) the new urban planning.



modified by later technological changes and innovations. It is clearly part of the same ethos that produced Le Corbusier's Ronchamp Chapel which, more than any other single building of the period 1950-55, revolutionised and changed the course of modern architecture.

Contemporary with this most significant of changes, Eero Saarinen's work in the United States had also gone through a drastic transformation ensuring a virtual metamorphosis in his work. He was a virtual leader of this new architecture – until his untimely death at the age of 51 in 1961 – through a whole range of architectural projects in the new idiom. These ranged from the remarkably expressive and distinctly naturalistic TWA Terminal at Kennedy Airport (then Idlewild), New York to the equally impressive curved roof structure for the Yale Ingalls Ice Hockey Rink, 1956-8.

As one of the international assessors in the Sydney Opera House competition, Saarinen acted as Jørn Utzon's main champion.

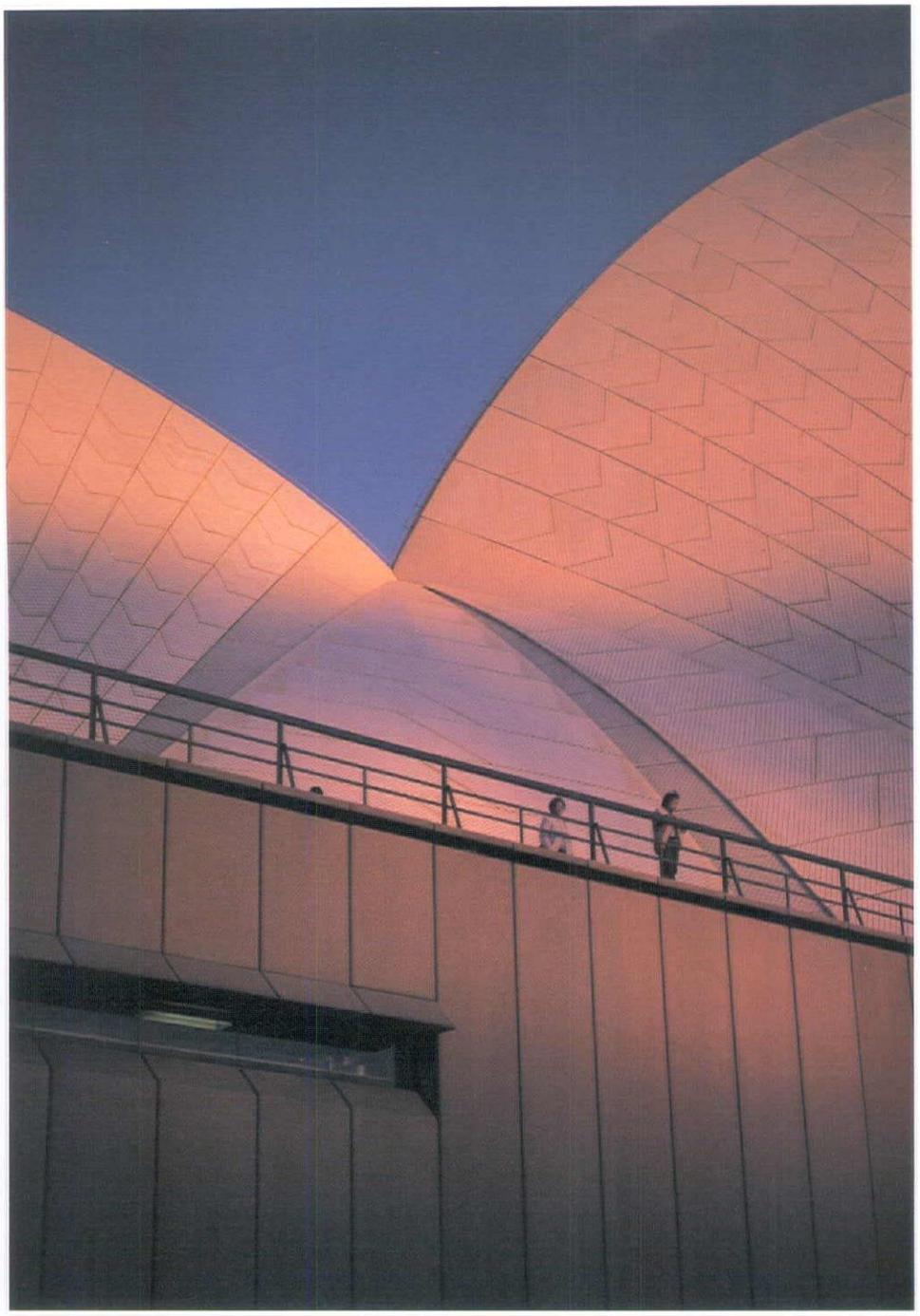
Insight into Alvar Aalto

There were other precedents too. From the end of the war onwards Utzon had gained an insight into the work of articulate and site conscious designers like Alvar Aalto, for whom he worked for a short period in Finland in 1945. He also visited the work of Frank Lloyd Wright in the US and worked for Arne Korsmo, the father of postwar Modernism in Norway. His other great hero has always been E Gunnar Asplund.

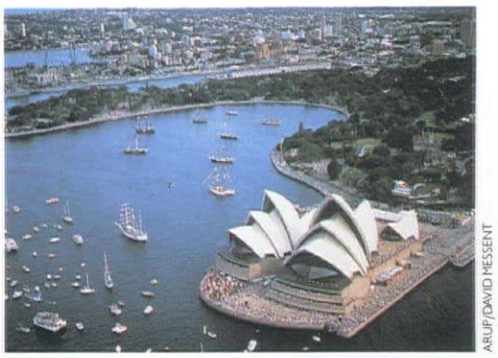
Whether he would be prepared to acknowledge a debt to the rebirth of work that had been frozen for many decades like that of the German eccentric expressionist Hermann Finsterlin is another question. Certainly at the time he submitted his competition entry there has been a revival of interest in Finsterlin's uncannily prophetic work. Paolo Soleri was not far behind. But I guess that is another story, although clearly part of the same ethos.

It is worth recalling too that the assessors admired his 'Classical' treatment of the Bennalong Point site which was to accommodate the massive base and to be topped by the "magnificent ceremonial approach to buildings that provided a unity for structural expression".

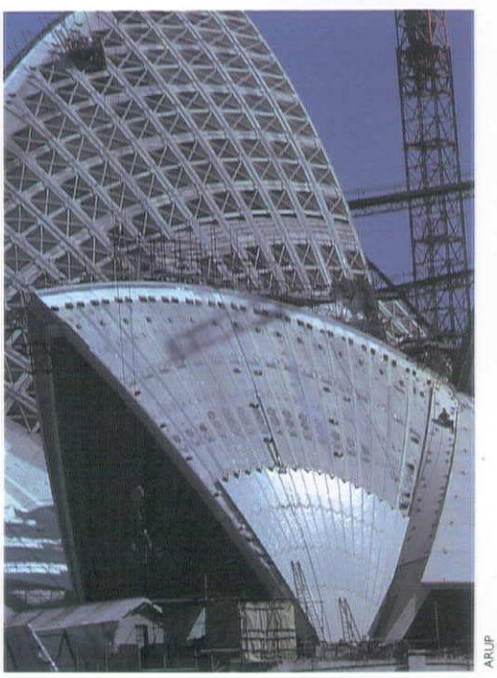
Utzon's original concept was for a massive base and hovering and dominating roofs. This inspiration owes more than meets the eye to his



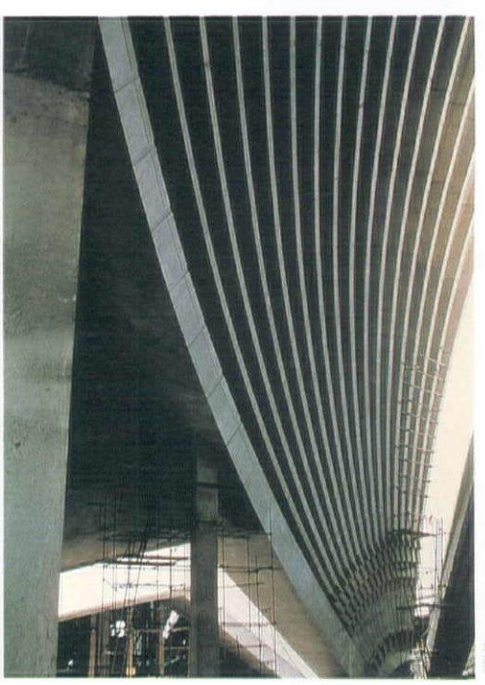
Views of the Sydney Opera House including (below) its siting on Bennalong Point and the great roofs under construction.



ARUP/DAVID MESSENT



ARUP



ARUP

own interest in the Mayan idea (Monte Alban, Mexico) of the earth as a ground platform and the openness above dominated by sky and clouds. Writing in *Zodiac* magazine Utzon emphasised this mythological but functional analogy: "One top of the platform the spectators receive the completed work of art and beneath the platform every preparation for it takes place". A simple idea perhaps but one that increasingly looked for a geometric solution to its intricate roofscape: the sphere eventually proved the answer

Scale beautifully achieved

And there is also the question of scale – of an appropriate scale – so beautifully achieved in the natural harbour. Here Utzon excelled. The object creates the place. The places create the focus of intention. The building is framed, but not overwhelmed, in one direction by the great coat hanger bridge and in another by fast growing trees and a civic renovation and development scheme that has done much to enhance its siting. Sydneyites have now come to terms with their own world-beating building, and it now clearly has overtaken the somewhat overrated Bondi Beach and the bridge itself as an object of tourist desire. It has become ubiquitous.

But how Jørn Utzon might view it if he ever went back is, of course, an open question. Next to Wright's Falling Water and Le Corbusier's Ronchamp it vindicates the romantic stream in modern architecture and reinforces the purposeful, artistic role of conceptual architecture.

In Utzon's case, thankfully further buildings of great subtlety and originality have followed, including the beautifully modulated interior of the Bagsværd church 1976, and the now shattered Kuwait Assembly as well as his own totally different house on Majorca. □

THE HOUSE THAT UTZON BUILT

In 1971 Jørn Utzon built his own home on the island of Majorca in the Mediterranean, a spectacular villa which links four courtyard houses in a design embodying many of the architect's most deeply felt beliefs. Christian Norberg-Schulz assesses its timeless qualities.

Utzon's house on Majorca (above) is simultaneously new and old: a natural and permanent part of the place.

Jørn Utzon's house on Majorca gives the visitor the impression that it has always been there, although it is distinctly "modern". When something is simultaneously new and old, the term "timeless" is appropriate. But something that is timeless does not remain outside time. It is something that is always valid. And that is how Utzon's house appears. It seems like a natural and permanent part of the place.

Is it not the distinction of a true work of architecture that it appears as a natural and permanent part of the place? The objection is obvious: "No, that is how it was in the past; today architecture ought to be *new* !" And we remember Giedion's words: "Contemporary architecture had to take the hard way. As with painting and sculpture, it had to begin anew."

But we ought to recall that Giedion added: "It had to reconquer the most primitive things, as if nothing had ever been done before." And that is exactly what Utzon does: he reconquers the most primitive things.

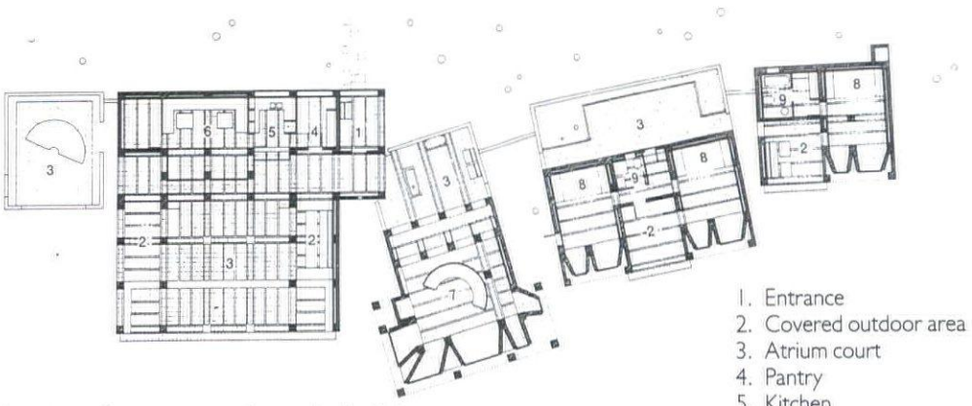
What, then, are the most primitive things? They are what we call the *origin*, that is, what is always valid. In fact modern art and architecture intended to reconquer the origin which had been obscured by historicism during the nineteenth century. In other words, it did not want to be original for the sake of being new, but because it wanted to return to the origin.

Origin resides in the place

Jørn Utzon tells us that the origin resides in the place and in the human being: place, with its topography, vegetation, light and "mood"; and man, who acts, interacts and dwells. But are not place and man subject to incessant changes? No. the place remains, although individual life perishes.

In the past *stabilitas loci* was, in fact, recognised as a basic human need because our own identity depends on the identity of the place. And human life does not really change

Floorplan: Majorca courtyard house



1. Entrance
2. Covered outdoor area
3. Atrium court
4. Pantry
5. Kitchen
6. Dining area
7. Living room
8. Bedroom
9. Bath

either. Its basic structures remain the same, and our task is to show what they mean *now*. Therefore a true work of architecture is both new and old.

Utzon's house on Majorca interprets the place and shows what it means to dwell *there* today. The house is situated on an extended natural terrace between the sea and trees. The terrace is a 20m high rock under the embracing sky and intense light of the Mediterranean. The place consists of the most primitive things: stone, trees, water and sun. Everything is part of a comprehensive "classical" order . Is it Poseidon or is it Aphrodite who reigns here, or perhaps an even more primitive character?

The layout consists of four "houses" that are linked together by walls and courtyards. A basic rhythm is present throughout, and the scale is uniform. Thus, the general order of the place is expressed. But the houses are slightly turned relative to each other, showing that nature is never pure geometry, at least not on earth.

View always related to spaces

All the units are orientated towards the sea. They open on the horizon and make us experience its width. But this does not occur directly; the view is always related to the spaces of the house: floor, walls, pillars and openings mediate between outside and inside, and unite what is far with what is close.

In each "house" this relation is different. In the tall main unit the view contrasts with the powerful, embracing wall within which the fireplace is located, while a small opening in the ceiling reveals the sky. In the large atrium the view is framed by flanking pillars, to make the rhythm of the house form a counterpoint to the movement of the waves below and the changing clouds above. Common to all the spaces are shaded courts, where vegetation tells us that nature means closeness and intimacy as well.

All this happens on the floor platform which gives definition and order to the natural terrace. One of Utzon's basic ideas thus appears in a new context. And above we also find his "sky": the houses are covered by a series of narrow vaults with a curved and hard terracotta surface. This contrasts with the stone walls and pillars. The vaults moreover emphasize the rhythm of the whole, and their orientation expresses the different character of the spaces. At the entrance they follow the direction of movement, whereas in the living room they are placed transverse to the view in order to equilibrate the room.

At first sight, the house appears as a pure stone structure. Stone is the main material that unifies the whole with the site and, in a more general sense, with the stone world of the Mediterranean.

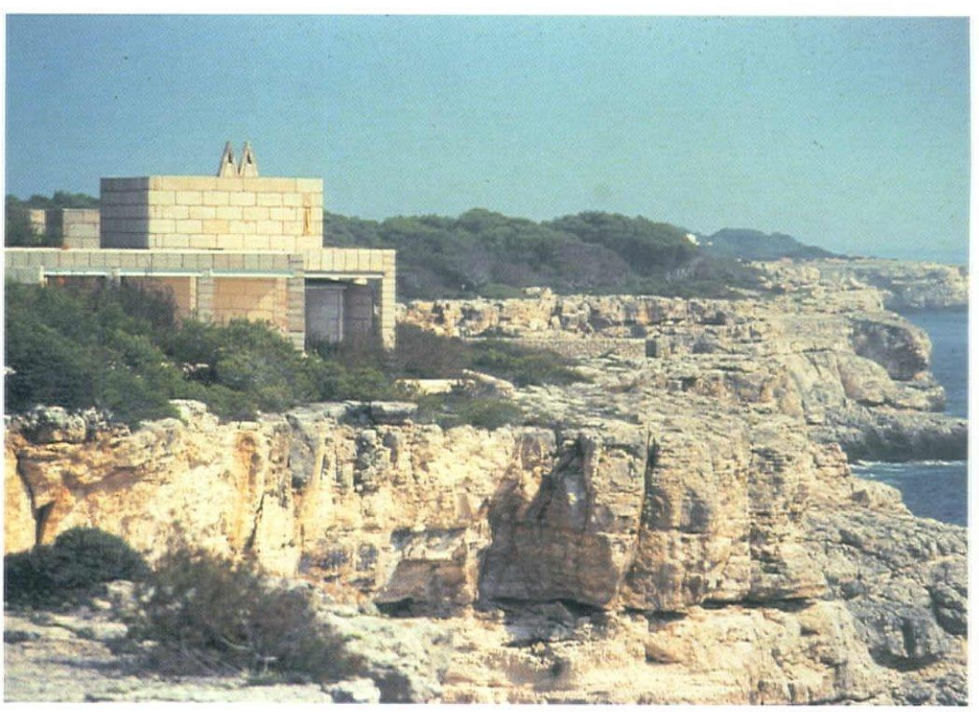
Refined use of materials

But then we discover the careful and refined use of other materials. All openings, for instance, are spanned by white, delicately dimensioned concrete beams that look like lines of force on a muscular body.

The window frames are placed on the outside of the walls so that they remain invisible from the inside; a detail that adds to the interplay of the spaces. And finally, where we sit down, luminous glazed tiles endow the built-in furniture with a heightened sense of place.

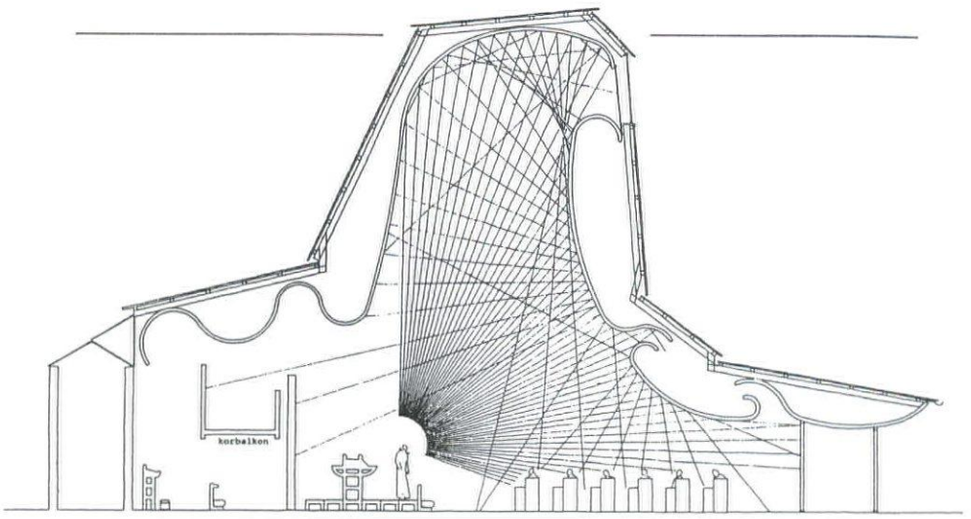
But the main quality of Utzon's house is the play of light and shadow. Rarely has a house grasped the character of Mediterranean light so well. Here it really emerges as what it is: always different and always the same.

"Light is the giver of all presences", Louis Kahn said. In Utzon's house light gives presence to everything else, and thus the place is visualized and explained. We also understand what Modernism intended when it wanted to "reconquer the most primitive things". □



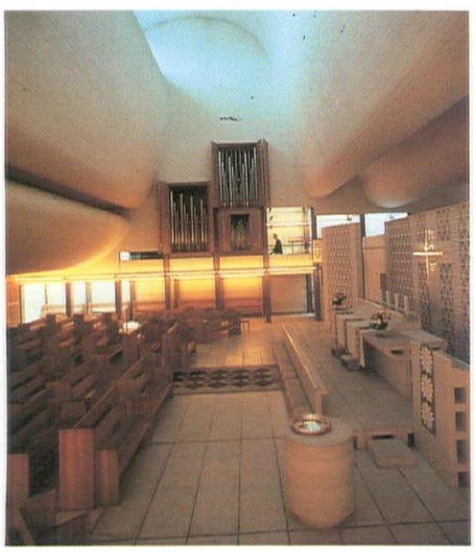
Stone structure unites Utzon's house with the stone world of the Mediterranean.

Bagsværd Church, 1976: cross-section and interior. A functional environment which also provides a sense of illumination and meaning.



RELIGIOUS CONVICTION

Jørn Utzon's Bagsværd Church belongs to the great tradition of Western ecclesiastical architecture but achieves its own grace by interpreting the key themes in a modern way, says Christian Norberg-Schulz.



Several times I have shown pictures of Jørn Utzon's Bagsværd church to people. I have always got the same reaction. First, the exterior: "It does not look like a church. It looks like a grain store!" Then, the interior: "That is better!" When I start to explain, the reaction changes a little: "Perhaps it is a church, after all."

Indeed, the Bagsvaærd church *is* a church, and one of the very few convincing ones of our time. Why is that so? Before I try to answer the question, I should, however, describe the building to make us see it.

The preliminary sketches by Utzon offer a clear indication as to his basic intentions. First he drew a group of people standing on a ground which extends towards a distant horizon. Touches of blue colour suggest that the sea is present too. Up in the high sky, voluminous clouds offer spatial definition to the scene and make light visible.

In the second sketch the same elements are present, but now the ground has become a built floor, and the clouds a series of hovering vaults. Between floor and ceiling the group of human beings is now directed towards a large, luminous cross which appears between earth and sky.

In general, the two sketches show that Utzon started out from a spatial vision, and that the space was intended as an *imago mundi*, that is, a built replica of man's basic existential situation. A description of the church therefore ought to begin with the space contained.

As constructed, the interior corresponds closely to the second sketch. Thus the space develops under a concrete vault which starts quite low over the entrance, rises steeply up immediately afterwards, breaks apart high up to let in a flood of light from behind, and curves down again towards the altar, over which a large white cross appears.

The altar is placed on the main axis in front of a transparent, grate-like screen, which suggests that the room extends behind it without precise limits. The vault is completely white, but because of its curvature it receives light differently, and a rich play of nuances is created, from intense luminosity at the top to deep shadow over the entrance.

The vault spans straight across the space and is carried at either end by thin concrete slabs, which do not stand on the ground but are opened up to allow for secondary spaces (aisles, organ loft). The secondary spaces are defined by repetitive concrete skeletons which create a regular rhythm of pillars along both sides of the interior, at the same time as they serve to carry and buttress the vault.

The skeleton is grey in colour, contrasting with the whiteness of the main structure, and is closed off towards the outside by super-imposed concrete panes which emphasize the "human" scale of the skeletal spaces. The contrast with the more "sacred" atmosphere of the main room is most effective.

The interior is certainly functional and in accordance with liturgical demands, but it cannot be explained fully in these terms. The early sketches as well as the executed building suggest that "meanings" are involved which go beyond merely allowing liturgical functions to take place.

A complex religious centre

The building contains several other functions, in addition to the church proper.
A parish hall, several meeting rooms, and other facilities of various kinds are added, making up a large and complex religious centre.

The secondary functions are disposed on the longitudinal axis of the church, and by extending the lateral skeletons to embrace them, the architect has created a fully

integrated and basically simple organism.

The exterior corresponds well to the interior. First of all it appears as a continuous envelope which follows the movement of the inside spaces, stepping up to allow for the church itself to develop in height. The skylights everywhere appear as small pediments which emphasise the movement of rising up in space, at the same time as they make the volumes become transparent towards the sky.

The increase in luminosity from the ground up is also expressed by the use of glazed tiles on the upper parts of the lateral walls. In general the exterior shows a very neat articulation and is distinguished by sensitive detailing. As it is not so quickly "understood" as the interior, it grows on the beholder even more, and appears more meaningful when leaving the church than when approaching it.

A church should make an "understood world" manifest. When man leaves the complex and transient everyday world behind and enters the church, he should experience the interior as an explanation which offers a sense of meaning and belonging. The word "understanding" in fact means to "stand under", that is, to know one's position between earth and sky.

Image becomes work of art

The understanding is made manifest as an image. We could also say that it is embodied or incarnated in the image. When this is accomplished, the image becomes a work of art. The church of Jørn Utzon is of particular interest in this context. To understand its importance we first have to ask: what is the image of the church?

Evidently a church has to offer a more comprehensive "explanation" than other buildings. Whereas a house or a factory is related to particular aspects of human life, the church ought to embrace the totality of human existence, or, to be more modest: its total spatiality. Therefore the church ought to visualise the essential properties of centre and path, verticality and light, in relation to the actual situation. If we take a look at the history of ecclesiastical architecture, we in fact see how the basic themes were repeated over and over again, at the same time as the situation at the moment required ever new interpretations.

Throughout the centuries the churches functioned as meaningful environmental foci, because they possessed the quality of strong images. In the midst of confusion and change, they made origin and permanence manifest.

But is not the role of the church different today? It certainly is. The church cannot any longer gather and dominate its surroundings. But it can still invite you in, and reveal an interior world of "illumination" and meaning. A modern church should not copy the original solutions, but it ought to offer an analogous explanation.

The Bagsværd church in fact does this. My description of its spatial organisation and built form shows that the basic themes are there, and Utzon's early sketches indicate this essential point of departure.

The stone floor to which the altar belongs is the earth, simultaneously understood as extended plane and solid rock. Man's daily life takes place on this plane, but it has a direction and a goal, and where the path ends the altar is firmly fixed to the ground. Being solidly founded on the rock, it gains the quality of security and permanence.

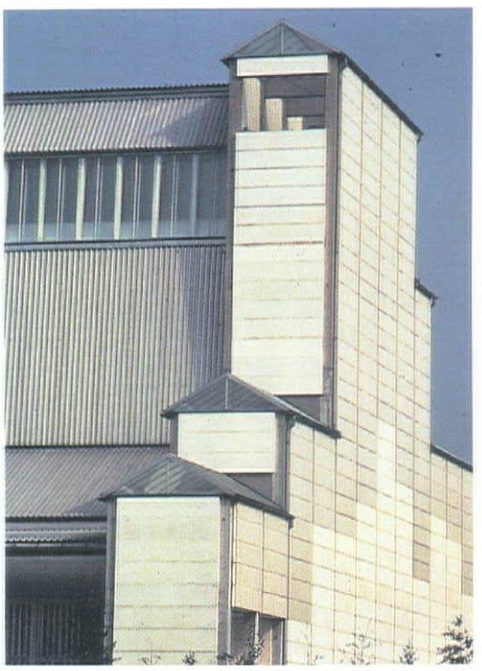
Daily life is, on the contrary, transient and vulnerable. The wooden furniture of the Bagsværd church as well as the floral patterns of the textiles (designed by Utzon's daughter Lin) express this.

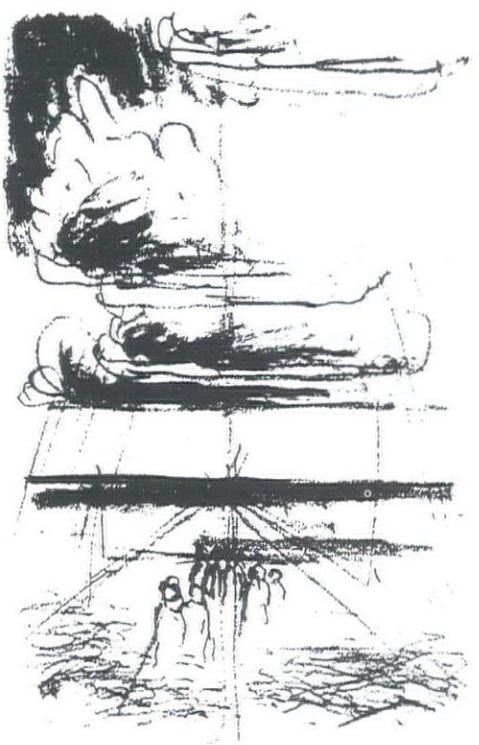
What takes place on the ground always happens under the sky. Utzon's sky is the curved vault which recalls the clouds of the Danish sky, where rays of light break through to illuminate the earth. Together with the lateral skeletons, the vault also belongs to the great tradition of Western ecclesiastical architecture.

Utzon's solution is therefore both old and new, and it tells us that great images are possible in our time. Here modern technology "reaches its real fulfillment and transcends into architecture", to recall the words of Mies van der Rohe.

The exterior serves as a more "neutral" shell to the world hidden inside. However it is something more than a mere container. The articulate continuity of the perimeter walls signifies enclosure and protection, at the same time as their stepping up towards the sky suggests an interior space of unusual character.

The Bagsværd church is in fact genuinely Danish, and shows how modern architecture may visualise the qualities of a particular place. What at the outset seemed bewildering thus becomes meaningful, and we may leave the building feeling that we have experienced an authentic work of art. □

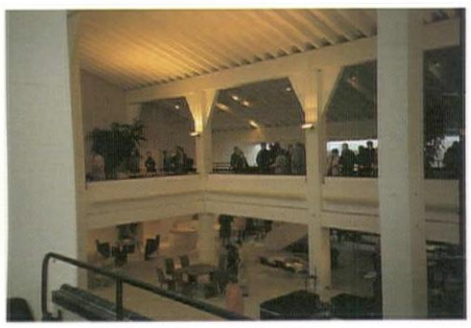




(Top) Bagsværd Church, austere exterior modelling. First time-visitors exclaim: "It looks like a grain store!" (Above) Utzon's first preliminary sketch for the building suggests the spatial definition of knowing one's place between earth and sky.

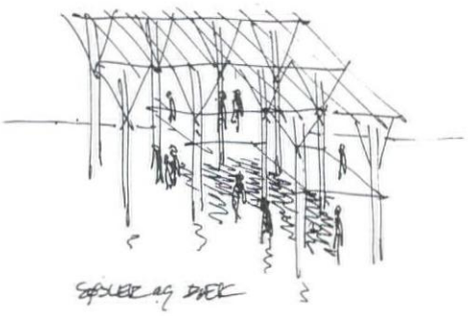
In recent years Jørn Utzon has continued to develop his professional ideas in collaboration with his two architect sons Jan and Kim. The firm Utzon Associates is involved in a number of key projects which serve as a contemporary platform for Utzon's ideas. Here, World Architecture *presents a selection of recent projects.*

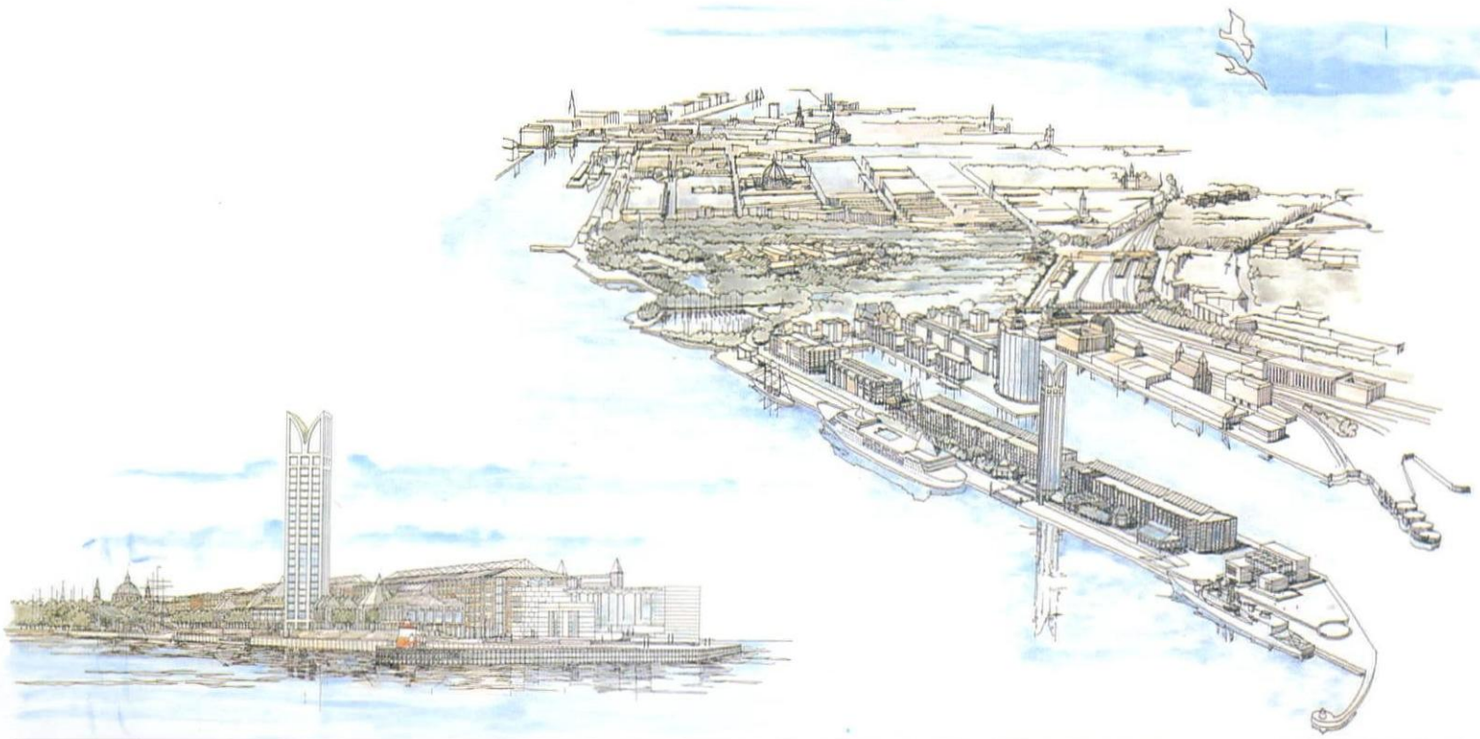
THE NEXT GENERATION

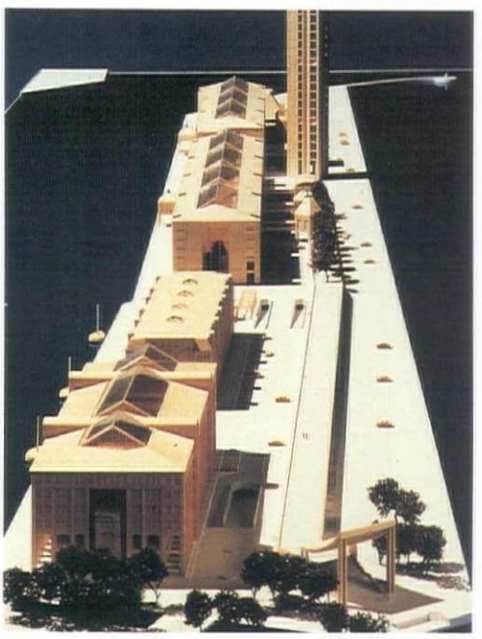


Paustian furniture showroom

Jørn Utzon's experience of walking through a Danish beechwood was instrumental in the design of the Paustian furniture showroom, 1986, on the Copenhagen waterfront: "In the dimness of the forest, clearings have the effect of overhead lights". The elements of the interior simulate a dense hall of columns, which dissolves upwards in a network of branches.

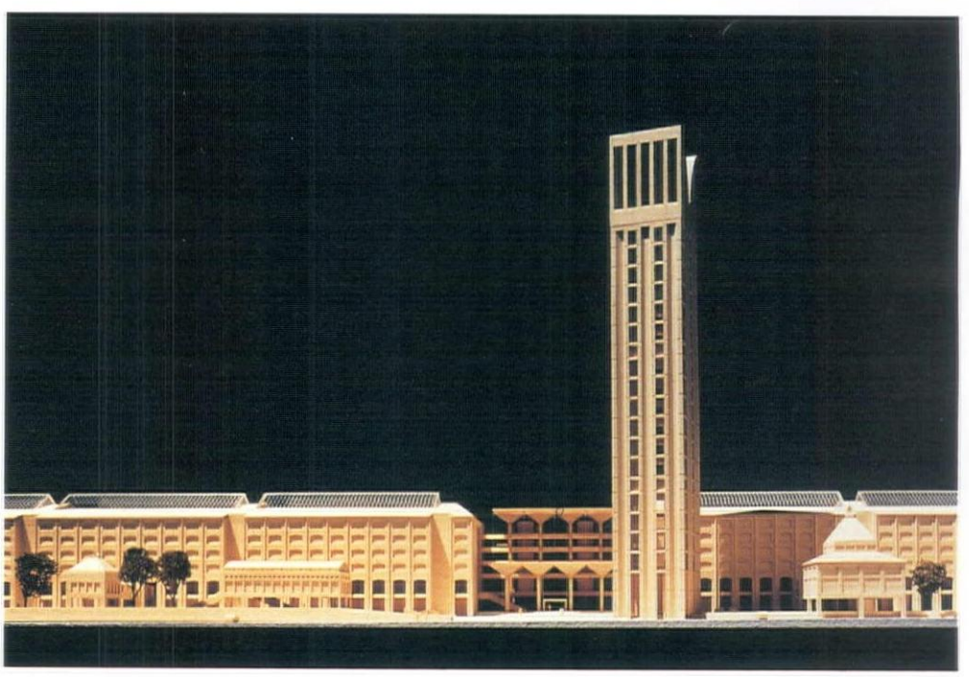


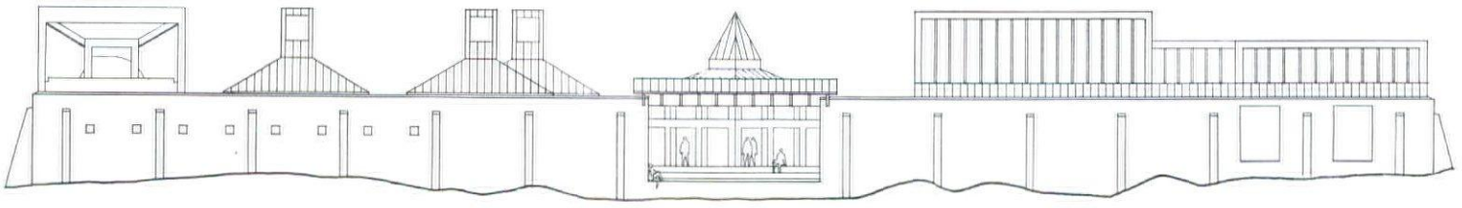


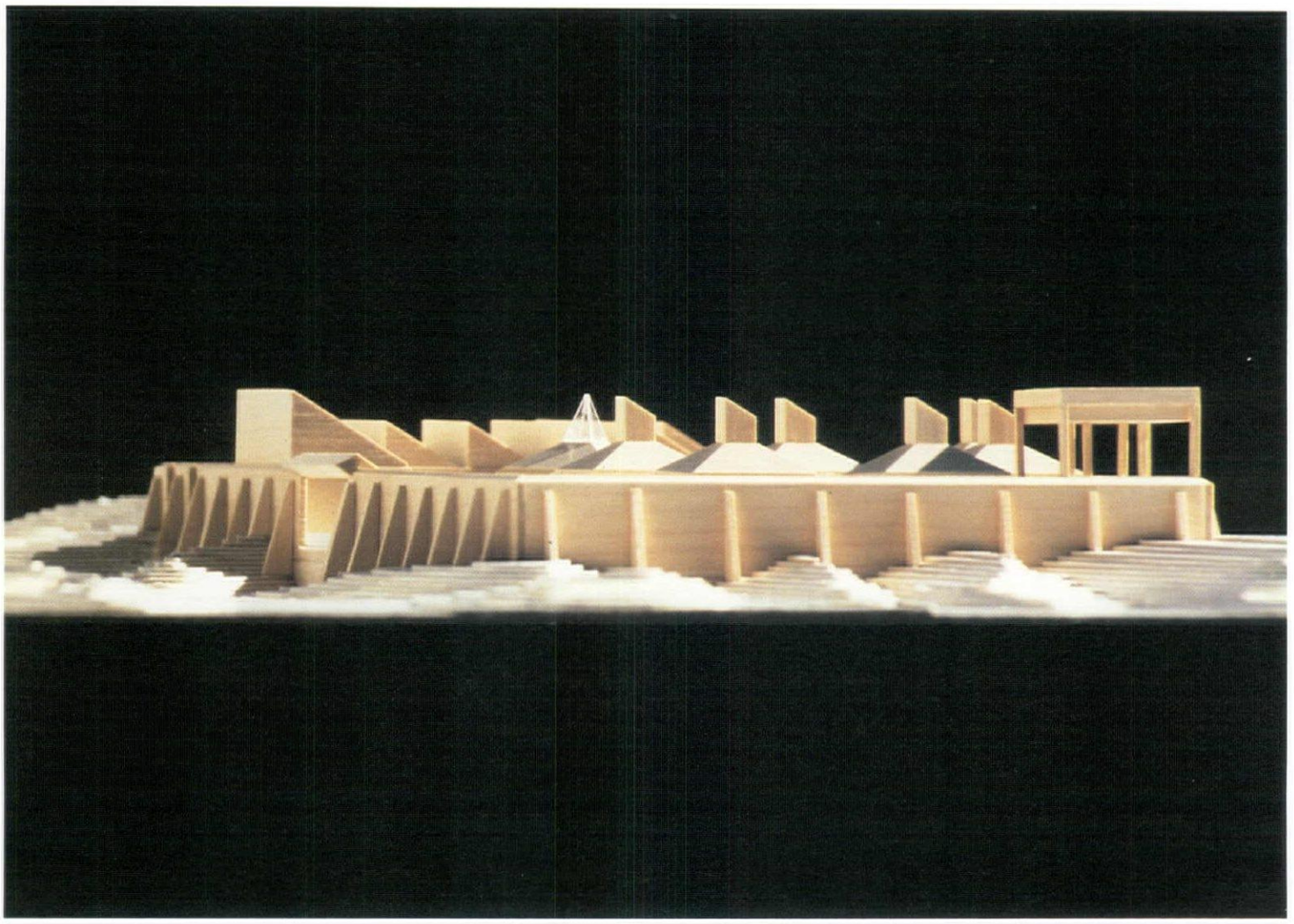


Langelinie complex

This project incorporates hotel and congress centre. It respects the low-rise character of Copenhagen's profile and reflects the continuity of the cityscape with large complexes surrounded by small buildings and towers. Langelinie promenade – home of the Little Mermaid statue – is a popular place with visitors. This scheme, which has received planning approval but awaits finance, aims to enhance the experience of going there; a pedestrian mall is flanked by retail, office and leisure development.

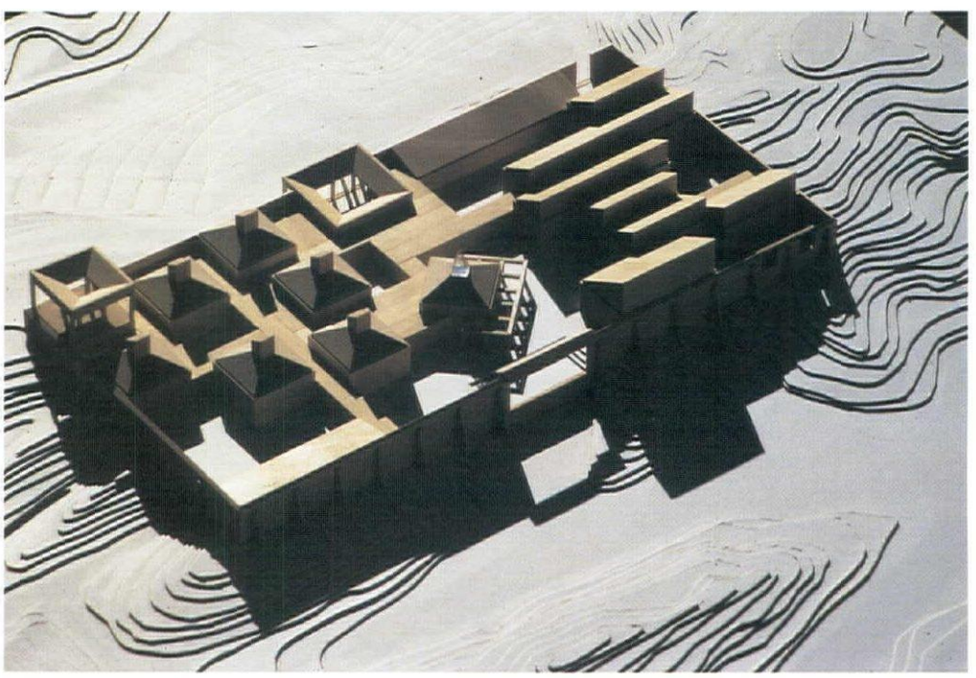


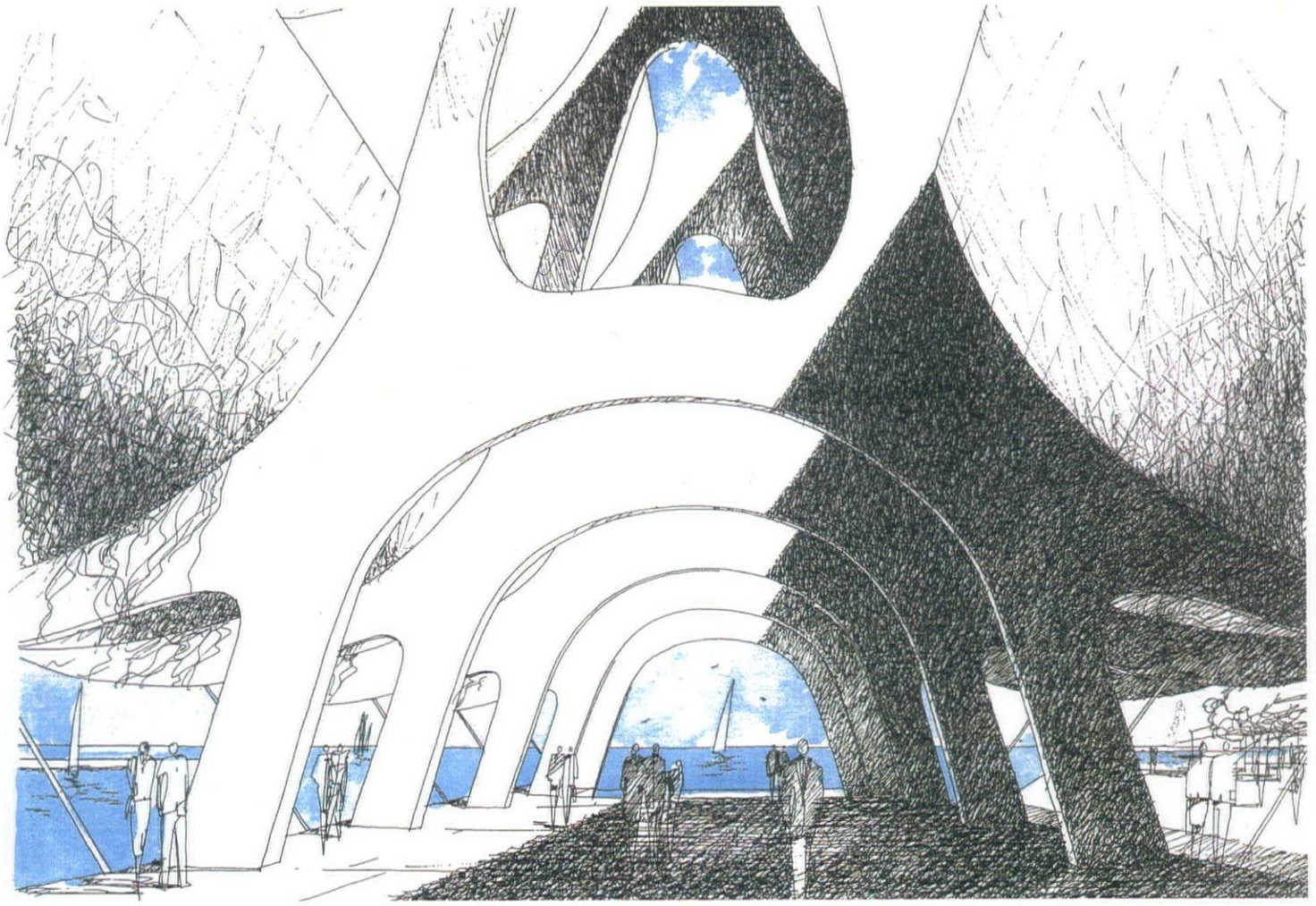


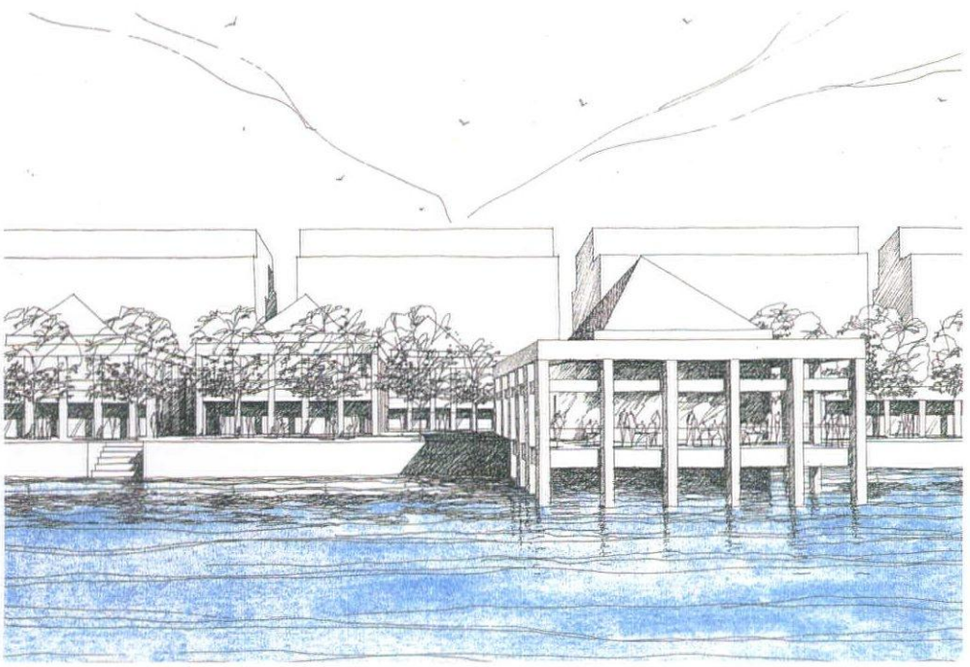


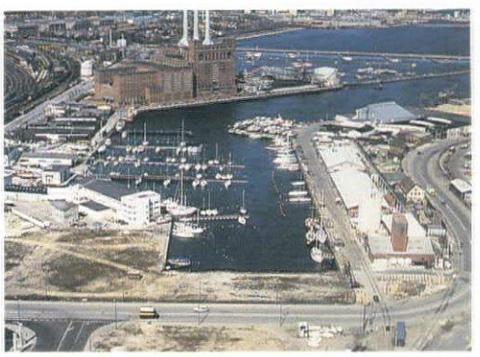
Skagen visitor centre and art museum

Situated on the northernmost tip of Denmark, this scheme has planning approval but awaits finance. It combines a respect for Danish building tradition with functional use of space.



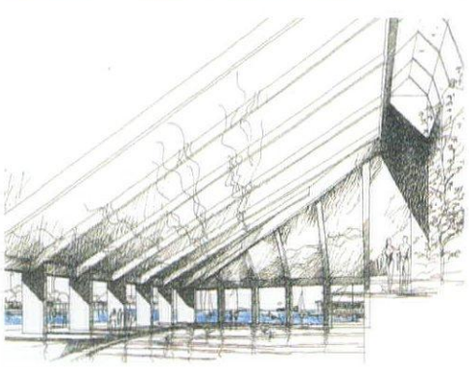






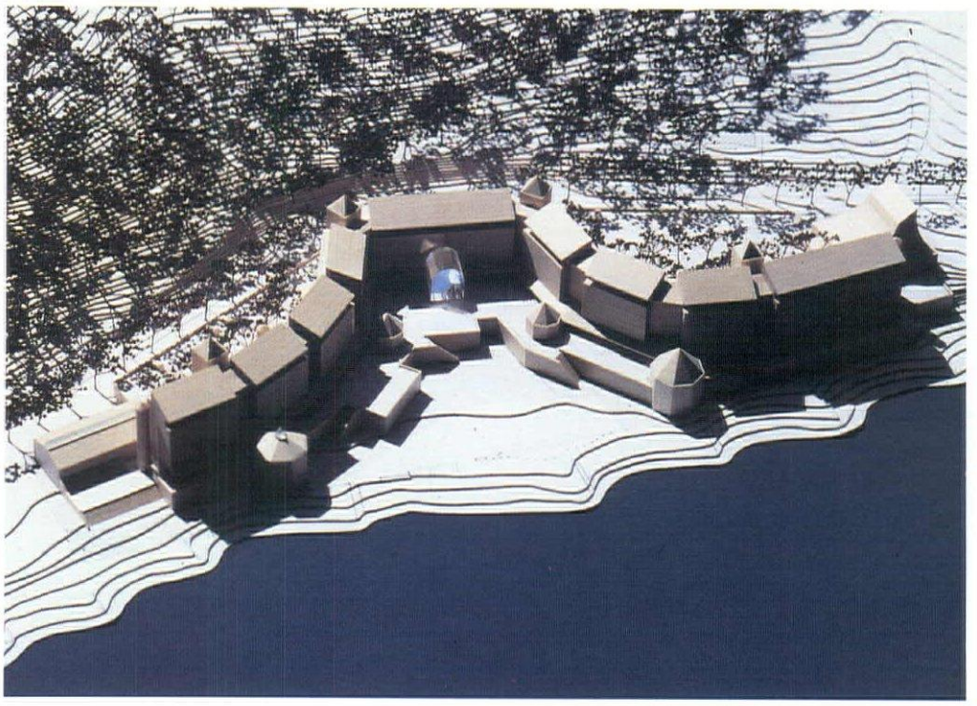
Kalkbraenderihavnen urban development

Masterplan for an urban area currently in the planning process. Architecture close to water is a recurring Utzon theme. Approval for the scheme is expected within a year.

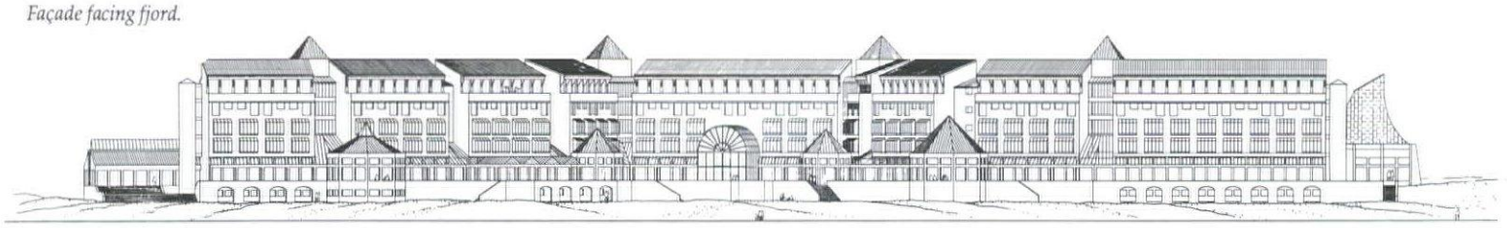


Kalundborg Hotel

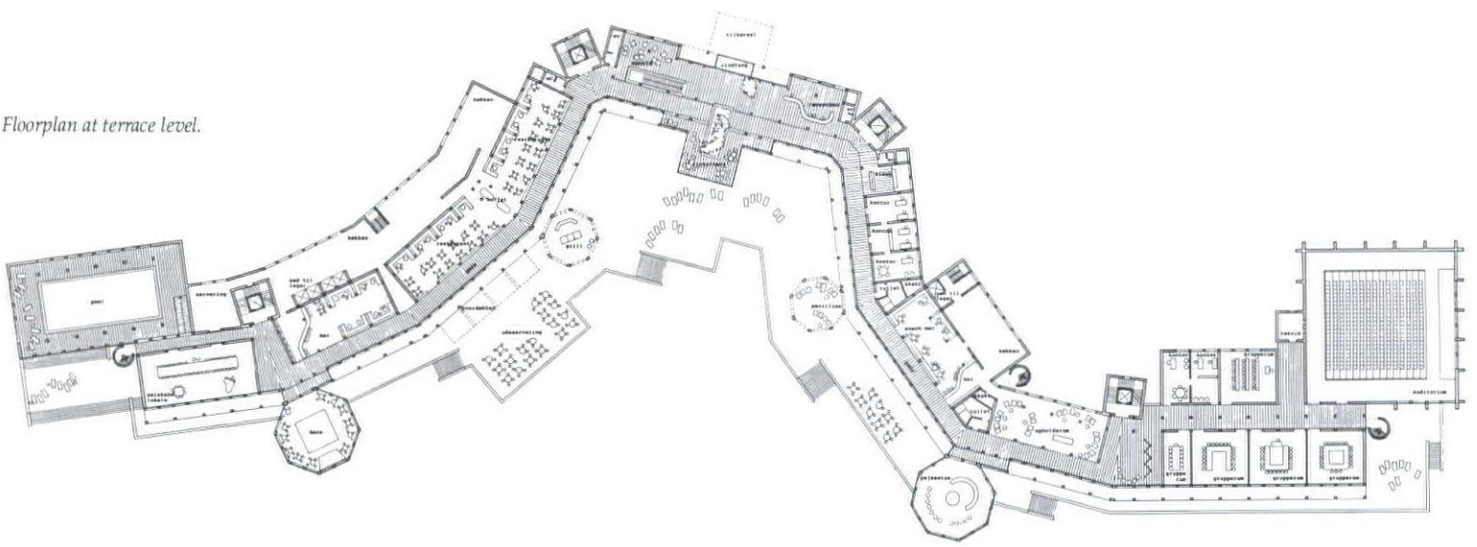
Scheme for hotel with congress facilities and large spa area sited on the edge of a fjord and aimed largely at German tourists. The project is currently pending.



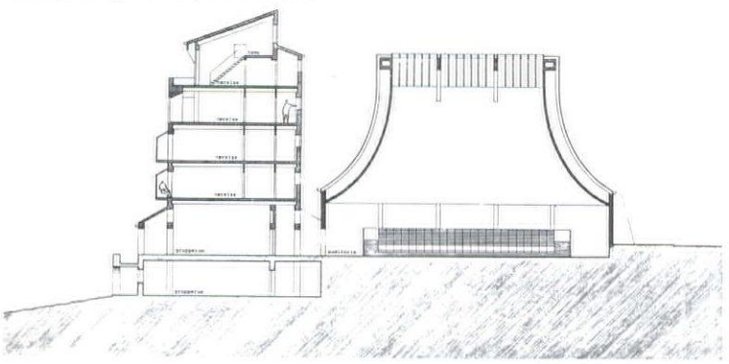
Façade facing fjord.



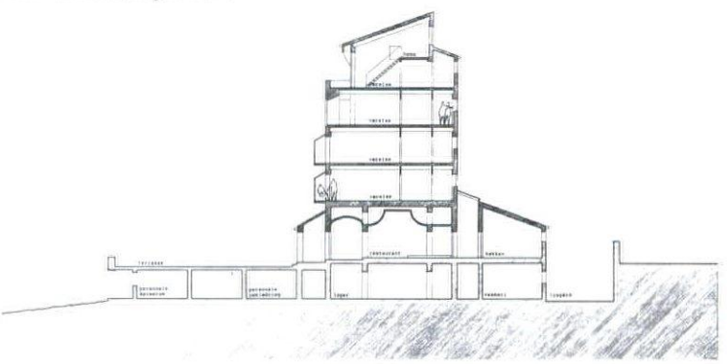
Floorplan at terrace level.

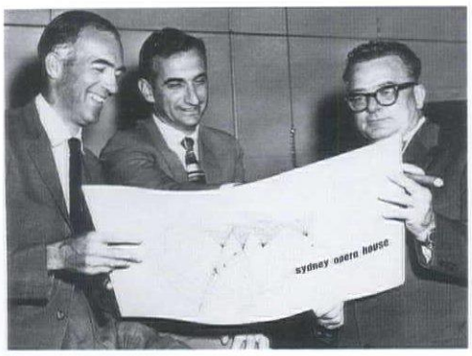


Section through auditorium and hotel.



Cross section through terrace.



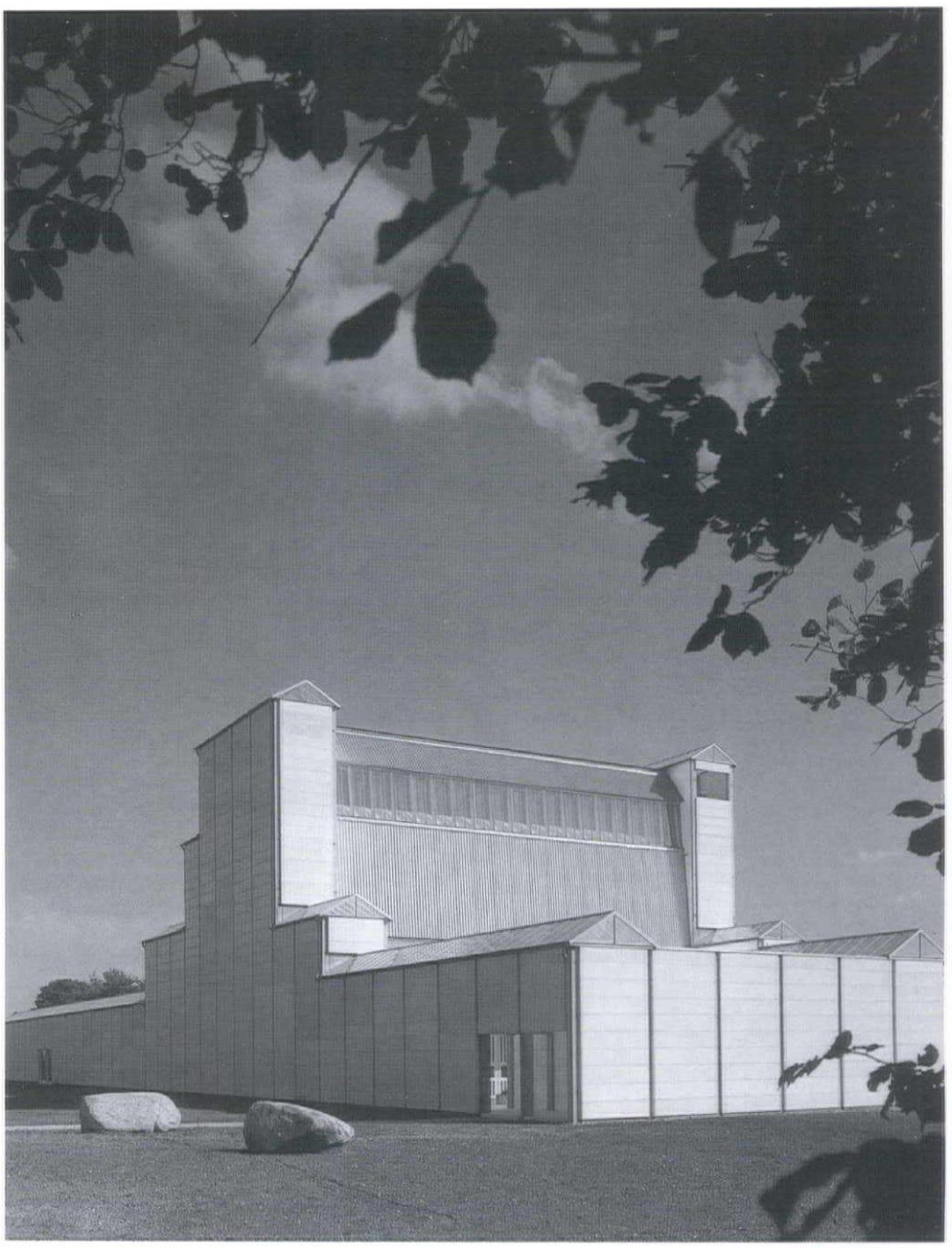


JØRN UTZON: A Biography

Danish. Born in Copenhagen, 1918. Educated at the Academy of Arts School of Architecture, Copenhagen, under Steen Ejler Rasmussen and Kay Fisker, 1937-42, Dip.Arch. 1942. Worked in the office of Gunnar Asplund, Stockholm, 1942-45, and in the office of Alvar Aalto, Helsinki, 1946; made study tours of Europe and North Africa, 1947-48, and the United States (Taliesin) and Mexico, 1949. In private practice, Copenhagen, since 1950. Recipient: First Prize, Sydney Opera House Competition, 1956.

Works:

1945 Crystal Palace Development, London (competition project, with Tobias Faber)
Crematorium (project)
1947 Housing Development, Morocco (project)
Central Railway Station, Oslo (project with Arne Korsmo)
Paper Factory, Morocco (project)
1948 School of Commerce, Gothenberg, Sweden (project with Arne Korsmo)
Development plan for the Vestre Vika area, Oslo (project with Arne Korsmo)
1952 Jørn Utzon House, Hellebaek, Copenhagen.
Development plan for the Skøyen-Oppsal area, Oslo (project with Arne Korsmo)
1952-53 House, Holte, Denmark
House, near Lake Furesö, Denmark
1954-60 Elineberg Housing Estate, Denmark (with E and H Andersson)
1956-66 Opera House, Sydney (completed by others, 1973)
1957-60 Kingohusene Housing Estate, near Elsinore, Denmark
1958 Workers' High School, Hojstrup, Denmark
High School, Hellebaek, Copenhagen (project)
1959 Melli Bank, Tehran
Pavilions Complex, *World's Fair,* Copenhagen (competition project)
1960 National Museum, Copenhagen (competition project)
Town development plan for Elviria, Denmark



(competiton project)
1962-63 Danish Co-operative Building Company Housing Development, Fredensborg, Denmark
1963 Art Museum, Silkeborg, Denmark (project)
1964 Municipal Theatre, Zurich (competition project)
1968 Utsep Mobler Flexible Furniture (project)
1969 School Centre, with Technical College, Herning, Denmark (project)
Espansiva Byg A/S Timber Component House System (project)
1971 Jørn Utzon House, Majorca
1976 Bagsværd Church, Copenhagen
1979-81 Kuwait National Assembly
1986 Paustian Furniture Building, Copenhagen

(Top left) Happier times on the Sydney Opera House: (left to right) Utzon with Jack Kunz of Ove Arup & Partners and Professor H Ingham Ashworth, Dean of the Faculty of Architecture, University of Sydney. (Above) Bagsværd Church, Utzon's ecclesiastical masterwork.

It shape design o Maki's f building

Observers of Tokyo's world famous Spiral Building can't have failed to notice the huge cone set within the facade of it's 8-storey fractured grid.

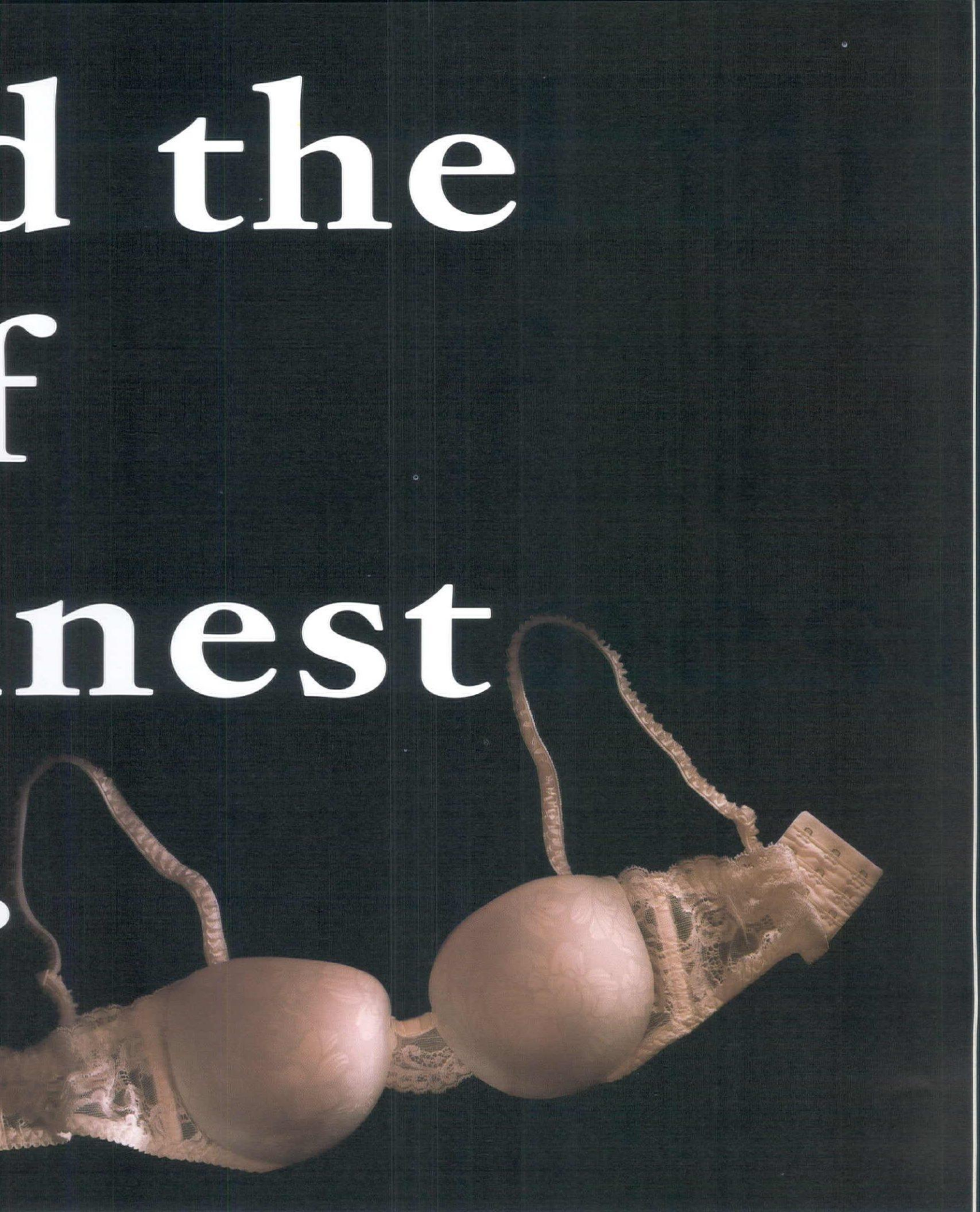
But do they know why it's there?

It was, in fact, Maki's way of poking a little fun at the client who commissioned it, Wacoal, one of Japan's biggest bra manufacturers.

In the next issue of World Architecture, we take a revealing Japan's leading modern architect.

Professor Botund Bognar puts Maki's career under the micr and there's an interview with the great man himself (at 59, he' active and creative than ever.)

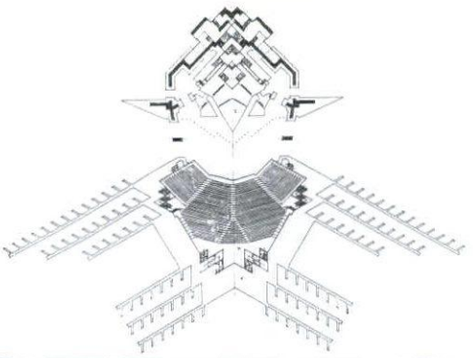
d the
f
nest



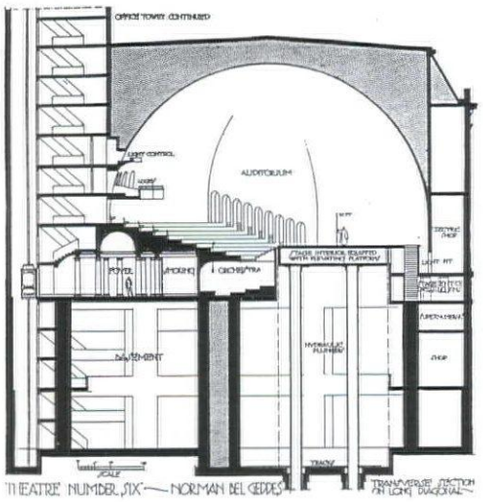
so in this special Japanese issue, Fay Sweet examines Tokyo's avant
architects, Jeremy Myerson discusses the new Tokyo Forum and
i Stanishev profiles young Japanese architect Toshhihiko Suzuki.
der your copy of World Architecture's special Japanese issue
It could shape your thinking for years to come.

WORLD
ARCHITECTURE

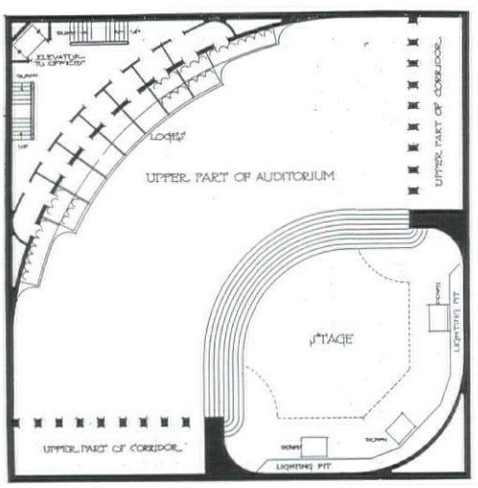
"I have never known a man with so free-wheeling a mind as Norman Bel Geddes . . . the past sits upon him not at all. He never approaches a problem-in-hand with what has been done before. His ingenuity is endless, his practicality proven, his sense of function brilliantly direct." Howard Lindsey, *Theatre Arts Monthly, 1948.*

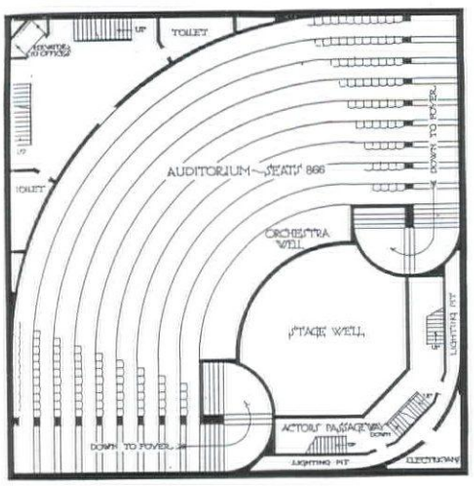


NORMAN BEL GEDDES
ARCHITECT OF THE MODERN THEATRE



THEATRE NUMBER SIX — NORMAN BEL GEDDES





US architect and designer Norman Bel Geddes played a major role in influencing today's theatre architecture. Yet, while his highly original and innovative designs remain unbuilt, Geddes' contribution should not be forgotten, argues William Faricy Condee.

The revolutionary principles of Norman Bel Geddes' designs for new theatre forms have been incorporated into many of today's successful theatres, yet he remains largely uncredited. Geddes is known as a designer of the 'New Stagecraft', but he was also a director, architect, and later an industrial designer. Perhaps because he did not limit himself to any one discipline, he has yet to be awarded sufficient recognition. He can be dismissed too easily as 'unique' or 'eclectic', shouldering him to the periphery of each field, and thus missing the importance and interrelationship of his ideas.

Because none of his theatre designs were built, Geddes remains little-known among architects. More surprisingly, no major study has been written on his theatres.

From the late 1890s through the late 1920s, modern-thinking drama critics, directors and designers of the 'New Movement' sought to move drama away from its dominant commercial and "illusionistic" course. They denounced the picture-frame proscenium arch, which enforced a rigid line of separation between audience and performance. Reformers wanted theatrical production to be governed by the 'New Stagecraft' guidelines of simplicity, suggestion and synthesis, and performed in new forms of theatre architecture that contained audience and performance in a single, unified space with equally good sightlines and seating for all. Their greatest ambition was that the theatre would provide a new focus for spiritual aspirations.

The acknowledged forefathers were Adolphe Appia (1862-1928) and Edward Gordon Craig (1872-1966). Appia and Craig's scenery consisted of unadorned vertical and horizontal planes; abstract, three-dimensional masses, sculpted by light and shadow, that evoked, rather than realistically depicted, the scene of the play. Their writings make clear, however, that these designs were not simply a new style, but rather were emblematic of the new approach to theatre.

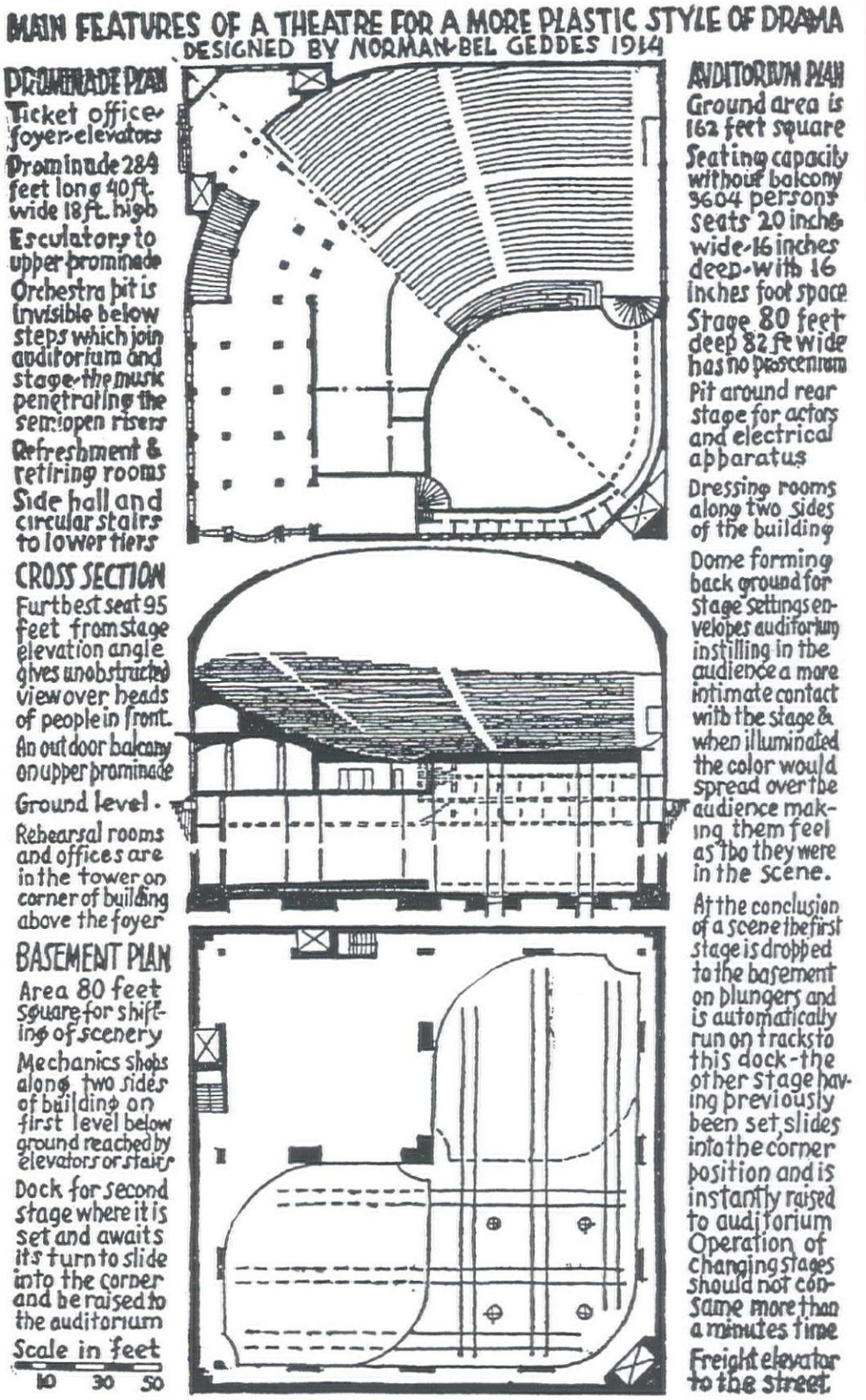
Unity of theatre art

Geddes' scenery is derivative of Appia and Craig's, but most of all he learned from them the importance of the unity of the art of theatre. One can also see the influence of German expressionism in Geddes' bold and non-realistic use of colour and mass. Early in his career, Geddes saw productions of Max Reinhardt's *Sumurun* designed by Ernst Stern, and the Diaghilev Ballet with sets by Leon Bakst, and read Moderwell's *The Theatre of To-Day*, which chronicled the New Movement in Europe.

Geddes began his career in the 1910s, writing a dramatisation of a native American myth, entitled *Thunderbird*, for which he also designed sets, costumes and a theatre, but it was never produced. In 1921, Geddes conceived an entire dramatic production of Dante's *The Divine Comedy*, including script, set, lighting, choreography, sound, costumes, masks, and with a cast of 523. The scenery consisted of a single, permanent architectural form, 45m × 55m (135 ft × 165 ft), made up of steps, ramps, and levels rising to 20m (60 ft). Geddes laboured unsuccessfully to get this extravaganza produced; he planned a version using Madison Square Garden, another for an outdoor stadium, and finally designed an entire theatre for the Chicago World Fair.

Geddes' most famous design, which today would be called "environmental", was for the 1924 production of Reinhardt's *The Miracle*. Geddes transformed the entire

Norman Bel Geddes: drawings for diagonal axis theatres. Far left: "Theatre Number Six" and, top, the "Water Pageant Theatre".



Century Theatre, New York, into a Gothic cathedral; the stage became the apse and the auditorium the transept, so that the performance surrounded the spectators. The seats were converted into pews and the walls of the theatre were disguised as Gothic arches with huge, stained glass windows.

These productions indicated Geddes' obsession with the place of performance. He was not satisfied with designing new kinds of sets on old-fashioned stages and was aware that his ideas could not be contained within the conventional theatre.

From the very beginning of his career, from *Thunderbird* through to *The Miracle*, Geddes was aware of architecture's central role in the art of theatre. In an early essay Geddes described the inextricable interrelationship of architecture and performance: "Under a sudden impetus I wrote a four-act play *Thunderbird* . . . With the consuming desire to visualize the written conception, I concocted a crude little stage. The effect showed me so many obstacles in adapting my own ideas to the mechanics of the present type of stage, that my second effort went into the discovery of a new form of theatre structure."

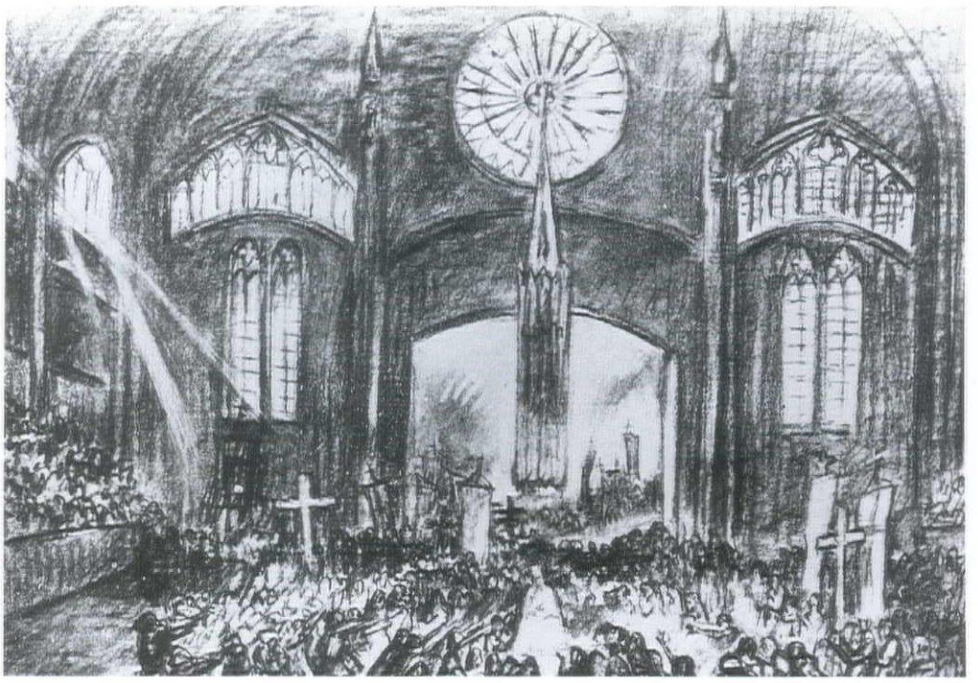
Incorporating architectural goals

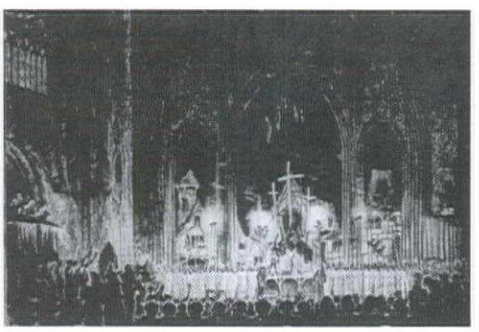
Geddes' projects are important because they are among the first fully developed plans to incorporate the architectural goals of the American reform movement. The projects are startling, simple and original, but there are precedents in Europe that influenced his designs. Hans Poelzig designed two theatres for Max Reinhardt (with whom Geddes worked), the Grosses Schauspielhaus, Berlin, 1919-20, and the unrealised Salzburg Festspielhaus, that had domed interiors and a stage that penetrated the audience. Max Littmann, whom Geddes specifically cited as an influence, designed several theatres in Germany, including the Munich Künstler Theatre, 1907-8, that set the audience in a single, unbroken block of seating. Heinrich Tessenow, in conjunction with Appia, designed a theatre for Emile Jacques Dalcroze, Hellerau, 1910-12, with stage and audience in a single, unified space. Jacques Copeau's Théâtre du Vieux Colombier, Paris, 1913, had a permanent architectural setting in an open-stage theatre, and Copeau had the Garrick Theatre in New York redesigned along these lines in 1917, during his wartime exile.

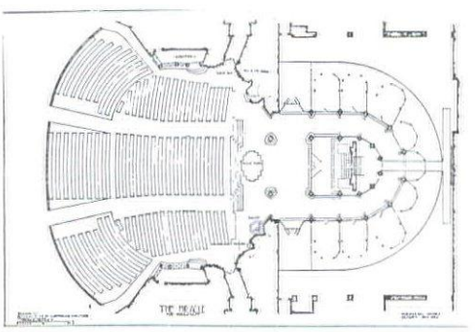
Geddes' greatest contribution to modern theatre architecture is the principle of the diagonal-axis theatre, a design begun as early as 1914 for his *Thunderbird* project. It was first exhibited in 1921. Geddes continued to rework the idea, with the Theatre No. 6 and the Repertory Theatre. The principle is to rotate the usual auditorium-stage axis – the longitudinal line in a rectangle – to the diagonal axis of a square. The stage is a quarter circle set in one corner of the square plan, with concentric rows of seats radiating outward from the curved front of the stage.

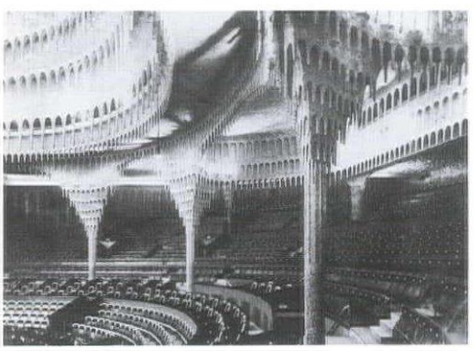
A central goal of the design is to provide a space that unifies stage and auditorium. There is no proscenium, and a set of curving steps eases the transition from stage to auditorium. The domed ceiling over the audience continues over and behind the stage, tying the space together and providing a cyclorama or sky dome that can be lit for the production. The single,

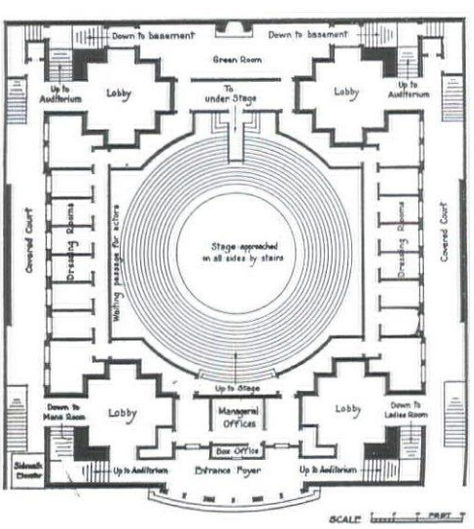
Sketches and plans for The Miracle *play at the Century Theatre, New York. Below: Max Reinhardt and the interior of Poelzig's* Grosses Schauspielhaus. *Berlin 1919. Bottom: "Theatre Number Fourteen".*











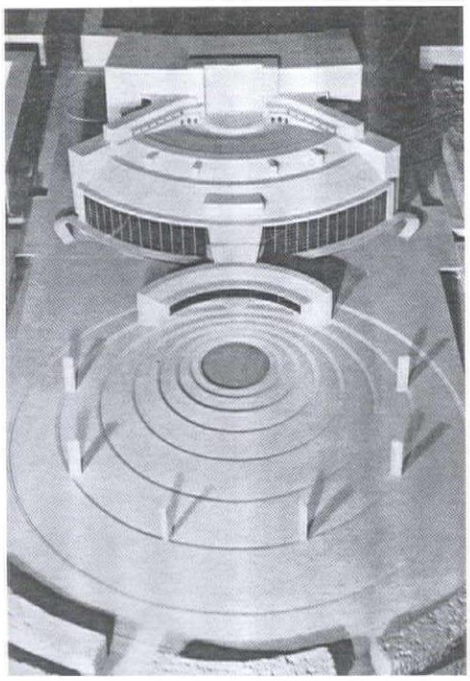
unbroken bank of seats contained within a unified space addresses the reformist goals of a democratic seating plan and evokes a mystical communion among the participants. The effect, according to Geddes, is that a sense of unity, intimacy, and audience-participation pervades the theatre, arising in part from the fact that the same great domed ceiling spans actors and audience.

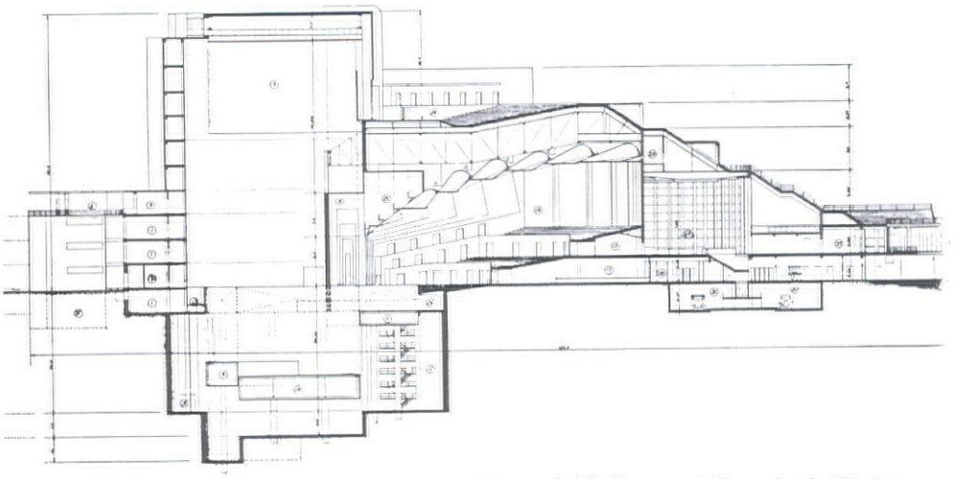
Unlike most open stages, the diagonal theatre has a capability – however complex and expensive – for changing scenery. The on-stage scenery would be loaded on to a wagon, and could be lowered on an elevator to the basement level; there it would roll into a storage area, another wagon with scenery would roll on, and the elevator would rise again to stage level.

The diagonal-axis plan has most of the advantages of the thrust stage and few of the disadvantages. The stage extends into the auditorium, and the seating partially surrounds the forestage, providing the feeling of intimacy and unity so rightly praised in thrust theatres. The actor maintains, however, a basic frontality to most of the auditorium, reducing the need for excessive crossing and spinning that can be distracting on a deep, three-quarter thrust. In addition, upstage scenery can serve as a background for the actor. In a deep thrust, spectators seated to either side view upstage scenery off to the side of the actor, and therefore it seems disconnected. In addition, recent modifications to Geddes' plan have removed the upstage walls, which would form the upstage corner in Geddes' plan. This allows the designer to use the depth of the stage for scenic units or vistas, which can still be seen from the entire auditorium, together with providing offstage space for storage. In a more conventional thrust, upstage scenery must usually be either, in effect, a back wall or remain invisible from much of the auditorium.

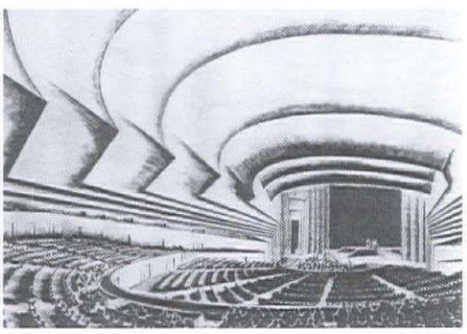
Intimate theatre-in-the-round

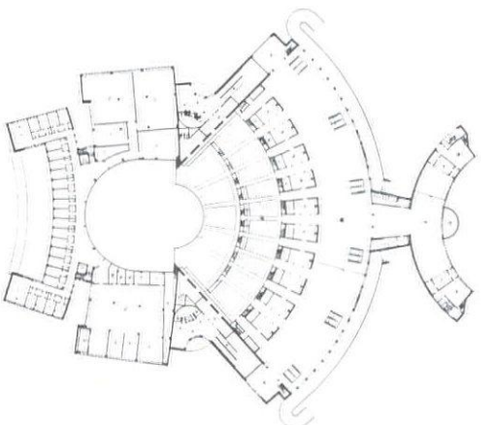
Geddes later designed an intimate theatre-in-the-round called the "Theatre Number 14", which would seat an audience of 800 under a great dome. The drama would be "intense dramatic plays of the close-up types such as those of Ibsen", but the design was based "on the same principle as a European circus or a boxing ring". Instead of the common type of theatre-in-the-round today, in which the stage floor flows with little interruption into the first row of seating, this theatre has a moat around the stage. Concentric rings of steps lead down to the basement level and serve as an apron and as an approach to the stage for the actors. The theatre is unique in that it allows for scenic spectacle in an arena

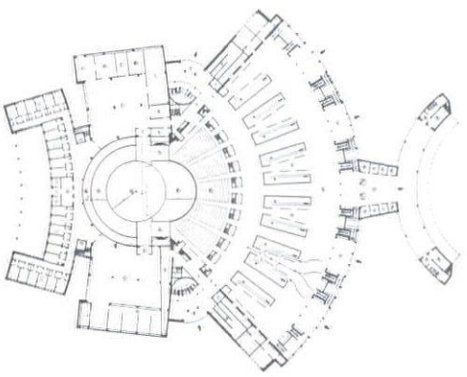




Norman Bel Geddes: competition project for Ukrainian mass theatre, Kharkov. Plans, section, model and interior sketch of main auditorium.







theatre – scenery could be moved on and off the stage by the same wagon-and-elevator arrangement as the diagonal-axis theatre.

These projects all came together in a grand scheme for the *Century of Progress* at the 1933 Chicago World Fair, but the plan was scuttled following the 1929 financial crash. The plan included six main elements: a 'Repertory Theatre', consisting of two diagonal-axis theatres, seating 1,700 and 600, a small proscenium-arch children's theatre, a diagonal-axis cabaret and a roof garden; "Theatre Number 147", designed especially for Geddes' production of *The Divine Comedy* seating 5,000 in a diagonal-axis plan; "The Intimate Theatre" ("Theatre Number 14", arena); "Water Pageant Theatre"; "Temple of Music"; and "Open Air Cabaret".

Geddes' other plans include a proposal for the Ukrainian State Theatre, consisting of an indoor theatre seating 4,000, an open-air theatre seating 2,000, and a plaza for mass meetings of up to 5,000 actors and 60,000 spectators. Geddes also designed a transverse stage, described by Oliver Sayler in 1923 as bi-secting a huge auditorium like an armoury, with half the audience facing each side of it and the dramatic action proceeding two-dimensionally in view from either end of the hall. While it is Geddes' diagonal-axis theatre that is best known, this may be one of the first contemporary plans for a transverse stage.

After World War Two Geddes advocated a flexible theatre: "The entire theatre area should be of such design that the stage can be located anywhere within it, and the seating adapted to it."

Profound influence on theatre

Geddes' influence on twentieth century theatre architecture has been profound. He influenced Frank Lloyd Wright's unrealised theatre for Aline Barnsdall, and its major design elements persisted in all of Wright's subsequent theatre designs, including the Kalita Humphreys Theatre, Dallas, 1959. Geddes' influence can also be seen in the theatres designed by Joseph Urban, particularly "the domical envelope of the auditorium" found in the Ziegfeld Theatre, New York, 1926, and the unbuilt Reinhardt Theatre.

Many other theatres built in recent times have used Geddes' diagonal-axis principle. Most notable is the Olivier Theatre at the National Theatre in London, 1976. In America, the list includes the theatre at Western Springs, Illinois, 1961, the Cincinnati Playhouse in the Park, 1967, the Alley Theatre, Houston, 1968, the Kreeger Theatre, Arena Stage, Washington DC, 1970, and the Actors Theatre of Louisville, 1974.

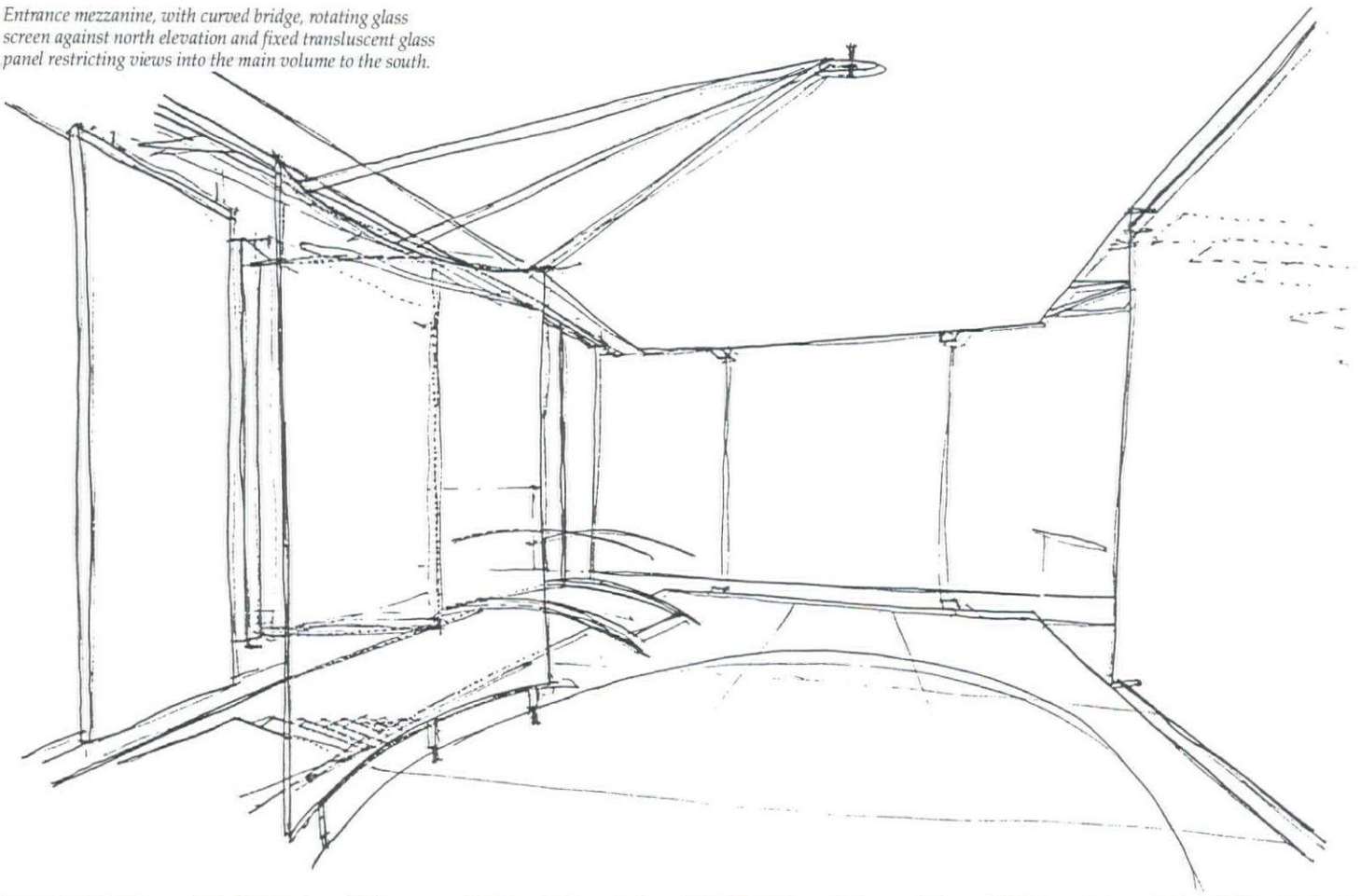
It may be more than coincidence and bad luck that so many of Geddes' designs and theatres remained unproduced or unbuilt. It may be that Geddes' ideas were too revolutionary to be incorporated intact into the theatre of this time. But we now recognise the achievements of many theatre artists from this period, and Geddes deserves top billing. While the work of directors and designers – Geddes included – is ephemeral and dies with the performance, leaving behind only shells of its true life, Geddes' architectural designs are a living legacy.

His plans for enhancing the audience's involvement with the performance continue to advance the art of theatre. □

Works Cited

Cole, Wendell. The Theatre Projects of Frank Lloyd Wright. **Eductional Theatre Journal** 12 (1960). Geddes, Norman Bel. Flexible Theatre. **Theatre Arts** 32 (1948); **Horizons** Boston, 1932; Six Theatre Projects. **Theatre Arts** 14 (1930); The Theatre of the Future. **Theatre Arts** 3 (1919). Joseph, Stephen. **New Theatre Forms.** New York, 1938. Leacroft, Richard and Helen. **Theatre and Playhouse.** London, 1984. Sayler, Oliver M. **Our American Theatre.** New York; 1923. Urban, Joseph, **Theatres.** New York, 1929.

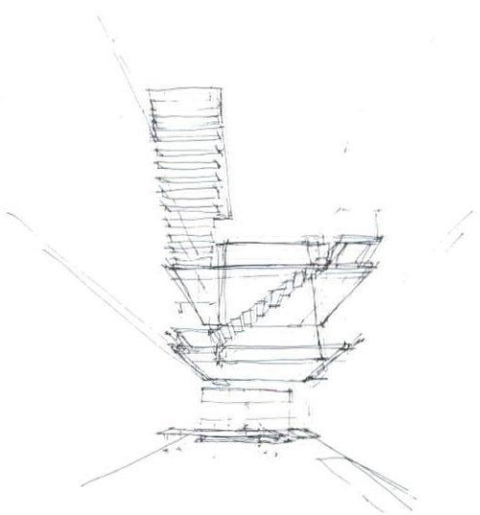
All illustrations used in this article are extracted from the above publications with the exception of the Reinhardt pictures, which were loaned from the Bristol University Theatre Collection.



Entrance mezzanine, with curved bridge, rotating glass screen against north elevation and fixed transluscent glass panel restricting views into the main volume to the south.

THE LOWE HOUSE

Architect-trained pop musician Chris Lowe of the Pet Shop Boys commissioned UK practice Alan Brookes Associates to design an uncompromisingly modern house and recording studio on a narrow site in north London. Job architect Nik Randall describes a scheme 'drawn full of hope'.



View of main volume looking towards the fixed transluscent glazed screen and drop down stair.

Chris Lowe requested that the spirit of the house should be "a calm light interior space defined by a confident use of materials" with a maximum sense of space and light. It had to provide security and privacy. The client's training as an architect had led him to this affinity for and understanding of simplicity in design, reinforced by recent visits to Japan. The clarity of Tadao Ando's concrete buildings, such as the Son and Hata Houses had greatly impressed him. Coincidentally, as project architect, I had worked in Japan in 1982.

Three distinct volumes

The architects conceived the design of the house as three distinct volumes: private bed space, main social environment and working studio. It was important for both the bed and studio areas to be private retreats from the social areas of the house. They were to relate to each other simply for everyday use whilst providing a natural separation to maintain privacy. There is also a separation of private and visitor entrances which utilise the changes of level as well as dual access of the site.

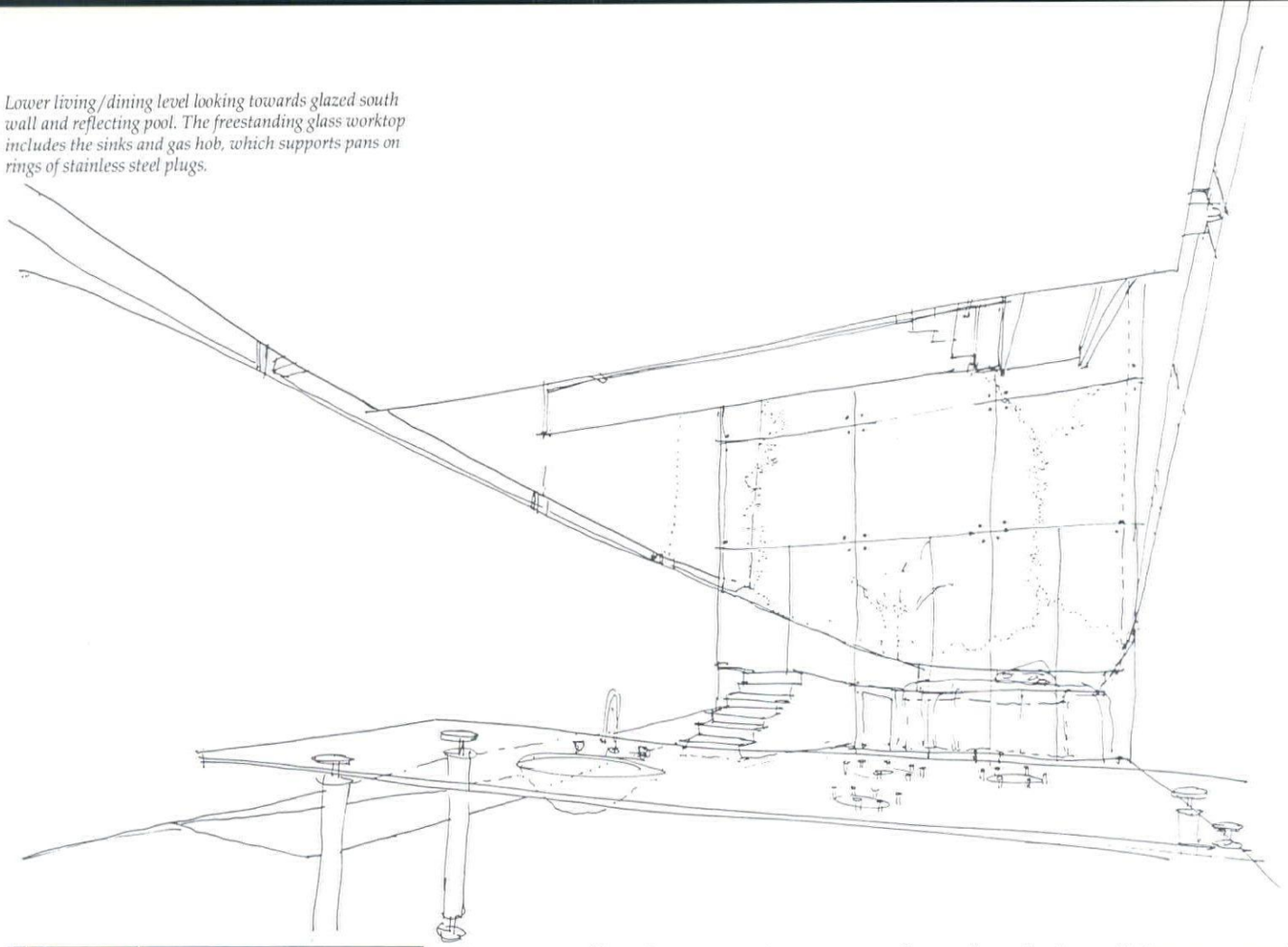
The design achieves a deceptive feeling of space by providing long internal views, maximising the scale of the site both horizontally and vertically. The internal organisation of the circulation increases this sense giving dramatically different experiences at each stage of the route. This is in the form of a spiral from the bed area at the top of the house, to the studio situated below ground at the lower end of the site.

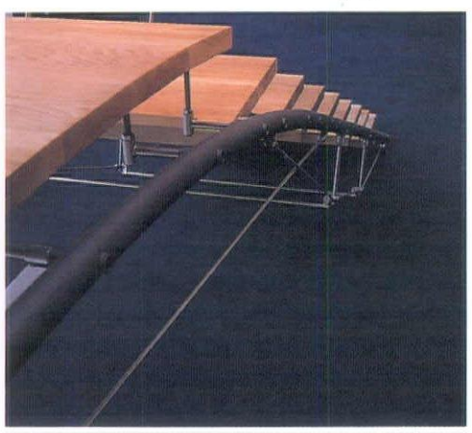
A clarity of circulation

This clarity of circulation has been achieved whilst providing distinct characters of space and construction along the route, which gradually lightens and opens ascending from the confined ramp and stairs of the lower concrete areas, to the lightweight drop down stair serving the bed area above.

A visitor entering from the northern end of the site is brought around a 120-year-old weeping ash tree and first enters an antechamber before crossing from the stone surface of the courtyard to the steel-faced mezzanine of the entrance platform via a small freestanding bridge. This has been curved to accentuate the feeling of passing from the *terra firma* of the exterior to the lighter mezzanine of the interior and was influenced by the form of traditional Japanese bridges. It is also a reference to the staircase in the Pet Shop Boys' offices for which Alan Brookes Associates were also the architects.

Lower living/dining level looking towards glazed south wall and reflecting pool. The freestanding glass worktop includes the sinks and gas hob, which supports pans on rings of stainless steel plugs.





The curved staircase in the Pet Shop Boys offices for which Alan Brookes Associates were also the architects.

This mezzanine platform is the point of arrival into the house for visitors. The dramatic scale of the triple height main space and glazed south wall is restricted from full view by a 4000 × 2400 mm single sheet of translucent toughened glass, which gives an even, calm light to the entrance area. Views to the courtyard can be controlled by external sliding perforated aluminium screens, which when retracted reveal the concealing branches of the tree.

The movement of visitors from this space can be subtly controlled by a rotating curved screen of translucent, toughened glass, which maintains the quality of light in the area. This has been influenced by the Maison de Verre in Paris where Pierre Chareaux used perforated steel sheet, rotating to separate the surgery from the main house. The glass screen at The Lowe House centrally pivots, running on a circular track in the steel plate of the floor, and can be used to close off either of the two routes from the mezzanine. Alternatively it can be positioned in front of the northern windows to maintain privacy whilst allowing in northern light.

The full scale of the main volume is experienced by passing to the upper living level via a lightweight steel staircase on the reverse side of the fixed translucent glazed screen. Here the user crosses into the very centre of the space, the drama of this volume being fully revealed with the dining area adjacent to the reflecting pool below, and the triple height glass wall rising up to meet the curved underside of the private bed space above.

Light filters down

The upper living area, as with the entrance mezzanine below, is spaced from the walls to allow light to filter down at the sides, so heightening the sense of a progressively lightening structure above the in-situ concrete of the lower levels. Horizontal 'ladder' radiators are recessed into this gap providing a safety grillage and a stratified shadow onto the side walls below. This softer carpeted area has a double layer of sliding glass and aluminium screens, which draws the tree into the interior space when open.

The exposed lightweight nature of the stair linking these two platforms is in contrast to the concrete stair which descends to the lower living area, containing the kitchen and dining facilities. Here the concrete treads are cantilevered from the adjacent retaining wall, and confined by a wall of equipment and storage free-standing as a piece of furniture on the level below. A narrow gap above this storage wall provides a glimpse of the dining area and glazed south elevation, which can be seen from only one tread position. From the base of this stair the full length of the building works is revealed. The view extends down the top lit ramp to the concrete retaining wall at the south end of the site and the undisclosed entrance to the studio.

All the building surfaces below the level of the northern courtyard are expressed as if hewn out of solid bed rock, and are formed by exposed in-situ concrete. The steel-framed building sits above, separated by a continuous translucent window which reduces the scale of the largest elevation and provides a subtle datum to the change in ground levels. A layer of slate laid onto the concrete floor of the lower living area extends up the steps to the southern entrance in a continuous layer to form the external path, passing between the horizontal roof glazing to the ramps and the reflecting pool.

This layering of construction is reminiscent of the Castelvecchio by Carlo Scarpa where the new is layered onto the old. In The Lowe House it defines the materials, revealing the constructional process and making the building easy to

comprehend.

There is, however, a spatial concealment of the two private volumes, the studio and bed area. The ramp to the studio extends from the kitchen area to the oblique junction of walls which rise from the ramp floor through the horizontal roof glazing to form the boundary walls to the east and south, defining the edge of the built volume.

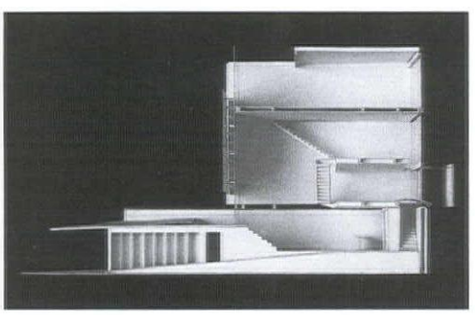
No domestic distractions

The studio is cut back from the line of site suggesting an unseen route behind an acoustic sliding glass door. This filters the daylight from the ramp to provide a quiet, softly lit interior. The client wanted a working discipline for the studio without domestic distractions or external views. This provided the opportunity to sink the studio below ground, giving a natural mass to achieve a high degree of sound insulation.

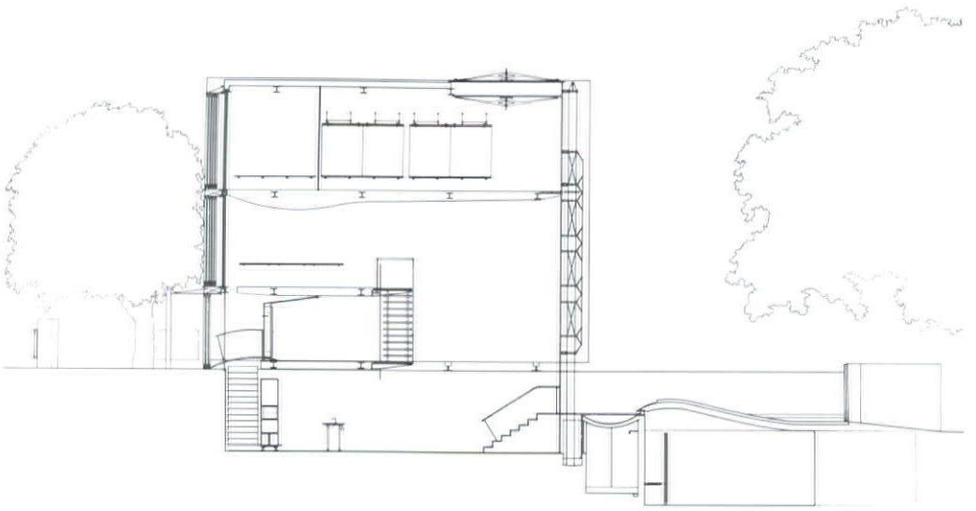
A simple contact with outside conditions is provided by a thin glazed slot, at high level, which at night is visible from the main house as an illuminated crack of light across the reflecting pool. The walls, floor and roof to the studio are not parallel for acoustic reasons. Similarly the rough-tooled finish to the concrete retaining walls helps break up high frequency sound, whilst accentuating the concept that the lower levels are carved out of the solid earth.

The second private space, that of the bed area, forms the ceiling to the main volume, and is accessed via a mechanically counterbalanced, drop-down steel-and-ash staircase, reminiscent of drawbridges and New York fire escapes. When retracted there is no evidence of a route or accommodation above. This concealment achieves controlled privacy and security.

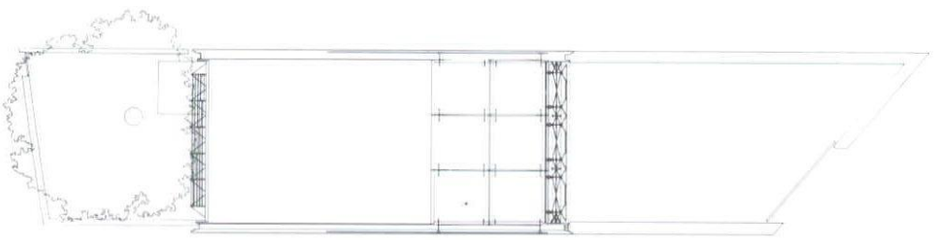
The bed space is truly a retreat. Designed to be independent from the rest of the



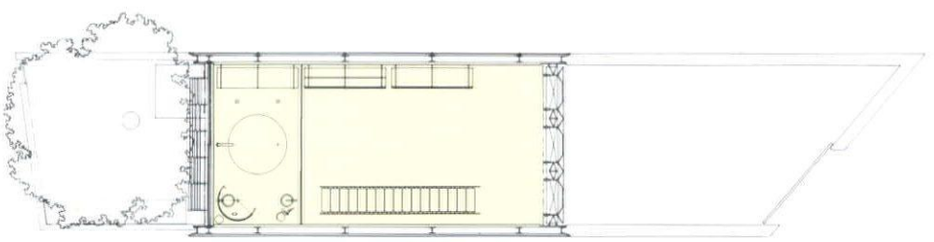
Section of the model with the east wall removed.



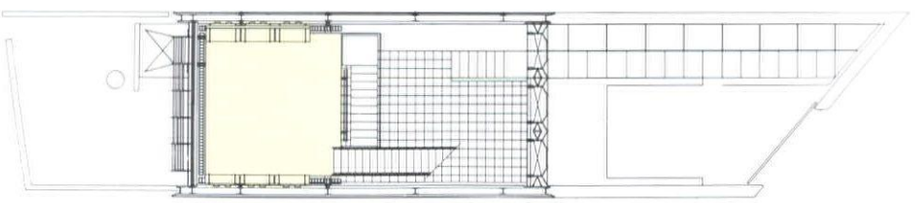
Section: the dual access and the three distinct volumes are expressed in the circulation and construction.



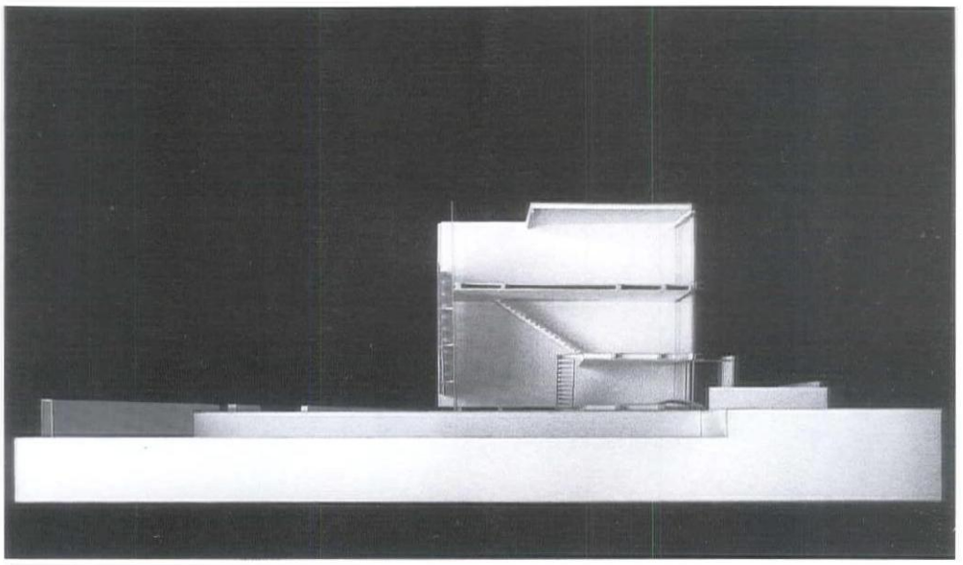
Roof plan: the sliding glass sun roof rises off perimeter gaskets to transform the room below into a sun terrace.



Bed area and steam room: the retractable steel and ash staircase folds flat to form a continuous floor plane.



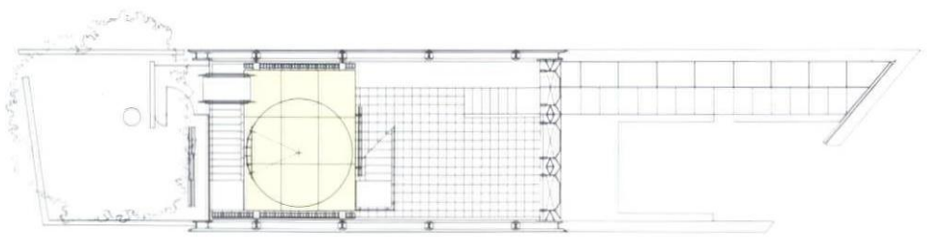
Upper living area: as with the level below this is held off the side walls with a continuous perimeter gap. The fixed screen spans from the edge of this platform to the mezzanine below.



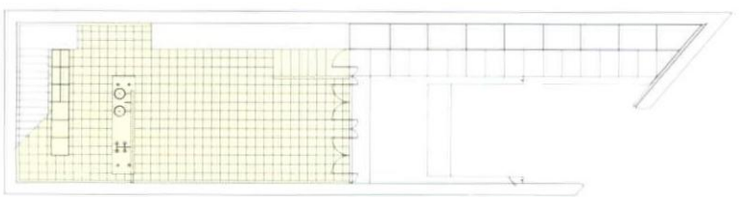
Full extent of the site with east wall removed.

house, this private volume was conceived more as a self contained 'bedsit' than a room in a house. Again the aim has been to provide a sense of space. The ash floor extends as a continuous layer through the clear sliding glass screens to the steam room. The stair treads rotate on retraction, the ash sections forming the same plane as the rest of the floor. All storage is pinned to the side walls leaving the floor surface unobstructed. Even the sink in the steamroom is positioned to accentuate the sense of space giving views towards the glazed south elevation, through the void formed by the dropstair into the triple height space below.

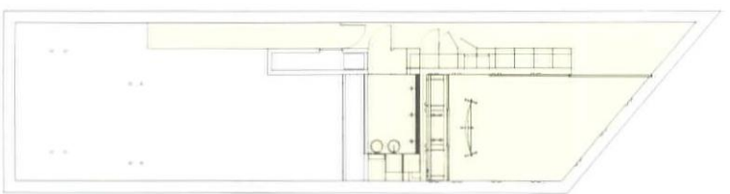
The southern end of the bed space opens to the sky, in the manner of a car sun roof, with the horizontal glazing rising off perimeter gaskets, and the south wall pivoting open as the culmination of the ever lightening structure. In this way the interior space becomes an exterior sun terrace. At night you can sleep under the stars. In the steam room you can bathe in the recessed bath with views over the adjacent park through the low level gap below the sliding external screens.



Entrance mezzanine: the curved entrance bridge crosses from the stone courtyard to the steel faced mezzanine. The translucent glazed screen can rotate to control access for visitors.



Lower living area: the freestanding equipment wall constricts the concrete stair cantilevered from the retaining wall. The full length of the site is revealed from the lower end of the stair. The glass kitchen work surface overlooks the dining area adjacent to the external reflecting pool.



Wet room and subterranean studio: the laundry and visitors' showers are located beneath the reflecting pool. Water falls gently over the glass opposite the showers. The ramp to the studio passes a wall of archival storage behind flush translucent glass. The office within the studio is concealed behind sliding acoustic screens which can also be used to modify the sound within the space. The surfaces area not parallel and the retaining walls have a rough tooled finish to provide a good acoustic interior.

Building opens like a plant

Although on a narrow urban site, this use of the external environment increases the generous sense of a building, which can open like a plant to the light and then close to protect itself, gently glowing at night through the thin, translucent marble screen.

The resolution of the client's needs seeks to produce an optimistic piece of contemporary architecture devoid of cynicism. As Rudolf Luscher said of Russian Constructivist architecture (interview with Olivier Fazan Sigfrido Lezzi in *Hoch Parterre*, December 1988), it is "drawn full of hope". □

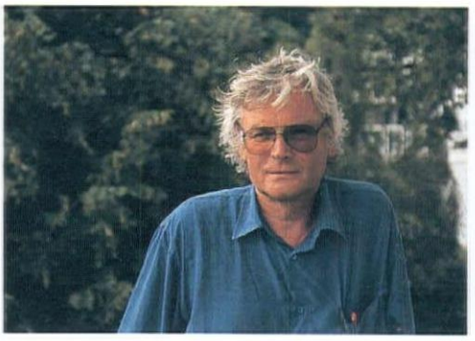
Design team

Architects:
Nik Randall
Dan Berube
Michael Stacey
Andrew Fursdon
Alan Brookes
David Woolfe

Consulting Engineers:
Whitby & Bird

Quantity Surveyors:
Davies Langton & Everest

Meinhard von Gerkan (right) is a greater believer in winning work via architectural competitions. (Far right and opposite page) Details of GMP's own office building on the banks of the River Elbe.



THE SPIRIT OF COMPETITION

Entering architectural competitions is seen as a waste of time and money by many architectural practices. Not so leading German design firm Von Gerkan Marg & Partner (GMP) which has established its reputation via a series of prestigious wins. Roger Watson talks to Meinhard von Gerkan about his firm's approach – and (overleaf) analyses two of GMP's recent projects.

As the newly completed Stuttgart airport terminal draws praise from architects and critics, the practice responsible, Von Gerkan Marg & Partner (GMB), is raising its profile as one of Germany's leading architectural practices.

Stuttgart is the twelfth airport terminal design completed by the Hamburg-based design firm – most of which have been won in competition. Indeed this work pattern was set even in their first year of practice in 1965 when Meinhard von Gerkan and Volkwin Marg won seven competitions, including that for Berlin's Tegel airport. Subsequently such has been the success of the practice – it has secured over 180 prizes, more than 70 of them being firsts – that the office now concentrates its full attention on competition work.

The workload is closely monitored by von Gerkan who, to explain the process, delves into his inside pocket and produces a wallet containing what looks like a small club membership card. He points to the bar charts drawn on front and back – one represents competitions currently running or entered, and the other projects won and in detailed design stage.

Close watch on construction

The practice is regularly invited to enter competitions, the method by which most designers are chosen for major German building projects, but for additional work von Gerkan also keeps a close watch on the construction magazine *Deutscher Bau* which publishes all competition details. Should something catch his eye, he consults the graphs on his piece of card and if there is time and staff available the practice sets about submitting an entry.

Von Gerkan and Marg are the main decision makers. The basic ideology behind their approach is that their architecture is "art but not independent"; it is a dialogue embodying four characteristics: simplicity, structural order (geometry), balance (variety and unity), and identity.

But while they agree on shared objectives and play important roles in the development of their associates and juniors, they tend to work independently on conceptual designs for projects. The key link between these conceptual designs and the finished work is Klaus Staratzke.

Staratzke, described as project director, is the important linchpin who single-handedly controls the practice's management of design and cost engineering. Although there is no formal structure within the company to determine set teams or groups of designers, Staratzke knows the ability and capacity of each of the practice's 120 architects and skilfully matches them to appropriate tasks. The method of working allows for tremendous flexibility and the free flow of new ideas.

GMP does not see itself as a multi-discipline practice but it does undertake cost engineering and management for almost two-thirds of its clients. Gaining this level of control has enabled the firm to make and adhere to extremely detailed specifications – often right down to the types of nuts and bolts used. It has also resulted in the forging of close relationships with specialist contractors.

While von Gerkan winces at the thought of streams of company representatives beating a path to his door eager to explain their services – in Germany architects rarely go to see subcontractors – he recognises that close ties with subcontractors often result in economical solutions achieved with minimal design compromise.

When asked whether he would like to explore work outside Germany, von Gerkan responds defensively by saying: "If there is a sufficient number of interesting projects in Germany then there is no real need to look too far afield." He does, however, talk about new projects in Tokyo with a glint of envy in his eye: "There, in Japan, the most adventurous projects are being designed. So little constraint is imposed, architects appear to be given an almost free hand in design."

On the subject of architecture in Germany, von Gerkan is anxious that the rapid redevelopment of Berlin should be handled with extreme care and sensitivity. He envisages that the new capital city will become a major north-south, east-west crossing point in Europe and could be prey to greedy development that threatens to pollute and lower the quality of life. He quotes the 1980s boom-time developments in London as a warning and to be avoided in Germany at all cost.

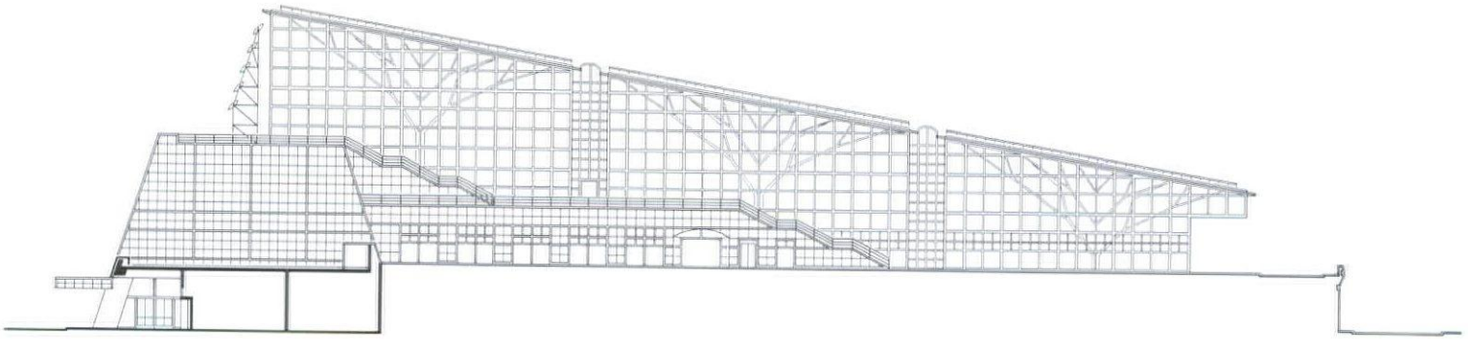
Designers in short supply

The problem facing Berlin, he says, is that developers and their money are likely to determine the future of architecture at a time when town planners and designers are in short supply.

Ironically, GMP recently faced a town planning problem of its own when the practice wished to expand its offices in the middle of a predominantly residential area. The town planners told the firm that offices should be with other offices, but von Gerkan contested this by arguing that if an architectural office is to determine the views of towns and cities then it needed a fitting environment in which to do so.

In the end the practice decided to move and von Gerkan discovered the ideal location, a small terrace on the banks of the River Elbe. The building with the red flag, as the locals call it, is now home to one of Germany's foremost design practices. As von Gerkan stands on the "bridge" of a new building with overt nautical metaphors, the image is an appropriate one for a team of architects running full steam ahead.

PHOTOGRAPHY BY H LEGKA



Stuttgart Airport Terminal 1991

Architect: GMP

Geometry is the key to the concept of this new airport terminal. The arrangement of the building is reduced to two elementary forms; the longitudinal with its triangular section and the rectangular hall with its trapezoidal section. These shapes were the dominating and controlling emphasis in the development of the existing airport.

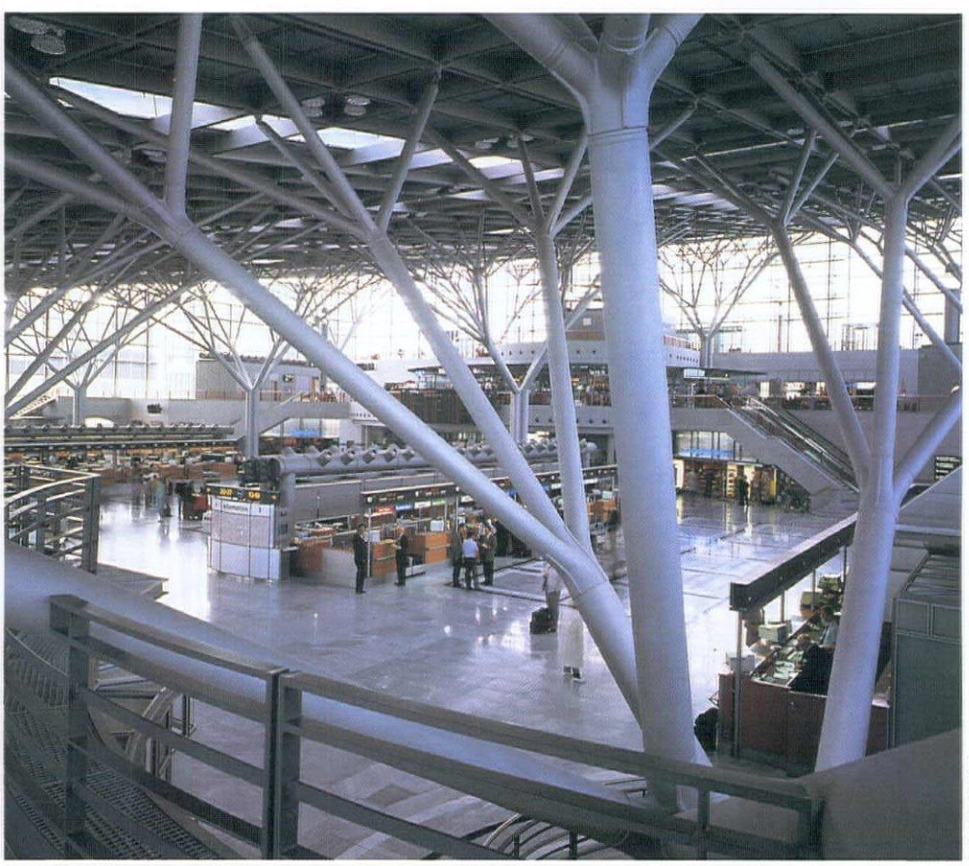
In contrast to the importance of detail in inner-city architecture, the development of the airport had no need to take neighbouring buildings into consideration. This has enabled the freedom that many architects prize. In approaching the building, the greatest impression is of a symbolic view of a door to the skies and flight.

Von Gerkan's wish, however, is that the structural, tree-arrangement to the roof should be taken as the unmistakable feature of the airport. The supporting structure closely resembles the forms of trees. The loading of the roof is spread over a column grid of 4m to 5m, each column having four main "branches" from which 12 further "branches" spring. The loads are taken through the "branches" back down to the foundation.

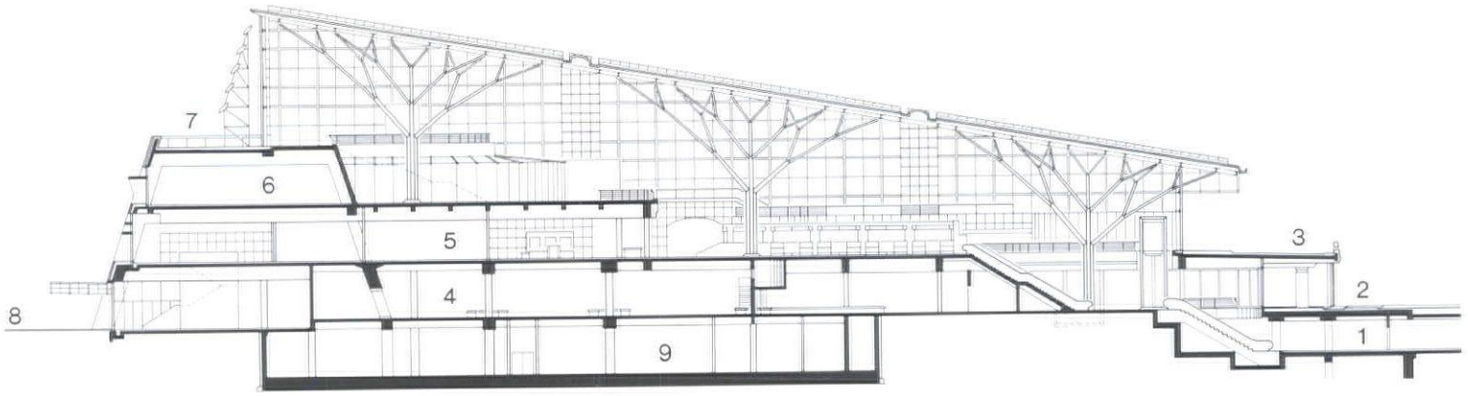
The openness of the structure is continued through to the end wall separating the land and air sides, and providing noise protection. The sloping walls cleverly bring the building back down to earth by tying the building's masses topographically to its surroundings. The "heavy" stone base of the building serves to enhance the delicate tree structures.

One of the fundamental concepts of the competition draft design was to achieve a sloping, glazed box floating above the foundation by means of structural trees. It was, therefore, necessary for not only the walls but also the roof to be completely glazed, in order to achieve the optimum possible daylight conditions. This glazing has allowed the changes from day to night and the differences in light conditions according to season and weather to endow the building with a "natural" atmosphere.

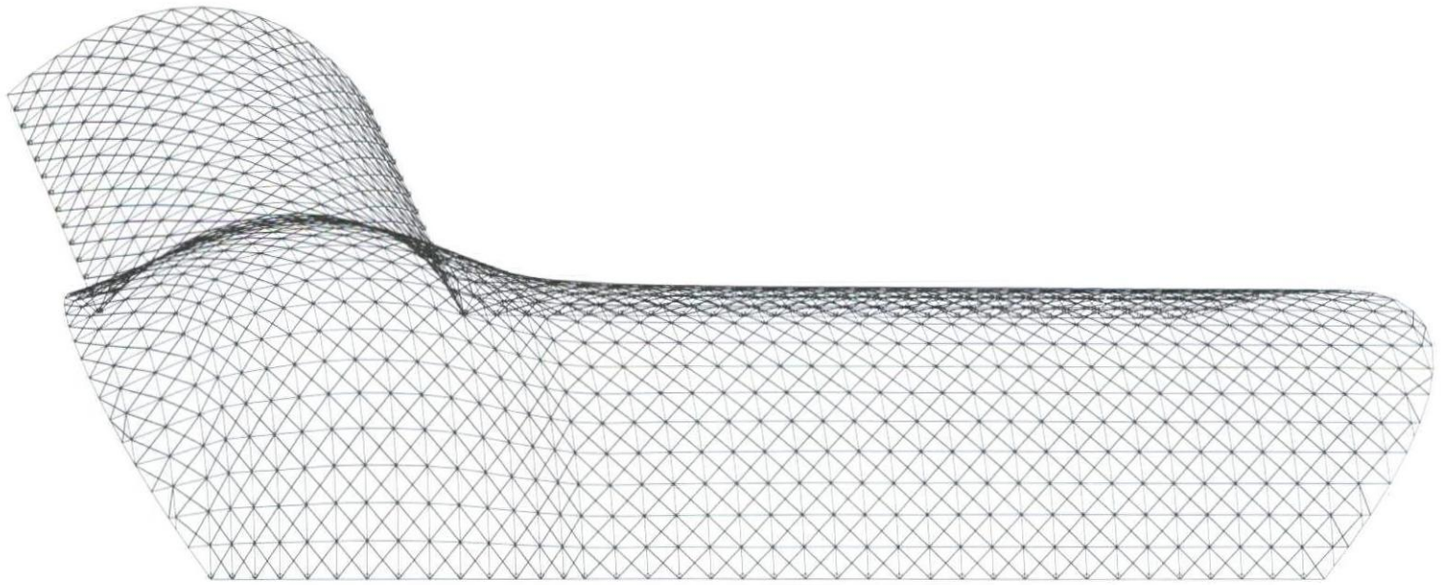
At competition stage the use of a double skin of glazing was considered, in which solar heat gain would be trapped between the skins and either removed or contained in the building's mechanical equipment for later use, thereby saving energy. This concept for the competition was not supported by energy calculation models, and could not be proven from experience. It was at this stage that two significant arguments against this proposal came to light. What would be the comparative costs of cooling the area in summer against the energy savings? And what about the problems associated with excessive use of light on monitors which would be harmful to users? Eventually, the idea of the great glass hall was not to be realised and a different solution found.



RICHARD BRYANT



RICHARD BRYANT



Hamburg History Museum roof 1989

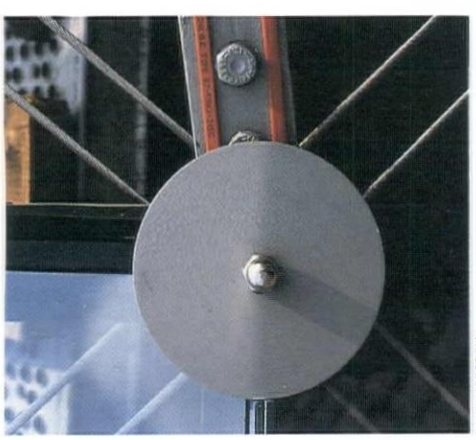
Architect: GMP

The listed building status of Hamburg History Museum led Marg to the idea of glazing over the courtyard to provide new exhibition space. This glazed roof has proved to be a masterpiece.

In order that the courtyard could be used as an exhibition area but still retain its original charm, Marg developed an ingenious solution with Fischer Glass Construction. It is the most delicate and light-filled construction imaginable.

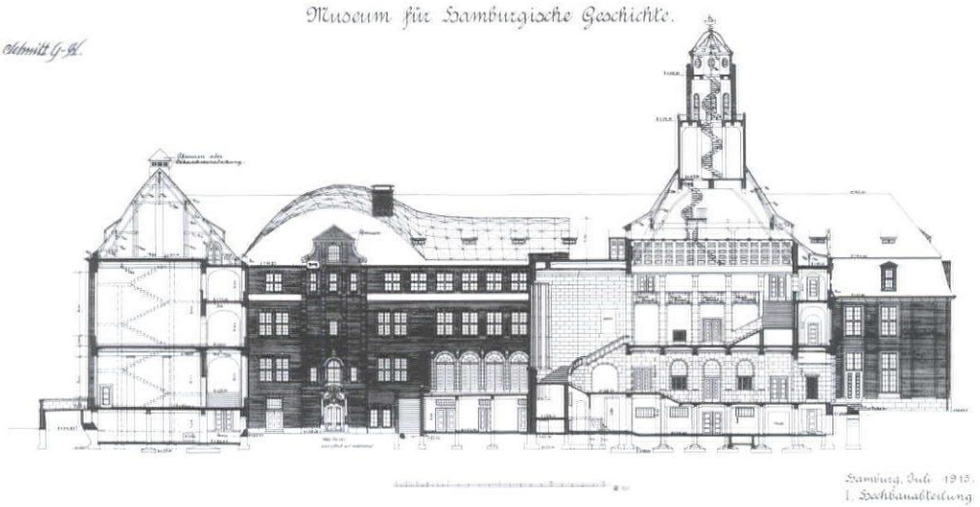
The new structure not only provides the necessary weather protection for the exhibitions while taking account of the status of the existing building, but opens a whole new realm of attractive uses for Hamburg's most beautiful courtyard.

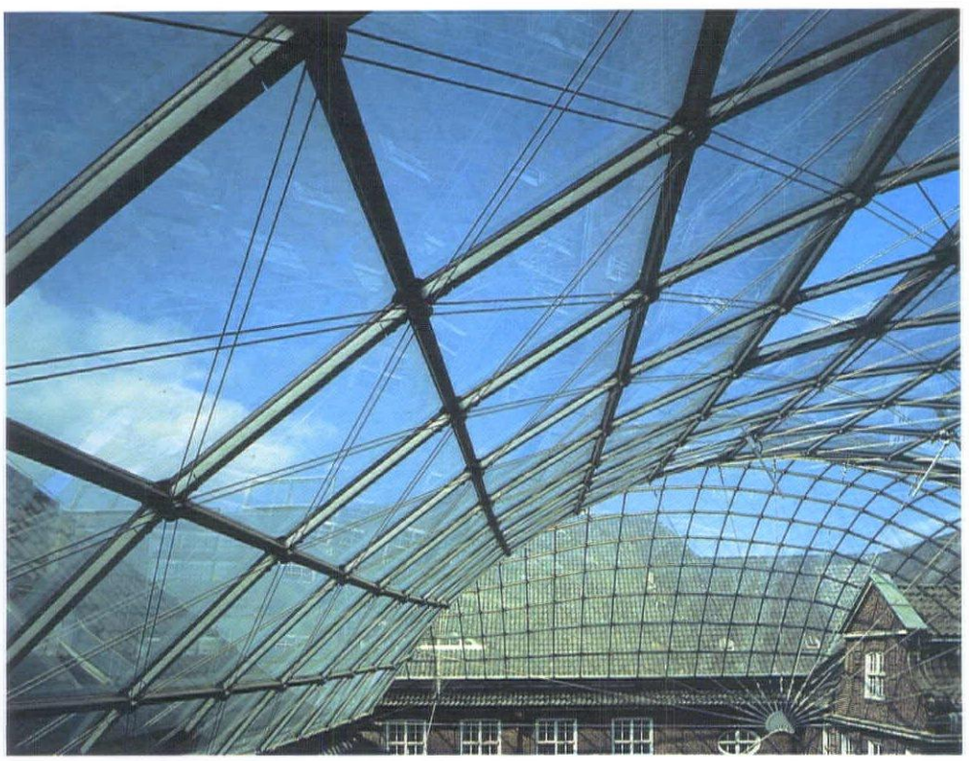
The greatest attribute of the roof is the fact that while being most revolutionary in technology and design, it managed to stay within the budget allowance. The roof was conceived, designed, developed and erected within just six months. Marg has achieved a coup in successfully combining simplicity of design, structural order, balance, and an unmistakable identity for the building.

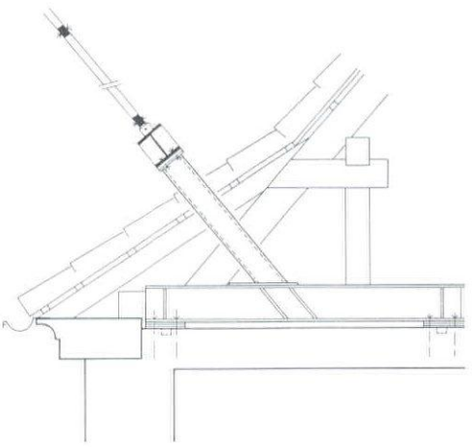


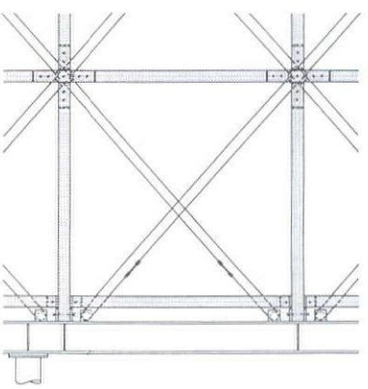
BERNT FEDERALL

HG ESCH









(Above) Detail of connection between the net shell and the existing building roof in section and in plan.

PHOTOGRAPHY BY H.G.ESCH

INTERNATIONAL FORUM OF YOUNG ARCHITECTS PUBLICATION

The International Forum of Young Architects is a worldwide organisation aiming at stimulation of avant-garde trends, conceptions and projects in architecture.

Editor/Design
Georgi Stanishev
Photography
Igor Palmin
Models
S Podyomshchikov
N Avvakumov

TEMPORARY MONUMENTS

"Vladimir Tatlin's 1919 'Monument to the Third International' represented the perfect fusion of formal artistic innovation and practical commitment to social change that was at the core of the art of the Russian and Soviet avant-garde early this century . . ." Ironically enough the "Perestroika Tower" by Yuri Avvakumov – a sample of the present-day sceptical Soviet avant-gardism – shows Tatlin's tower's clothes hiding the skeleton of the Socialist-Realist "Monument to the Worker and Farmer". Here Michael Govan, assistant director of the Solomon R Guggenheim Museum, analyses Avvakumov's works as reflecting the reinterpretation of the Agitarch consciousness of the 1920s in contemporary Soviet culture.

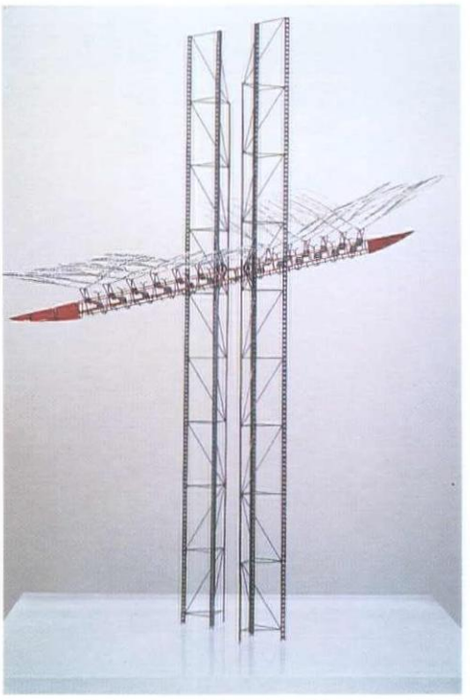
ASCENT AND DESCENT
by Michael Govan

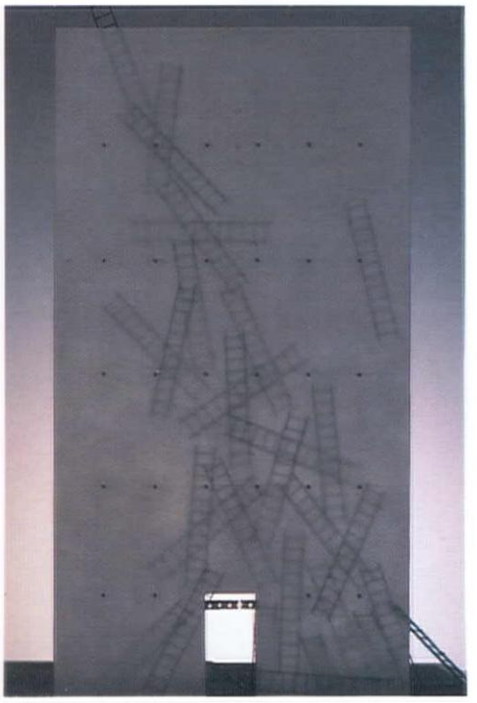
Vladimir Tatlin's 1919 "Monument to the Third International" represented the perfect fusion of formal artistic innovation and practical commitment to social change that was at the core of the art of the Russian and Soviet avant-garde early this century.

Unwilling to contain his painterly and sculptural experiments within the confines of his studio, Tatlin ventured into the streets and enlarged his formal innovations to an architectural and utilitarian scale. Melting art with technology and industry, Tatlin's monument design was, however, highly impractical as architecture. The famous project, known through photographs and reconstructions of Tatlin's model, has served in the end a more symbolic function – representing the physical realisation of a theoretical Utopia.

Within the context of a highly industrial aesthetic, Tatlin's work was driven by humanistic ideals. The 1919 tower was a symbol of human consciousness constructed by the power of human labour. Recalling the Renaissance artist-inventor Leonardo da Vinci, Tatlin's last major project was a bird-like flying machine that he envisaged as "an everyday object for the Soviet masses, an item of ordinary use".

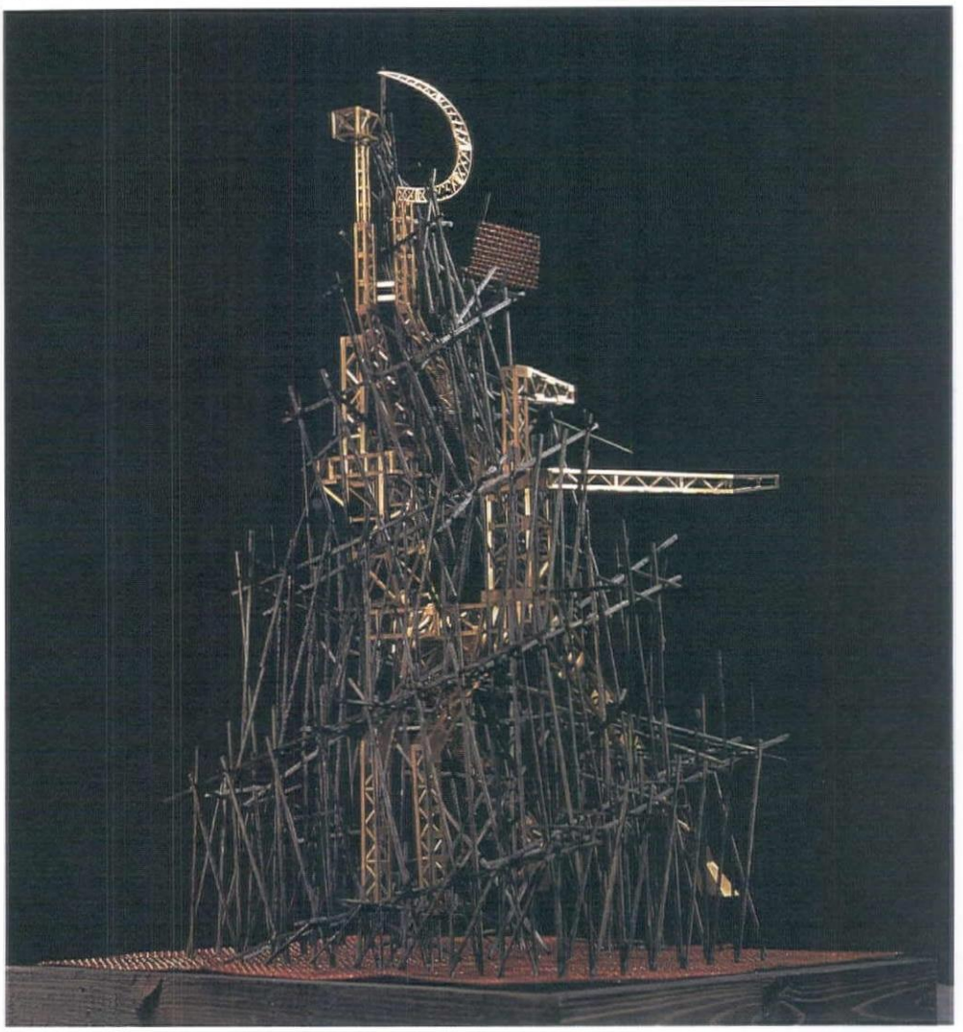
The so-called "Letatlin" – a pun: letat = to





(Above) "Aerobatics" or "The Flying Ladder", 1990. (Right) "The Flying Proletarian", 1990 (with N Avvakumov): a homage to V Mayakovsky. An amusement park swing for collective athletic contests. "Fire-Escape Monument", 1988. A wall with fire ladders on one side, fire hydrants on the other, and two fire exits. Dedicated to the unknown fireman.

"The Perestroika Tower", 1990: a homage to V Moukhina. A construction within a sculpture and vice versa, or Social-Realism in Constructivism and vice versa.



fly, with Tatlin – developed between 1929 and 1932 with a group of scientific researchers behind the walls of Moscow's Novodevichy Monastery, and took the science of mechanical construction back to the science of natural biology. Tatlin intended the machine "to give back to man the feeling of flight" that was "robbed by the mechanical flight of the aeroplane".

The eerie black and white photographs of the wings of "Letatlin", constructed at the dawn of the Stalinist era, take on the human significance of the story of Ikarus. In retrospect, the broad social objectives of the art of the Russian avant-garde communicated in Tatlin's constructions appear naive.

Reminiscent in spirit

The image of Tatlin's flying machine is appropriate in Yuri Avvakumov's recent small model "Red Tower", 1987. Suspended from a crane supported by a skeletal scaffolding, reminiscent in spirit of Tatlin's "Monument to the Third International", the "Letatlin" is dangled as a sign both of the aspirations and the failure of Tatlin's social ambitions. Yet Avvakumov's project is also a monument to the lingering power of Tatlin's aesthetic, if not social, triumph. Similarly, in Avvakumov's "Red Gallery" and "Flying Proletarian", emblems of progress, industry and speed (rowing and flying machines) are held in paradoxical suspension.

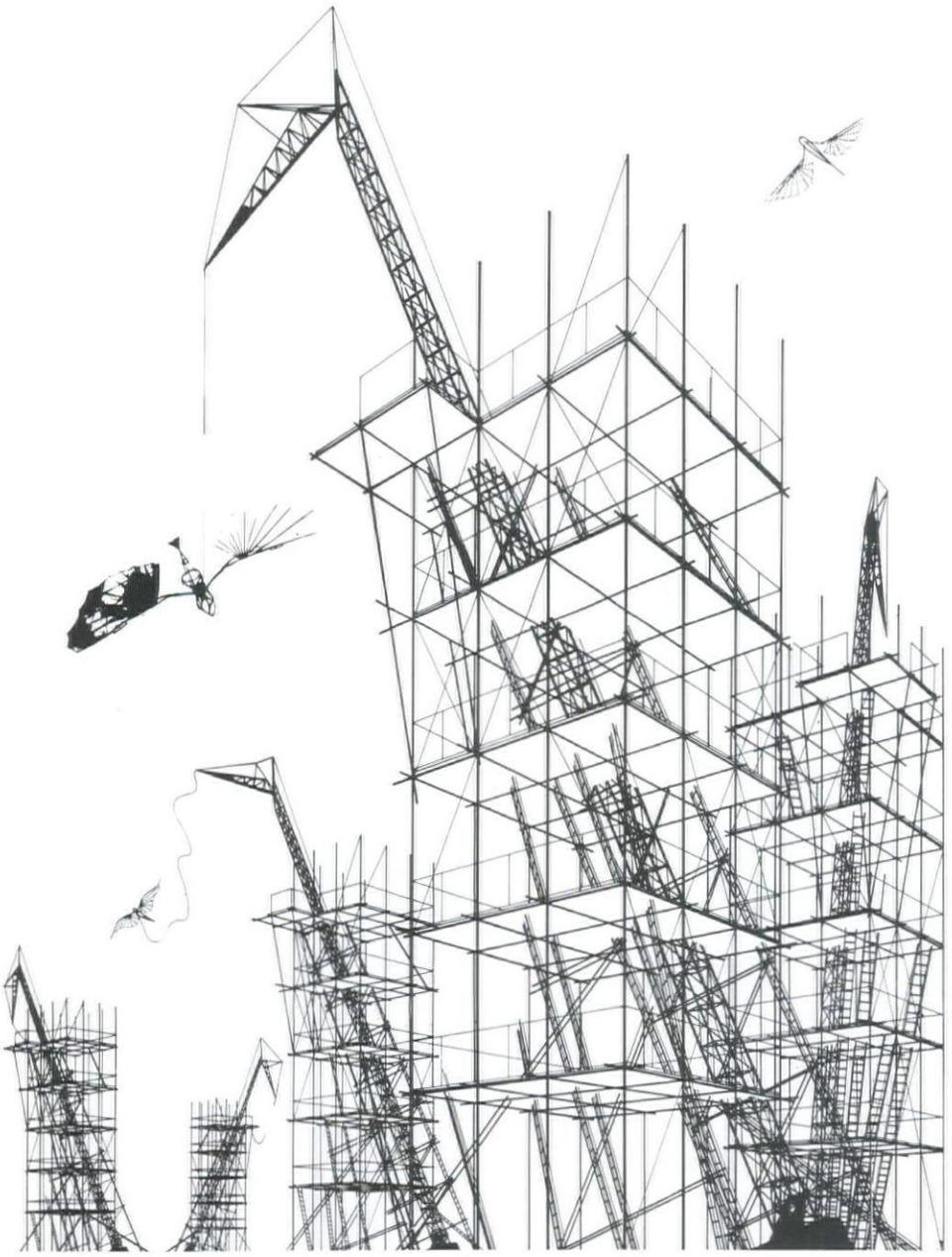
Unlike Tatlin's, Avvakumov's models are not intended for construction. An avant-garde architect in the present-day Soviet Union, of course, cannot build. Thus, Avvakumov practises "paper architecture" of symbolic, not functional import. Often as ironic commentary on social and political "models", Avvakumov's models employ the formal, sculptural devices of Constructivist architecture together with the critical insight of metaphor and pun to expose human elements embedded in the work of art and politics: aspiration, frustration, staying power and humour.

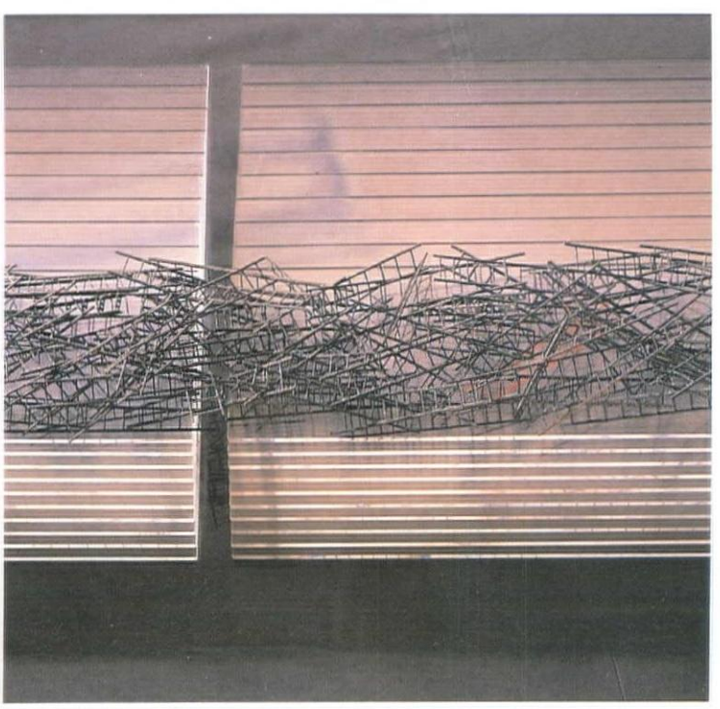
Made on the scale of toys, yet with precision of an engineer, Avvakumov's constructions are as playful as they are critically incisive. In the end Avvakumov's work proposes no political solution; rather it favours the subtlety of irony and humour, humbling and shrinking social and political ambition to a sculptural display placed under the gaze of more careful scrutiny. Avvakumov's witty "House of Cards" – an ironically stable structure – can be repeatedly erected and collapsed. It is tempting to compare this to the construction of the Soviet Union now falling apart.

The bare skeletal form of Tatlin's tower or the "Letatlin" represents a naked truth. In his model for a "Perestroika Tower", 1990, Avvakumov begins with Tatlin's Constructivist "Monument to the Third International", overlaying it with the Socialist-Realist "Monument to the Worker and Farmer", pared down to only its skeletal support. The two transparent structures then co-exist in physical space and by their elegant intertwining. The obvious incongruity is the equation of the abstract monument with the realist monument stripped of its figurative cover; the formal irony then implies a further political irony.

Changes in politics or aesthetics are made through revolution or revision. Modern art was a revolution, Post-Modern art a revision; 1917 was a revolution, *glasnost* a revision. Avvakumov exposes this rhetoric in his model for a "Glasnost Tribune" (1988) based on El Lissitzky's revolutionary design for "Lenin's Podium", 1920, except, that the design for an elevator to carry Lenin to the podium has been replaced by Avvakumov with a more "democratic" staircase.

Avvakumov's meanings are felt through metaphorical and formal manipulations – translations, equations, reversals – of objects and symbols. In his "La Cupola", 1989, installation in the Melz Club in Moscow, Avvakumov mirrors the exterior architectural symbol of state power, the cupola, in the interior, atrium space below it. A wavy wire and clear plastic frame of a dome is hung upside-down from the ceiling – as if reflected in water. The distorted





(Right) "The Stair-Ladder Barricade", 1989 (with N Avvakumov): a homage to my country. (Above) "The Red Tower", 1987 (with Y Kouzin): a homage to V Tatlin. Scaffolding, fire ladders and a crane boom. The installation is used for flight-testing of Letatlins.

image of the dome becomes a sort of air balloon, and with ladders scattered on the floor below, the cupola is transformed into a vehicle of escape.

The notion of ascent or escape is ever present in Avvakumov's recurring use of ladders; the ladder is an ancient symbol of the ascent to the heavens. A highly constructive element, the ladder is employed by Avvakumov more often for its sculptural and metaphorical (rather than functional) potential.

A haphazard cluster of ladders ascends the surface of a semi-transparent screen wall of Avvakumov's "Fire Escape Monument", 1988. "Ascent Axis", 1990, is designed as a tower of ladders, capped on top and bottom by mirror surfaces reflecting the "ascent axis" infinitely up and down.

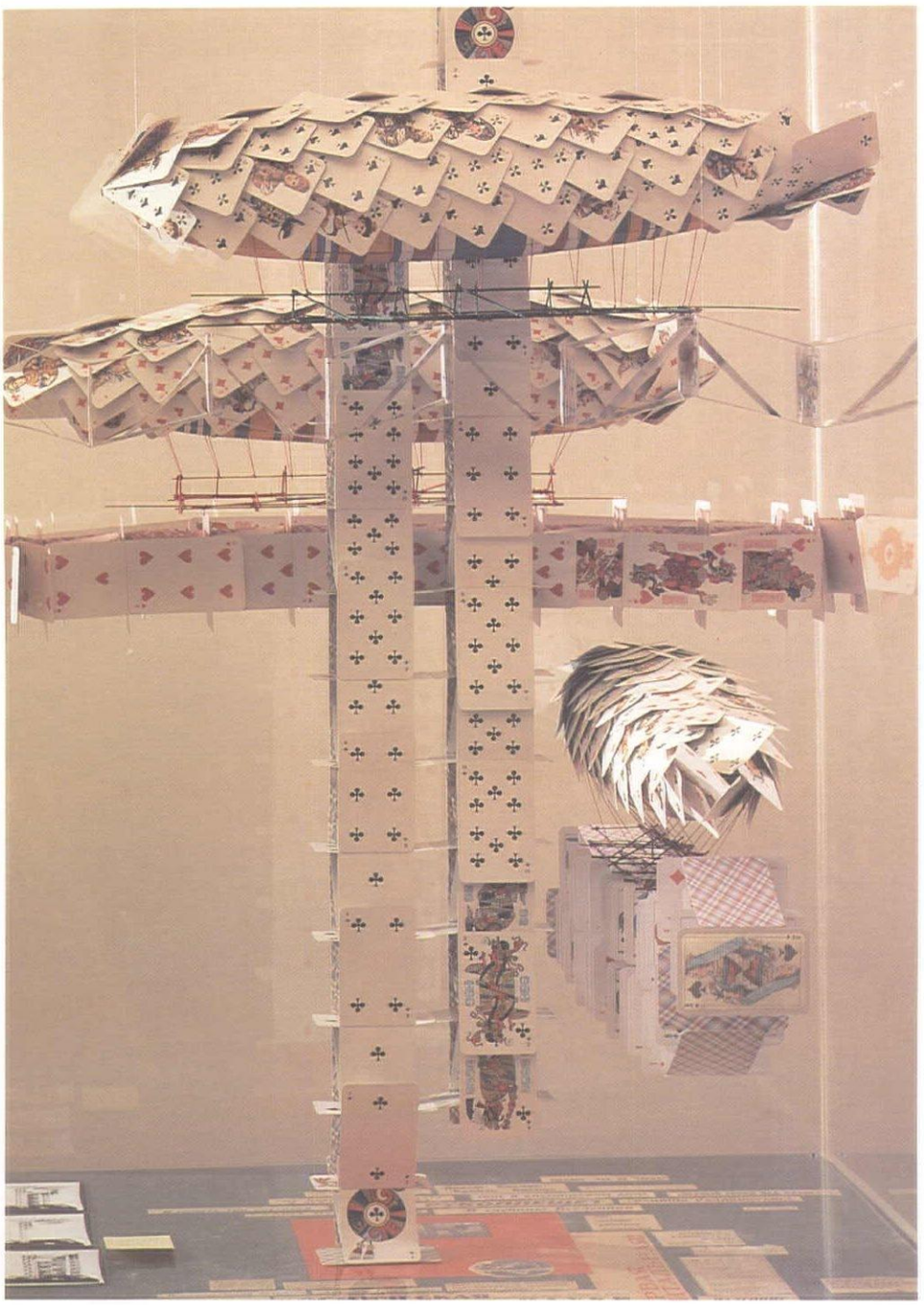
Horizontal mass of ladders

In "Barricade", 1990, another more dense, horizontal mass of ladders sits like a fence along a symmetrical wall of steps; devices of ascent – ladder and stair – become objects of barricade.

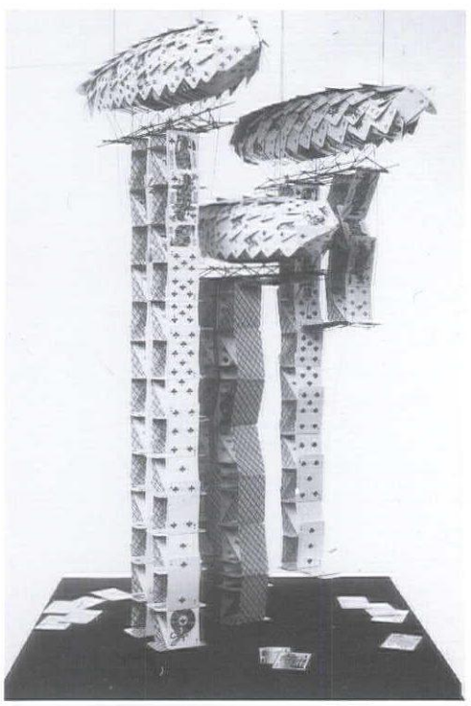
The dynamism of Tatlin's Constructivist art can be related to the optimism of the revolution and a sense of the perceived through an obsession with the future – "the task ahead of us", as he wrote. The use of historical reference and the reliance on the mechanisms of comparison and revision in Avvakumov's work instead reveals the sense of the present between an almost symmetrical past and future.

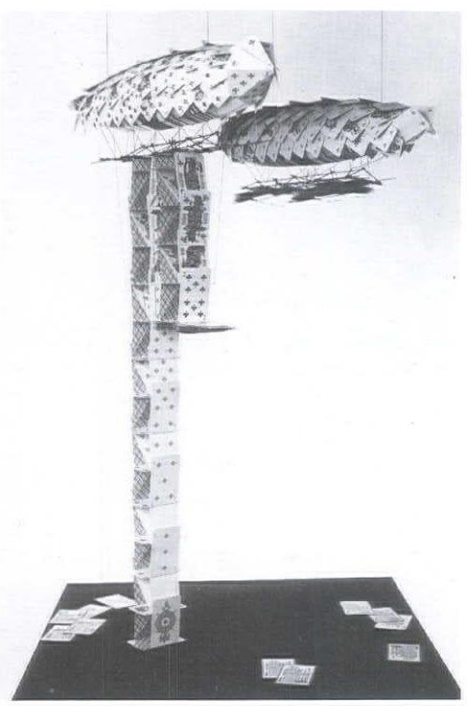
As opposed to Tatlin's dynamic and unidirectional compositions that represent a trajectory forward in space and history, Avvakumov's constructions are always built with visual and verbal balances or alternatives – a Constructivist design co-exists with a Socialist-Realist design, a machine of flight is held fixed in space, a fragile house of cards is glued together, a weighty cupola is turned upside-down to become an air balloon.

And just as "Ascent Axis" reflects infinite levels of ascent and descent, so the dense cluster of ladders of "Barricade" portrays a boundary, but in its multidirectional construction more precisely embodies the suspension in an infinity of possibilities that forms the thin existence between the future and the past. □



"The Space Bridge", 1989. "At once a homage to Constructivist design and a symbol for the collapse of the Constructivist Dream." New York Times, *19 August, 1990.*





Yuri Avvakumov
1957 Born in the city of Tiraspol, USSR.
1974-81 Studied at the Moscow Architecture Institute.
1981-83 Worked at a research division of the Institute of Design.
Since 1981 Received awards at conceptual architecture competitions: Style for the Year 2001, *A+U*, 1984, 1st Prize; Doll's House, *AD*, 1983; Grand Halle – La Villette 1988; *Façades Imaginaires*, Grenoble, 1990.
Since 1982 Took part in art and architecture exhibitions, including all Paper Architecture presentations; 'Architecture and Imagination manifestation', Fort Asperen, 1989; Paris – *Architecture et Utopie*, Pavilion de L'Arsenal, 1989; 'Between Spring and Summer', ICA, Boston, 1990, etc.
Since 1990 Personal exhibitions: Metal Graphics, Dominus Gallery, Moscow, with Sergey Shutov; Agitarch Models, Linnsen Gallery, Cologne, with Sergey Podyomshchikov; 'Back to the Future', Russian Museum, S Petersburg, set for 1992.
In 1992 Invited as a guest professor at the Hochschule für Gestaltung, Karlsruhe.

This text by Michael Govan was first published in the exhibition catalogue of the Linssen Gallery, Cologne.

The Disney Corporation pioneered the concept of entertainment architecture, and its move into France with Euro Disney and its patronage of the world's top architects, from Graves to Isozaki, has kept its design policy in the public eye. In the latest of WA's *dialogues with leading architectural clients, Fay Sweet talks to Wing Chao, Disney's senior vice president of planning, architecture and design, in Florida.*

FAY SWEET

THE FANTASY BUSINESS

The Disney Corporation is rapidly gaining a name as one of the world's boldest commissioners of modern architecture with a series of initiatives which have caught the design imagination. How does the system and the thinking work, and what does your job involve working on the Disney team?

New building is handled two ways: there are the theme parks and then there are the hotels and resorts. Theme park design is the responsibility of our team of imagineers. The rest – the hotels, commercial projects, office building and shopping centres – is managed by my department and is usually designed by outside architects. I began working for Disney in the 1970s in its imagineering section where I spent a great deal of my time developing masterplans for theme parks and organising infrastructure, transportation and planning. I now work in non-theme park development.

How does Disney set about commissioning outside architects?

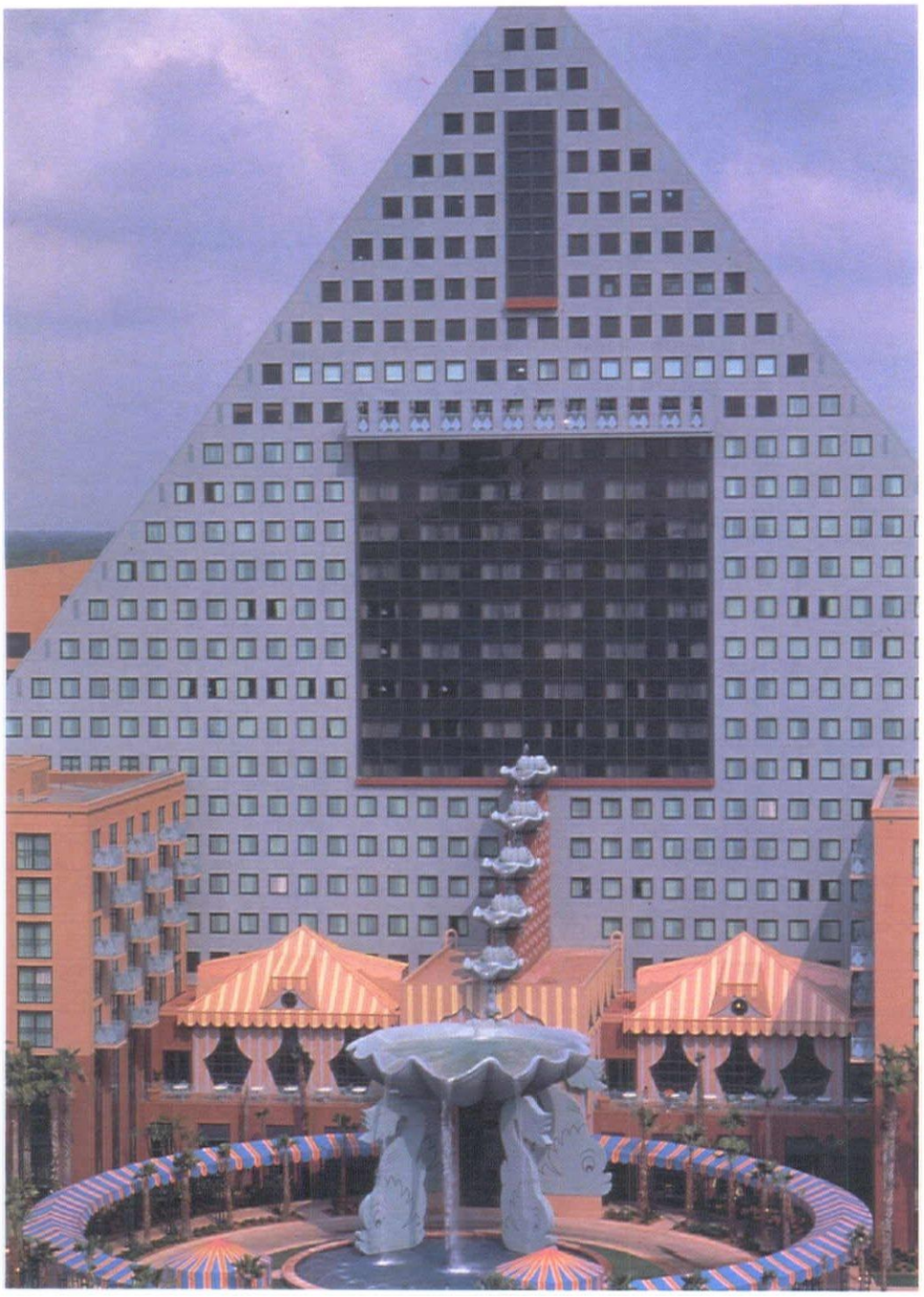
We do this in two ways, either by the interview process or by competition. For the former we decide on a character or theme and interview a number of architects who we think can give us what we want. The competitions are usually open to invited designers who submit their ideas and then we select one to follow through.

What recently has been produced as the result of a competition?

There have been many buildings, but perhaps the Dolphin and Swan hotels at Walt Disney World here in Orlando, Florida are the best known. For that project we invited ideas from the Robert Venturi, Alan Lapidus and Michael Graves.

How did Graves get the job?

We felt his solution provided interesting shapes and colours and a very strong presence in Walt Disney World. We needed to construct large hotels offering plenty of additional guest space as well as convention and meeting areas. Robert Venturi came up with some very interesting concepts which have stimulated us to build more hotels in the Epcot resort area, and Alan Lapidus, although not selected as a design architect for the Swan and Dolphin, worked with Michael Graves as production architect.



(Left) Disney's Dolphin Hotel, designed by Michael Graves. Strong presence in Walt Disney World extends the concept of entertainment architecture. (Opposite page) Wing Chao, Disney's senior vice president of planning, architecture and design.

The Swan and Dolphin hotels are massive and by being crowned with huge models of swans and dolphins are impossible to ignore. They can be seen for miles around, even from the Epcot theme park where they burst onto the skyline. Are you concerned about the ways in which new structures slot into the Disney landscape?

We are very sensitive about the way new structures are introduced and about their relationships with our existing projects. Aside from the Swan and Dolphin hotels, most other new development is not visible from our theme parks. The reason that the new hotels can be seen is because we planned it that way. We wanted them to be eye-catching and fun. When you look at them for the first time they should make you smile and say 'wow'. The larger of the two, the Dolphin, is a convention hotel and is the largest in south eastern USA. We have 1510 rooms and meeting space of around 200,000 sq ft. We did consider bringing the structure lower, but because we needed so many rooms, the building would have been a mile long and it would have taken forever for our guests to walk from their rooms to the meeting places. The other option, the one we chose, was to go up.

Which of your hotels are currently the most popular with guests?

We carry out surveys regularly and have found that there is no one hotel that stands out from the rest.

Which books up first?

There are three that are about equal – the Grand Floridian, the Polynesian and the Contemporary.

What has been the response to the Swan and Dolphin?

It is too early to gauge by repeat visits, but people say it is fun and different. They have been very polite.

Will you be shipping any of the American hotel designs over to Euro Disney?

There will be six hotels in Paris offering around a total of 5,200 rooms and all but one of them – and adaption of the Walt Disney World Grand Floridian by Wimberly, Allison, Tong & Goo, which we and our guests really like – will be entirely new designs. We felt that the Euro Disney project was a very American idea and spent a long time discussing what character hotels and resorts we should build. Our research led us to identify the places Europeans love to visit when they come to America and so we decided to bring America to Europe. Europeans love the south west and the desert so we commissioned Antoine Predock to design the Hotel Santa Fe on that theme. New York is represented by Michael Graves' design for the mini skyscraper Hotel New York. Mountain architecture is represented by Antoine Grumbach's Sequoia Lodge, Bob Stern has designed the seaside-style Newport Bay Club and, for Wild West enthusiasts, the Cheyenne Hotel complete with cowboys and cowgirls as staff. Construction is well under way and all will be open next April 12 at 9.01 am.

Have the designs for Euro Disney been very different from designs in America or Japan?

In some ways, yes. We have incorporated more covered areas – such as walkways and swimming pools – to protect visitors from inclement weather. In the hotels we have added lobby fireplaces and have made the guest rooms slightly smaller than those in America. A typical luxury room in America would be around 400 sq ft compared with around 265 sq ft in Euro Disney. It is still generous, though, by European standards.

Did you invite any British architects to help with Euro Disney?
Yes we did, there were a number of them including Sir Norman Foster. But our work schedule and their timetables didn't allow us to make any commissions. However we do hope to work with British architects in the future.

Once you have made a commission, how much freedom do you allow architects or do they have to conform to a Disney style?
For every project we develop a programme detailing square footages required, functional relationships and a budget. In terms of style we will provide a description of the concept but the designer has total freedom to develop designs. We do not want to tie their hands.

How do you imagine working with an architect like Sir Norman Foster who is presumably going to produce designs which bear his distinctive trademark rather than a Disney trademark?
We always talk to architects before they start on a project and make sure they feel comfortable with our storyline – the process is like making a movie where you have to find the right person to play the part.

So an architect who wants to stick to his own rigid architectural principles really isn't of much use to you?
We are a very creative organisation, we are sensitive to the different ways in which architects like to work and we respect their creativity – we could not force an architect to design something he or she will feel uncomfortable working on.

In a lot of the buildings there is an element of pastiche. Do you find that some architects respond to designing like that and some simply don't?
Our property is like a gallery. As you see here in Florida, we have replicas of old styles of building but we also try to push ourselves and the barriers forward to create a new chapter in modern design. The new Team Disney building by Arata Isozaki, for example, is a very modern building. You talk about freedom of design and that's what we gave him. The required office space could have been housed in a simple rectangular building but Isozaki thought that would be too boring and so he built a sculptural piece at the centre which is a massive sundial, the largest in the world. It is a fascinating building.

To many people, Disney is a powerful American icon. Is that something you bear in mind when commissioning architecture?
We are not conscious of being an icon. The term entertainment architecture really started back in 1955 when Walt Disney opened Disneyland in California. He set out to create a themed park turning the two dimensional film to a 3D experience – architecture is an extension of that. Today Michael Eisner is continuing that tradition and is pushing architecture forward and expanding faster and broader. We may be setting trends for the future, but it's not conscious. We are doing it for our guests.

What are the plans after Euro Disney opens next April.
That project will take at least 20 years to complete so there's plenty of work for us and we're already working on phase two and phase three developments.

So where can we expect to see the next Disney theme park?
We are a company that looks many years ahead and we are looking at other markets. We do have plans but I cannot discuss them with you right now. □

Team Disney building designed by Arata Isozaki: Disney pushing the barriers forward to create "a new chapter in modern design" by giving architects creative freedom.

BAUHAUS INTO PRINT

Bauhaus 1919-33
By Magdalena Droste. Published for the Bauhaus Archiv, Berlin, by Benedikt Taschen Verlag, Berlin, price £9.50.

The Bauhaus
By Uwe Westphal. Studio Editions, London, price £19.95

Review by Dennis Sharp

These two books with their common theme reflect the current revival of interest in the Bauhaus and its personalities. There has been a variety of new titles published with more in the pipeline.

This new interest is understandable in the context of Germany unification. This has brought the cities Weimar and Dessau back into prominence as well as the future of Bauhaus buildings. At Dessau they were recently talking of the Bauhaus becoming the key element in a new technical university while at Weimar the total restoration of the original Bauhaus buildings (formerly the Weimar School of Applied Arts) is under consideration.

There is also a general interest in the accurate documentation of Modern Movement monuments as well as growing concern over the historical importance and influence of the Bauhaus. To this end Dr Droste's study draws on historical material from the Bauhaus Archiv in Berlin. It is a model of its kind – a popular book yet beautifully presented and well edited.

It begins with an essay "On the Origins of the Bauhaus", which examines the German cultural milieu out of which it sprang. It regards the *Arbeitsrat für Kunst* as one of the prime groups and its aim "to create a new culture" as a significant factor in the formation of Gropius' Bauhaus.

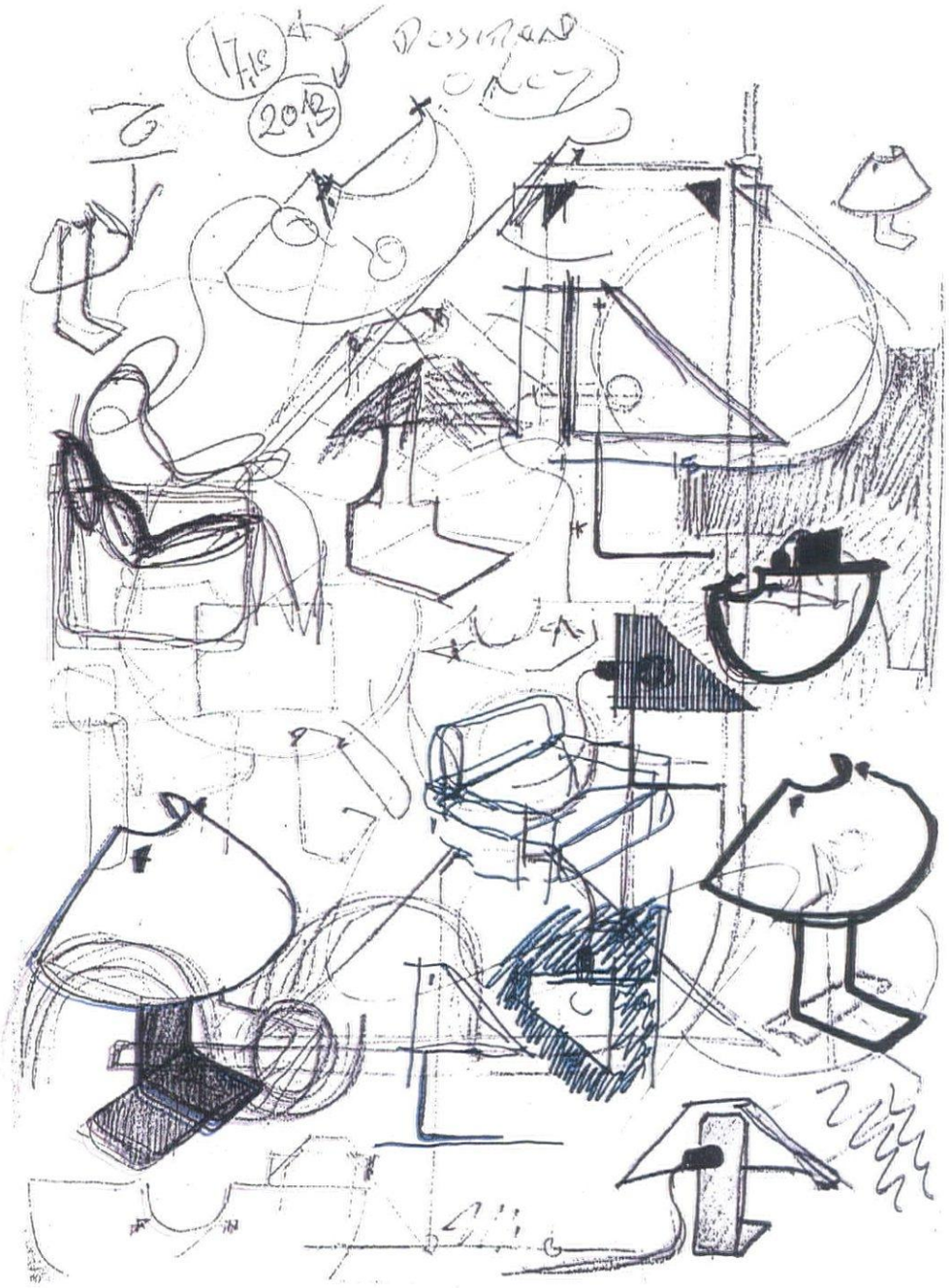
Under Gropius' magical touch in 1919, the new institute soon combined a curious mixture of cultural overtones – including 'Art Soviet' programmes, quasi-religious and medieval notions of the Guilds, and the mysticism of the Cathedral – to unite arts and crafts with fine art teaching under the banner of architecture.

The chronological development of the Bauhaus at Weimar is carefully examined until the book breaks half way through to introduce the new Dessau Bauhaus as a modern Institute of Design. Here the more familiar story of the multivalent cultural atmosphere of this productive phase is documented and illustrated.

Uwe Westphal's well-illustrated book is more that of the Bauhaus enthusiast. It extolls the virtues and achievements of those at the Bauhaus. It examines the Institute's background much more in general art historical terms than through the more precise German cultural references of Droste's text. In a somewhat perfunctory manner it examines key events of the Bauhaus period, setting some of them out in relation to pedagogy and training.

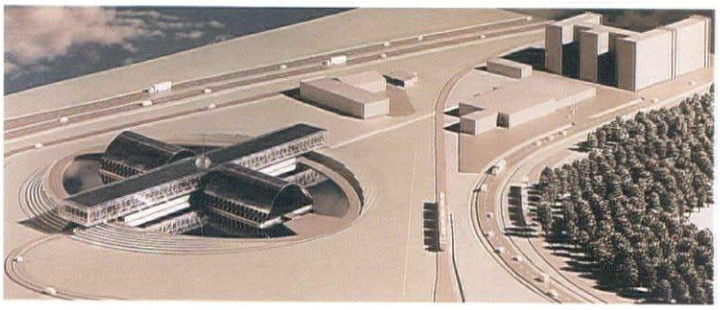
Westphal makes some interesting comments on the organisation of the workshops where many areas of expertise overlapped. Gradually some workshops became small but immensely influential units and the Bauhaus commitment to standardization – a key process of the whole period – enabled manufacturers to introduce radical designs into the market place.

Although much more selective and idiosyncratic than the Bauhuas Archiv book, this volume should appeal to those general readers who want an introduction to the Bauhaus methodology and ethos. □

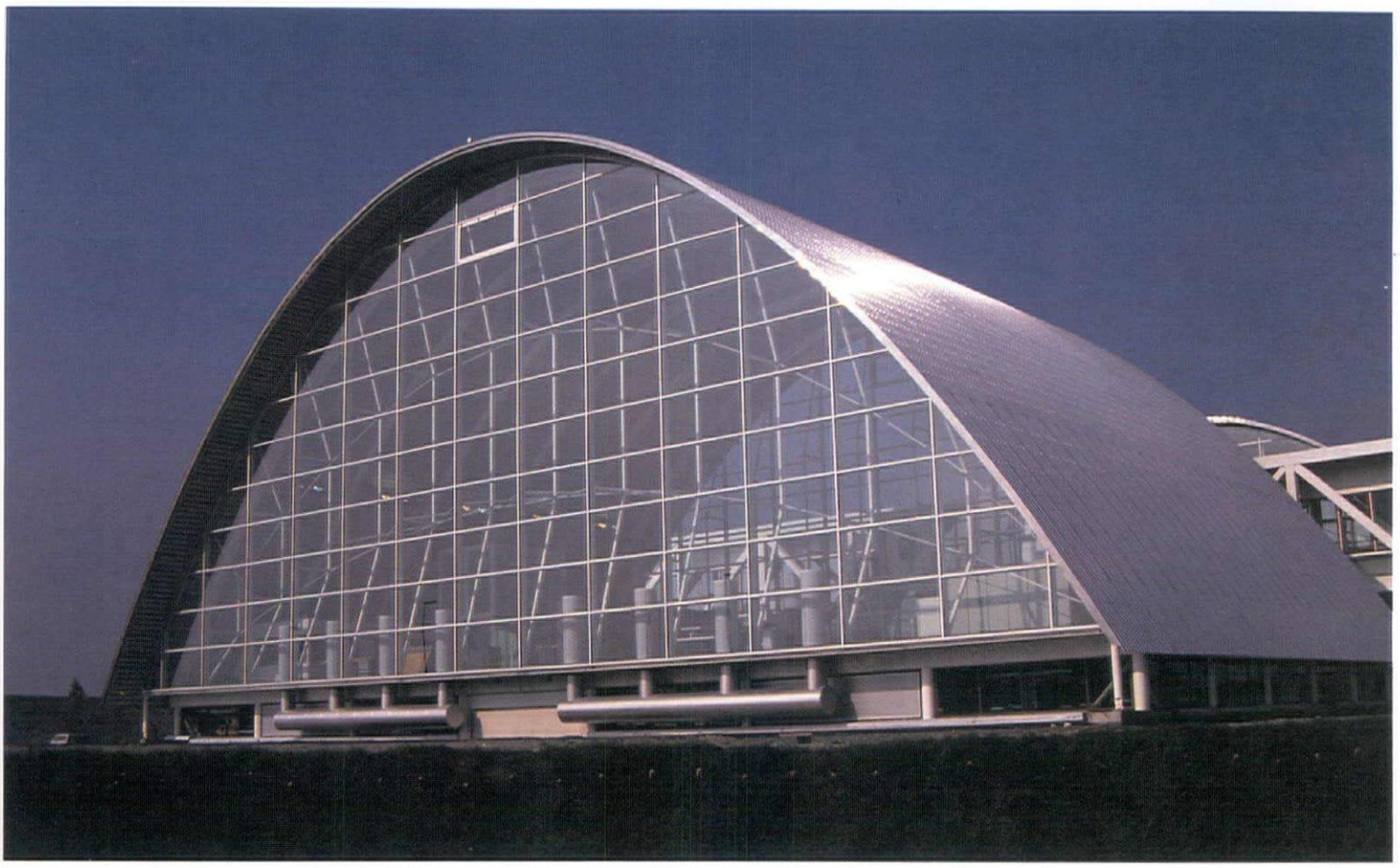


Sketches by Italian architect and designer Vico Magistretti for the Posenna table lamp, 1976, manufactured by Artemide. One of the many intriguing illustrations from *Vico Magistretti: Elegance and Innovation in Postwar Italian Design* (Thames and Hudson, London, 1991, £22.50), which explores the development of some of the best known objects in international design and provides an insight into Magistretti's enduring creative powers.

The bold use of steel in construction can be the basis for architectural innovation. Here World Architecture *explores the material's use in a Belgian research centre and office block, both designed by Brussels architects and civil engineers Samyn & Partners.*



CAPABILITIES OF STEEL



The new OCAS research centre, Zelzate-Gent, Brussels, designed by Samyn & Partners as a showcase for the architectural potential of steel construction: (top) model view of site; (above) façade view of one of the testing halls.

The new OCAS research centre at Zelzate-Gent, Belgium, has been designed as a showpiece to demonstrate the properties of steel in construction.

The brief from the client, the Steel Applications Research Centre (OCAS – Onderzoek Centrum voor de Aanwending van Staal) made three main demands – that the architecture should clearly express the centre's activity, that it should endorse the professional dedication and experience of the researchers employed there, and that it should demonstrate the constantly upgraded characteristics of steel and the benefits these offer to the building sector.

The site chosen for the structure is at the Sidmar steelworks near the intersection of the Antwerp-Knokke motorway and the R4 trunk road at Kennedylaan. The east-west axis of the building is aligned with the main road of the steelworks complex, and the north-south axis with one of the wings of the existing Sidmar building.

A circular embankment

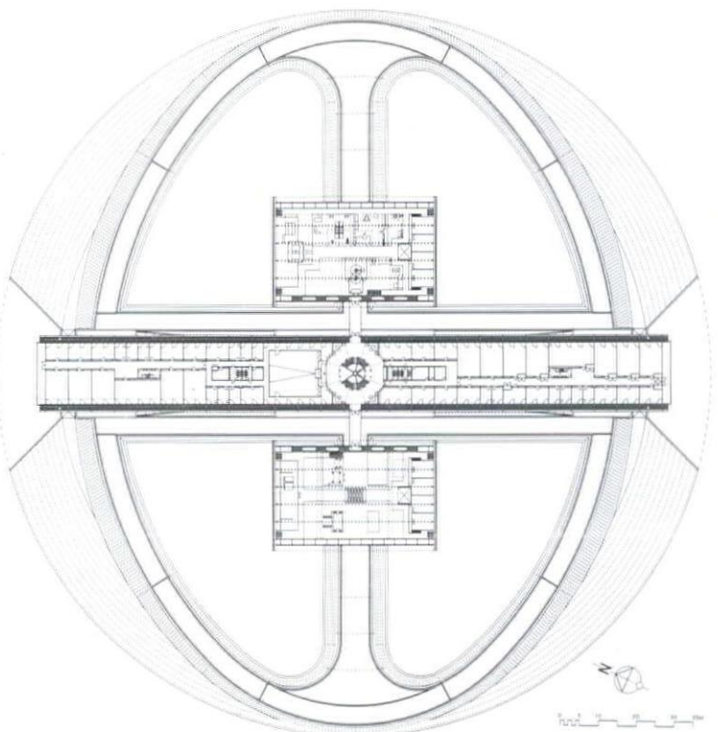
The new project is placed within a circular embankment measuring some 180m in diameter. The banking varies in height up to a maximum of 5m to shield the project while also preserving views to the east and west. The organisation of the area has been based on a radial layout within a sphere to maximise the potential for expansion and minimise average transit distances.

Access to the various parts of the complex is via an entrance hall located in a cylindrical tower at the core of the building. It was, therefore, essential that the outer spaces extend inwards to the centre of the complex. Given this layout, the organisation of the various functions had to be based on two orthogonal axes to permit autonomous growth.

The demands of the brief thus resulted in a simple cross-shaped design built primarily in steel with glass to allow maximum transparency. Within this shape the laboratories have been located on the first floor bridge, 162m long by 19.5m wide, which acts as a cover to the car parking areas. The solution has avoided spoiling the countryside with the sight of parked cars.

This section of the building also contains offices which, when the laboratories expand, will be moved to a 12-storey tower at the complex

OCAS research centre: horizontal projection (below) shows how the demands of the brief have been imaginatively met.



centre. In this area, too, the laboratories are provided above and below with the technical service spaces, 1.5m high and incorporated in the lattice bridge structure. All the laboratory "arteries" converge at the cylindrical core in a clearly stated hierarchical arrangement.

Large testing shops are placed at right angles to the laboratory bridge, and are located on the ground floor. They have been given parabolic roofing – constructed using satin-finish, stainless steel sheet – which allows the workshops a clear span of 42m and a height of 16.5m.

Structural elements are very slender and have been designed with bracing to absorb horizontal loads such as wind. This function is performed by the load-bearing structure of the glazed bays. Ties transmit the wind forces to two glazed gables in the form of tubular steel grids hung from slender terminal arches.

The combined effect of grid and arch enables the latter's section to be reduced to the minimum. Each gable rests on a pair of pivoted columns from which braces transmit the horizontal loads to the foundations. An oval road running along the inner side of the circular embankment provides access to these high basement spaces.

Well-suited configurations

The three morphological elements used – the parabolic arch, the truss girder, and the cylindrical tower, are archetypal steel structures. However, the use of these configurations was particularly well suited to the project.

The use of steel in construction was an essential requirement of the client. The building and bridge structure comprise two main truss girders 19.5m apart which support the entire edifice. The girders measure 6.4m in height. Each girder has a clear span of 60m.

The concrete floor is supported by secondary truss transverse girders with a height of 1.5m placed at every 6m. The entire framework is external to the building and does not therefore need to be protected against fire.

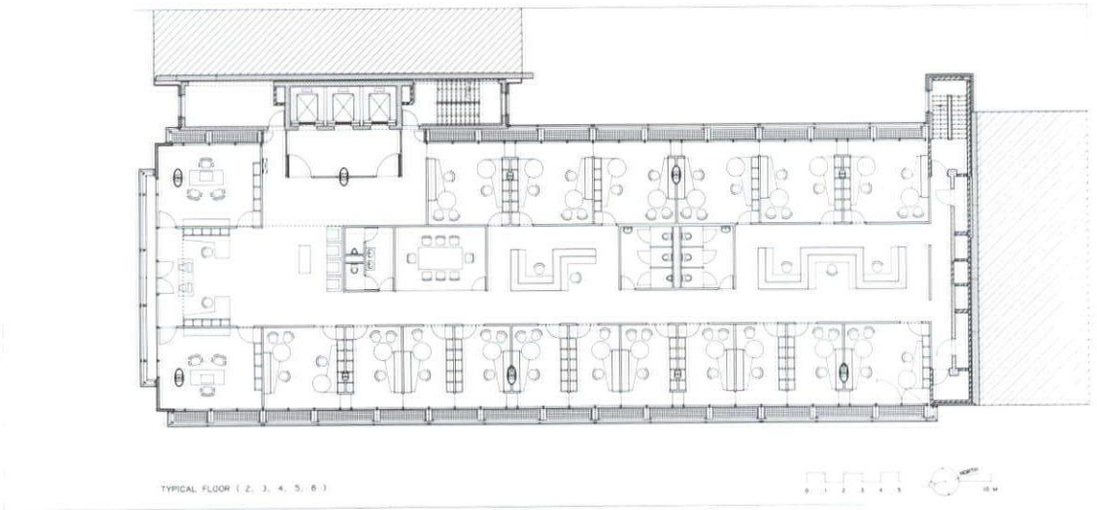
Each main girder rests on two bearings. The external bearing located at the top of the embankment is of the sliding type on stainless steel plates which allow for horizontal movement along the longitudinal axis. The bearing close to the central core involves the use of pin-ended columns some 5.5m in height.

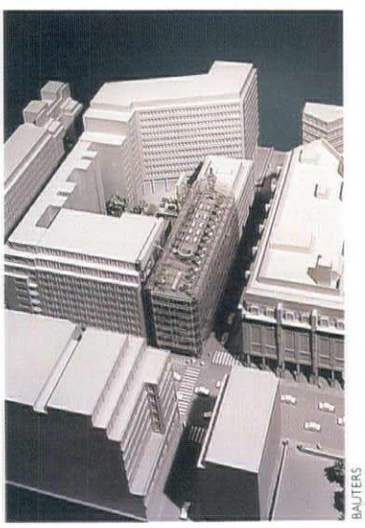
The horizontal forces acting along the longitudinal axis of the building are transmitted to the central concrete core. Transverse stability is assured jointly by the whole of this metal framework, and by the bracing at roof level and at the upper edge of the transverse lattice girders.

Facilitating alterations

The detailed design of the floors and ceilings aims at avoiding the creation of heat bridges, and at facilitating alterations to installations and lightweight partitioning.

The structure of the testing shops consists of 400mm high sections arranged parabolically. Braces in the form of round bars transmit the wind forces to the





Typical floor plan and ariel and ground level model projections for the new Brussimmo headquarters building in Brussels. It is scheduled for completion in January 1993.

gable. The roof structure, from the inside outwards, comprises pre-lacquered, profiled steel sheet which also acts as a vapour barrier, timber planks placed 1.5m apart with a 150mm layer of rock-wool insulation inbetween, a vapour-permeable inner-roof, and an outer roof made of profiled stainless steel sheet.

The glistening steel and glass complex is given additional interest by being mirrored in a surrounding, ornamental, four-segment lake.

Brussimmo office project

The second Belgian project by Samyn & Partners to demonstrate the versatility of steel structures in architecture is the Brussimmo headquarters in Brussels. When Brussimmo first planned to construct a new headquarters in the city's business district, its requirements were for a light and airy yet distinguished structure. The building answering these requirements, currently under construction and due for completion in January 1993, would have been unfeasible without the use of a metal frame.

Tightly woven streets

The site chosen was in a busy, tightly woven network of streets in the Leopold district. The building had to offer the whole range of office accommodation from small individual spaces to full open-plan areas, a quiet and pleasant working environment, underground parking and easily accessible services. The gross above-ground floor area was to be around 6,300 sq m and gross basement area of 2,350 sq m.

The completed design, distinguished by an enormous, glazed vaulted roof and offering clear spans of 10.8m, includes a ground floor with reception area, a first floor with office accommodation, five standard office floors, and a seventh floor, half of which is under the semi-cylindrical vaulting with an air-conditioning and technical services space under the other half. (These services were originally to be placed in the basement, but a high water table prevented sufficiently deep excavation.) The building will be given entirely glazed façades.

The office levels are to be supported by two rows of five columns, and braced by two concrete cores accommodating lifts, emergency staircases and technical conduits.

Cantilever support

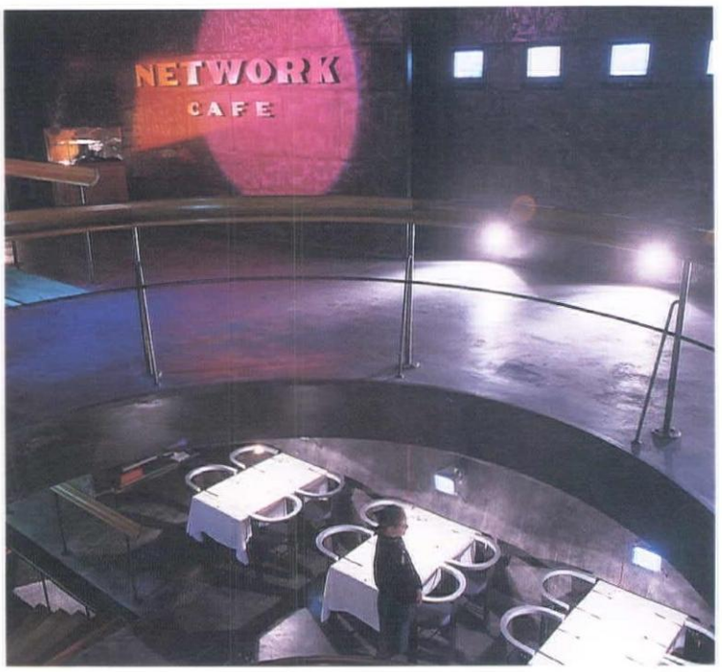
Two girders, resting on each of the groups of five columns, support transverse girders with 2.8m or 3.4m spacing. These transverse girders provide cantilever support for the glazed outer façades. A reinforced concrete floor on precast panels rests on these secondary girders.

The spaces between the main and secondary girders allow the trouble-free installation of all the building's internal equipment.

Fire resistance standards have been observed by using the AF system developed by Arbed. □

CREDITS

	OCAS	BRUSSIMMO
Owner	Brussimmo, Brussels	Brussimmo, Brussels
Architect	Ph.Samyn & Partners, Brussels	Ph. Samyn & Partners, Brussels
Structural Engineer	Sidmar, Ghent	Setesco, Brussels
Steel supplier	Arbed, Luxembourg ALZ, Genk	Arbed, Luxembourg
Fabricator	V Buyck, Eeklo Portal, Brussels	



Barcelona bar culture: (left) Network Cafe designed by Eduard Samso; (below) Velvet Bar, designed by Alfredo Arribas. Part of a "semi-fictional story for the collective psyche".

SPAIN'S SOCIAL SETTINGS

The Barcelona bar interior has become a potent international symbol of Spanish design creativity. Guy Julier explains why and, overleaf, looks at two recent examples of the phenomenon.

The tradition of architects working in all areas of design has a long pedigree in Spain. After all, Gaudi, Puig i Cadalfach, Domènech i Muntaner and fellow exponents of *Modernisme*, Catalonia's regional variant on Art Nouveau, tirelessly worked beyond the fabric of buildings to create fittings, furniture and decoration.

When Barcelona architects such as Correa-Milà, Francisco Barba Corsini, Oriol Bohigas and Josep Martorell were marginalised from large-scale projects in the 1950s as the result of Francoist favouritism for Madrid, they turned their hand to shop interiors, cafés and chic holiday homes on the Costa Brava. And with little in the way of modern furniture and fittings at hand on the local market to grace these interiors, they designed and manufactured their own.

This pattern was repeated at the beginning of the 1980s, when the euphoria of the transition from dictatorship to democracy coincided with an economic recession hanging over from the previous decade. Little construction was underway – the concepts of a Barcelona Olympic Games or a Seville Expo were mere pipedreams. So architects and designers once again found themselves working on a small scale.

On one level many young architects were involved in the small parks, plazas and paving projects, fruit of the so-called "Bohigas years" when Oriol Bohigas was head of urban development for Barcelona's city council. But the nation was also hungry for new codes of self-presentation, so in the first half of the 1980s, clothes, the shops to buy them in and then the bars and clubs

to wear them in were to become radical platforms for design.

Now the bars have superceded the more ephemeral nature of fashion retailing. One architect whose work reflects this pattern is Eduard Samsó, a 1980 graduate who provided Barcelona with two of its most exciting shop interiors, Bis de Bis and Jeanne-Pierre Bua. Samsó played with geometry, scale, texture and images, floating clothes and shoes in space or anywhere one wouldn't normally expect to see them.

Then, in 1985, he designed Nick Havanna, a bar which has a cavernous space, a dense visual text of video screens, urinals as a cascading mirrored waterfall and a single, oblique reference to "Nick Havanna", the cowboy conqueror of the West in the cow-hide bar and saddle-like bar-stools by Barcelona studio Transatlantic. The elements are united by the lighting scheme and the bar remains unchanged and as popular today as it was when it first opened.

Nick Havanna had been preceded by a flurry of smaller bars which fitted into the narrow, deep spaces typical of Barcelona's Ensanche district. These included 33 by Vicente Miranda and Dani Freixa, Snooker by Santiago Roqueta, Oleguer Armengol and Victor Mesalles, and Si-si-si and Bijou by Gabriel Ordeig.

Increasingly ambitious

Samsó, however, opened the way to create increasingly ambitious projects. In the Network Café opened a year later, and undertaken with Alfredo Arribas, the visually epic activity of socialising was transferred to eating. Here a Post-Modern bunker was created echoing futuristic films such as Terry Gilliam's *Brasil* and Ridley Scott's *Blade Runner*.

At the same time, Alfredo Arribas was working on Velvet, conceived as a succulent response to the colder, minimalist settings of earlier bars and informed by David Lynch's film *Blue Velvet*. Arribas' projects subsequently grew both in size and ambition, travelling through his 3,000 square metre discotheque complex, Louie Vega, at Calafell, near Tarragona, to the Barcelona waterfront café El Gambrinus, undertaken with Javier Mariscal.

Arribus' latest project is with Mariscal: the Torres de Avila where £1.5m worth of furnishings nestle in 300 square metres of interior.

Sporadic examples of designer-bars and restaurants may be found in other Spanish cities – each boasts its particular brand of relentless nightlife, especially Madrid and Valencia. But a key to understanding the intense concentration of such spaces in Barcelona is that for many they form a semi-fictional story for the collective psyche.

While they are backdrops for social experience and not purely experiences in themselves, their aficionados may often be heard talking about which bar has just opened and who is running it as if it were a soap opera. Often the interiors might reference each other.

A second, and not unrelated, key to understanding their formation is the fact that Barcelona is still a relatively small place made up of a dense cluster of small enterprises such as studios and workshops.

In this context, teams of individuals ranging from architects and graphic designers to master chefs, are brought together on different projects. Contact between them is established by word of mouth and subsequent communication is kept mostly at an informal level within Barcelona's bar culture. □

Guy Julier is the author of New Spanish Design *(Thames and Hudson, price £18).*

Torres de Avila

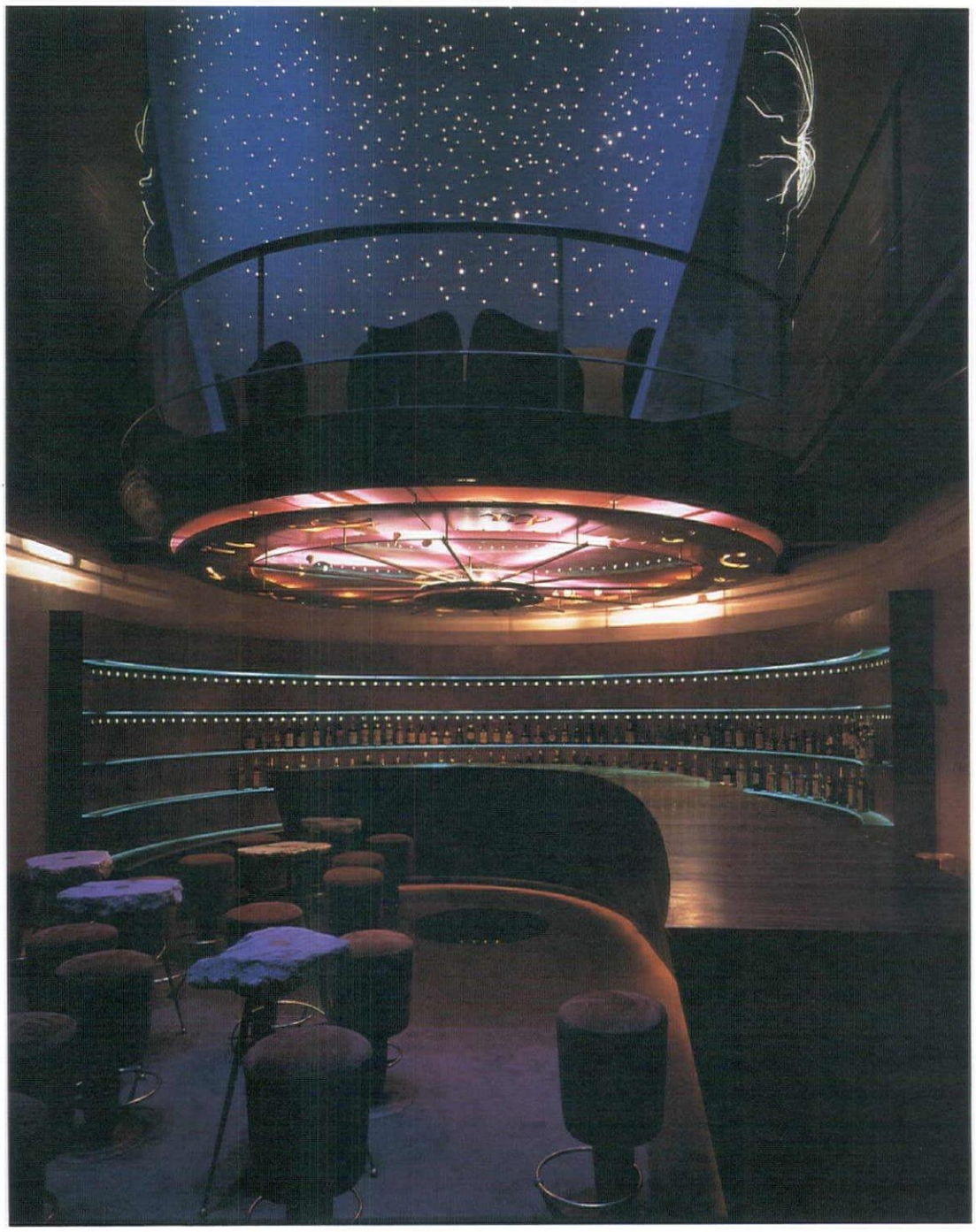
Designers: Alfredo Arribas and Javier Mariscal

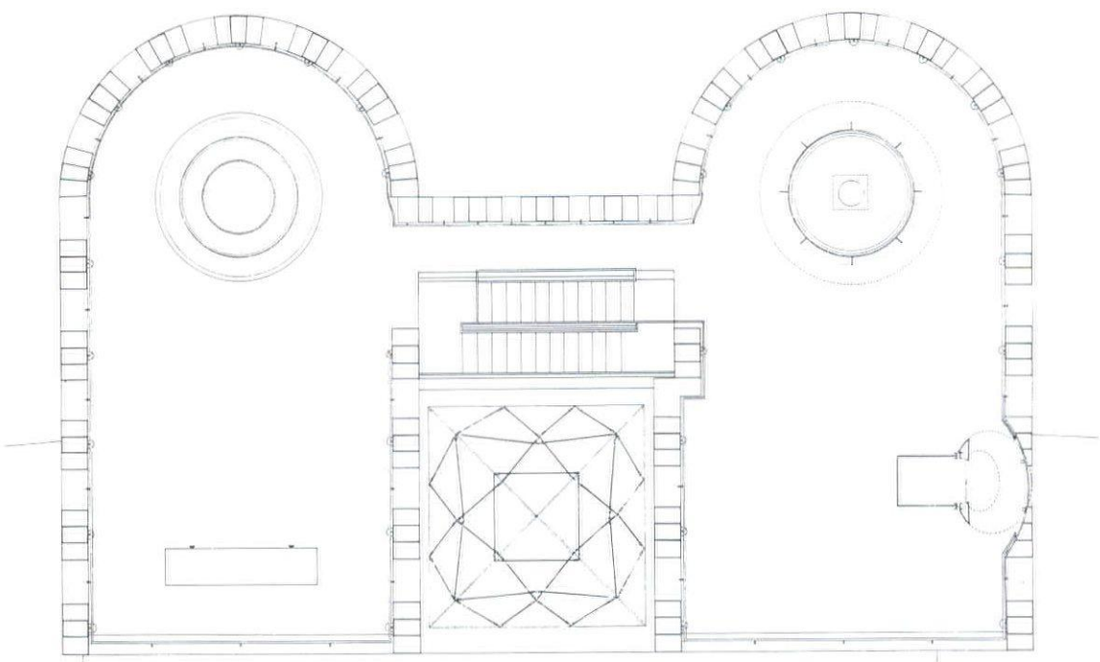
The setting for this nightspot is bizarre: it was originally built as part of the Poble Espanyol, which is above Barcelona on the Montjuic hill close to the 1992 Olympic installations. A forerunner of Disneyworld, this kitsch mock Spanish town was built for the Universal Exhibition of 1929 and reproduced examples of vernacular architecture from all of the Iberian peninsula.

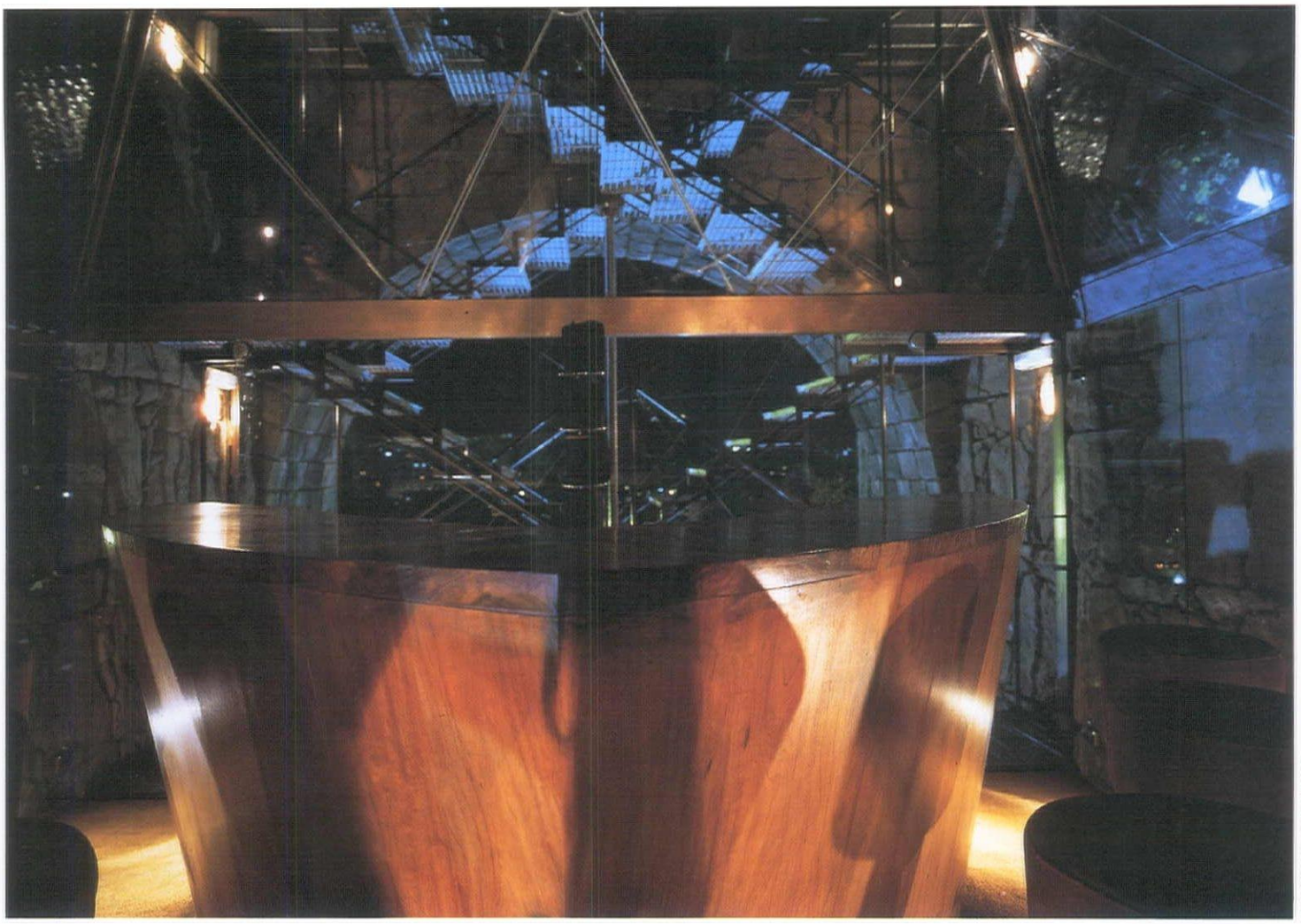
The Torres de Avila consisted of two "medieval" towers linked by a gateway. Their original construction was a precarious 'façade' of reinforced concrete. The project therefore required the forging of a new metallic internal structure which made safe the building and created a link between the towers.

It is the structure which gives the project a geometric unity which clearly expresses Arribas the architect. Interplaying with this scaffold, though, is a dense script of ideas. Thus one tower is laced with symbols of night, the other day. This in turn sets up an intercourse of opposites – moon-sun, feminine-masculine, emptiness-fullness, curved-edge, blurred-contrasted. One tower is thus topped with a dark dome, pierced with Javier Mariscal's own brand of astrological signs; its twin holds a delicate cupola aloft.

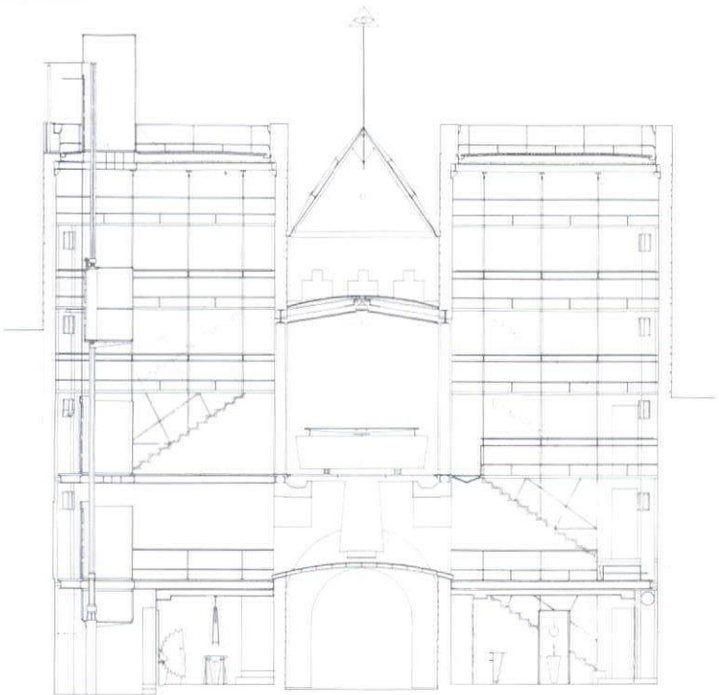
Interior furnishings and fittings include a computer-controlled sound-light system, an elevator, custom-built furniture and Mariscal's inventions of archaeological debris. He is only half-joking when he says that the Torres de Avila has become, "more of a museum than a bar".

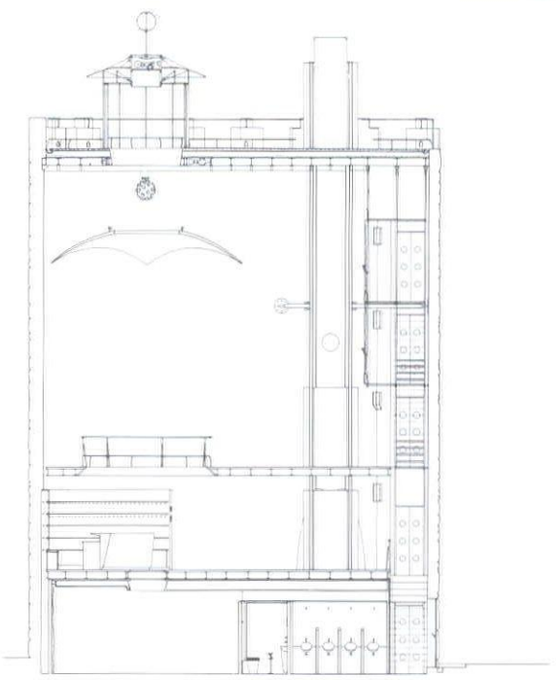






PHOTOGRAPHY BY JORDI SARRA





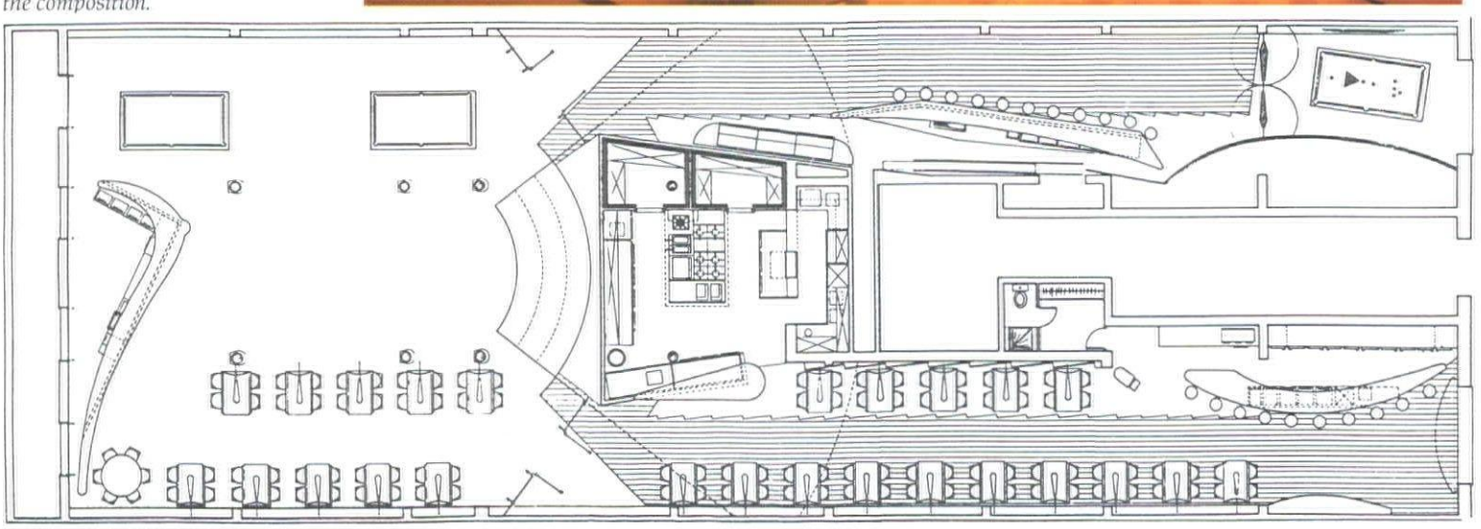
Ticktacktoe

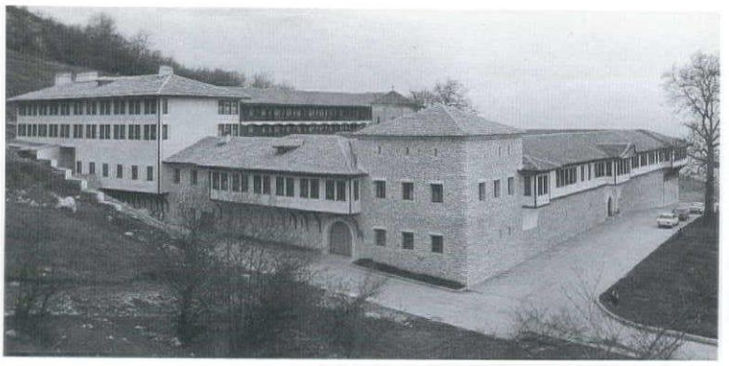
Designers: 'YN Disseny d'Interiors

Husband-and-wife team Manuel Ybargüenboitia and Maria del Mar Nogués are among Barcelona's most energetic interior designers. Since 1984 they have completed more than 50 interior projects ranging from shops to business schools. In the case of Ticktacktoe they were originally taken on to centre an interior around 12 billiards tables. 'YN took a sideways glance at the Network Café to discover that whilst neo-fast-food was served there, at that time there still didn't exist a designer restaurant serving high-quality Catalan cuisine in Barcelona.

As its name suggests – the American for naughts and crosses (called in Spanish, "three in a row") – Ticktacktoe now fulfills three basic functions. In a long rectangular space typical of Barcelona's Ensanche district, a restaurant, a billiards hall and two bars were slotted in, catering for all tastes at all times until three in the morning. Within the former warehouse, the restaurant space is marked out by a row of gigantic conical uplighters. Each table is given intimacy with a copper, aluminium and parchment lamp.

In Ticktacktoe Scheme, there are the suggestions of Modernisme *(in the curvilinear),* Noucentisme *(in the classical) and Modernism (in the minimalism) collide. Changes of pace are thus denoted by details, with the billiards hall forming an axial point to the composition.*





IAA Creativity Centre, Santo Kiriko, Bulgaria: Setting for international seminar on water resources development.

UNIVERSITY AND THE CITY

World Architecture *is the official magazine of the International Academy of Architecture. Here, we begin news and views from the Academy with a report on its involvement in a French design workshop about the relationship between the university and the city.*

An international design workshop on the theme University and the City took place on 9-20 September 1991 in Paris, organised by the International Academy of Architecture, the French section of the International Union of Architects, and the School of Architecture of Paris, under the auspices of UNESCO and various French ministries.

Ninety architects from 32 countries met to exchange views and elaborate ideas about the links between the university and the city to which it belongs. The programme included visits to five satellites of Paris: Evry, Marne-la-Vallee, Saint-Quentin-en-Yvelines, Saint Maur, Saclay and the City of Perpignan, with a view to finding solutions to the integration problems of cities and their universities.

The university plays an exceptionally important role in the intellectual, technological, political and social development of the nation, and is a significant factor in the establishment and development process of the city to which it belongs.

There are historical models for solving spatial and functional connections and interactions between the university and the city. On the threshold of the twenty-first century, Europe, and France in particular, is developing many programmes on new university construction.

The question is how to find new spatial and functional ideas for the university of tomorrow. The cities explored as part of the workshop programme differed vastly in their geographical and historical conditions, and this was the reason for the wide variety of proposals.

The international jury noted the highly professional level of entries, and representatives of the local authorities expressed their gratitude to the young architects and their co-ordinators, stating that their work was a contribution to the future development of this most complicated architectural theme.

The workshop was an international forum for the exchange of ideas by young architects from architectural schools in different parts of the world, and was a valuable opportunity for professional thinking on one of the most complex architectural challenges. Two grand prix were awarded by the IAA and IFYA (International Forum of Young Architects); French ministries and other organisations and authorities gave seven equal mentions.

Housing and maintenance

A IAA-UNCHS (Habitat) exhibition of entries in a design competition for low-cost housing was held at the 13th session of the Commission on Human Settlements in Harare, Zimbabwe, from 29 April-8 May 1991 as a contribution to the international effort to support the Global Strategy for Shelter to the Year 2000. 126 young architects from 26 countries took part and the best proposals won awards.

Experts from Colombia, India, Zimbabwe, Ghana, Singapore and the UK, along with two UN representatives, met on 4-7 June 1991 in Santo Kiriko, Bulgaria for the IAA UNCHS (Habitat) international building maintenance workshop. They discussed key topics and finalised recommendations. The results will be published and distributed worldwide by Habitat.

Water resource seminar

The IAA Creativity Centre, Santo Kiriko, Bulgaria hosted an international seminar on environmental aspects of water resources development on 7-16 October 1991, organised by IAA and the United Nations Department of Technical Co-operation for Development.

The programme centred on six main themes related to water resources and water quality management; environmentally sound development of land and water resources, containment and control of water contamination; environment degradation due to unwise water use; and international co-operation for water resources and environmental protection.

Participants from Bangladesh, Cyprus, Egypt, Gambia, Ghana, Jamaica, Jordan, Poland, Sri Lanka, Syria, Tanzania, Turkey, Uganda, Yugoslavia and Bulgaria exchanged experience on key topics and presented reports.

The programme also included two study tours covering major Bulgarian water resource development projects.

Environmental forum

The IAA has initiated an Ecopolis Forum Programme in support of the objectives of UNCED '92, Rio de Janeiro. The event will include an exhibition of ideas on the Ecopolis city of the future, and is targeted both at established architects and urbanists, as well as a younger generation of professionals who would like to express their ideas for solving the global problems of mankind on environment and development. A round table discussion – Ecopolis Forum of Ideas – is also planned.

Meanwhile an international seminar on architecture, environment and education was held in June in France, attended by 40 participants from various countries. It was organised by IAA, the French Ministry of Foreign Affairs and the French Ministry of National Education, Youth and Sports.

Objectives of the IAA

The International Academy of Architecture was set up in 1987 to stimulate development of architectural theory, criticism and creativity, and to initiate advanced studies of postgraduate qualification training of talented young architects. It is a non-governmental organisation, recognised as an international consultative body by UNESCO.

Its members have been selected from internationally recognised professionals in architecture: 44 of them have the academic rank of IAA Academicians and 38 have the title of IAA Professors.

The Academy engages in a wide range of research, design and training activities.

More about the IAA

If you would like to learn more about the activities of the Academy, please contact: Edith Kraichkova, International Academy of Architecture, 2 Rouski Boulevard. Sofia, Bulgaria. Tel: +2-873863 Fax +2-871313. □

BUNGLING OF THE BUREAUCRATS

Pierre Vago takes an acerbic look at the institutional life of international architecture and finds many of its activities to be wanting.

There has been another session of the UIA Council. Twenty-four of its members and a few guests came from all over the world to meet at Curituba in Brazil, a city some 400 km southwest of São Paulo, whose mayor is the architect Lerner.

The long and detailed minutes of the meeting make disappointing reading. Four pages are dedicated to the usual formal speeches, another ten to finance. Once again, there was a long discussion of that sea-snake of a question, the UIA's relationship to youth: only to conclude that one wasn't getting anywhere.

On the important subject of architectural education, the Council got on with the preparation of a meeting, quite forgetting plans for joint action with the International Academy of Architecture. Directors, assistant directors and co-ordinators were appointed; but one searches in vain for an idea or a plan.

We have already mentioned the appointment of a new person responsible for international competitions. Alas, every month we read in the press about the launch or the results of some international competition, where organisers, jury members and participants have completely ignored the UIA. While the Working Groups recently created or confirmed don't seem active enough, the Council has agreed to create three more, of which one knows very little.

A large part of the meeting was devoted to the Chicago Congress, preparations for which are giving rise to serious anxieties. It was essentially the big financial questions that were debated; nobody seemed particularly worried about problems of content, nor about the role of the UIA in the major event organised by the IAA, combining several conventions together, or about how the Union's "identity" could be safeguarded within this dangerous multiple marriage.

There was serious talk of moving the Congress to China, which reminds one of some very unhappy precedents. It is amazing that this could still be happening four years after the Assembly decided to hold the 1993 Congress in Chicago. And one could go on . . .

A rethink required

These meetings are becoming more and more administrative, which is perhaps inevitable; but they are happening more and more often – and becoming more and more expensive. Yet the problems in which architects are interested, their role, their function, their responsibilities in a world and in a society undergoing profound changes – these are entirely forgotten.

One is bound to ask, like many others: what is the UIA for? But nevertheless . . .

We also have to be honest enough to admit that this year the Sofia Biennale, the main event organised by our Academy, was not as successful as its predecessors. There were many reasons, one of which was certainly the repercussions of the profound internal changes undergone by the host country, another was the world economic situation.

But these are not the only ones, and the Academy's officers need to think seriously about last July's event. There is nothing more dangerous than *routine* at a time when change and innovation are necessary, a search for new thought and new creativity, for architectural quality, for a new architectural contribution to social and technological evolution.

In active collaboration with all its members, the International Academy of Architecture has an important role to play, greater today than yesterday, and tomorrow greater still.

Critics criticised

A traditional highlight of big events like the Biennale and the UIA Congress is the contribution of the CICA (Comité Internationale de la Critique Architecturale). We have been used to packed halls, to enthralling and passionate debates on interesting topics.

At Sofia, the theme was topical enough (Architecture and Democracy), but it wasn't really dealt with. Very few critics were present, the lack of preparation was inexcusable. The audience too was thin on the ground and rather amorphous.

The CICA needs to pull itself together. It has a very important role, at least it ought to have one, a mission to fulfil. It should realise this, and take the necessary action.

Rejuvenating the young

The Young Architects too should engage in self-examination. The honorary Presidents, the honorary Members they have appointed, even if still young in spirit, are all now too old to intervene actively in a movement created *by* the under-40s *for* the under-40s. Eight years have passed since then. One by one, the officers pass the fatal line. Rejuvenation is necessary.

The Young Architects' Forum has no *raison d'être* and no role to play if it doesn't remain faithful to its origins. We, the older ones, should do nothing more than encourage, help and respect these active, enthusiastic and dedicated young people – while waiting for them to take our place. □

IN THE NEXT ISSUE OF

WORLD
ARCHITECTURE

Japanese Special Issue

Fumihiko Maki
Major profile of Japan's leading modern architect

The Transparent City
Architectural ideas from Tokyo's avant garde

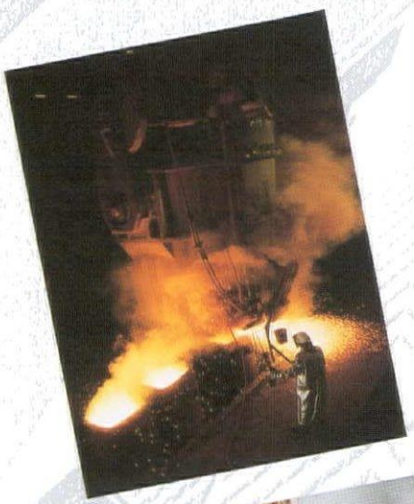
Shizu Harada
The award-winning Forte centre at Hamamatsu

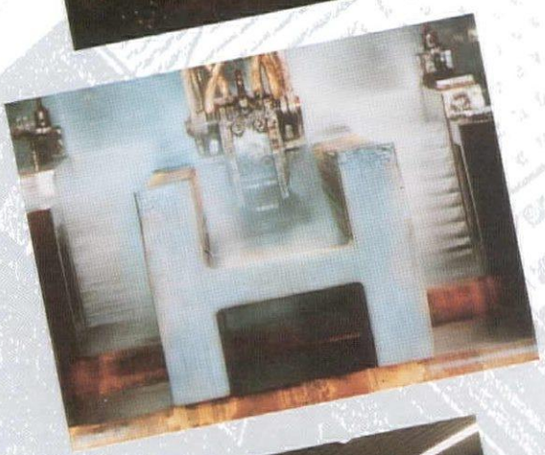
David Chipperfield
Adventures of a European architect in Japan

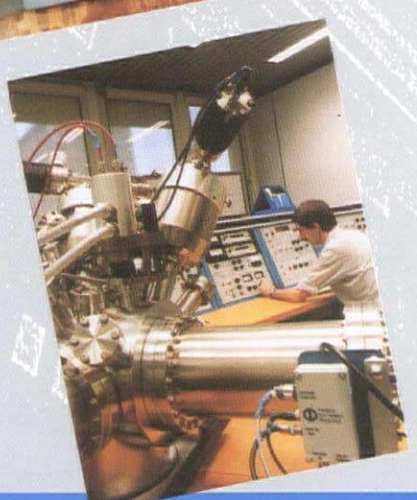
Plus: all our regular features on technical issues, interior design, young architects, products and polemics.

Due out February-March 1992

High Style Steel







Steel is a unique building material which offers a remarkable combination of aesthetic and structural advantages. Notably in the use of rolled steel beams for multi-storey buildings:

- rolled steel beams allow large open spans, with no obstructing pillars
- rolled steel beams permit prefabrication, employing standard elements
- rolled steel beams facilitate logical construction programmes, using fast erection methods
- rolled steel beams give flexibility for easy site adaption in the future
- rolled steel beams encourage innovative design techniques, yet fully meet all current fire regulations

To specify or design with the finest quality and widest choice of hot-rolled sections, contact your partner in steel – Europrofil, the new joint sales organisation of ARBED and UNIMETAL.

EUROPROFIL

EUROPROFIL S.A. 3-7 rue Schiller
L-2930 Luxembourg

Telephone: **49 763-1**
Facsimile: **48 00 17**

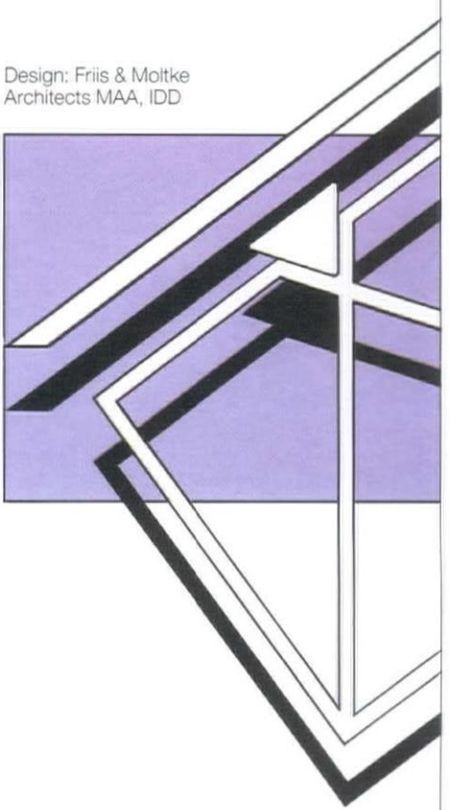
The series of office furnitures comprises desks, terminal tables, side tables, pedestals, cabinets and shelving systems. Please refer to our material sheets for steelframe colours and wooden parts.

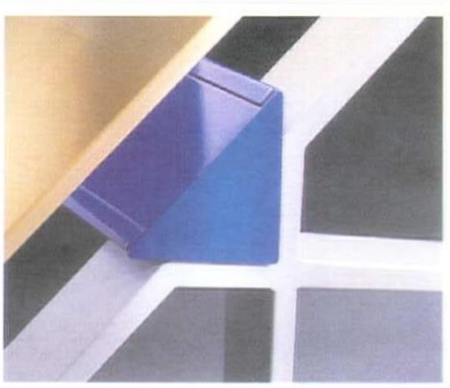
A triangular profile both serving for wire management and support is the "nerve" in the system of office furniture. All parts are supported by or carried in the triangular "artery". The table tops are supported by two "arms" mounted on the triangular profile, into which a lifting/lowering/tilting mechanism can be incorporated. The "legs" of the system are formed by the triangular profile traversing either a table end or a column.

By changing of materials, colours and top sizes the same table can be modified from the simple work station to the elegant executive office.

Please ask for further information and leaflets by phone or letter.

Design: Friis & Moltke
Architects MAA, IDD





Jørn Moesgård, Århus

RANDERS

R. Randers A/S
Aarhusvej 52 · DK-8300 Odder
Telefon 86 54 07 66
Tel. +45 86 54 07 66
Telex 60378 ranod dk
Telefax +45 86 54 15 28

• HOSPITALS • HOTELS • OFFICES • THEATRES •

• CINEMAS • EXHIBITION CENTRES • BANKS • DESIGN STUDIOS • SHOPS

• SHOWROOMS • FOYERS • MUSEUMS • AIRPORTS • LIVING ROOMS

THE FRUITS OF PARTNERSHIP

Design, colour, ambience – all vital elements for success in the different sectors of interior decor. Hotels, restaurants and bars, boutiques and department stores, homes and offices all have one thing in common: the carpets play a crucial role in creating the right impression.

Whatever the designer wants – luxuriously elegant, richly traditional or strikingly bold and patterned – the right choice will be found from the many collections made from Timbrelle and Tactesse, ICI's premier polyamide carpet fibres.

ICI TACTESSE CARPET FIBRES

ICI Timbrelle CARPET FIBRES

And in each of these demanding markets, performance is equally important. Working closely with its manufacturing partners, ICI ensures that carpets bearing its brands meet the most stringent technical specifications.

The result? 'Emotion + Ratio' – ICI's international concept for achieving the perfect balance between performance and aesthetics.

Carpets in Timbrelle and Tactesse mean good looks that last.

ICI Fibres, Hornbeam Park, Hookstone Road, Harrogate, N Yorks HG2 8QN Tel: 0423 722000

Timbrelle & Tactesse are trademarks of ICI

• BUSINESS CENTRES • RESTAURANTS • CLUBS •

The choice of both natural and synthetic floorcoverings has never been greater for architects. Wendy Smith introduces World Architecture's Flooring Product Update with a look at materials and styles back in favour.

FLOORING

Designer flooring: TOP porcelain stoneware from Cooperativa Ceramica D'Imola.

A STEP AHEAD

Throughout architectural history, flooring has been used to signify the prevailing architectural ideas of the time, whether functional or decorative, austere or exotic.

In any contemporary design scheme, the choice of flooring will be a major design decision, determining tone, atmosphere and visual statement. As it forms one sixth of the surface of any room, the floor literally becomes the base of the interior.

The modern floorcoverings market offers a vast range of materials, both natural and synthetic, to appeal to the architect's sense of the aesthetic and the functional. In line with the current renaissance of a more rustic and traditional Arts and Crafts finish, natural coverings such as stone, marble, slate and ceramic tiles are once more back in vogue.

Stylish statement

In offices, wood has been prevalent in the past and there is much to be said for the stylish statement of hardwood floors. With greatly improved technology, the carpet has gained ground. But stone, which is both practical and aesthetic, will last as long as the building itself.

Traditionally, stone buildings and floors would have been made from the nearest available suitable stone. Thus, local architecture would have been a visual expression of the local geology. But with ease of transportation, specifiers now have a wide international choice: slates, for instance, from China, Spain and Britain (Delabole in Cornwall); granite from Africa, Scandinavia and India.

When architects are not constrained on budget, the favourite stone will still be the classical favourite – marble. Easy to clean and hardwearing, marble imbues an entrance foyer or reception area with grandeur and status. It adds luxury and timelessness to bathrooms – and it is refurbishable, a point not lost on hoteliers.

But genuine-article marbles face a competitor: the conglomerate, often specified where the splendour and grandeur is still required for an interior without breaking the bank. The conglomerate will find favour and a foothold on the floor of shopping malls and hotel interiors where the same look will not necessarily be required in the year 2000.

Dramatic revival

However, best comeback for a floor covering must be linoleum. Considered as a great industrial success story in the mid-nineteenth century, linoleum fell from favour by the 1950s with the arrival of PVC floorings.

The demise of the product was predicted by the end of the 1970s, but in the eco-conscious 1980s, linoleum's natural and renewable qualities found a new and enthusiastic marketplace among specifiers keen to discover a realistic green alternative.

Realising the potential of linoleum, manufactures hastily revamped their offerings by introducing more modern colour ranges and developing seam-welding techniques desired by architects. The new, bolder and more dramatic colours made the revamped linoleum product particularly popular in the Scandinavian countries where specifiers were moving away from carpeting in public areas on health grounds. And, due to the discovery of laser cutting techniques, many interiors now feature dramatic and artistic linoleum floors.

Reinforcing a theme

Apart from discovering a floor or floorcovering that will be sympathetic to a building's architectural theme, or reinforce an aesthetic statement, there are other intrinsic factors that govern the final choice of material.

The approach to the working and leisure environment, for instance, has undergone rapid changes as the European population has shifted from a manufacturing-based economy to a more service-based one.

Technology has introduced the thorny issue of how to cover the raised floor in the office – a problem solved by an important flooring development, the carpet tile. Despite the plethora of choice in the contract flooring market, carpets are far and away top of the pile. Carpets account for 87 per cent of the £1.4 billion British flooring market alone, according to a survey by Mel Ziziros.

Superior tile range

Gone are the hairy, coarse tiles of the 1970s with a built-in resistance to staying flat or stuck to the surface. In has come a superior range of tiles in exotic colours (with vastly improved backing structure) which many designers would agree are difficult to tell apart from broadloom.

The flexibility of carpet tiles means that they can be moved around to access cabling and save on localised wear and tear, and laid to denote walkways. Borders can also be added to give a more dramatic effect to an otherwise plain design.

Carpet tiles shapes can be cut into the main body of a carpet to allow designers to effectively mix and match tile qualities.

Geography naturally plays a part in the specifying of floor coverings. Ceramic tiles and marbles will always be popular in Greece, Italy and Spain, for instance, where the requirements are for a cooling influence on an interior. Northern Europe has a different approach to sensibility and style in floorcoverings, particularly when considering the long winter months.

One thing is clear: floorcovering choice is now very much a part of architectural decision-making. The ranges featured on the following pages of *World Architecture's* Product Update show how much choice architects have. □

SURFACE VALUES

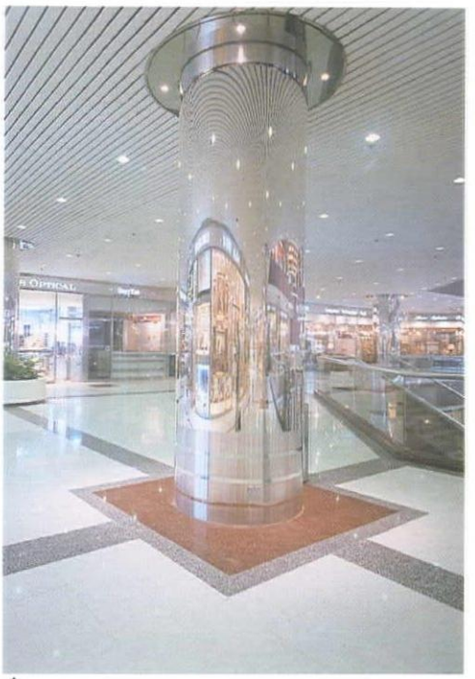
International product development in flooring for architects.

1 and 2
Las Vegas (1) and California (2) ceramic tile ranges from Philkeram Johnson, PO Box 10213-54110, Thessalonili, Greece. Tel: 031 471 702 or 473 702.

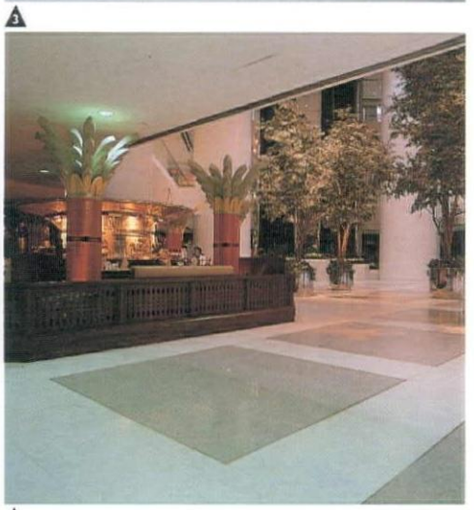
3 and 4
Petra, a flooring product with the look of granite, has been widely used in two major Hong Kong locations: the New World Shopping Complex (3) and the Pacific Place Plaza (4). Petra is an agglomerate marble - a less expensive alternative to natural marble. Available from Rover, Strada Dell Giara 23, 37030 Poiano, Verona, Italy. Tel: 045 526 322.

5
Boldy geometric Triad ceramic tiles from the American Olean Tile Company were specified for the Landmark Center, Monterey Park, California by architects Design Force. American Olean Tile Company, 1000 Cannon Avenue, Lansdale, PA 19446-0271 USA. Tel: (215) 855 1111.

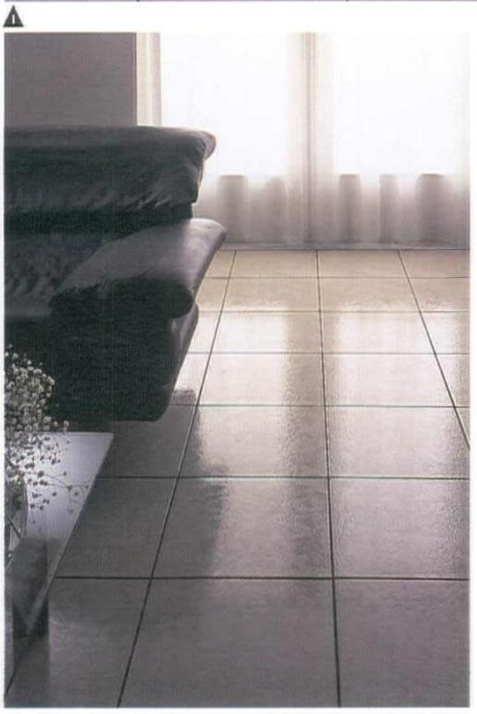
1



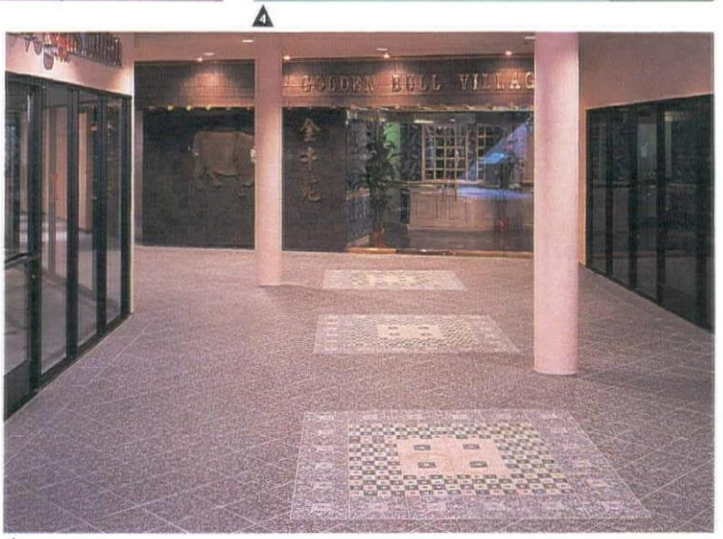
3



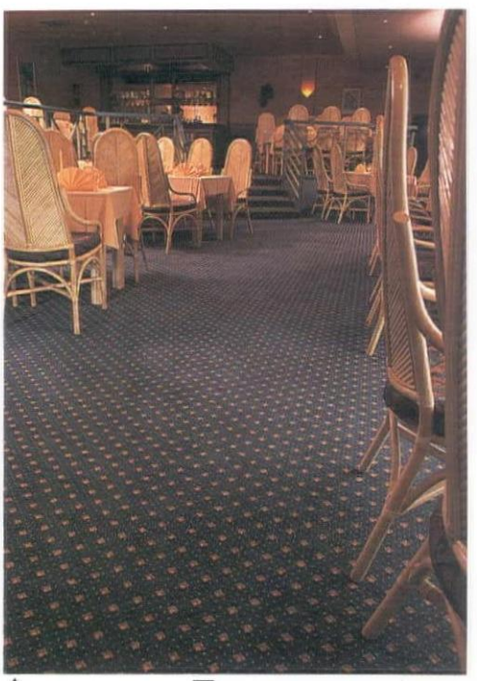
4



2



5



6 and 7
Natura Liberty tiles from Florida Tile, specified for Hyatt House, Winston Salem (6) and the North Eastern Ohio water treatment plant, Cleveland, Ohio (7). Florida Tile, PO Box 447, Lakeland, FL 33802, USA. Tel: 813 687 8647.

8
The Park Suite of Kilmarnock Football Club in Scotland has a Liberty Contract Axminster broadloom carpet from BMK, Kilmarnock, Scotland KA1 1SX. Tel: 0563 21100.

9
Caberfloor is a moisture-resistant chipboard flooring which is easily removed to leave a smooth, clean, non-stick surface. It is manufactured by Caberboard and is available from leading UK distributors.

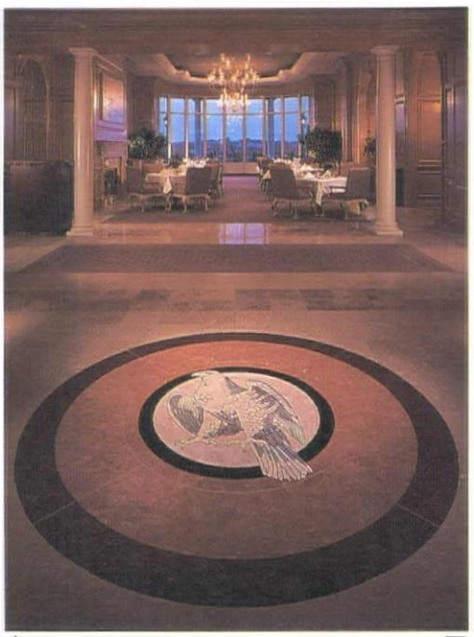
1 and 2
Gail Keraplus (1) is a ceramic flooring suitable for high-traffic commercial and residential interiors. Technoplate flooring (2) combines durability with high aesthetic quality. Both ranges are available from Gail AG, Architektur-Keramik, Erdkauter Weg 40-50, D 6300 Glessen 1, Germany. Tel: 0641 7 03-0.

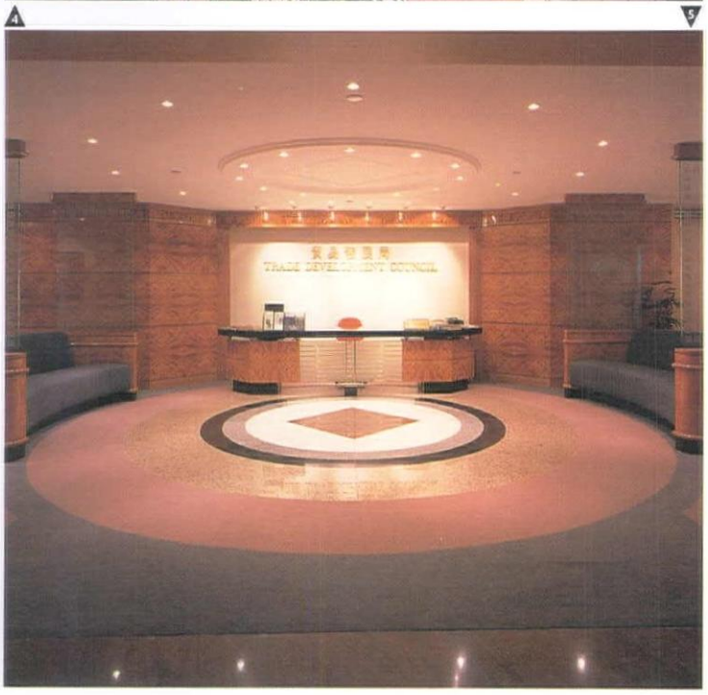
3
Lonplate is an all-vinyl sheet flooring suitable for high traffic areas in shops and restaurants. It is slip-resistant and easy to clean. Available in four colours featuring the classic industrial diamond pattern. From Lonseal Inc, 928 East 238th Street, Carson, CA 90745, USA. Tel: (310) 832-7111.

1

2

3





4
Porcelain tiles from Crossville Ceramics specified for durability and easy maintenance at Westminster Shopping Mall, California. Crossville Ceramics, PO Box 1168, Crossville, Tennessee 38557 USA.
Tel: (615) 546 7661.

5
Tecsom 4100 carpet tiles from Sommer were supplied to the Hong Kong Trade Development Council. Sommer Asia Pacific, 10/F Easey Commercial Building, 253-261 Hennessey Road, Hong Kong. Tel: 573 8716.

6
Lodestar 'statements in stone' make use of the centuries-old art of Byzantine and Florentine mosaic in a composite technique. A wide range of surfacing materials are used. Designs vary from restrained geometrics to ornate florals and stylised Art Deco depending on the setting. Lodestar 231 East 58th Street, New York, NY 10022 USA.
Tel: 212-755 1818.

7
Delabole Slate has a worldwide reputation for durability in high traffic areas. It has been used in flooring since the sixteenth century. Delabole Slate, Pengelley Road, Delabole, Cornwall, PL33 9AZ, UK.
Tel: 0840 212242.

8
Hartco Pattern-Plus is a quality hardwood flooring which can be adapted to suit any interior. Available from Hartco, Box 1001, Onelda, TN 37841, USA.
Tel: 615569 8526.

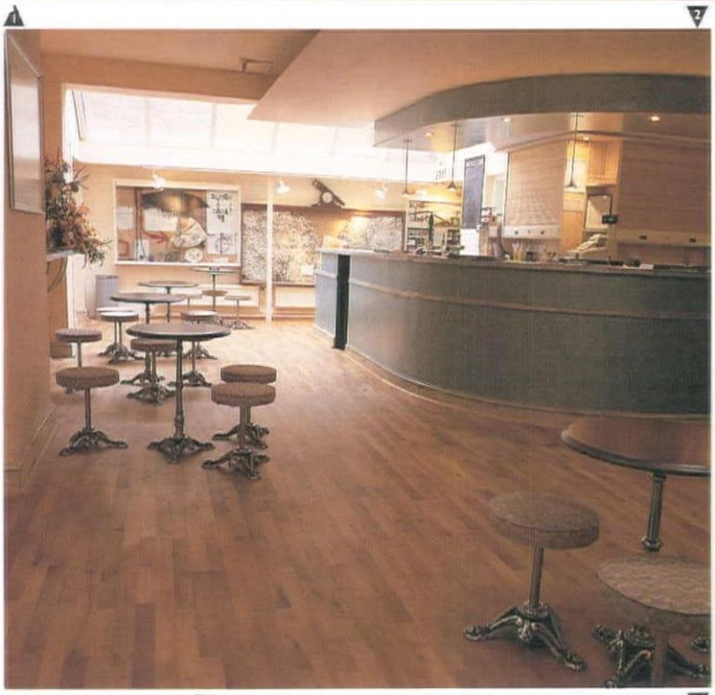
9
Solitude carpeting available from Pacific Crest Carpet Mills 31 Columbia, Aliso Viejo, California, 92656-51508, USA.
Tel: 714 831 7955.

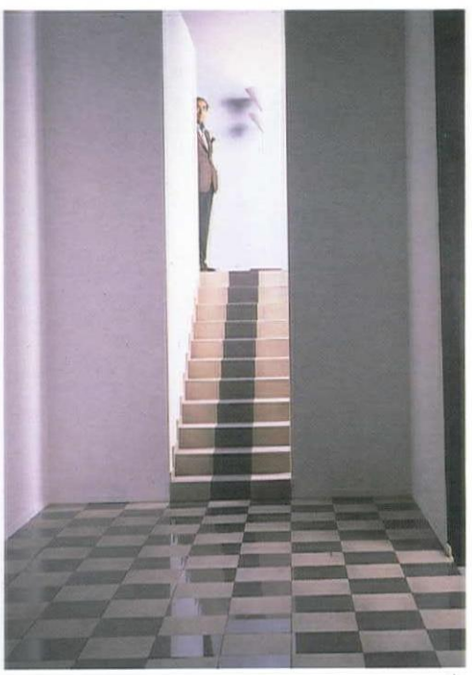
1 and 2
Junckers hardwood flooring specified for the Birmingham International Convention Centre (1) and the Tricycle Theatre in London (2). Junckers, Wheaton Court Commercial Centre, Wheaton Road, Witham, Essex CM8 3UJ, UK. Tel: 0376 517 512.

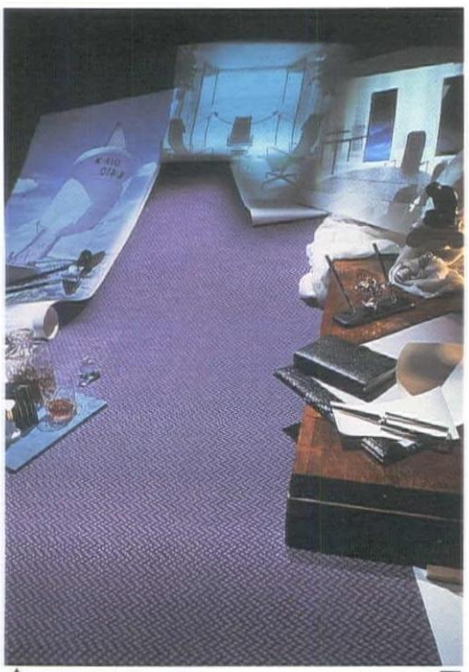
3
Entrance matting featuring company logos has been introduced by Nuway Manufacturing Co, Halesfield 19, Telford, Shropshire TF7 4QT. UK. Tel: 0952-680400.

4
Porcelanatto is a range of Spanish dust-pressed ceramic floor tiles. Available in 12 colours and three finishes – unpolished, polished and riven – from Dennis Ruabon Limited, Hayfod Tileries, Ruabon, Wrexham, Clwyd LL14 6ET, UK. Tel: 0978 8422 83.

5
TOP porcelain stoneware flooring from Cooperativa Ceramica, D'Imola, as interpreted by leading Italian architect and designer Vico Magistretti. Cooperativa Ceramica D'Imola, Via Vittoria Veneto 13-40026 Imola, Italy. Tel: 0542 31500.

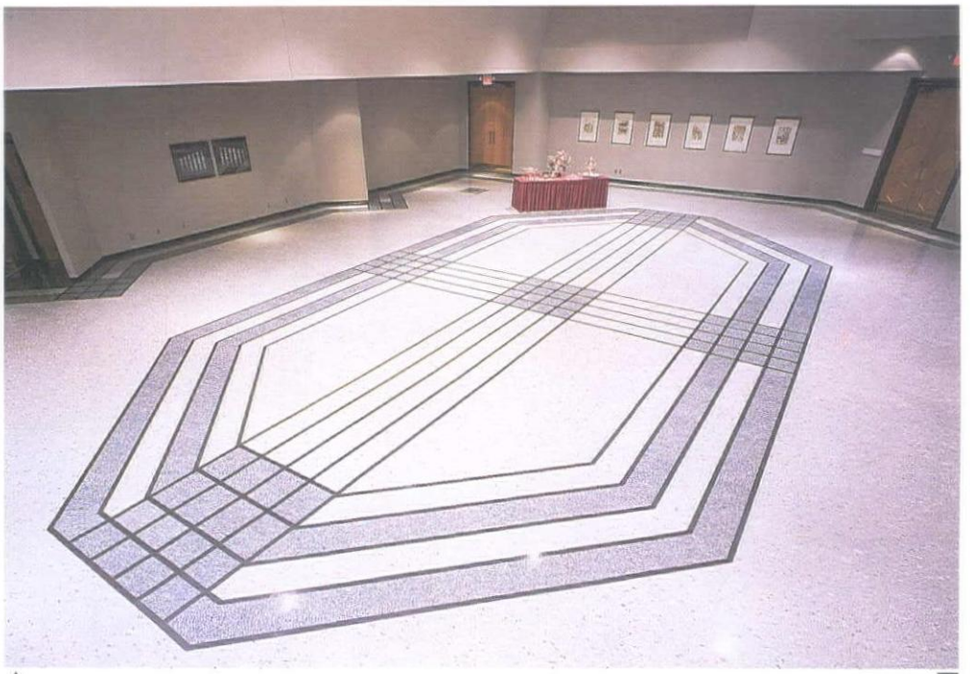






6

7



8

9

6
An image of the 'prestige' segment of the office carpet market as visualised by the colour and styling service of ICI Fibres. ICI's Carpet Vision aims to inform architects about new trends. ICI Fibres, Hornbeam Park, Hookstone Road, Harrogate, North Yorkshire HG2 8QN, UK. Tel: 0423 722 000.

7
Applani ceramic floor tiles from ICR Industrie Ceramiche Riunite spa, Via Pordenone 13, 31046 Oderzo (Treviso) Italy. Tel: 0422 717616-716236.

8
Azrock Vinyl Composition Tile flooring was specified for the Agudas Achim Synagogue in Austin, Texas. Architects on the project were the Austin Group. Azrock Industries Inc, PO Box 696060, San Antonio, Texas 78269, USA. Tel: 512 558 6400.

9
Flame-textured Kirkstone flooring and treads in the Brooks Shopping Centre, Winchester, designed by Building Design Partnership. Kirkstone is a versatile architectural stone, volcanic in origin. Available from Kirkstone Quarries, Skelwith Bridge, Ambleside, Cumbria LA22 9NN, UK. Tel: 05394 332 96.

1 and 2
Tecsom 4100 carpet flooring from Sommer, shown in two French Installations. Sommer, 29 Avenue des Champs-Pierreux, 92022 Nanter Cedex, France.
Tel: 146404249.

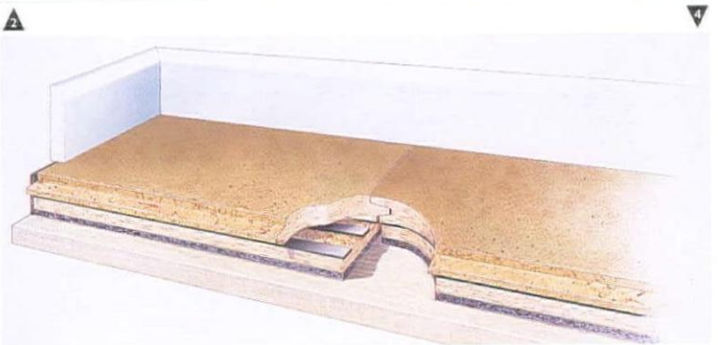
3
Palazzo concrete slab flooring available from Partec Concrete PB, 62 00501 Helsinki, Finland.
Tel: 358 0 39441.

4
Reduc acoustic flooring has been scientifically designed to dampen and insulate interiors against impact and airbourne noise transmission. There are three types of flooring in the range. Shown here: Reduc Foundation, which can be used as a floor deck onto the joists or as an overlay onto solid screed. Reduc acoustic flooring is available from Ecomax Acoustics Ltd, Gomm Road, High Wycombe, Bucks HP13 7DJ, UK.
Tel: 0494 436 345.

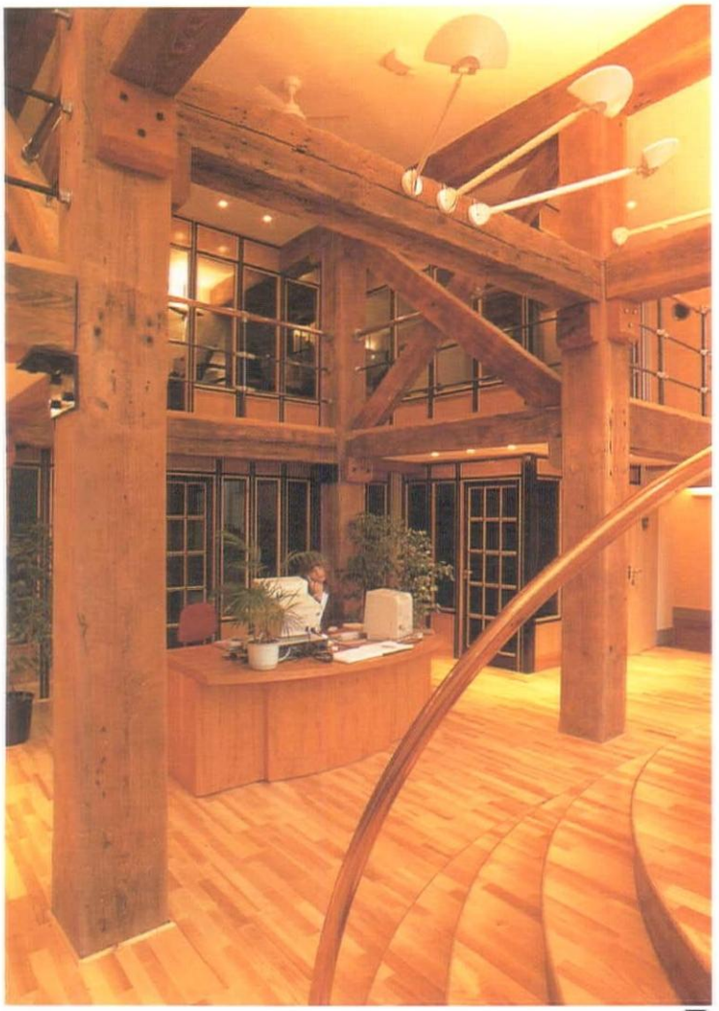
5
The Marquis carpet range, a heavy duty Axminster from Brintons Ltd, PO Box 16, Kidderminster, Worcestershire, DY10 1AG, UK.
Tel: 0562 820000.

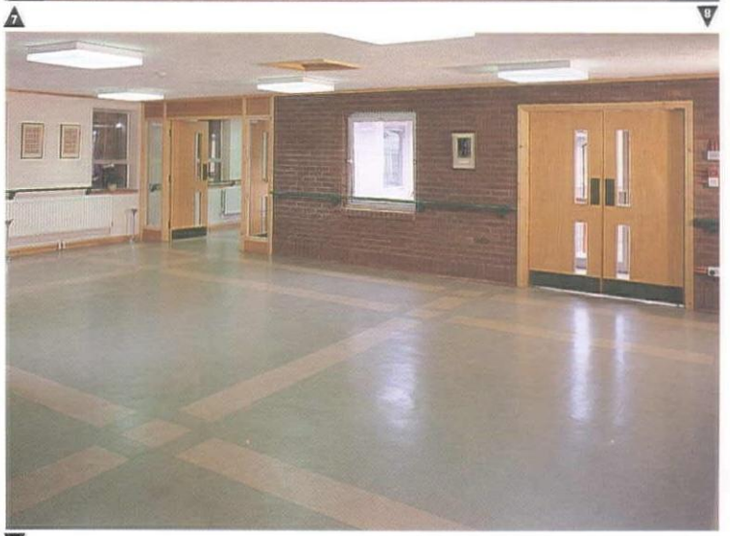
1 3

2 4



5





6 and 7
Tarkett Ash hardwood flooring was specified by architects Freeman Leslie for a refurbishment scheme for computer company Cullhaven (6). Tarkett Eminent vinyl flooring was specified by designers Michael Birney and Bruce Kernick for the reception area at Epsom General hospital (7), Tarkett Ltd, Poyle House, Blackthorne, Colnbrook, Slough SL3 042, UK.
Tel: 0753 684533.

8
Environment-friendly Umbro linoleum from Sommer UK, installed at the Erskine Hospital, Strathclyde, Sommer UK, Berry Hill Industrial Estate, Droitwich, Worc, WR9 9AB, UK.
Tel: 0905 795004.

9
Wilton Royal Contract Carpet using Zeftron 500 nylon fibres manufactured by BASF Fibres Division, Willow Court, 34 Thornaston Lane, Leicester LE5 0TE, UK.
Tel: 0533 461060.

10
Phoenix is the name chosen by the International Wool Secretariat for its 1992 colour forecast for interior textiles. For more information contact the IWS Development Centre, Valley Drive, Ilkley, West Yorkshire LS29 8PB, UK.
Tel: 0943 601555.

WORLD ARCHITECTURE

ADVERTISERS INDEX

Reader Reply No	Advertiser	Page No
1	ASW Construction Systems Ltd	6
2	Bruder Eckelt & Co Glastechnik GmbH	13
3	Canobbio Spa	25
4	Circle Redmont	IBC
5	Clyde Canvas	10
6	Delabole Slate	24
7	Europrofil S.A.	80
8	F.R. UK Ltd	18
9	Fischer Glass Construction Ltd	8
10	Focchi Spa	16 & 17
11	Friedrich Grohe GmbH	5
12	Hallmo SRL	19
13	Hoechst AG	2 & 3
14	Hydro Aluminium Systems UK Ltd	14
15	ICI Fibres	8
16	Kemper Systems	20 & 2
17	Koller UK Ltd	2
18	Metallkommerz Srl	
19	O & K Rolltreppen GmbH	IF
20	Pillar Naco Industries Europe Srl	OB
21	Pohl, Christian, GmbH	2
22	R. Randers A/S	8
23	S.I.V. Spa	2
24	Schott Glaswerke	1
25	TKT GmbH	1
26	VCR International Srl	
27	Vitral International A/S	1
28	Zarges	