

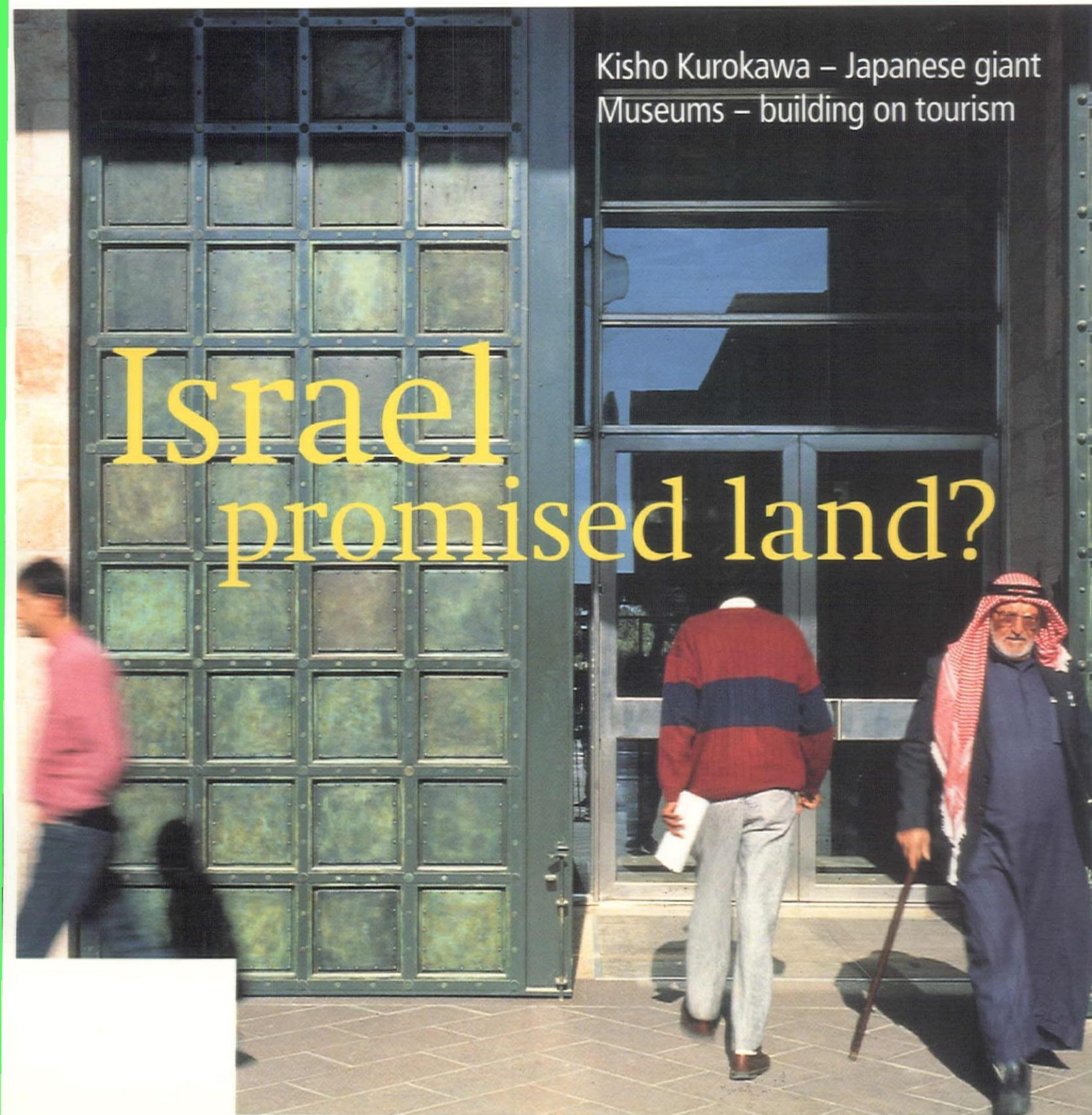
# WORLD ARCHITECTURE

The business magazine for the global architect

Issue number 55 | April 1997 | US \$18.00 | UK £12.00

Kisho Kurokawa – Japanese giant  
Museums – building on tourism

Israel  
promised land?



Moshe Safdie on making his name at home and abroad | Jerusalem's new City Hall | Meier's Broadcast Museum



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## Cover

Detail of the entrance to Jerusalem City Hall, Israel, by A J Diamond, Donald Schmitt and Company.

# 2

## Regulars

- 2 Free Print Offer** Subscribe to *World Architecture* and get a free print from View, London's newest architectural photographic agency.
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## Business

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- 32 Events** Global events, previews and reviews.

# 34

## Country Focus

### 34 Israel

Despite suffering a "mini-recession" Israel, and its construction industry, are in good health economically. *World Architecture* reports from Tel Aviv on opportunities for international architects.

### 50 Coming home

Moshe Safdie made his name overseas, in Canada and the US, before returning home to Israel where he now has several major projects under construction and on the drawing board. He talks to Nancy Levinson.

### 52 Project reviews

Including an in-depth report on Jerusalem's new City Hall Complex by A J Diamond, Donald Schmitt and Company. Plus reviews of Rechter Architects' Faculty of Law at Rishon Le Zion; Chyutin Architects' Esslingen House community cultural centre and youth hostel in Tel Aviv; extension to Jerusalem's Science Museum by Hillel Schocken and Ari Avrahami, and a private house at Ramat-Hasharon by Yoav Messer.

# 64

## Profile

### 64 Kisho Kurokawa architect + associates

Founder of trends and winner of awards *World Architecture* reviews the life's work of a twentieth-century architectural legend. Throughout a career spanning 30 years Kisho Kurokawa has retained his singular vision, combining architecture with Buddhist beliefs and an approach based on philosophy.

# 104

## Special Report – Museums

### 104 Positive exhibitionism

Together with the global increase in tourism, a general increase in accessible education has created a substantial market for museums. *World Architecture* focuses on this enigmatic architectural type and uncovers some surprising results about the ratio of private to public funding for architects queuing for a ticket.

# 130

## Products

### 130 Floored genius

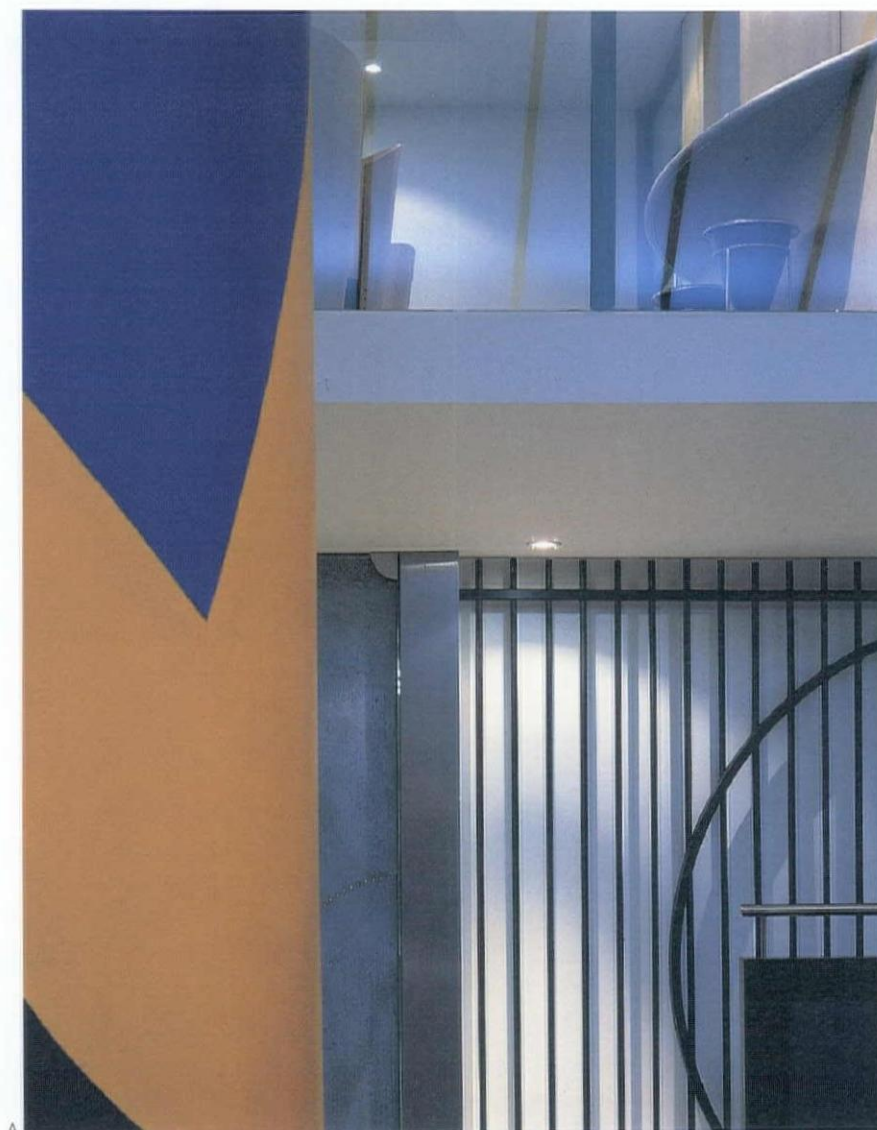
Kelly Shannon and Katherine MacInnes throw new light on the range of materials available for all types of flooring – from industrial and retail usage, to museums and housing. Stone, tiles, wood, bamboo, cork and synthetic finishes are profiled.



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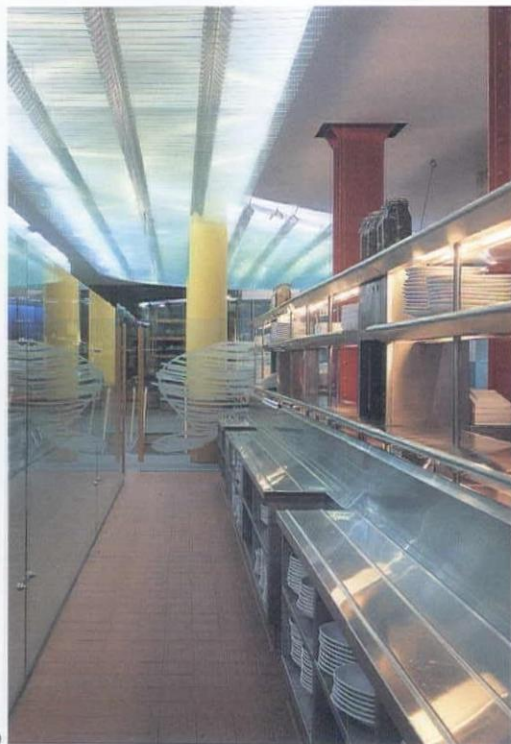




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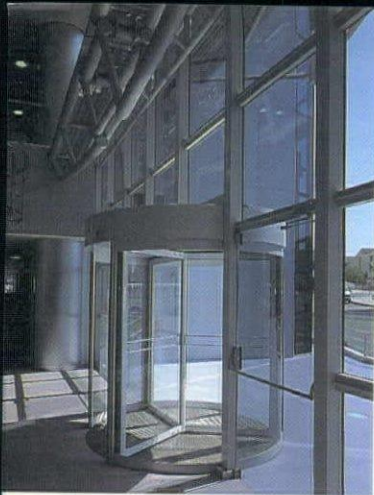
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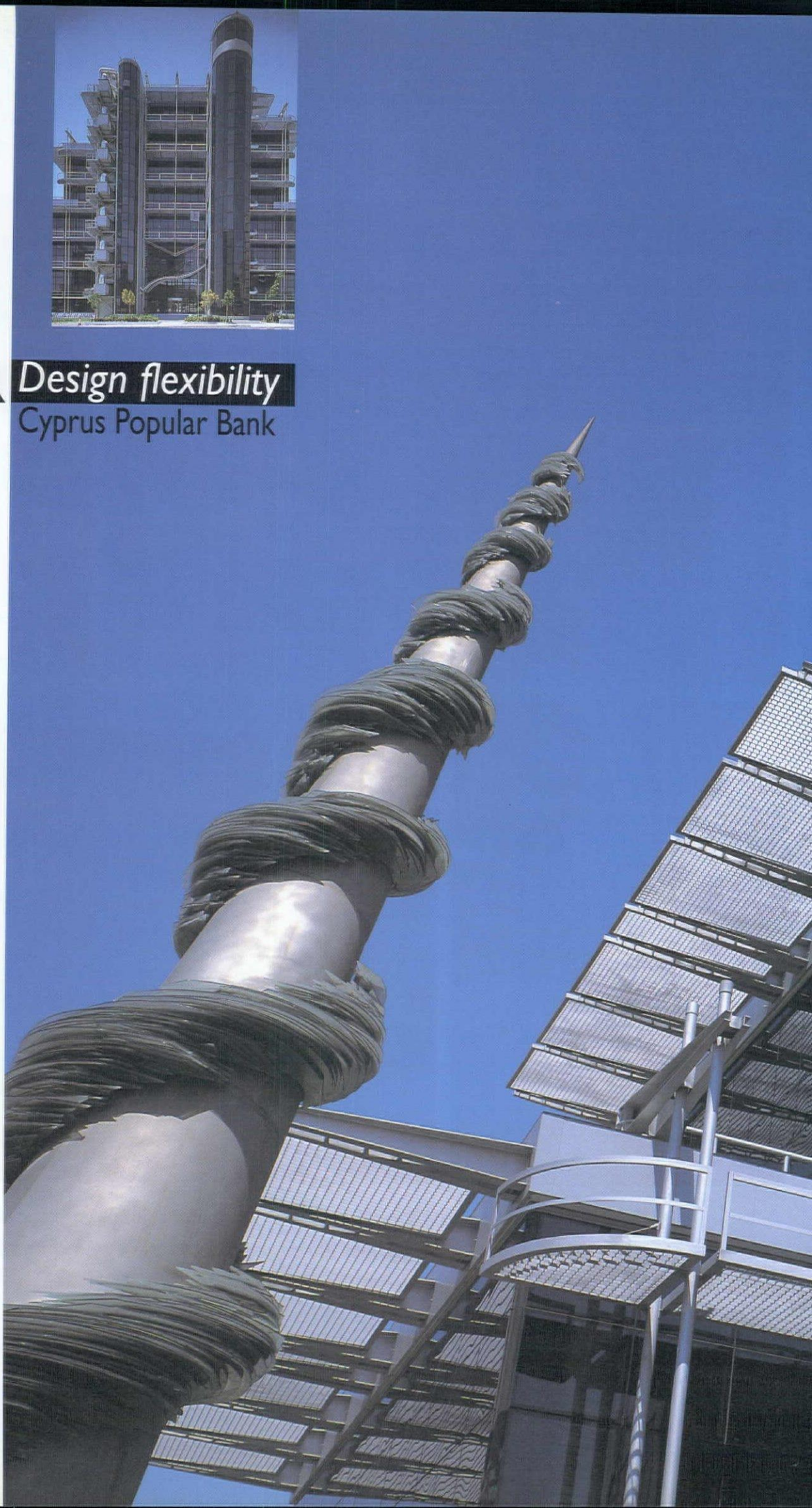
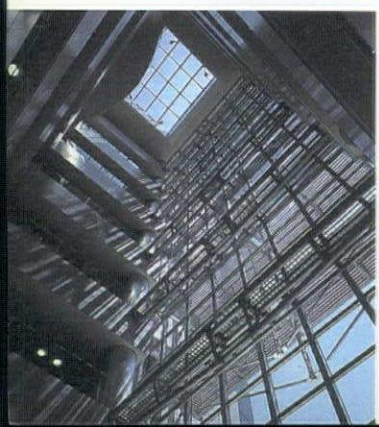
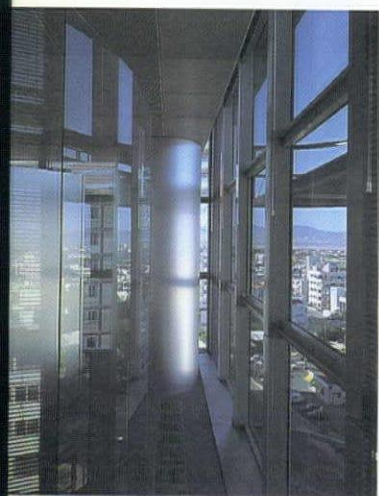
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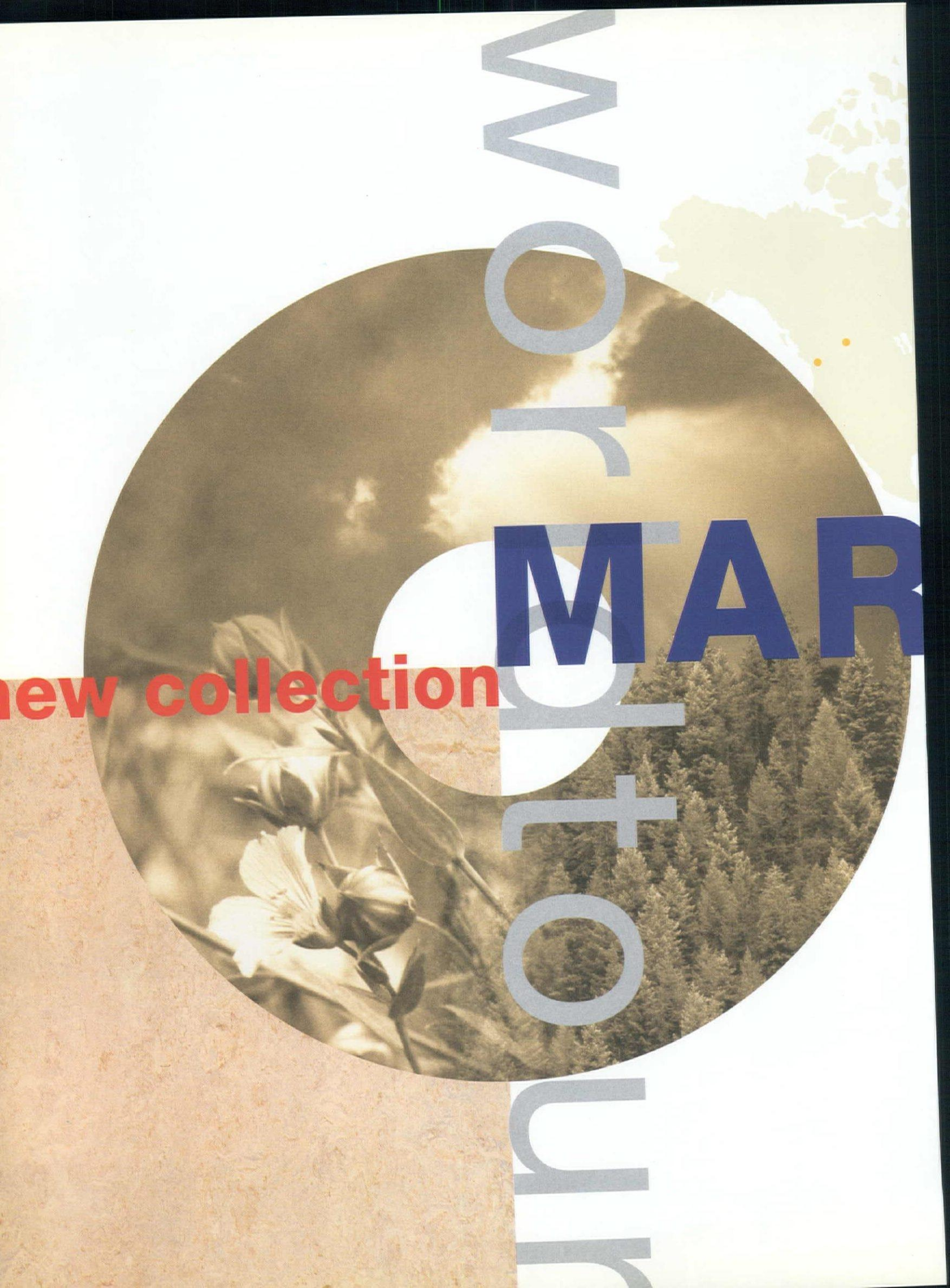
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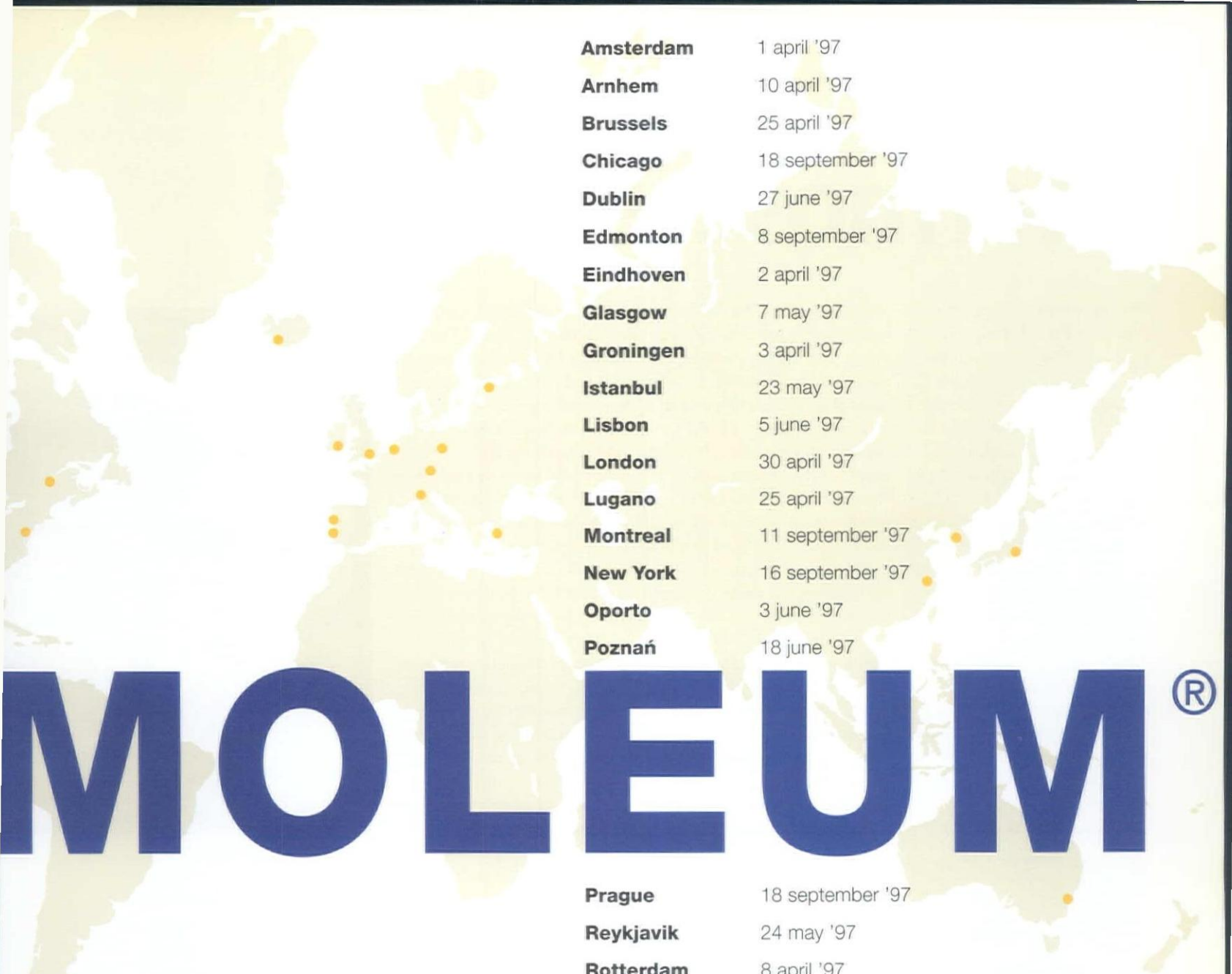
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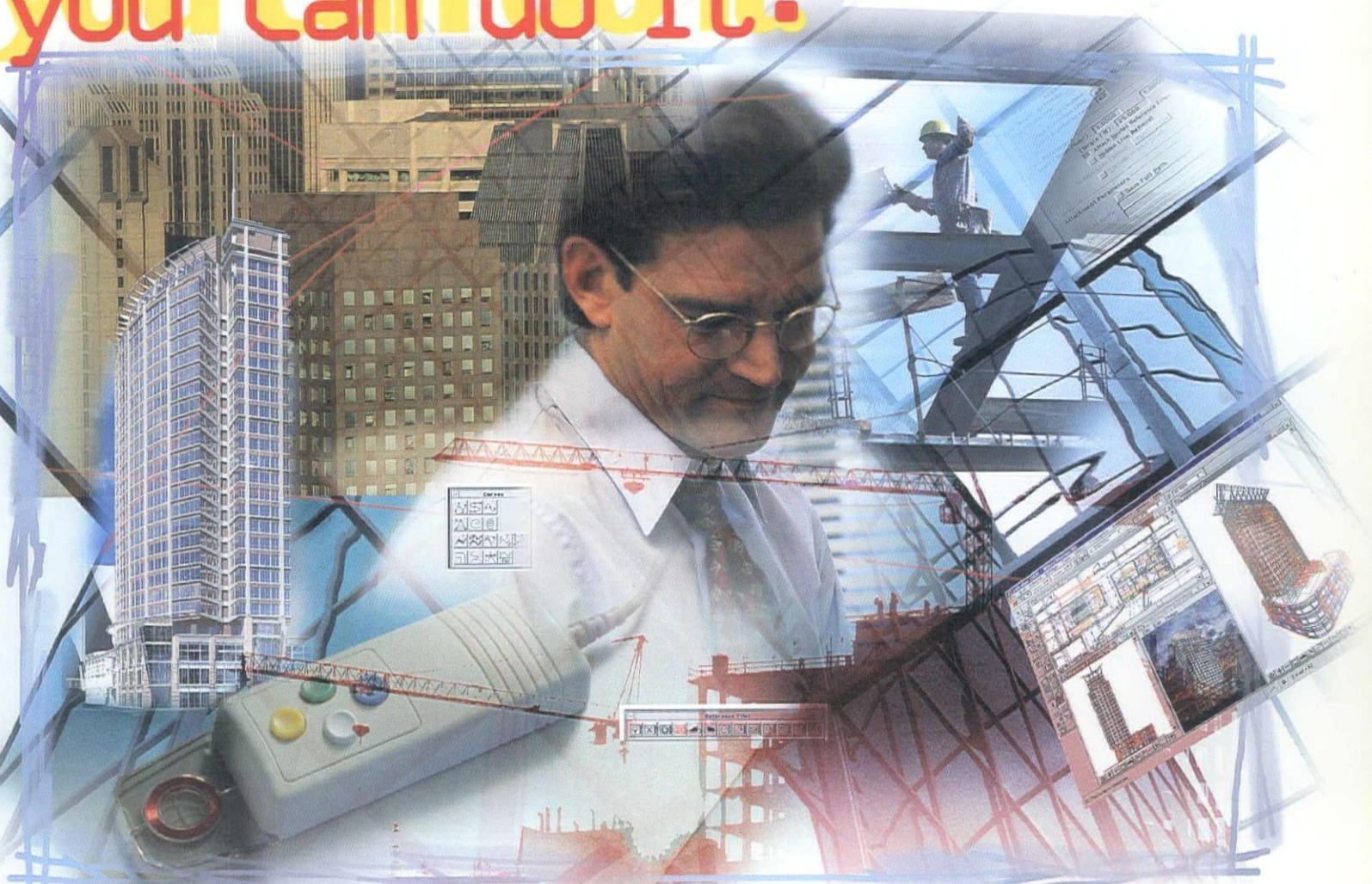
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# CADVANCE

## The CAD System for Real World

The screenshot displays the CADVANCE software interface with a menu bar (File, Edit, Draw, Symbol, Utility, Options, Grid, View, Window, Help) and a toolbar. The main workspace shows a 2D architectural drawing of a building floor plan. A 'raster' window displays a 3D rendering of a building at sunset. A '3d' window shows a 3D wireframe model of the building. A 'picture' window shows a 2D image of a building. A 'DOOR SCHEDULE' table is visible in the bottom right corner.

| NO | DOOR | TYPE | SW | SH | TH    | TRAIL | MAT'L | FINISH | COLOR |
|----|------|------|----|----|-------|-------|-------|--------|-------|
| 1  | DOOR | SW   | SH | TH | TRAIL |       |       |        |       |
| 2  | DOOR | SW   | SH | TH | TRAIL |       |       |        |       |
| 3  | DOOR | SW   | SH | TH | TRAIL |       |       |        |       |
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| 5  | DOOR | SW   | SH | TH | TRAIL |       |       |        |       |
| 6  | DOOR | SW   | SH | TH | TRAIL |       |       |        |       |
| 7  | DOOR | SW   | SH | TH | TRAIL |       |       |        |       |
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| 14 | DOOR | SW   | SH | TH | TRAIL |       |       |        |       |
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| 17 | DOOR | SW   | SH | TH | TRAIL |       |       |        |       |
| 18 | DOOR | SW   | SH | TH | TRAIL |       |       |        |       |
| 19 | DOOR | SW   | SH | TH | TRAIL |       |       |        |       |
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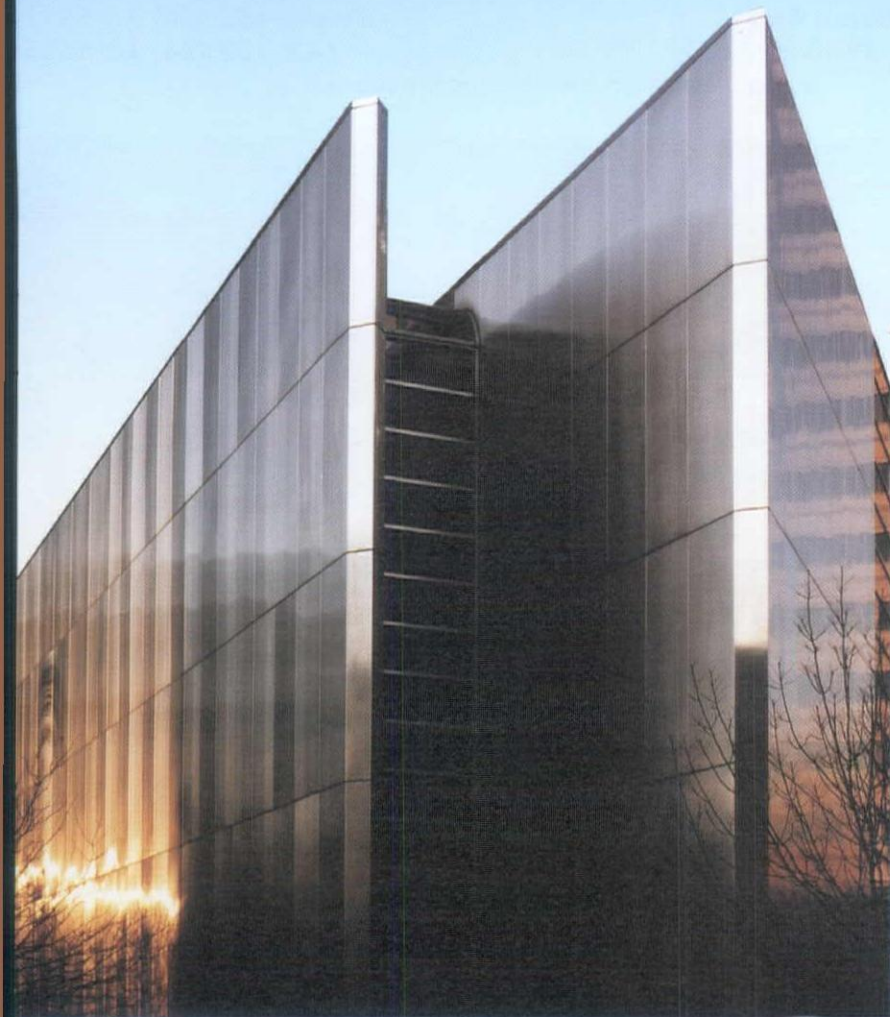
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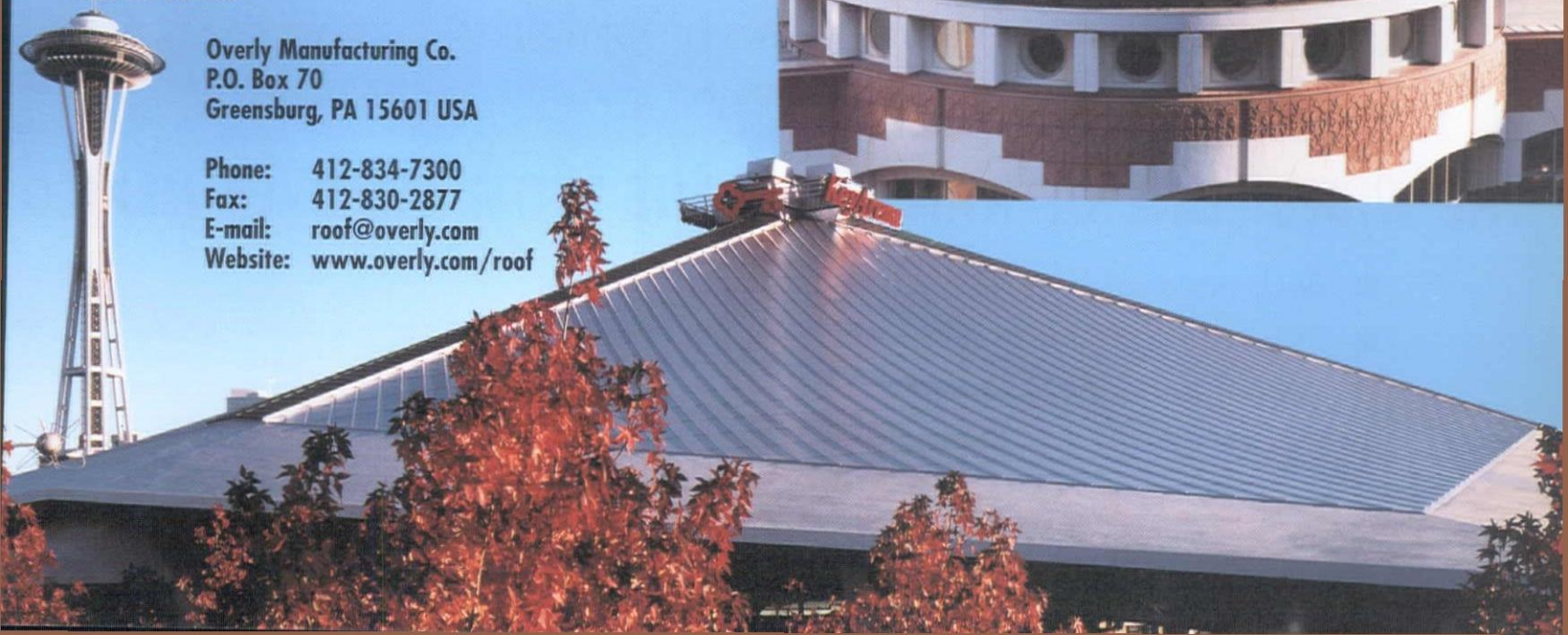
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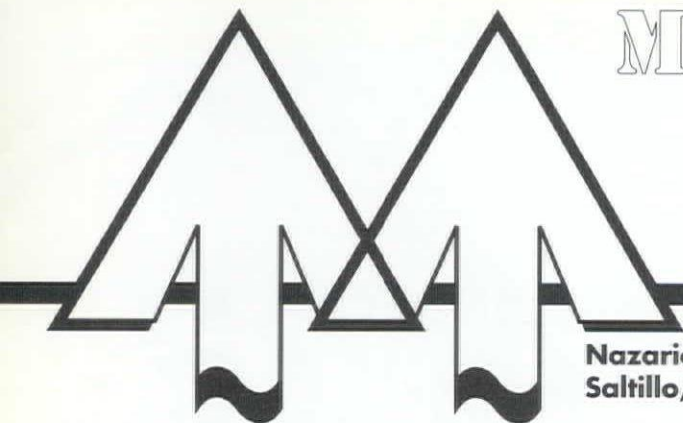
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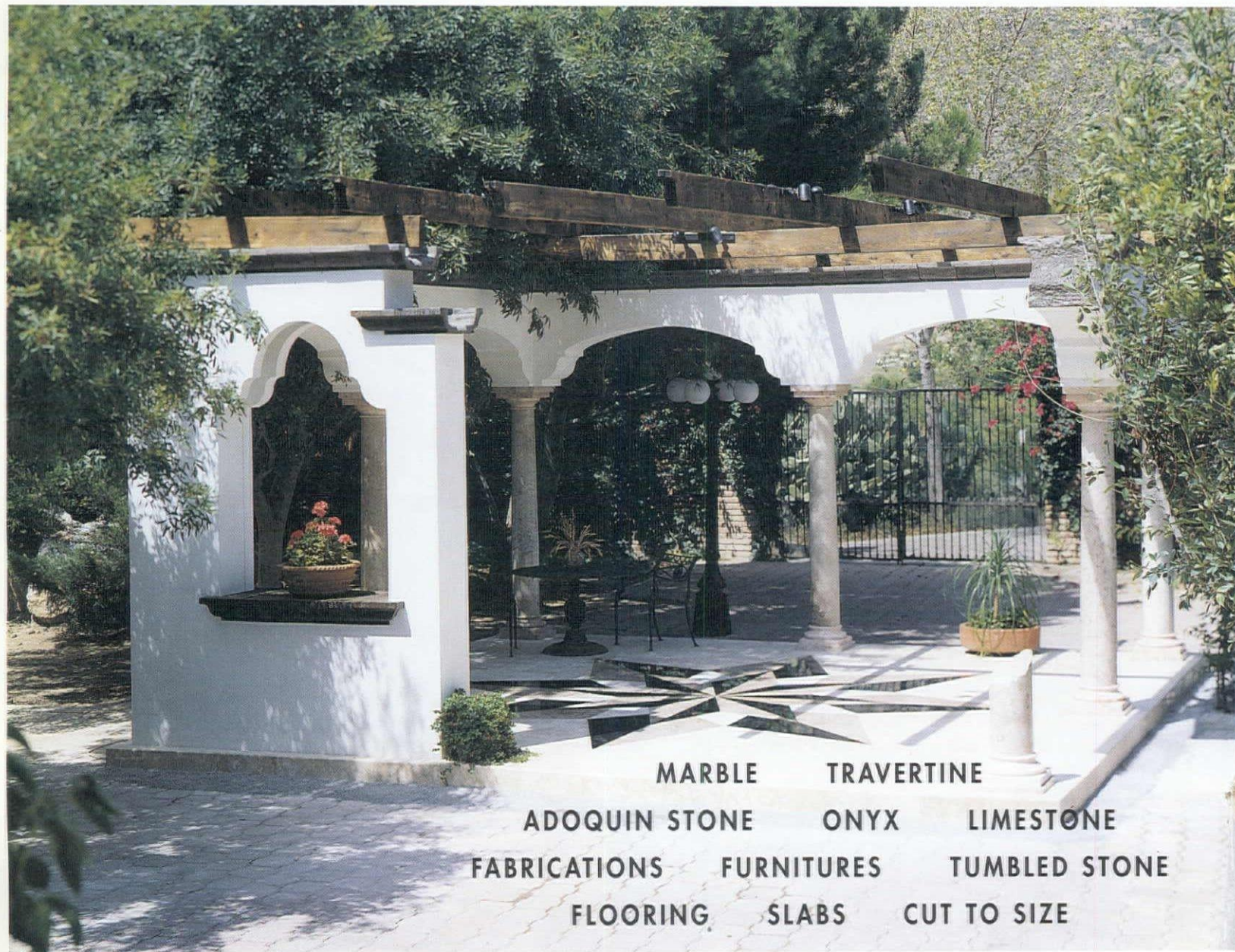


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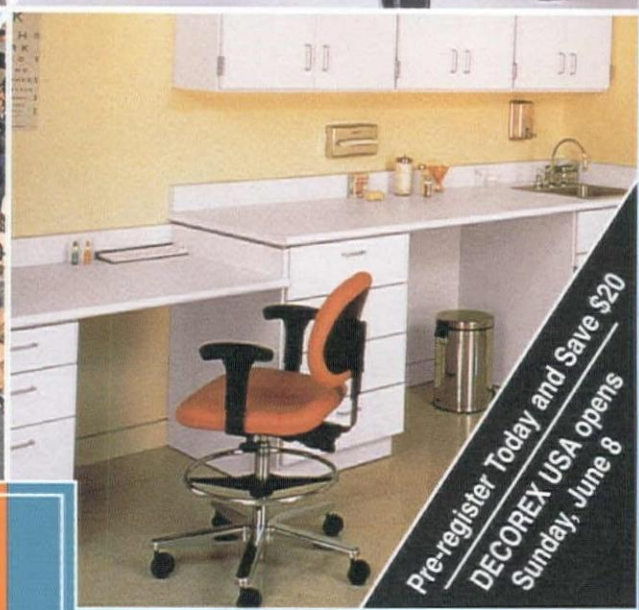
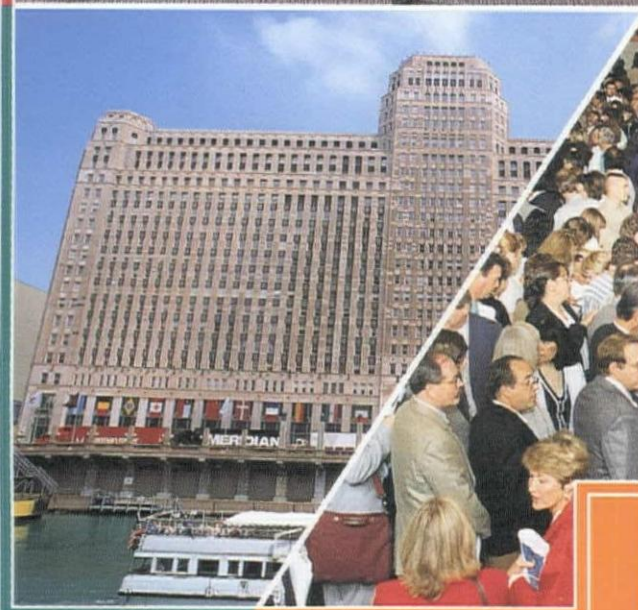
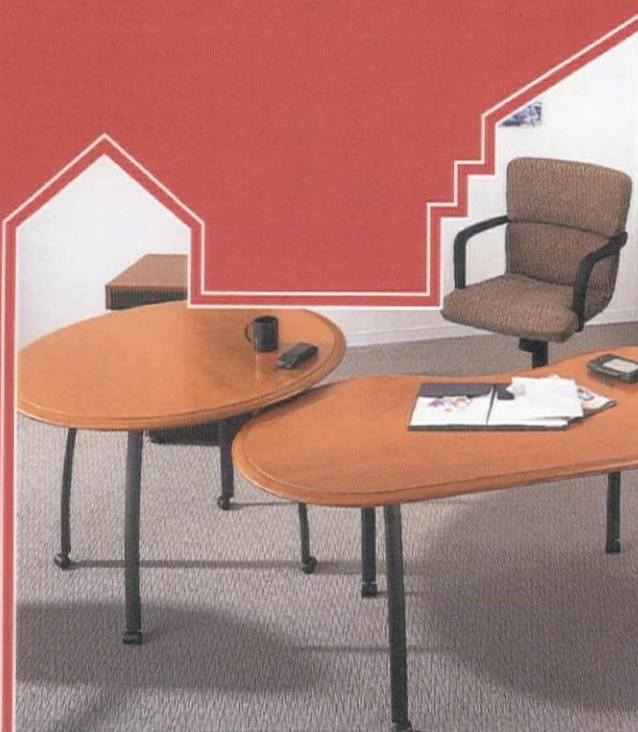
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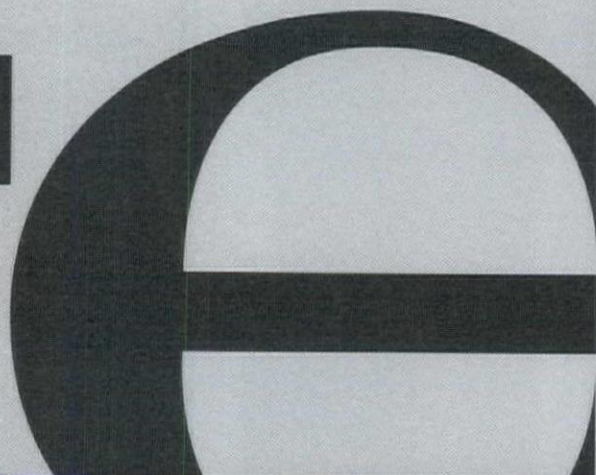
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# Who, or what, is "the architect"?

Who is qualified to call themselves an architect, and what does being an architect entail? Last month the world's oldest significant architectural award, the Royal Institute of British Architects Gold Medal, was presented to Tadao Ando, an architect who RIBA itself admitted could not practice in Britain under the title of "architect" despite being one of the world's most celebrated and talented builders and designers. In the same month a conference between some 30 architects at the Eighth Asia Design Forum (ADF) which was held in Melbourne, Australia, provoked a similar debate when Professor Kawaguchi of Japan, the doyenne of Asian structural engineering, presented work which was at least as striking and innovative as that of the "architects", including a bridge which he had both designed and engineered, without the collaboration of another designer. Surely, we argued, he could justify calling himself the architect of this project? This was an academic discussion – and the need for qualifications and regulations to protect clients and other practitioners was recognised – but the discussion served to remind us of what a client should expect from an architect. Professor Kawaguchi provided a service to his client that was more complete than that which many architects could offer.

Improvements in practice – and, as I have said before, in education – need to be encouraged so that architects become consummate professionals, encompassing an expert understanding of their building's structure, environmental engineering and cost efficiency, beyond design. Although specialist consultants are necessary, indeed invaluable, clients should no longer have to be referred to them when asking the architect rudimentary technical questions. This argument was articulated by Ken Yeang, the ADF convenor, who has learned through experience that the only way to improve the quality and serviceability of his buildings, while developing the design concept, is to ensure that he, as designer, is also answerable to the technical and economic efficiency of his product. In the real world of rapid construction in Asia clients need to know that the architect they have hired is going to deliver technically efficient buildings on time and in budget. Perhaps there needs to be a new title, denoting proficiency beyond the drawing board, for those who succeed.

**Nicola Turner**

After setting up a trial site WA is now officially launching its World Wide Web site. Find us at: <http://www.world-architecture.co.uk>. Letters to the Editor are welcomed. Please send them either to [warch@atlas.co.uk](mailto:warch@atlas.co.uk), or fax them to 44 171 470 7007

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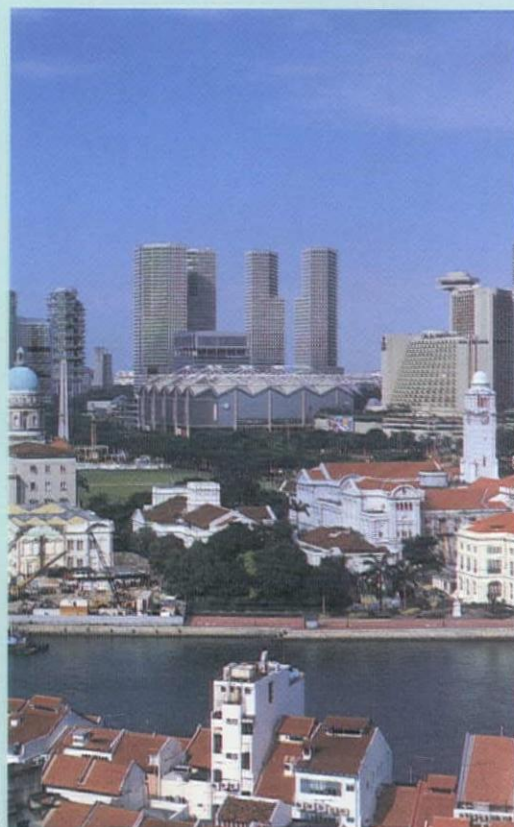
# In next month's WORLDARCHITECTURE



1: Tel Aviv Sourasky Medical Centre by Cannon

2: University of Brighton's Aldrich library, UK, by Long & Kentish architects

3: Tsao & McKown's Suntec City scheme (centre, back) in the centre of Singapore, incorporating three mixed-use towers and an international conference centre



## BUSINESS

International news, reviews and previews.

OnScreen continues in the pursuit of computer related innovations and their relevance to architectural offices around the world.

## COUNTRY FOCUS – SINGAPORE

*World Architecture* provides a detailed report on construction in one of the world's fastest-expanding cities. Amidst the profusion of Americanised skyscrapers and hotels lies a myriad of quality architecture from designers as talented as any you will find elsewhere. Tang Guan Bee's playful East Point Shopping Centre, Akitek Tengarra's KK Hospital and Andrew Tan's bold residential housing complex are profiled, in conjunction with a blow-by-blow account of Suntec City, Singapore's multi-use mega-development, by New York architects Tsao & McKown, incorporating three office towers and an international convention and exhibition centre. In an exclusive interview *WA* speaks to Michael Wilford of Michael Wilford and Partners, on the trials and tribulations of working in the City State, focusing on his controversial project for the new Singapore Arts Centre.

## PROFILE – CANNON

"It's like you guys have no ego!" Which firm of architects is this client talking to? Johnson & Burgee? Stirling & Wilford? No, Cannon – and if you haven't heard of them, you'll be proving him right. This firm is so self-effacing that it doesn't even have a headquarters – instead it lays claim to the title of "single firm multi-office". What this means in practice is that all of their specialist skills such



as healthcare (ranking sixth in the world), sports facilities and educational design are equally available, whether a client contacts them in Boston, St Louis – or any other of their offices from New York to Los Angeles. As Timothy Ostler discovered, it means hard work and frequent travel for Cannon's architects – but those he spoke to believe that it's worth it.

## SPECIAL REPORT – LIBRARIES

Libraries are becoming more numerous and more accessible with the increased emphasis on education and literacy. Countries are employing top architects for their public architecture to secure a place on the international map. But apart from the issue of kudos, libraries present unique technical difficulties in that they have to accommodate everything from handmade paper books to CD

ROM. *World Architecture* examines this building type through projects such as the Science, Industry and Business Library in New York by Gwathmey Siegel & Associates and the Médiatèque at Poitiers in France by Sylvain Giacomazzi with Laurent and Hervé Beaudouin to the Ringwood Library by Edmond & Corrigan in Melbourne, Australia.

## PRODUCTS – EXTERNAL ENVIRONMENT

*World Architecture* looks at examples of cities in Europe, Japan and Brazil which have instigated specific programmes of design development for the external environment, from the mundane to the spectacular – including street furniture, lighting and signage.



# Dublin has never had it so good

The Republic of Ireland's economy currently rates as one of the strongest in Europe. With the Gross Domestic Product expected to rise by between five and six percent this year, and annual inflation forecast to remain as low as two percent, the Republic has become a very appealing prospect to international companies wishing to establish a base in Europe. In fact, five of the world's ten largest software companies already have bases in the country – Microsoft, IBM, Corel, Novell and Oracle. The Irish industrial development agency (IDA), recently announced that 40 percent of all personal computer software, and 60 percent of all business software sold in Europe is produced in Ireland.

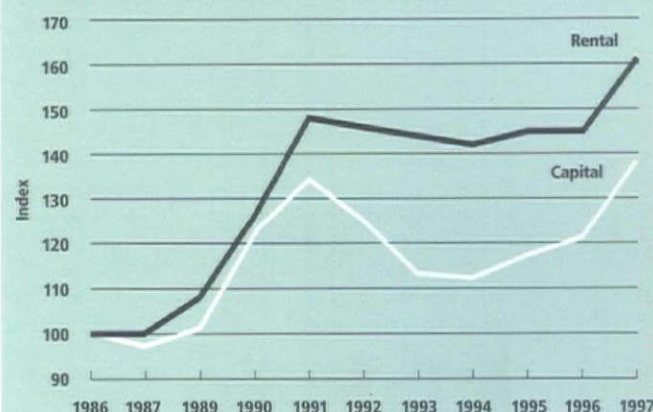
The price of commercial rents in Dublin reflect the general mood of well-being in the city, and demand

shows no sign of abating. Within Dublin's International Financial Service Centre, which is located in the city's former dock area, rents per square foot are now up to \$US45 (£27.50) – foreign financial services companies seeking to acquire office space within the Centre are enticed with a 10 percent "corporation tax rate". Even outside the Centre, where concessionary taxes are not offered, rents in 1996 rose to between \$US25.4 (£16) per square foot and \$US28.6 (£18) per square foot.

The boom in commercial rents in the city has also brought about a dramatic rise in construction output. Since the upturn in the Republic's economic situation began, in the early 1990s, the country has benefited from an influx of European Union (EU) structural funds. These have been used to fund improvements in

Irish Office Property Market

Source: Jones Lang Wootton, Dublin



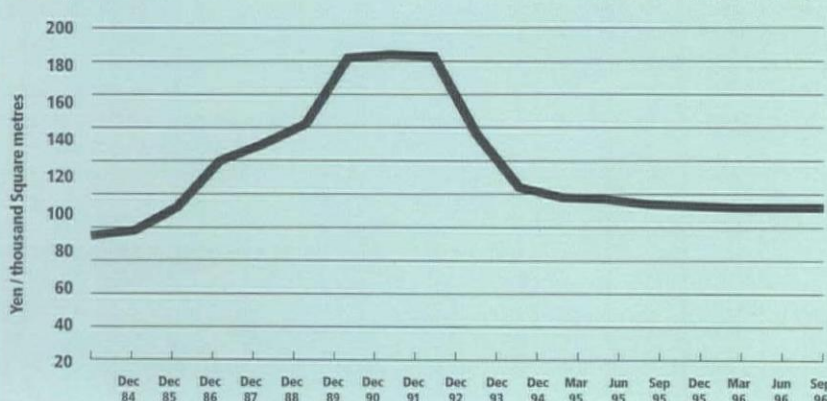
the country's infrastructure – the construction sector grew by 11 percent last year, and analysts expect further growth of around five to ten percent this year. The vast majority of new-build projects are taking place in the International Financial Service

Centre, although two large-scale speculative developments – the Ballsbridge Centre and Charlemont Exchange – are on-site in the city centre, but even in these cases it is widely assumed that the developers have tenants clamouring at the door.

## Fresh opportunities in Japan: new government initiatives to boost an ailing property market

Rent per annum

Source: Jones Lang Wootton, Tokyo



Even though Tokyo still has more empty office space than the entire office stock of Hong Kong, market analysts are saying that in 1997 real estate is amongst the safest of all speculative investments in Japan. This prediction offers a stark contrast in outlook from the depression that accompanied the slump of Japan's property market at the

beginning of the decade.

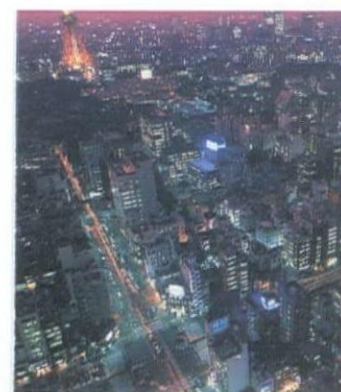
From its zenith in 1990-1991 commercial rents in Tokyo have fallen by over 70 percent. When Japan's "bubble economy" burst, the ensuing banking crisis led to a collapse in prices which has been a drag to the national economy ever since. For over five years banks have been shackled by non-performing loans which were taken

out in order to buy overvalued buildings during the 1980s.

In March the Japanese prime minister, Ryutaro Hashimoto, ordered the finance ministry to announce measures to bring land values back to "reasonable levels". Hiroshi Mitsuzuka, the finance minister, subsequently proposed to make it easier for banks to turn dormant debts into cash by lifting the present curbs on securitisation of loans. Rules concerning the amount of building permitted on a plot of land, and restrictions stopping developers from buying adjacent plots of land are also to be lifted.

Added to government-backed proposals is a degree of common-sense amongst investors and developers that was conspicuously absent during the boom time. Whilst the government is attempting to entice foreign investment – Alderney Investments of Singapore and the

Pacific Century Group of Hong Kong have both bought Tokyo sites in recent months – developers are conscious of not repeating the mistakes of a decade ago. The new office buildings sprouting up around the city are generally being built on less expensive, suburban sites outside the main business districts. Added to this, the new offices are "intelligent buildings", with one eye on the future.



Lucas Abreu/Image Bank



**PORTUGAL****Clube de Campo resort to the André Jordan Group**

Property developers, the André Jordan Group, have begun work on Belas Clube de Campo, a residential development set in a natural amphitheatre in the hills of Sintra, a resort outside Lisbon. The mixed-use development of 1,150 apartments and villas is being constructed around an 18-hole golf course. The master plan will be constructed in two principle phases, the first of 133 hectares, the second of 39 hectares. An additional 329 hectares is under consideration for future development.

The first 30 apartments will be completed by the end of this month. The development is due to be completed by August 1998.

**City centre shopping show**

The Via Catarina shopping centre, designed by José Quintela Architect and Britain's Building Design Partnership (BDP), and developed by Sonae Imobiliária recently won the MIPIM Award in the Shopping Centre category at MIPIM International Property Market in Cannes, France. Situated in the northern Portuguese city of Porto, the Via Catarina centre is a showcase project. It is intended to demonstrate how a sensitive, carefully orchestrated redevelopment can breathe new life into an historic city centre.

**CANADA****Revival in Canadian property sector**

After over five years of decline, the Canadian property market is beginning to show signs of a revival thanks to a surge of investment in Canadian property companies. Late last year the merger of Horsham Properties and Trizec – reported in WA53 – created North America's second largest public real-estate developer; it is estimated that TrizecHahn have \$US 1.4 billion of capital available for acquisitions. This has been followed by the restructuring of Toronto-based Brookfield Properties, whose current share value of \$US 417 million (\$C600 million) has allowed the company to begin considering new prospects – such as office building in New York, Boston and Toronto – for the first time in half a decade. Analysts expect the revival

to be sustained throughout the next 12 months. It has even been suggested that if it continues at the current rate developers could justify the construction of the first major new-build developments in a decade.

**HONG KONG****Pelli building big on a small island**

US architects, Cesar Pelli & Associates have been selected to design the new Hong Kong Central Station Development, by the Mass Transit Railway Corporation (MTRC) and the Central Waterfront Property Project Management Company Ltd. The development, which will occupy a prestigious site on Victoria Harbour, with the island's famous Peak as its backdrop, is dominated by a 400-metre tower. It will be the highest building in Hong Kong. The project integrates Hong Kong's central underground station with a new air terminal for express service to the Chek Lap Kok airport.

Phase one includes the construction of the 400-metre office tower (comprising approximately 180,000 square metres of floorspace); a 210 metre office tower of approximately 73,000 square metres and a four-storey retail podium with a public roof garden. The project is due to go on-site in 1999.

**THAILAND****Slump imminent in Thai property market**

At the end of March it became clear that land values in Bangkok were beginning to slip. Analysts in the city are concerned for the state of the industry. All the elements required for a sharp and perhaps bottomless decline are in place: oversupply, cash-strapped developers, and pressure from both government and financial institutions.

Another feature of the Bangkok market is that, although the property glut warrants a price decline, which would in turn help to compensate for the imminent crisis, this has yet to happen – government agencies estimate the amount of vacant residential units in Bangkok at between 330,000 and 650,000, or between 2.75 and 5.4 years of demand. Jones Lang Wootton note that: "Prices haven't really fallen because market activity has dried up. The market here [Bangkok] is different from Hong Kong and Singapore, where the markets adjust quickly. Here it's more like Japan where prices held up until people were forced to sell and then they fell very quickly".

**THE PHILIPPINES****The Hillier Group come down the mountain**

The Hillier Group, in association with Charles D Jordan AIA & Associates, have been appointed to provide architectural services

for a luxury resort hotel on the island of Saipan, the Philippines.

The four-star hotel will be built into the side of Mount Papochau in a stepped configuration. 225 guest rooms will "cascade" down the mountain towards the Philippine Sea. The development also includes three restaurants, a 350-person banquet hall, a private dining room and a water park.

**GERMANY****Construction in need of a boost**

In mid-March the German cabinet met with the aim of reaching an agreement on what can be done to boost the countries ailing construction sector. Chancellor Kohl announced that the state-owned banks Kreditanstalt für Wiederaufbau and Deutsche Ausgleichsbank would initiate investments worth \$US12.3 billion (DM20 billion), and that a further \$US3.1 billion (DM5 billion) would be generated by bringing forward projects in areas such as transport and education. Kohl also expressed hope that the investment would have a positive impact on employment opportunities in the construction sector.

**Symbol for a transfer of power**

In February Chancellor Kohl broke ground for Germany's new Bundeskanzleramt (chancellery) on a riverside site in Berlin, in the shadow of the Brandenburg Gate. The structure marks the transfer of power from Bonn to Berlin, which, depending on the smooth running of the construction schedule, and the ironing-out of numerous bureaucratic loopholes, will happen between May 1999 and February 2000.

The US\$245 million complex, which will include the chancellor's office, the cabinet room, a conference hall, 310 offices, 13 winter gardens, an underground car park and a "chancellor garden" and a "chancellor park", has been designed by architect Axel Schultes, himself a resident of Berlin.

**UK****1997 Stirling prize open to the EU**

The search for the winner of the RIBA's prestigious Stirling Prize for Architecture – last year won by Hodder Associates' Centenary Building for the University of Manchester – will be extended to buildings throughout all the European Union (EU) countries in 1997.

The awards consist of the RIBA awards for the best buildings in each of RIBA-designated regions, which are in turn put forward for one of the seven Category Awards. The winners of the Category Awards form the shortlist for the Stirling Prize itself. Only buildings completed between 1 January 1994 and 11 April 1997 are eligible.

**Dispute over Foster's tower**

The future of Foster and Partner's 385-metre Millennium Tower is in the balance. A dispute between London City planners and developer Kvaerner could delay planning permission. Despite the clearly expressed misgivings of a variety of local institutions – English Heritage, the Royal Fine Art commission, Westminster council – Kvaerner are currently unwilling to compromise either the design or height of the controversial tower. The Corporation of London meet at the end of the month to decide whether or not the Millennium Tower will be granted planning permission.

**HLM appointed by MOD**

HLM Architects have been appointed to design the new £500 million (US\$800 million) Joint Service Command and Staff College by Defence Management – a consortium including Laing and Serco – for the Ministry of Defence (MOD), on a greenfield, Oxfordshire site. The Private Initiative Scheme is the result of a review of British defence costs in 1994. It is scheduled for completion in 1999.

The layout of the development is based on a series of three-storey cruciform buildings radiating from a central, circular auditorium – extensive use of interconnecting courtyards is intended to create a collegiate ambience. The college will provide secure training facilities for all three of the armed services, and residential space for 650 students.

**MALAYSIA****RTKL and GDP work on an office park**

US giant RTKL, in association with one of Malaysia's leading architectural design firms, Group Design Partnership (GDP), have completed master planning, urban design and architectural layout for Prolink 20/20 Office Park, a new 611-acre office park in Johor,



Malaysia. According to Kamil Merican, GDP's chief executive officer, the low-density, park-like environment has been designed "to reflect the energy and individualism of Malaysian business today".

The project has been developed by Prolink Development SBN BHD (a subsidiary of Renong Bernard, a public company listed on the Kuala Lumpur Stock Exchange), whose new headquarters building will be the focal point of the office park, occupying a 37-acre site.

#### ISRAEL

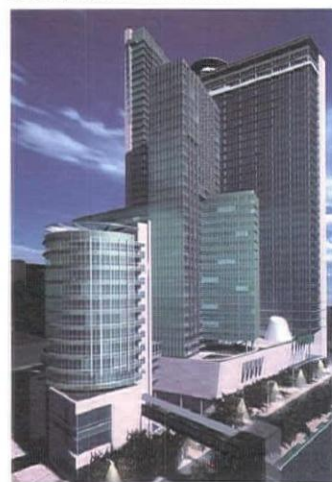
##### **Jewish settlement underway in Arab east Jerusalem**

In late-March the Israeli prime minister, Benjamin Netanyahu gave the go ahead for a plot of land at Har Homa in Arab east Jerusalem to be cleared for the construction of a Jewish settlement. The decision was in stark contrast to a wave of international opinion, and has been described by Palestinian officials as a move which throws further doubt on the potential success of the peace process. Netanyahu defended his decision saying: "There is no good time to

build in Jerusalem because there are always objections to such building". (For an extended report on the difficulties of construction in Israel Country Focus in this issue.)

#### USA

##### **Development in heart of Seoul**



US firm, Leonard Parker Associates, Architects Incorporated, in association with

Won Yang Architects of Seoul, Korea have won an open competition for the Eul Chi-Ro redevelopment project in the south Korean capital. The development will house 112,000 square metres of office space, 47,000 square metres of residential space and 26,000 square metres of retail space.

Located on an historically significant city-centre site, near Seoul's City Hall, the project will re-establish an axis stretching across the city, visually linking two mountains on either side of the city centre.

The project is expected to go on-site in late 1998.

##### **Otak and HHPA secure Seattle station**

The Washington State Department of Transportation (WSDOT) have awarded the contract for the redevelopment of King Street Station, Seattle to Otak Incorporated, in association with Hardy Holzman Pfeiffer Associates (HHPA). The project will rehabilitate the neo-classical-style station (originally built in 1906), and improve its links with other forms of transportation. The US\$88 million project will be constructed in multiple phases, the first of which – due to begin in

late 1998 – will include improvements to Amtrak customer services, seismic retrofitting and historic rehabilitation.

##### **Wimberly Allison Tong & Goo**



Top-rated leisure and hospitality specialists, Wimberly Allison Tong & Goo (WAT&G) have prepared designs for the Four Seasons Resort Club Aviara in Carlsbad, California. Construction began on the 1000-acre "vacation-ownership" complex in February. Resort Club Aviara will ultimately make up one of four high-quality leisure facilities in the Aviara area – these include a 50,000 square-foot sports centre; an 18-hole golf course and 30,000 square-foot clubhouse; and a 331-room hotel. The latter three components are also WAT&G designs.

## Aluminium clad headquarters in Pittsburgh

Rusli Associates, Pittsburgh-based architectural design firm, have begun work on the new world headquarters for the Aluminium corporation of America (ALCOA), the Alcoa Corporate Center. Clad in aluminium Rusli Associates' new building will supersede Harrison Abramovitz's noted 1953 aluminium-faced 30-storey, steel framed skyscraper as the headquarters for ALCOA.

Located in North Shore, a waterfront site across the Allegheny river from Pittsburgh's downtown area,

the six-storey Corporate Center provides 28,000 square metres of work space, and an underground carpark.

The building is organised north-south, in keeping with Pittsburgh's linear city-plan. The overall scheme has been planned as a series of linear elements, running from front to back: starting from the northern edge of the city's downtown area on the opposite site of the river, moving up through the waterfront terraces, following the line of the serpentine office block, which shields an enclosed, glazed atrium.



## Architects proclaim first eco-friendly highrise

Officially opened last month, Düsseldorf-based Ingenhoven Overdick Kahlen und Partner's (Profile architects in *World Architecture* 60) Hochhaus RWE AG Essen tower has been proclaimed – by the architects – as the first "pro-ecological highrise in the world". Located in the Ruhr valley, the 30 floor building, which reaches 162 metres at the extent of its antenna, is the tallest structure in the German state of North Rhine-Westphalia.

The most striking feature of the Hochhaus RWE AG tower is its 120-metre glass cylinder which, even at

such heights, allows natural air flow and roof gardens through the cylinder's role of integrating internal and external environments. The glass lift-shaft is housed in a separate 127-metre tower which not only enables users of the building to orientate themselves from the same point of entry on every floor, but also maximises floor-space. The gross floor area is 35,000 square metres. Although the design marks an advance in ecological innovation some designers, such as Ken Yeang, have been pioneering bio-climatic design in skyscrapers for some time.



## OBITUARIES

**Howard Hirsch**

Howard Hirsch, founder of Hirsch/Bedner Associates, the international hotel design firm, died on 1 February in Los Angeles. He was 70 years old. Hirsch dedicated 35 years of his life to the evolution of hotel design as a recognised market sector, and the development of the California-based firm – who now have offices in Atlanta, San Francisco, Hong Kong, London and Singapore. Hirsch's hotel designs include The Hyatt Regency Maui and the Kahala Mandarin in Hawaii, as well as the White Swan in Guangzhou. He was the first American designer to build a major hotel in The People's Republic of China.

**David Singleton**

Award-winning landscape architect, David Singleton has died aged 56. Singleton ended his life as a lecturer at the School of Architecture at the University of Wales, Cardiff, but he made his name during the 1960s for landscape architectural work in Denmark, a period which established his deep-held admiration for Scandinavian architecture and design.

## HONG KONG

**Additions to RTKL's Hong Kong office**

US-based firm RTKL have added eight architects to their Hong Kong office. Joining the office, which opened in 1994, will be J Scott Kilbourn, James K M Cheung, M Yasmin Visram, Jaime B Dagdag, Frederick T Liwanag, Mario S Torres, Yvonne Lau and Rebecca Collis. The expansion will allow the firm to develop further their work in the Asia-Pacific region, which already includes projects in China, Indonesia, Malaysia, Thailand and the Philippines.

## GERMANY

**DEGW win special award**

Jenoptik, DEGW's US\$765 million (DM450 million) project to regenerate the former Carl Zeiss works in Jena, Germany, won the Special Jury Award at the 1997 MIPIM International Property Market awards. It has taken four years to develop the former lens factory into a mix of offices, shopping centre, university and hotel with a combined floor area of two million square metres. The complex – which is the largest refurbishment ever undertaken in Germany, will provide 4,500 jobs.

## THE NETHERLANDS

**Aad G Jacobs, "Man of the Year" 1997**

MIPIM's "Man of the Year" – an award which went to Sir Norman Foster last year – is Aad G Jacobs, Chairman of the Executive Board of ING Group. Headquartered in The Hague – with offices in Brussels, London, Paris, Washington DC, Madrid and Beijing – ING Real Estate operate in the fields of investment, development and finance. Notable recent projects include the 4,172-square-metre Nationale-Nederlanden insurance building in Prague, and the 15,300-square-metre North Michigan Avenue in Chicago, which also incorporates a 2,508-seat cinema.

## UK

**Ushida Findlay Partnership set up in UK**

Renowned in Japan for their innovative designs for private homes, but little known elsewhere, the Scottish-Japanese husband and wife team, Ushida Findlay Partnership (UFP) have now opened an office in London. UFP plan to collaborate with engineers Dewhurst Macfarlane and Partners on future UK projects, which they hope to win on the strength of their considerable success in Japan.

**Tadao Ando wins against the odds**

The world's oldest significant architecture award, the Royal Institute of British Architects Gold Medal, first presented in 1848, has been awarded this year to Tadao Ando – who cannot even call himself an architect in the UK. Despite never taking any formal architectural exams Ando has, over the years, scooped all the major international awards, including the Carlsberg prize, the Pritzker Prize and the Japanese Premium Imperiale. An RIBA spokesman confirmed: "If Mr Ando were to win a competition in Britain, he could build the building but not call himself its architect."

## USA

**HOK appoint Reinke to London office**

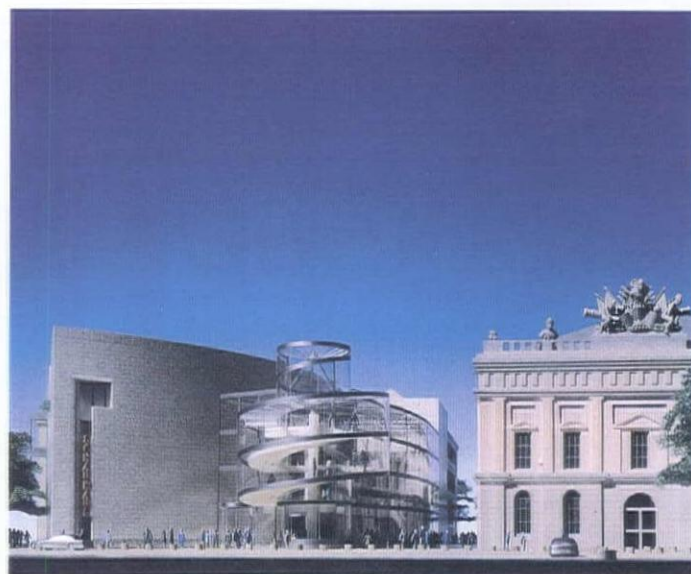
Stephan C Reinke, aged 42, has joined US construction giant Hellmuth, Obata + Kassabaum (HOK), as director of project development. Reinke will be based in the firm's London office, from where he will overlook pre-design, concept development and project development client services in Europe, the Middle East, Africa and the Indian sub-continent. Reinke was the founding member of the American Institute of Architects First International Chapter, which he set up in London in 1993.

**Earl R Flansburgh recognise success**

Earl R Flansburgh + Associates Inc have expanded their board of directors and named new corporate officers. The firm's three principals, Davis S Soleau, Michael H Bourque and Kate M Brannelly have all been recognised: Soleau has been promoted to executive vice president; Bourque will assume the dual roles of senior vice president and treasurer, and Brannelly has been promoted to vice president and a member of the board of directors.

**MWM Architects promote architects**

MWM Architects Incorporated of Oakland, California have announced the promotion of architects Laura Ham and Scott Gold to Associate status. Ham has 18 years experience, mainly in the California area, of working as both project architect and manager. Gold has recently been responsible for the running of MWM's Guam office, from where he also ran the firm's activities in the Pacific Rim. Previously he has worked in Tokyo for, amongst others, Nikken Sekkei, GK Sekkei, Italian architect Aldo Rossi's Tokyo office and Kisho Kurokawa.



# I M Pei ein Berliner

by Germany correspondent, Layla Dawson

I M Pei, as is his right after a long and successful career on several continents, refuses to compete against other architects in architectural competitions. His list of buildings speak for themselves; the Bank of China in Hong Kong; the Louvre pyramid in Paris, as well as various culture and research buildings in the US and a hotel in Beijing. He works on very few projects nowadays and only those in which he is interested.

Following Helmut Kohl's personal invitation to design the German History Museum extension in Berlin, Pei's design was finally unveiled in January at the Chancellor's office in Bonn. Born in Canton in 1917, Pei emigrated to America in 1935 where he was a student of Gropius and Breuer and later studied the work of Karl Friedrich Schinkel. Despite his interest in both neo-classical and modern German architecture this is his first project in Germany and the museum is obviously delighted to have won him over for their institution.

The Deutsche Historische Museum occupies the Zeughaus, a two storey geometrically ordered baroque building commissioned by Friedrich 1 and completed in 1706, on Unter den Linden. Pei has named the extension, a building in its own right and of contrasting modernism

which will host temporary exhibitions, the "Shauhaus". Standing beside the existing building, on a triangular site, its main feature is a corkscrew spiral ramp. Placed between baroque and modern elements of the two buildings it is set off to advantage against the curved masonry outer wall of the extension. As an eye catching attraction it aims to draw people into the heart of the site. All circulation space on four floors are glazed, open and light, giving views of an eighteenth-century facade opposite and Berlin's most famous boulevard, in contrast to the solid, introverted exhibition rooms. The square centre courtyard of the Zeughaus will also be glazed over as a greenhouse ante room to the existing halls. Of the newly created space, altogether 4,500 square metres of usable area, 3,000 will be for exhibitions.

With a budget of US\$59.7 million (DM 97million), agreed by the government in 1996, the building will start on site in 1998 and be completed in 2001. Contrary to the outcry from the revisionist architecture corner which hampered Günter Behnisch's modern solution for the Academy of Arts on Pariser Platz, the "stoned" architectural faction have not yet uttered a word against Pei's design. Either they have run out of steam or they dare not question the work of a venerable architect under the Chancellor's protection.



## Broadway Malyan to float a boat into London's docklands

British architects Broadway Malyan, have been appointed architects for an US\$128 million (£80 million) leisure scheme at Greenwich Reach, London by Clearwater Estates & Properties Limited who, in association with London Merchant Securities Plc, are in negotiation with landowner Greenwich Reach Developments Limited to develop the eight acre site, which has over

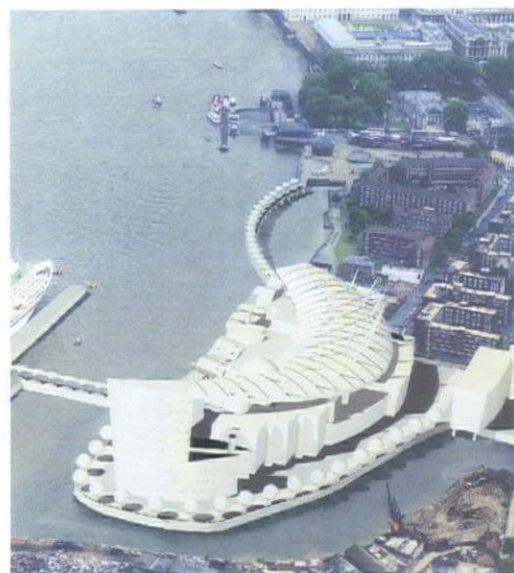
800 metres of riverside frontage.

Broadway Malyan have submitted planning application for the 560,000-square-foot facility, which will include a 12-screen multiplex cinema; casino; 200-bedroom hotel; 130 apartments and London's first cruise liner terminal. The terminal will have the capacity to accommodate liners of up to 50,000 tonnes, and 240 metres in length. The on-shore development

will offer access to the Docklands Light Railway (DLR), and the extended Jubilee underground line.

Within the context of London, the development offers further evidence of the long-recognised, but rarely-acted-upon need to integrate the River Thames into the city's fabric.

If planning consent is granted construction will commence in the summer, with completion by 2000.



## Engineering an innovation

by Germany correspondent Layla Dawson

The work of German architects von Gerkan Marg und Partner for the German railway, Deutsche Bahn, has been presented, in Copenhagen, Denmark with one of the 12 Brunel awards. Named after Isambard Kingdom Brunel, the prolific nineteenth century engineer, the ceremony was hosted by the Danish State Railways (DSB), together with the Watford Conference of European Railways Architects and Designers, of the UK.

Since the establishment of this biennial event in 1985, by the Watford Conference of European Railways Architects and Designers, to commemorate the 150th anniversary of Britain's Great Western Railway, the

awards have been presented in Austria, the Netherlands, Japan, Spain and the US.

The Watford Conference, created 30 years ago by the British Railway as a chance for architects and engineers to meet and exchange experiences, was widened in the 1980s to include other European railways. Currently there are 16 European members – including Amtrak from the US. The Secretariat is located in Paris. Two-hundred and twenty-five projects from 21 railways companies worldwide submitted entries for the 1996 awards.

As a name synonymous with pioneering achievements, the Brunel awards are intended to encourage innovative engineering and design among the world's railway compa-

nies. The seven man jury of British and Scandinavian architects, engineers and designers presented the Deutsche Bahn with a prize in the A1-Trainstops category for their elegant wing-like platform canopies supported on two rows of slender steel columns incorporating roof glazing, information and lighting systems.

Designed for new train stations and in the renovation of existing stops the standardised elements allow for different configurations to suit conditions. Hamburg-based Von Gerkan Marg und Partner have acquired considerable experience in bridge, airport and railway design. One of their largest projects, the Lehrter railway station in Berlin, also for Deutsche Bahn, is now on site.

## Hans Hollein makes his Latin American debut in Lima

Hans Hollein has designed his first building in Latin America. The Austrian architect was one of four practices to be invited to enter a two-stage competition organised by Interbank, Peru's largest private bank, in 1996 – the other invitees were, Kohn Pedersen Fox (KPF), Michael Graves and Mario Botta.

Hollein's design for Interbank's new financial centre in Lima is dominated by an 80-metre high "tower-slab", whose form makes reference to Peru's Indian heritage in both its monumentality and stone-work base. The nature of the site dictated the striking form of the structure: it is surrounded by Lima's grid-like business district on one side; the wide, arching curve of Javier Prado Avenue, and the Paseo de la Republica express-way interchange. The high-rise, curving slab, which effectively forms a barrier against the interchange, is complemented by block structure on the east side, which rises to only 30 metres, bringing the development in line with the height of the office building opposite, on Carlos Villaran Street.

The glass facade of the 80-metre tower is shielded by a textile-like patterned metal screen, which also carries Interbanks signage at the top – the company recently internationalised the spelling of their name, changing the C to a K.

The project is due to go on site later this year, with completion anticipated by 2000.





# Romania's progress

by Adam Mornement

On the surface Romania's current political and economic outlook appears promising. The recent election of Emil Constantinescu's liberal and social democrat coalition government – and the efforts of the new prime minister and former mayor of Bucharest, Viktor Ciorbea, to instigate Romania's membership of both NATO and the European Union – suggest a sense of coherence and unity of purpose not seen in Romanian leaders since the inter-war period.

## Bucharest

With the governmental emphasis clearly focused on economic development, what is the immediate future for the nation's construction industry, and in particular for the nation's recently ravaged capital city?

One of the many problems facing Bucharest's planners and developers is that, as occurred in the former East Berlin, nobody seems sure of who owns which tracts of land, and there is even less certainty about how the land will be distributed once this has been ascertained. The only apparent hope for the industry in the short term is foreign investment, and this requires first class infrastructure – which is in very short supply – as well as marketing muscle and political dedication to raise the city's profile. The government are making attempts to entice interest from abroad. For example, late last year a law was passed allowing foreign firms outright ownership of the land they invest in. But there is still a long way to go.

One source of foreign attention came through "Bucharest 2000", the

competition organised by the International Union of Architects (UIA), in 1996, in association with the Romanian arm of UNESCO, which aimed to "tame" Ceausescu's Bucharest. The competition was won by German practice von Gerkan, Marg & Partners.

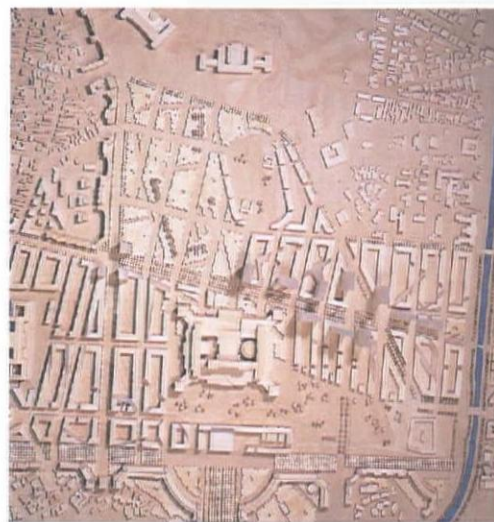
Given the current confusion in the city over land ownership, and the general atmosphere of economic frailty, many have voiced doubts about whether the project can ever happen. Augustin Ioan, editor of Romanian architectural journal *Architectura* and a member of the Union of Romanian Architects feels that "it can and it will be done. In 20-30 years from now it will be roughly ready". But Ioan is a rare optimist.

## Westfourth Architecture

Westfourth Architecture are a New York-based firm, set up in 1990 by Romanian-born Vladimir Arsene. Westfourth are the only American firm to have offices in both the US and Romania. Their output is almost exclusively concentrated in Bucharest.

The first of their designs to have reached development stage is currently on site in Bucharest. The new headquarters for Mindbank, Romania's largest private bank is located on a tight 2,432-square-metre site on the edge of Bucharest's emerging business district. The design-related problems encountered by Westfourth were by no means unique. Bucharest's low water table, perpetual seismic activity and poor soil conditions have always been design considerations in Bucharest.

In the case of the Mindbank, the situation was complicated by the client's wish to create a large banking hall on the site which is enclosed on both sides by historical structures of only three/four storeys. Romanian post-Ceausescu planning codes fervently oppose any type of physical intervention, in terms of both height and style, in the city's historic centre. The answer was to build the hall 4.80 metres below ground level. (The Mindbank is due



1: Westfourth Architecture's Mindbank headquarters on site in Bucharest

2: Plan of von Gerkan, Marg & Partners' winning entry in the "Bucharest 2000" competition

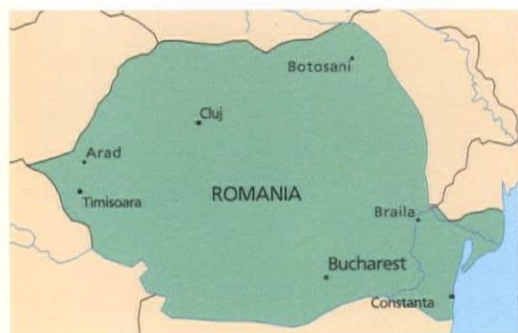
to be completed in December.)

Arsene, who describes Bucharest's city planners as "conservative", feels that "they [the city planners] have a vision of Bucharest as a central European city, like Budapest and Vienna, which evolved from formal grid systems. Bucharest is not like that". This attitude, added to the fact that Romania, despite tentative steps towards privatisation, is still effectively state run, has made life difficult for Arsene. "Westfourth could not have come as far as they have without having an office in Romania. It is necessary to have someone fighting for you at all times."

Given this state of affairs, the significance of foreign interest in the Romanian construction industry is clear. Whilst Romanian labour is technically competent and readily available, the nation, in all respects,

is in the process of technology transfer. On the Mindbank project Westfourth employed an Italian general contractor, Italimprese SPA, to work with two Romanian companies – Proconstruct SRL and Roistar SRL – in order to both educate the local firms and to get the job done. Westfourth also try to use local materials where possible as a show of support for local industries.

Arsene says that "the biggest problem in Romania is politics, not economic politics, but politics politics". That is to say, Arsene recognises how hard it is for both the populous and the government to accept the change to the equilibrium that the move to democracy brings. After nearly half a century of state ownership the government cannot hurry the return of the land to a people who have little or no experience of democracy.





# EXPO 2000, Hanover

by Layla Dawson, Germany correspondent

On 1 June 2000 Hanover will host EXPO 2000, the first world exhibition ever held on German soil. Will a small provincial town at the cooler end of Europe, however royal its connections, manage to stage a crowd-pulling event? The goal is 40 million visitors over five months, as the *Frankfurter Allgemeine* newspaper so graphically put it, "half the German nation including pensioners and babies". The theme – Man, Nature, Technology could be a gripping one given the rise in environmental awareness and there is no reason to suppose that the architecture will be any less conventional than in Seville.

Already completed structures include Thomas Herzog's Hall 26, Peter Schweger's 8,000 square metre extension to Hall 14 and Albert Speer's 12,000-square-metre extension to Hall 12. Ackermann + Partner have designed a new 24,000-square-metre Hall 13 which will be complete this October and Wilke + Partner a glass roof, which is under construction, for the avenue of United Trees. Submissions have already been called for an international competition for Halls 8 and 9. From the concepts submitted, 35 participants have been selected to produce designs which will be judged in April. Work on site will start in June 1998 for completion in February 1999.

Four more competitions have already been won. Kamel Loaifi, an Algerian based in Berlin, beat 56 other landscape architects from seven countries for the overall EXPO landscaping, the international competition with eight invited contestants for the Central EXPO Plaza was won by von Gerkan Marg + Partner, the EXPO train station, being built over existing tracks was won by the brothers Gössler and partner Düring, and the engineering competition for a family of six bridges within the site capable of being reduced in width for use after the event was won by Schlaich + Bergermann of Stuttgart, also with architectural help from von Gerkan Marg + Partner. Of the industrial pavilions Alsop + Störmer have won the competition for Mercedes Benz. Local consultants have been heard to complain that they are not getting enough of the action, although to an outsider it would seem that most of the winners have been German firms, mainly based in the north.

Competition for the German pavilion is bound to be stiff. After soul searching it was decided to make this another international competition, the argument being that architectural design cannot be confined within national boundaries. Open to all architects in the European Union or World Trade Organisation member countries 1,400 potential contestants have

clicked in to the Internet Web site or applied through old-fashioned channels for details. First stage is the submission of a one sheet design concept. Twenty-five will be chosen in July for a detailed second stage.

The established Hanover Trade Fair is in charge of the site for all the pavilions but a separate organising company, EXPO 2000 Hanover GmbH was set up to prepare competitions, plans, programme, advise participants and steer associated projects. With starter capital of 100 million deutschmarks from the federal government, Hanover local district and German industry, a general committee of politicians and captains of industry, Volkswagen and Daimler Benz, oversees the work of managing directors, Theodor Diener and Dr Reinhard Volk, and three specialist groups: a committee of academics, medical and ecclesiastical personalities looking after building and publicity, a culture committee of museum, film art, theatre and literary managers putting together the entertainment and an international advisory board of World Bank and environmental representatives to search for and advise participants.

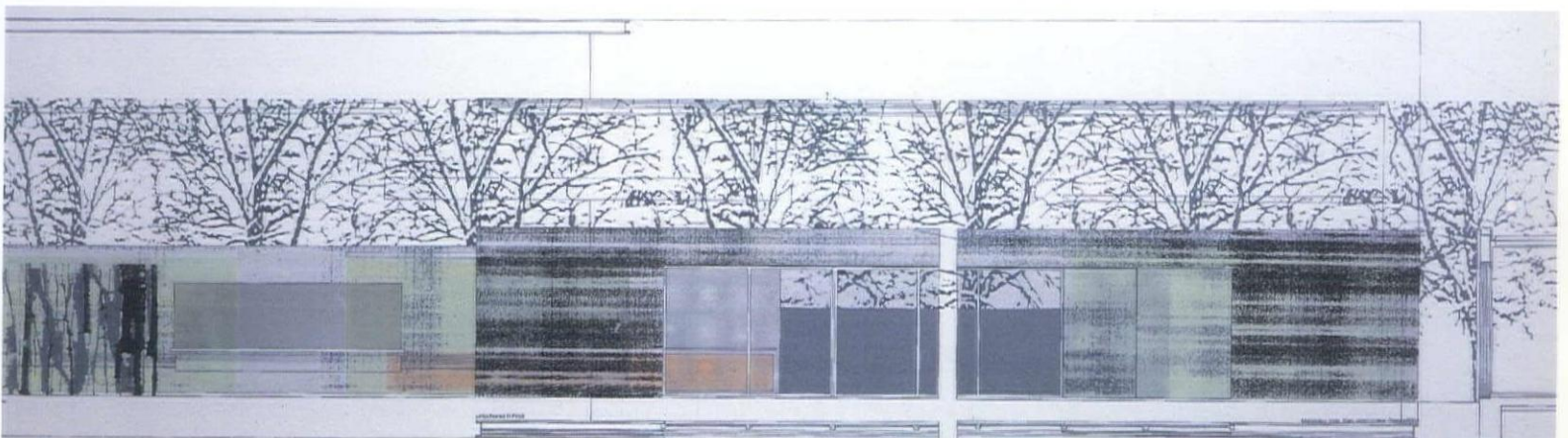
What will result from this mix of German car and heavy industry interests, confirmed ecologists, Christians, bankers and technology surfers?

Bridget Breuel, former head of the Treuhand commissioned to



privatise East German state industries, and now appointed head of the EXPO General Commission, represents the host nation. According to a German newspaper report she has promised that there will be a Bavarian beer evening somewhere in the programme, 185 countries have been invited to set up national pavilions beside a 100,000-square-metre theme Park, financed by EXPO GmbH and the German car industry. But the character of the event remains as nebulous as the EXPO logo, an op-art cloud of digital spots with no discernible profile, designed by Iris Utikal from Cologne. Exhibitors are being allowed to colour in this metamorphic symbol to match their individual corporate images – ie Lufthansa in Condor yellow, the Deutsche Bahn railway in red. Rainer Schilling, Art Director of EXPO, who unveiled the logo in March said that it should signal "I am different, colourful, fun, open, I am the world of colour". He hopes that cutting edge technology will be used to give visitors virtual reality experiences of the foreseeable future. Whether this will be more than touch screens and button pushing in the EXPO 2000 cyberspace cafe will depend in no small part on the reality of the architecture, in real time.

1: Peter Schweger's 8,000 square metre extension Hall 14





# OnScreen

*This month OnScreen provides a review of Japanese architect, Makoto Sei Watanabe's Web site and an insight into how new CAD software is enabling architects to make better use of the World Wide Web*

## The Web according to Watanabe

Makoto Sei Watanabe's Web site features five built projects, along with three city planning projects developed with students at Yokohama National University over the last three years. Mura-no Terrace, the K-Museum (see Special Report project review), Atlas, Aoyama Technical College and Tokyo Subway No 12 each focus on a different aspect of Watanabe's work. The work is presented very simply, allowing the projects to speak for themselves, and considering that most of Watanabe's built work defies description, each project has a surprisingly clear text.

Aoyama Technical College, which is described as "a challenge for the organic in urban space" is still one of the most bizarre apparitions in Tokyo, a difficult claim to hold on to in Japan. Watanabe explains that the College questions what building a single piece of architecture can mean in the apparent disorder and disorganisation of Tokyo. "Architecture ought to represent the effort to find a way for even one structure to have some effect on the city."

The "Induction City" project begins with the conclusion that a city cannot be designed. Through a number of

well documented studies the project searches for a "free order", guiding not designing the city.

For one of the studies – "The city of the Sun God" – a computer program was developed which automatically maximised the number of hours of sunshine an apartment unit received. The computer combined units at random and then made sure sunlight reached each unit. This process was repeated until all the units were arranged. It revealed that the standard method of arranging units in Japan is certainly not the best, but only one of many solutions.

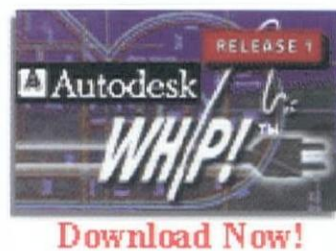
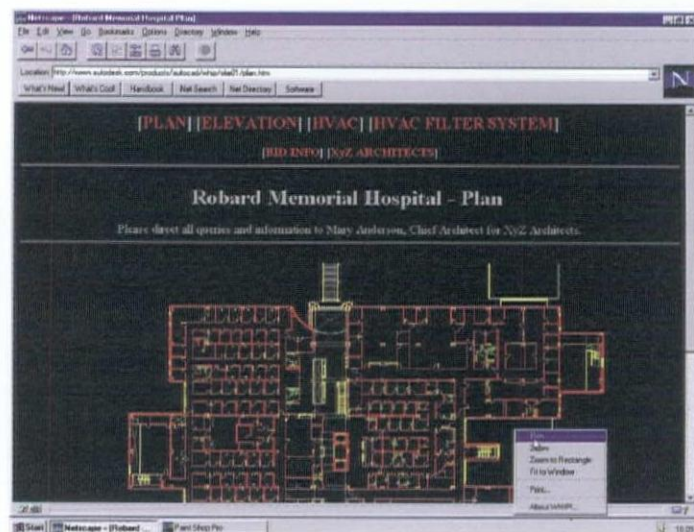
The city projects are peppered with elegant Quick Time movies, and links to Nippon Telephone Telegraph's (NTT) InterCommunication site, where other of Watanabe's city projects are located, along with projects by Jenny Holzer and Ingo Gunther.

Many architectural sites on the Web at the moment purely regurgitate a company brochure. Watanabe's site goes well beyond this giving a very in depth view of the practices principles, thoughts and research.

(<http://arch1.arc.ynu.ac.jp/~architec/>)

## Living drawings

Recent software developments now allow drawings to be uploaded to the Web, from where they can be viewed instantly by project architects, engineers and construction managers. The immediacy of the Internet and the graphical nature of the World Wide Web can help the



design community convey the design intent clearly and efficiently, compressing schedules and reducing costly mistakes that result from out-of-date information.

Autodesk and Netscape Communications have developed a new compressed file format, drawing Web format (DWF), engineered specifically for the Internet. Designed for detailed graphical data such as professional design drawings, the DWF file format is a highly compressed vector format for 2D graphics. In contrast to the static nature of bitmap images, DWF files let users pan and zoom the drawing without accessing the server, reloading the file or losing visual data.

AutoCAD most recent utility, Release 13, part of a CD-based Internet Publishing Kit, allows the user to publish any drawing on the Web, by simply creating a new drawing or opening an existing one and saving it as a DWF file. It is also possible to embed URL's or hyperlinks into the drawing. As in any Web site there are links embedded into the page with hyperlinked text or buttons which take you to another page or site. Now hyperlinks can be embedded into the drawing file too, directing the viewer to another drawing, say a detail sheet, or to a supplier's Web site for specific product information.

The new AutoCAD release allows the user to access a drawing posted

anywhere on the net from within the drawing program, but other surfers without Auto CAD can also view the drawing. WHIP!, a Web browser plug-in which is fully compatible with Netscape 3.0, allows any surfer to access the drawing files. WHIP! not only allows surfers the ability to view the file but to pan, zoom and follow the embedded links.

## AutoCAD's Web site

In what amounts to a bridging technology, Autodesk Publishing (ADP) have just announced the availability of Design Blocks, a compilation of "intelligent information" on CD-ROMs that builders, architects and engineers can use in planning and executing design and building projects. It is like a mini Web or Intranet on a CD which just contains product information. Data drawn from the resources of two of the world's leading sources of information for the construction industry (Sweet's Group and Manufacturer's Survey Associates Incorporated) can be accessed by means of a standard navigation interface.

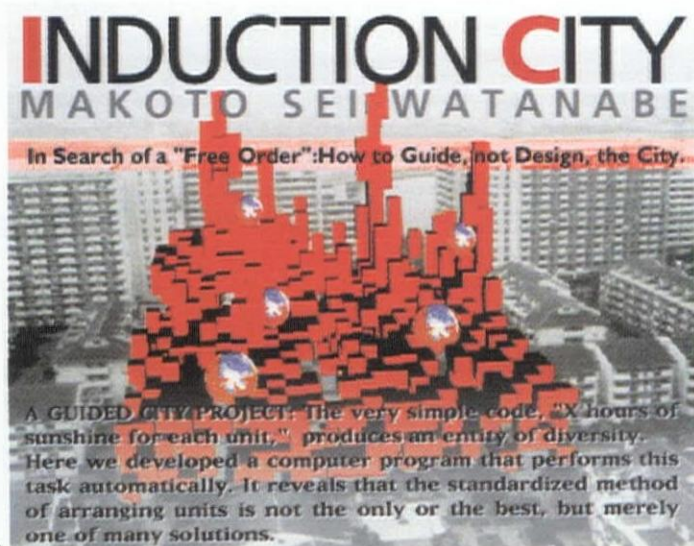
Ian Howell, publisher of the Autodesk Design and Construction Library said: "For architects and engineers up to 30 percent of their time can be spent finding product information, re-drawing building products and details, and specifying products. This simple lack of access to information has been the root cause of this time loss." (<http://www.autodesk.com/products/autocad/whip/whipdwn.htm>)

Mark Dytham is partner of Klein Dytham architects, based in Tokyo. He can be contacted via WA or Tel/fax: +81 3 3796 1709; or e-mail: [zapkdarc@gol.com](mailto:zapkdarc@gol.com)

1: AutoCAD's Release 13 allows users to access drawings posted anywhere on the net

2: WHIP! plug-in logo

3: Watanabe's Web site invites the user to investigate the thoughts and principles behind the practice's work





# "Downgazing": The next flavour of the month

## Polemic

Choose a major financial centre; London, New York, Tokyo, Chicago, Frankfurt, Singapore, Hong Kong...Wherever it is you can be sure that when the staff in its great office towers go home at the end of the day, their computers don't switch off. Instead they run programmes that download the day's business into secure vaults far away. If the firm's offices are bombed, catch fire, flood or are otherwise disabled before the start of business the next day, more computers will come alive. Key staff will be telephoned at home and a rendezvous will be arranged at the company's "hot site", a nondescript office building somewhere on the outskirts of the city. This emergency headquarters, ready to receive furniture, personal computers, telephone lines and data terminals at four hours notice, is where the staff will work until the difficulty at the main office is resolved.

Worldwide there are probably 400 specialist companies offering what are now called "business continuity services" like this. Depending on the perceived risk, these companies will take care of everything from automatic data recording to remote office lettings and emergency computer network planning. Born in the wake of terrorist activities in several countries, nowadays they deal with other matters as well. Bombings and fires are still relatively rare. Much more common are electronic systems failures, thefts of equipment, employee sabotage and sickness, any of which can seriously damage profitability. Last year business continuity insurance against risks from bombing to food poisoning is estimated to have cost companies nearly US\$770 million (£480 million) in the world's 12 major

financial centres. It is a measure of the transformation that has taken place in the relative status of place, space and information that continuity planning of this kind — once unknown — is now an integral part of the enormous Information Technology budget that, in the City of London alone, is expected to rise from US\$4 billion to US\$6.4 billion (£2.5 billion to £4 billion) by the year 2000, and globally could reach US\$112 billion (£70 billion) by the turn of the century.

If global figures of this magnitude ring alarm bells in the minds of architects, because they wonder how much money will be left to invest in buildings after IT is satisfied, then they are right, for all the indications are that a contest is arising between IT and building construction over infrastructural investment. According to OECD figures a total of US\$48 billion (£30 billion) was raised by banks and bonds worldwide for project finance last year. This private sector figure showed a massive 83 percent increase over 1995, but a breakdown of the projects themselves showed that the overwhelming majority were in the IT or IT-related category, rather than in construction. Of the US\$17 billion (£11 billion) invested in European Community projects in 1996, all except US\$500 million (£312 million) for the Anglo-French Channel Tunnel rail link went into IT, telecommunications and electricity generation and distribution.

It is the prospect of an IT-dominated future that is beginning to make the humble "hot site" look interesting. "Hot sites" are cheap and can be as interchangeable as used cars on a forecourt. Virtually everything to do with their usefulness is determined by their IT-friendliness, not their aesthetics

or their prestigious address. Indeed, as the cost and complexity of computer and communications networks increases, so does the importance of freedom from downtime begin to overwhelm all other corporate considerations. Buildings can easily cease to be a major issue. Business managers fear IT and computer failures more than they fear any possible problem that can occur with a building — up to and including its total destruction by high explosives.

This is the bottom line for "hot sites" for, important as they are as a form of insurance, they otherwise barely exist as a separate entity. Too small, too old, too undistinguished, too inconveniently located, they have often failed to find conventional buyers or tenants on the open market because they are without original or distinguishing features of any kind. In real estate terms they are no more than terminals. The last resort of a beleaguered corporation striving to foresee and avert catastrophe.

Why then do they now represent an opportunity? Because in corporate terms security of communications and records is already more important than architecture. In fact, in some ways, conventional corporate architecture, conspicuous, lavish and creative, has become a business liability, an easy target for public displeasure, or an individual with a grudge. As a result, many major corporations not only have "hot sites" but "remote sites" too, places where their core business can be carried on in peace and quiet. The German airline Lufthansa has storefront offices in major cities all over the world, but all its reservations are handled from a facility in rural Galway in Ireland — as are those of American Airlines and Korean Air.

Could it be that the inverted value system of the "hot site" and the "remote site" is becoming a paradigm for what architects should try to provide, now that they are going to have to fight hard for a place on the corporate shopping list? Despite the efforts of art historians, under the impact of information technology all buildings, from humble dwelling house to mighty office tower, have begun to slip away from the concept of permanent and appreciating value into a kind of limbo where their value is constantly being reassessed. At one extreme is the assertive signature building, a fortress with a price tag registering hundreds of millions of currency units. At the other is the cheap and inconspicuous suburban or provincial office building.

Just as the late Howard Hughes eschewed limousines in favour of used Chevrolets, in order not to attract attention, so are some experts in the art of fitting organisations into buildings looking increasingly at the modest and inconspicuous. Where future work for the corporate sector is concerned, "downgazing" may turn out to be as important as "downsizing".

**Martin Pawley**



**"Conventional corporate architecture, conspicuous, lavish and creative, has become a business liability, an easy target for public displeasure, or an individual with a grudge"**



# Book Reviews

## Have airport will travel

*Building for Air Travel – Architecture and Design for Commercial Aviation. Edited by John Zukowsky. Prestel, New York. 256pp, 103 colour and 216 b/w illustrations. US\$65 (hardback)*

Reviewed by Thomas Leslie

The simultaneous development of aeronautics and modern architecture has given us buildings of both outstanding quality and dismal misconception. Since Le Corbusier's *Aircraft*, a poetic ode to the architectural and urban possibilities inherent in air travel, architecture has been challenged, broadened, and occasionally surpassed by the spatial and metropolitan possibilities of the aircraft and its natural habitat, the airport.

Since the early 1920s, the airport has been a unique architectural opportunity. Originally conceived as slightly updated railroad station waiting rooms, the terminal building has undergone a dramatic evolution. The pastoral nature of the early terminals buildings reflected the almost aristocratic approach to flight of the time. By 1960, with the introduction of the commercial jet liner, the scale

and complexity of the airport terminal increased dramatically, often with unpredictable results. In many cases, airports designed for the smaller craft, such as Idlewild Airport in New York, underwent sensational transformations into massive jet ports that challenged preconceptions of functionality and aesthetics while stressing urban infrastructure to the absolute limits.

Since the further explosive growth of air travel in the 1980s, the airport has undergone further changes. The airport of the 1990s bears more of a relationship to a supermarket than a functional machine. De-regulation in the US has reduced air travel to an often mundane method of transportation, and the resulting airport and aircraft designs reflect an emphasis on efficiency and commerce rather than drama and jet-age style.

Throughout this brief but turbulent history, architecture, urban design, and product design have been employed by airlines, cities, and manufacturers. *Building for Air Travel* is a long overdue, comprehensive examination of this often uneasy relationship. As the catalogue to the Art Institute of

Chicago's exhibit of the same name, it presents the history of aviation-related design in archaeological detail, its subject-matter ranging from the impact of air travel on the American city to the contribution of graphic designers to the ephemera of the aircraft cabin.

The book is divided into a section on the history of airport design, and one on the urban and psychological impacts of the aircraft and the city. The histories are excellent surveys of European and American airport design. David Brodherson's essay on American design concentrates on the development of Chicago and New York's airports, although his examination of early developments throughout the country is excellent as well. Essays on European examples are given more space. Wolfgang Voigt's description of early developments is notable for its resurrection of particularly interesting British examples.

These histories are good introductions, however the need for a comprehensive examination of international airport design remains unfulfilled. The second half of *Building For Air Travel* is more complete, in its examination of the relationships between cities, regional economies, and airport hubs. Robert Bruegman's contribution, "Airport City" is particularly instructive, noting how the combination of urban and aeronautic functions has long been an unrealised goal of planners and architects alike.

Perhaps the most intriguing contribution to the book is Wood Lockhart's A "Pilot's Perspective on Airport Design". Written by a veteran commercial pilot, this piece examines the rationale behind runway, taxiway, and terminal design from the other side of the terminal gate. In fact, developments such as Denver's new International Airport are perhaps more notable for their functional layout than their architecture, however this is rarely possible to notice or appreciate. Lockhart's view allows a new appreciation of the extreme functional requirements involved in airport site design.

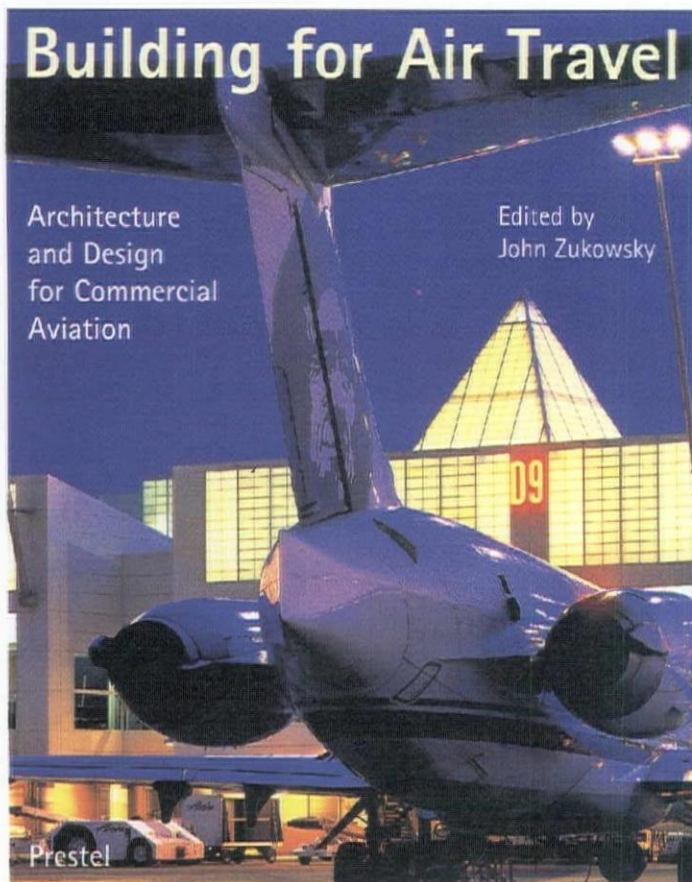
Finally, Leonard Rau's examination of the role of graphic design contains several points of note. In particular, it

is a pleasant surprise to find that the classic "Pan Am" globe colours and livery were designed by architect Edward Larrabee Barnes.

The ability of the authors and editors to span the range of design, from cocktail napkins to infrastructure, is notable, and it is the scope of this book that is most interesting. The collection of historic photographs is welcome for its attention to both airports and aircraft – both of which have been targets of major design efforts. Unfortunately, the designers of aircraft interiors have rarely been as well recognised as their counterparts, and this collection serves to partially correct this.

As a complete history, however, *Building for Air Travel* falls some way short. There is obviously a rich record of aviation's relationship with architecture and design available. While this effort provides an admirable survey, and an outstanding collection of historical plates, the relationship deserves further study and, one hopes, a comprehensive history.

Thomas Leslie is a designer/writer living in San Francisco, California



## The sky's the limit

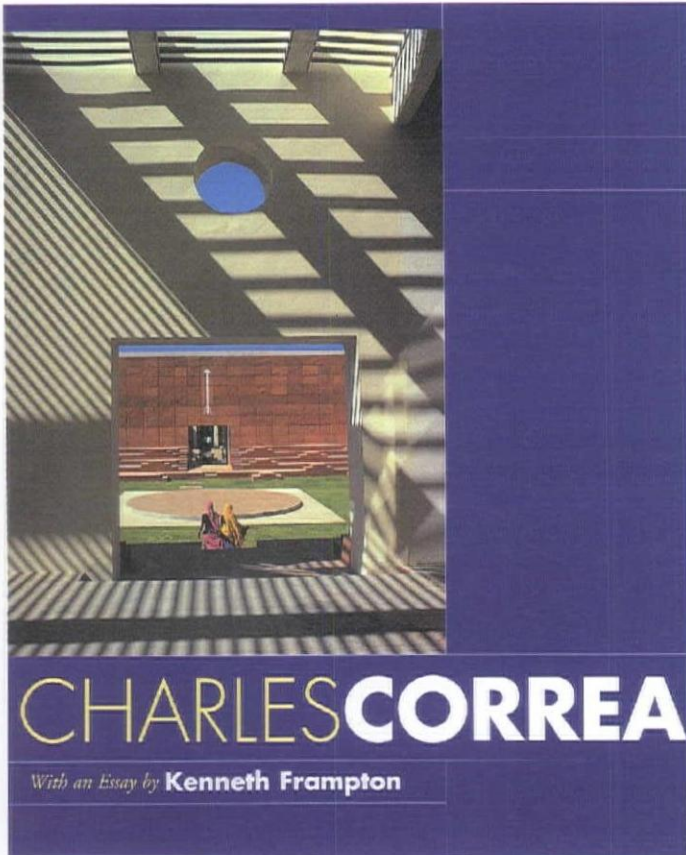
Charles Correa. With an essay by Kenneth Frampton. Thames and Hudson, London. 208pp, 450 illustrations, 200 in colour. £40 (hardback)

Reviewed by Dennis Sharp

There have been occasions in the past when I – and many others – have listened enthralled by Charles Correa's descriptions and presentations of his own work. The talks have ranged from single buildings to urban design projects on a gigantic scale for new Bombay. We marvelled at the way he could develop a framework for his concepts, drawing upon roots that transcend fashionable currents yet remain utterly and fascinatingly up-to-date.

This superbly designed and illustrated book brings back memories of these talks, but with its additional illustrations, drawings and sketches, gives a whole new dimension of meaning to his words. Each of the 29 schemes illustrated has a full





accompanying text which is supported by some breathtaking coloured pictures that convey the broad cultural base from which Correa operates.

According to Kenneth Frampton, whose words preface this book, Correa's work has always been characterised as a synthesis between popular culture and archaic cosmology. Furthermore, Frampton refers to the architect's "faith in...the 'eternal present'," a phrase borrowed from Sigfried Giedion, but one that has particular reference to the Indian sub-continent where past, present and future meet.

We see in this book a series of story-line narrative plans which the architect has given meaning to and enriched, like a guru. For the Arts Centre, Jawahar Kala Kendra, at Jaipur – itself a city steeped in science – Correa developed "eternal" walls and a Mandala plan of great subtlety. The dual cultural equation was further extended to encompass the evocative spaces of the new State Assembly at Bhopal, with a series of *partere*, or gardens within gardens. In many of the examples presented one can observe the effect of his inventive building forms illuminated and articulated by the power of the tropical sun.

Understandably, the book's tail-piece is a signed credo supporting Correa's view that the most important

part of his inspiration derives from the "sense of the sky" which he claims "profoundly influences the designer's relationship to built form". It goes on: "That is why in Asia the symbol of education has never been the Little Red School House [but] the guru sitting under the tree."

The book's opening essay is also called "The blessings of the sky" and, like his talks, dwells on building types but trades space to give comments on terraces and courts and ritualistic routes like Padmanabhapuram in conjunction with concepts of work spaces, urbanisation issues and tourism that he has put into practice in a number of projects. These include the Hotel Cidade de Goa (1978-1982) and the Kala Akademi (1973-1983) also in Goa, with a kit-of-parts involving colours and images in order to set up "a dialectic between built form and imagery" – a metaphysical aspect of design concerning "our relationship to something outside [and beyond] ourselves."

The book concludes with a fully annotated chronology, biodata and a comprehensive bibliography that opens yet another seam of printed material on the prolific ideas-based architect.

*Dennis Sharp is a London-based architect and writer*

#### How the other half live

*Democratic Architecture: Practical Solutions to Today's Housing Problems. Donald MacDonald. Windsor Books International, Oxford, UK. 176pp, over 100 b&w illustrations. US\$35/£26.95*

*Reviewed by Dickon Robinson*

The author of this book uses it to explore three main themes. The need for cheap, affordable housing for the many Americans who are homeless or at risk of homelessness; empowering poor people to purchase their own home, and the need to build high density mixed-use schemes in order to reduce suburban sprawl. Who could disagree? – although what is democratic about this agenda is less clear.

MacDonald describes in considerable detail his own designs for timber built structures. These are carefully thought out and make the maximum use of components which can be bought off-the-shelf. There are clear resonances with the work of Walter Segal in the UK and it is interesting how "homely" timber construction systems seems to bring out an almost religious fervour in their advocates.

Similarly his ideas on mixed-use developments and the desirability of achieving higher residential densities seem familiar to European eyes. His exploration of organic form, although derived from Mexican villages, could equally be drawn from the study of medieval villages in Europe, and probably elsewhere besides.

One thing is clear: the US is not free from bureaucracy, regulations, planners, conservationists, building codes and highway engineers. Overcoming these hurdles to provide affordable housing is as daunting a prospect in California as it is in the UK. Some of the most interesting parts of the book describe the ways in which MacDonald and his clients dealt with the problems.

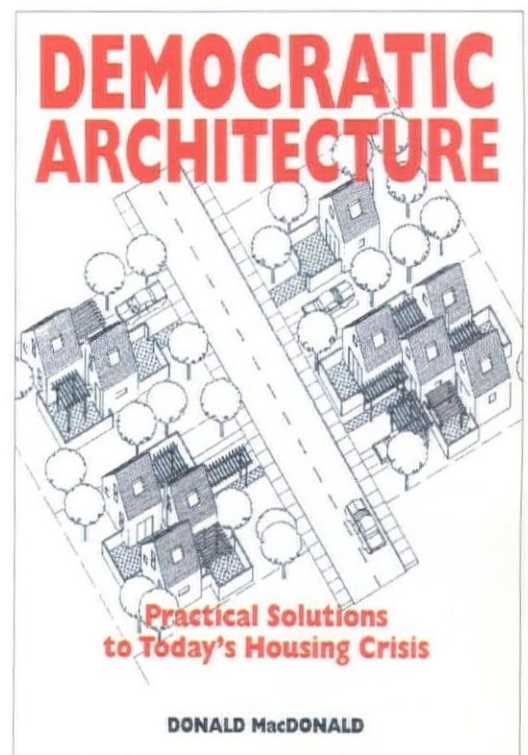
He gives a very clear example of the blind obstruction of officialdom when describing the reception of his minimalist "city sleeper" – a weather tight box constructed out of eight foot by four foot plywood panels mounted on concrete blocks with a

simple door and left in a location frequented by rough sleepers. Their removal was forced by the California Department of Transportation who were concerned about their potential liability if anything happened to one of the occupants. It is a sad reflection that if a homeless person constructs their own shelter it would generally be tolerated while if a voluntary agency provides it the implications of taking responsibility results in the initiative being discouraged.

Even more depressing is the way Americans are now turning to third world solutions to solve their homelessness crisis, the scale of which is truly daunting. MacDonald estimates that over 1,000,000 people spend the night on the streets, and it is much to his credit that he focuses attention on it.

This is a well written and well illustrated book. Sadly, the overwhelming feeling one gets from it is that real freedom, is freedom from any form of social concern for those at the bottom of the heap.

*Dickon Robinson is Director of Development and Technical Services at the Peabody Trust, London*





# Events

## Lectures, Congresses and Conferences

### Australia

#### **Biennial Oceanic Architecture and Design Student Conference**

International student conference to be held at Deakin University, from 6-11 July 1997. Contact Carlie Spiteri, School of Architecture and Building, Deakin University, Woolstores Campus, Geelong, Victoria 3217, Australia.

Tel: +61 3 5227 8364

Fax: +61 3 5227 8365

e-mail: [morphe@deakin.edu.au](mailto:morphe@deakin.edu.au)

Web: <http://www.ab.deakin.edu.au/morphe/morphe.html>

### Bulgaria

#### **INTERARCH 97 VII World Triennial of Architecture**

Organised by the International Academy of Architecture (IAA) and the Union of Bulgarian Architects, the Triennial will consist of a symposium – on architectural education in the twenty-first century – and an exhibition. From 23-29 June 1997 at 2 Tzar Osvoboditel Blvd, Sofia 1000, Bulgaria.

Contact Milka Kostourkova.

Tel: +35 92 9872931/9871313

Fax: +35 92 9877165

### Canada

#### **Underground Space: Indoor cities of tomorrow**

The seventh international conference on underground space and facilities, to be held in Montréal, Canada. 29 September-3 October 1997. For further information contact the Organising Committee, City of Montréal, 303 Notre-Dame Street East, 5th floor, Montréal, Québec, Canada H2Y 3Y8.

Tel: +514 872 8334

Fax: +514 872 0024

e-mail: [7econfo@odyssee.net](mailto:7econfo@odyssee.net)

### Poland

#### **Challenges to Civil and Mechanical Engineering in 2000 and Beyond**

A Council for Tall Buildings and Urban Habitat (CTBUH) endorsed conference to be held at the Technical University of Wrocław, from 2-7 June 1997. Themes

include: an analysis of twentieth century achievements in engineering and how the industry might be improved at the turn of the millennium. Contact Secretariat of Conference CCME 97, Technical University of Wrocław, Institute of Building Engineering, Wybrzeże Wyspiańskiego 27, 50-370 Wrocław, Poland.  
Tel: +48 71 3203721  
Fax: +48 71221465  
e-mail: [kobiak@pioneer.ib.pwr.wroc.pl](mailto:kobiak@pioneer.ib.pwr.wroc.pl)

### UK

#### **ICBEST 97 Greener buildings for the new millennium**

An international conference on building envelope systems and technology. The main focus of this year's event will be the construction of greener buildings. To be held from 15-17 April 1997 at the University of Bath, Claverton Down, Bath BA2 7AY, UK. Tel: +44 1225 826 541. For further information contact Davies Associates, 95 York Street, London W1H 1DU, UK.

Tel: +44 171 258 0701

Fax: +44 171 724 0106

e-mail: [hq@dapr.com](mailto:hq@dapr.com)

#### **Portable Architecture**

A conference, organised by the Portable Research Unit of the University of Liverpool, focussing on the application of demountable and portable building systems. The event runs from 30-31 May 1997. For further information contact the University of Liverpool, School of Architecture and Building Engineering, Leverhulme Building, Abercromby Square, Liverpool L69 3BX, UK.

Tel: +44 151 794 2604

Fax: +44 151 794 2605

e-mail: [paconfex@liv.ac.uk](mailto:paconfex@liv.ac.uk)

Web: <http://www.liv.ac.uk/~paconfex/home.html>

## Architecture and Design Competitions

### Czech Republic

#### **The Prague Castle Pheasantry Redevelopment Project**

The Prague Castle Administration have announced the first stage of a major open international competition for the redevelopment of the former Pheasantry garden and the adjacent buildings of the Court of the Riding Hall situated at the northern approach to Prague Castle. The competition is open from 2 May 1997. Submissions for the first stage are due by 15 August 1997. For further information contact Jan Zemánek, AYH HOMOLA Projektmanagement sro, nám. Barikád 1134/3, 130 00 Prague 3, Czech Republic.

Tel: +42 2 697 00 24

Fax: +42 2 697 20 15

### Finland

#### **International competition for a Music and Arts Centre in Jyväskylä, Finland**

The City of Jyväskylä have organised an architectural design competition for a new Music and Arts Centre, to coincide with the 100th anniversary of Alvar Aalto's birth. The competition is open to architects from all European Union (EU) countries, as well as certain others. Registration until June 1997.

Deadline for entries 15 September 1997. Total prize money FIM 750,000. For further information contact the competition secretary at The Finnish Association of Architects, Yrjönkatu 11A, FIN - 00120 Helsinki, Finland.

Tel: +358 9 584 448

Fax: +358 9 601 123

### Germany

#### **Techtextil 1997: Textile structures for new building**

The working Group for Technical Textiles, in connection with the International Trade Fair for Technical Textiles (13-15 May 1997) are holding a competition open to students of architecture and construction engineering. Entries must be submitted by 7 March 1997. For further information contact Mr Michael

Jänecke, Ludwig-Erhard-Anlage 1, D-60327 Frankfurt am Main, Germany.

Tel: +49 69 7575 6578

Fax: +49 69 7575 6710

### Italy

#### **1997 Ermanno Piano Scholarship**

The Ermanno Piano Scholarship has been created to give recently graduated architects of any nationality the opportunity to work, for six months, with the Renzo Piano Building Workshop in Genoa, Italy. The grant amounts to US\$10,000. The 1997 scholarship is open to architects who graduated in 1996. Applicants should send their curriculum vitae – in French, English or Italian – to the Renzo Piano Building Workshop, Via Rubens 29, 16158 Genoa, Italy before 31 May 1997. The final selection will be made on 15 July 1997.

### USA

#### **Van Alen Institute Dinkeloo Fellowship: an architectural portfolio competition**

A competition open to US citizens who are recent or prospective graduates of US architecture and related programmes, from May 1988 to May 1997. The Fellowship, which honours John Dinkeloo's contribution to public architecture, involves the award of US\$3,500-7,000 to the successful applicant, in support of a two month stay at the American Academy in Rome, Italy. Submission deadline 1 May 1997. For further information contact Van Alen Institute, 30 West 22 Street, New York, NY 10010, USA.

Tel: +212 924 7000

Fax: +212 366 5836

e-mail: [vanalen@designsys.com](mailto:vanalen@designsys.com)

Web: <http://vanalen.org>





## UK lecture: Spaced Out III – series of ICA talks

**Paul Robbrecht and Hilde Dam** *The Emotional Impact of Architectural Definition*, 24 April 1997, 19:00 hrs. **Francois Roche** *Chameleon Architecture*, 15 May 1997, 19:00 hrs. **Oliver Kruse and Claudio Silvestrin** *Argriarchitecture, Hombroich and the Hermetic* 3 June 1997, 19:00 hrs. **Ben van Berkel** (pictured above) *Continuous Relations*, 18 June 1997, 19:00 hrs. For further information on *Spaced Out III* contact the Institute of Contemporary Arts (ICA), The Mall, London SW1Y 5AH, UK. Tel: +44 171 930 3647. Fax: +44 171 873 0051

### Exhibitions

#### Canada

##### **The New Spirit: Modern Architecture in Vancouver between 1938-63**

Until 25 May 1997. For further information contact the Canadian Centre for Architecture (CCA), 1920 rue Baile, Montréal, Québec, Canada H3H 2S6. Tel: +514 939 7000 Fax: +514 939 7020

#### France

##### **Made in France: 1947-1997**

The last exhibition at the Pompidou before its closure for internal reorganisation looks back on 50 years of French design. Until 29 September. For further information contact the Centre Georges Pompidou, Paris, France. Tel: +33 1 44 78 12 33 Fax: +33 1 42 78 50 59

#### The Netherlands

##### **As Good as New**

An exhibition, organised by the Rotterdam Reconstruction Committee, which looks at the ideas of five teams of architects and historians concerning the possible revitalisation of buildings from the reconstruction period in Rotterdam.

From 5 April until 11 May 1997. For further information contact the Netherlands Architecture Institute (NAI), Museumpark 25, 3015 CB Rotterdam, the Netherlands. Tel: +31 10 4401200 e-mail: info@nai.nl Web: <http://www.nai.nl>

#### SWEDEN

##### **Rafael Moneo**

An exhibition of the architect's designs for the new Swedish Museum of Architecture and the new Museum of Modern Art, in Stockholm, Sweden. Until 10 February 1998. Contact Catharina Siegbahn at Arkitektur Museet, Skeppsholmen, S 11149 Stockholm, Sweden. Tel: +46 8 463 0500 Fax: +46 8 611 47 61

#### UK

##### **Charlotte Perriand: Modernist Pioneer**

Retrospective of the influential French designer's long career. Until April 1997. The Design Museum, Shad Thames, London SE1 2YD, UK. Tel: +44 171 378 6055

##### **The Power of Erotic Design**

An exhibition, designed by Nigel Coates, of the erotic in twentieth century culture, from Freud to

Madonna. 1 May-12 October 1997. Design Museum, Shad Thames, London SE1 2YD, UK. Tel: +44 171 403 6933 Fax: +44 171 378 6540

#### USA

##### **Building for the people of the USA**

An exhibition of the General Service Administration's 1996 Design Award winners, representing excellence in the categories of: architecture, art, engineering, graphic design, landscape architecture, interior design, historic preservation and building designs in progress. A key theme in the exhibition is the restoration of courthouses from all over the country. The event runs until 4 May 1997 at the National Building Museum, 401 F Street NW, Washington DC 20001, USA. Tel: +202 272 2448 Fax: +202 272 2564

### Trade Shows

#### France

##### **Euro City 97**

An exhibition of products for the urban environment to be held at Parc des Expositions de Paris, Porte de Versailles, 75015, Paris, France. 3-5 June 1997. Contact Caterina Proietti, Euro City 97, Hereford House, Bridle Path, Croydon, Surrey CR9 4NL, UK. Tel: +44 181 6804200 Fax: +44 181 6815049

#### Germany

##### **Interzum 97**

Trade fair for new products in the furniture production and wooden interiors sector. 2-6 May, 1997. Contact Elisabeth Nürnberger at Köln Messe, Messeplatz 1, D-50679 Köln, Germany. Tel: +49 2 21/8 21 25 62/2627 Fax: +49 2 21 8 21 3417

#### Italy

##### **TexFair**

An exhibition of products aimed at the domestic and contract furnishing markets. 9-12 May, 1997. For further information contact the Ente Organizzatore, Cosmit, Corso Magenta 96, 20123, Milan, Italy.

Tel: +39 2 485921 Fax: +39 2 4813580

#### Jordan

##### **PAX 97**

The first international construction exhibition to be held in the Near East, designed to attract visitors from the West Bank, Gaza, Jordan and the Iraqi community in Amman. 5-8 May 1997. Contact Saatchi & Saatchi. Tel: +962 6 612825/6 Fax: +962 6 633090

#### Kazakhstan

##### **KAZBUILD/KIPS 97**

KAZBUILD 97, Kazakhstan's fourth international building, construction and interiors exhibition will be run in conjunction with KIPS 96, the fourth international protection, security and fire safety exhibition at the Atakent International Exhibition Centre, Almaty, Kazakhstan from 3-6 September 1997. For further information contact Irene Batsieva at ITE's Construction Division. Tel: +7 3272 509 390 Fax: +7 3272 509 391

#### UK

##### **Hilight & Lightex 97**

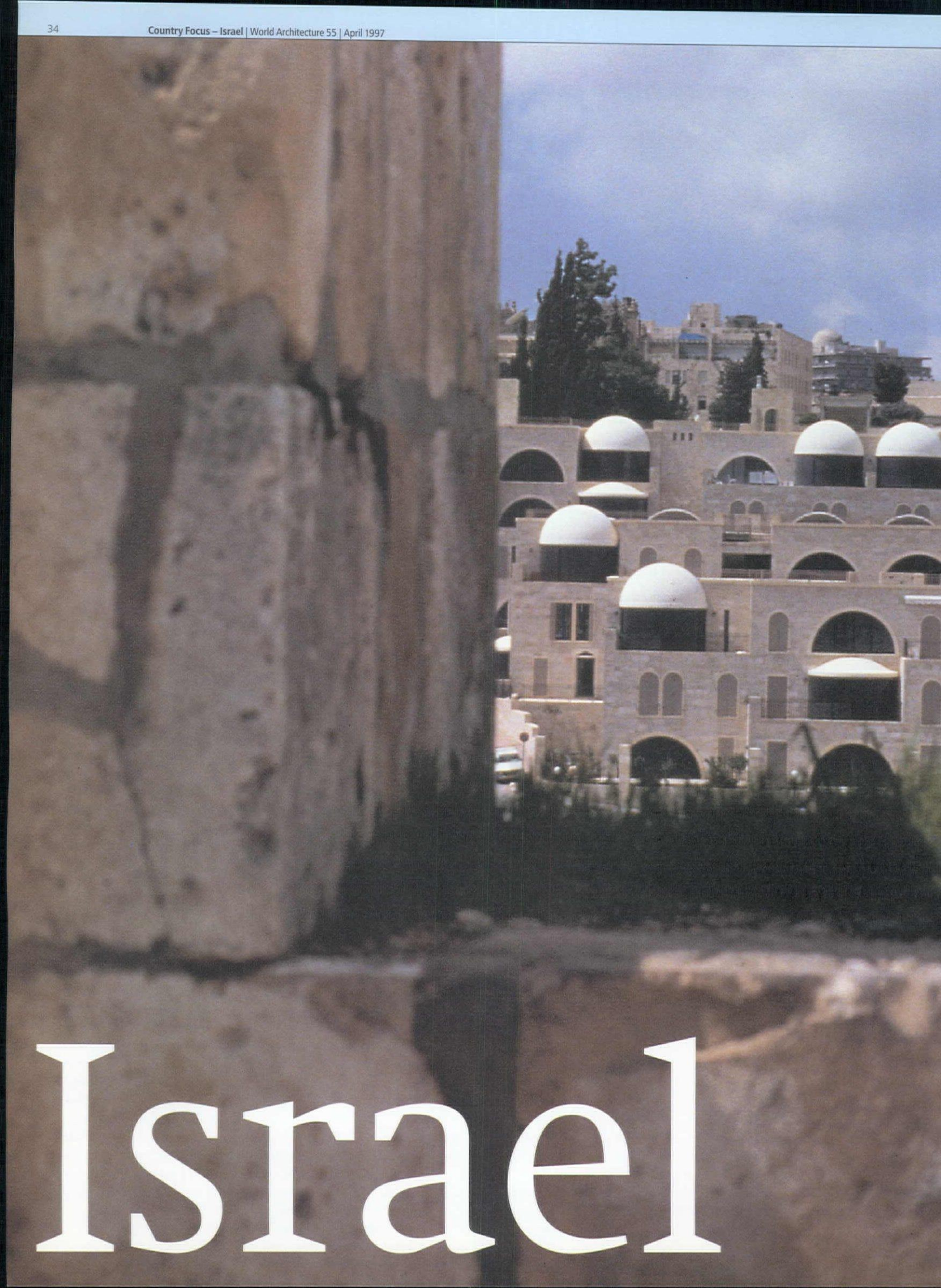
Lighting trade show. To be held at the National Exhibition Centre (NEC), Birmingham, UK, from 20-22 May 1997. Contact Chantel Stiborski at ILE & IALD, Lennox House, 9 Lawford Road, Rugby, Warwickshire CV21 2DZ, UK. Tel: +44 1788 576492 Fax: +44 1788 540145 e-mail: ILE@iald.pipex.com

#### USA

##### **The National Convention and Exposition of the American Institute of Architects**

The theme of this year's AIA convention, which is expected to attract over 10,000 industry professionals, is Practice & Prosperity: Serving Client & Community. Runs from May 16-18, at the Ernest N Morial Convention Center, New Orleans, Louisiana. For further information contact the AIA at 1735 New York Avenue, NW, Washington DC 20006, USA. Tel: +202 626 7395 Web: [www.aia.org/aiaexpo/](http://www.aia.org/aiaexpo/)





# Israel



## Country Focus

For the first half of this decade Israel enjoyed economic growth at an equivalent rate to the Asian “tigers”. The construction industry, especially the housing sector, flourished. Now architects are having to look for work. But despite this apparent “recession” and the country’s idiosyncratic construction laws, Israel is still ripe with architectural opportunities and is attracting top-class international architects. *World Architecture*’s Jerusalem-based correspondent, Larry Derfner outlines current and future developments, and Hanscomb cost consultants provide a construction factfile.

1: Moshe Safdie's Mamilla residential-commercial complex facing Jerusalem's Old City





**T**hese are relatively rough times for architects in Israel. For the first time in this decade some of Israel's estimated 4,000 architects – quite an abundance in a population of six million – are actually having to look for work instead of turning it down. Owners of luxury apartment and office buildings are having a hard time finding buyers and leaseholders. The Africa-Israel Co, one of the country's largest builders, had to lower the asking price for apartments in a new complex in upscale North Tel Aviv from US\$4,500 per square metre to US\$3,500. There's no need to cry for Africa-Israel, though – it is also building 300 houses in the rich Tel Aviv suburb of Savyon, and the average sale price on them will be US\$1 million.

When people speak of a recession in Israel, particularly in the building industry, they are speaking in purely comparative terms. The economic growth rate for 1996 was disappointing – 4.4 percent, compared to an average of about six percent for the first half of the decade, which was a Far Eastern "tiger" pace of expansion. During those years, real estate prices rose 50-60 percent above the annual inflation rate. Today, privately-owned, high-rise commercial-residential complexes and publicly-funded projects worth hundreds of millions of dollars – often designed by the biggest-name foreign architects – are going ahead as planned.

Israel is a tiny country, about the size of Wales, UK or New Jersey, US. Its southern half – the Negev Desert – is sparsely populated, and about 85 percent of the desert is used for military bases. The northern half of Israel is more densely populated than any nation in the world. Furthermore, the government owns between 90-95 percent of the country's land, and sells it to bidders sparingly and expensively – land in North Tel Aviv costs up to US\$12 million an acre.

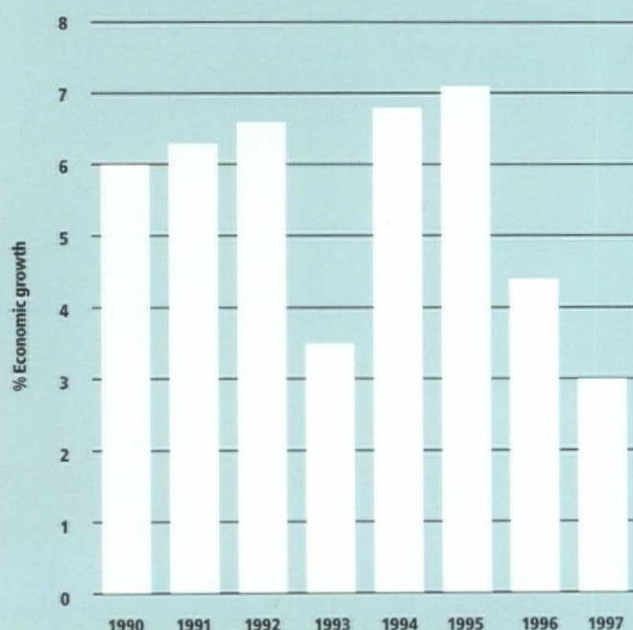
In addition, Israel has a higher rate of population increase – nearly two percent per year – than any other economically advanced country. Between the birth rate and immigration, Israel's population has multiplied ten times since statehood in 1948, and is projected to grow from its current six million to 8.4 million in 2020. "Most poor countries have high population growth, and most rich countries have low population growth. I don't know of another country in the world that has both high economic growth and high population increase like Israel," notes Elinor Barzacchi, deputy head of Tel Aviv University's School of Architecture. With such little land, and so much of it being built on to meet the needs of a rapidly growing population and economy, Israeli real estate development and architecture seem to have a lucrative future.

### Economic growth amidst political unrest

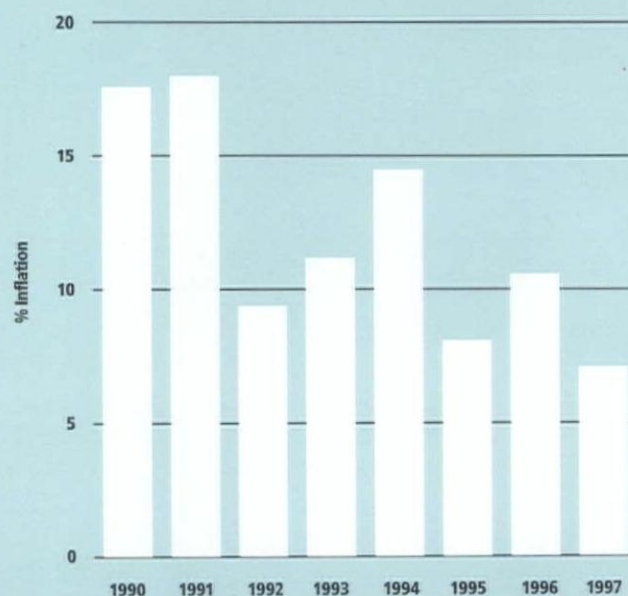
Even in this "recession," Israel has far more architectural opportunities, acre for acre, than Europe or North America. Galloping economic growth – fuelled mainly by a giant influx of new immigrants, mostly from the former Soviet Union, which in turn set off a boom in the construction industry – and the real estate depression in the West combined to lure first-rank architects to Israel, and to keep Israeli architects quite satisfied to stay home. In the 1990s, Israel left the Second World and entered the First World. Some 750,000 new immigrants pushed up consumer demand, mainly for housing. To illustrate, in 1989 there were just under 20,000 housing starts; in 1990, 41,000; in 1991, 88,000. The housing boom had a ripple effect on the economy, and today the average Israeli earns US\$17,000 a year – only US\$4,000 less than the average British citizen.

The peace process was also a major contributor to prosperity. Political barriers to international trade with Israel began

The housing boom had a ripple effect on the economy



The fluctuation in inflation rates reflects the slowing of the economy



**"I don't know of another country in the world that has both high economic growth and high population increase[s] like Israel"**





1: Tourism has suffered due to political unrest, but major new hotels include a Hyatt hotel at the Dead Sea

2: Model of the US\$600 million Shalom Center, Tel Aviv, the largest of any current commercial project

coming down when peace talks between Israel, the Palestinians, Syria and Jordan began in Madrid in 1991. These barriers collapsed almost completely when the slain Prime Minister Yitzhak Rabin and Palestinian leader Yasser Arafat signed the Oslo peace accord in September 1993.

While it was commonly thought that the chief benefit to Israel's economy would be trade with Arab states, in fact it was the influx of major foreign companies and investors to Israel, who were no longer afraid to alienate Arab partners, and who saw in this country the prospect of a less explosive, more stable environment in which to do business, as well as a Western-oriented setting for their operations in the Middle East. A very strong dose of international, not to mention domestic, confidence was injected into the Israeli economy; people began to bet on the country's future.

From the night of 4 November 1995 until January 1997, however, the peace process went into decline – and when the peace process falters, the Israeli economy in every sector feels it immediately. After the night of Rabin's murder, faith in the future of the process was shaken. It was rocked again the following spring by a spate of Islamic fundamentalist bus bombings in Jerusalem and Tel Aviv. The upset victory in last May's prime ministerial election by Binyamin Netanyahu, previously a bitter foe of the Oslo accord, brought deeper uncertainty than ever. Foreign leaders and businesspeople feared that the hawkish new Israeli leader would alienate the Arabs and drive the political dynamic towards war instead of

peace.

The first three months of Netanyahu's tenure seemed to bear out these fears, and his precipitous opening of an ancient Jewish tunnel near Moslem holy sites in Jerusalem's Old City set off shoot-outs between Israeli soldiers and Palestinian policemen, in which over 70 people were killed. The Middle East seemed on the brink of war. Four nervous months later, though, Netanyahu and Arafat signed the breakthrough agreement in January 1997 for the withdrawal of Israeli troops from most of the West Bank city of Hebron, and the peace process wobbled back on track. The consensus is that the brash 47-year-old Netanyahu was shocked into reality by the threat of war and of Israel's return to international pariah status, and that he will take greater care in future to keep Israeli-Arab relations stable.

#### Sliding into "relative" recession

Aside from politics there are intrinsic reasons why the country has fallen into a relative recession. "The economy was too hot – it couldn't keep growing at such a rate, it had to slow down to take a breath," says developer David Azrieli, who built the largest of Israel's shopping malls, and is now building the largest of any current office/commercial projects – Tel Aviv's US\$600 million, 1.9-million-square-foot Shalom Center.

Until about a year ago contractors were buying up land and building as fast as they could. There was such demand for architects that firms went begging for new hires. "So many projects were being built that new ones were stalling because there

#### COUNTRY FACTFILE

**Population:** Six million

**Number of architects:** 4,000 (estimated)

**Time Difference:** Israel is two hours ahead of Greenwich Mean Time (GMT) and seven hours ahead of Eastern Standard Time (EST). Time is advanced one hour from March to September.

**Currency:** One New Shekel (NIS), equals 100 agorots.

**National Holidays:** The Hebrew calendar is a lunar calendar, so holidays change yearly in accordance with the lunar cycle. Jewish holidays begin at sunset the day before the holiday.

|               |                              |
|---------------|------------------------------|
| March         | Purim                        |
| March-April   | Passover (two to seven days) |
| April-May     | Remembrance Day              |
| April-May     | Independence Day             |
| May           | Lag Baomer                   |
| May-June      | Shavout                      |
| July          | 17 of Tammuz Fast            |
| July-August   | Fast of Av                   |
| September     | Rosh Hashana (two days)      |
| September     | Gedalyadhu Fast              |
| Sept.-October | Yom Kippur                   |
| Sept.-October | Succot (eight days)          |
| Sept.-October | Simhat Tora                  |
| December      | Hanukkah                     |

**Airport Information:** The main airport is Ben Gurion International Airport near Tel Aviv. Domestic services connect the major cities of Tel Aviv, Haifa and Jerusalem to Eilat in the south and to the Galilee region in the north.

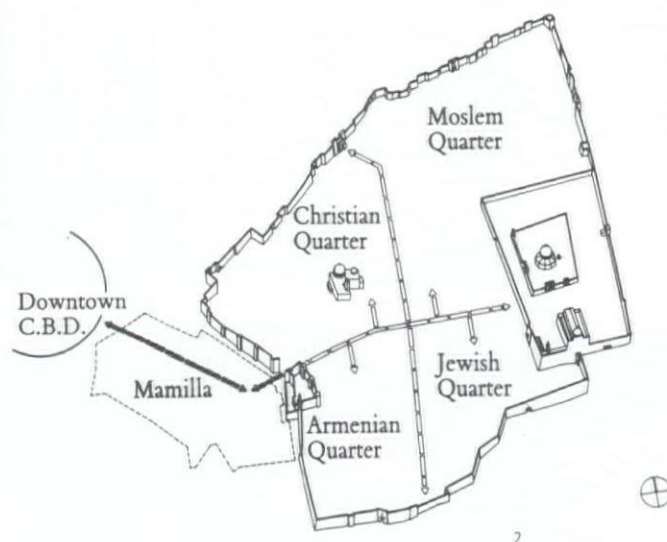
**Dialing Code:** Israel's dialing-in code is 972. The international dialing-out access code from Israel is 00.





1: Detail of the Mamilla residential-commercial complex by Moshe Safdie

2: Site plan showing Mamilla in the context of Jerusalem's Old City



## "Even in this 'recession' Israel has far more architectural opportunities, acre for acre, than Europe or North America"

weren't enough construction workers to go around," notes Barzacchi. There was such a frenzy of activity that when the recession started to take hold, it became clear that contractors had overbuilt in industrial, commercial and office space. Prices fell in these sectors by some 20 percent, and building slacked off. "The slowdown in these markets should continue until the end of this year – maybe longer," says Dr. Yair Duchin, a real estate consultant and lecturer at Jerusalem's Hebrew University.

Luxury apartment prices have fallen by about the same rate. Contractors have become relatively cautious in committing themselves to large-scale investments. Banks, in turn, have become more conservative in financing. "Before a contractor could get bank financing for a project with 15 percent of the capital up front, but now the banks are demanding that they put up 35 percent or 40 percent," Duchin notes. Interest rates are high – prime is 14.25 percent, with inflation for 1997 projected at 7-10 percent. All these factors are inhibiting new construction, and Duchin forecasts that housing starts will fall 10,000 units below demand this year. However, he adds, this shortage should drive the prices of luxury homes back up by the latter part of the year. The bus bombings last spring and the Israeli-Palestinian shootouts last autumn caused a sharp drop in tourism, which put a damper on the hotel construction sector. But major new hotels are still being built in Tiberias on the Sea of Galilee, and in Ashkelon on the Mediterranean coast. One large hotel has just been completed in Eilat, at Israel's southern tip on the Red Sea, and a Hyatt hotel was recently finished at the Dead Sea.

### Increased competition with privatisation

Domestic political changes have begun to cut into architects' fortunes. Netanyahu (who got a bachelor's degree in architec-

ture from the Massachusetts Institute of Technology, but never practised) is trying to "Thatcherise" the economy, complete with harsh cuts to government spending and privatisation. His administration is not expected to initiate the kinds of massive housing, hospital and school projects that Israel saw in the past. He is also expected to cut back on government aid to many major commercial projects, such as large grants and negative interest loans for new hotels. "There's still work left over from the good times, but the amount of new projects is limited," says Arthur Spector of Spector and Amisar, one of Jerusalem's leading architectural firms. Now that designers can no longer sit back and watch new work fall onto their desks, Spector adds: "Everybody is undercutting everybody else in price."

### Good medium and long-term prospects

But while there are short-term difficulties for architects, the unanimously-held view here is that the medium and long-term prospects are excellent – assuming that the peace process stays healthy, which is a much easier assumption to make than it was last autumn. This optimistic forecast is based not only on Israel's growing, hi-tech-based economy, which promises to keep money available for building, but also on the country's geographic and demographic conditions, which are almost certain to keep real estate prices very high.

### International architects in Israel

In January Renzo Piano, Mario Botta and Boston-based Arc came to Jerusalem to discuss proposals for the construction of a new theatre. In recent years major projects, mainly in Jerusalem and Tel Aviv, have been designed by overseas architects, including: Cesar Pelli, Shin Takemats, James Ingo Freed,



Ricardo Legoretta, and Kohn Pedersen Fox (KPF). Israeli-born Moshe Safdie (see *Face to face*) is a kind of international architect-in-residence here, his work including the new city of Modi'in and the Mamilla residential-commercial complex facing Jerusalem's Old City. He is now designing the US\$600 million expansion of Ben-Gurion International Airport.

During the last few years, Pelli has completed the master plan for the Ayalon Centre Building in Tel Aviv, an 800,000-square-foot, mixed-use project slated for construction. Takematsu has designed and planned a 450,000-square foot mixed project in Tel Aviv. Jack Diamond has completed Jerusalem City Hall, and is now designing a new Foreign Ministry in the capital. KPF have planned an office building in Herzliya. MIT Professor Julian Beinart, in association with Spector, have done the master plan for a major expansion of Jerusalem's Israel Museum, and Freed came in with Spector for the design. Botta has also planned a scheme for a synagogue/cultural centre for Tel Aviv University.

Asked why his development company, Ella Brothers, commissioned a design from Takematsu for its Tel Aviv project, David Ella said: "We'd heard about him from other Israeli architects. We looked at designs from a number of Israeli architects, but Takematsu's was the most suitable. It offered the best combination of futuristic design and practicality in construction."

But clients here often have other motivations in turning abroad for architects. Since Israeli zoning remains relatively sketchy and open-ended, the promise of a prestigious international architect can persuade a city engineer to increase the

allowable density on a project, Spector notes. And, of course, a big-name designer can also raise the price and sale-ability of units. The long-standing connection between foreign Jewish philanthropists and Israel has also played a part in bringing major foreign designers into the country. Freed joined in the design of the Israel Museum expansion on the donor's request. Likewise, US firm Cannon designed a building at Beilinson Hospital in the Tel Aviv suburb of Petah Tikva, at the donor's wishes. Foreign Jewish philanthropists' money also helps the profession. The Rothschild Fund financed the new Supreme Court building, and, over 30 years ago, the building that houses Israel's Knesset, or parliament.

### The best of the home-grown architects

It must be stressed that there are two levels of Israeli architecture firstly a very thin level of top-quality, very expensive projects (often valued in the hundreds of millions of dollars), and secondly, everything else. Foreign architects have been called in to work almost solely on the few, elite projects, and these are only world-class architects. The best Israeli architects get their share of the plum jobs. For instance, Avraham Yaski designed Azrieli's Shalom Center (after Azrieli fell out with and dismissed the original architect, Israeli-born, New York-based Eli Attia); Ram and Ada Carmi, winning a top-drawer international competition, designed the new Supreme Court building in Jerusalem; and Spector and Amisar are designing many of Jerusalem's largest, most prestigious projects, including the new Government Precinct, the visitor's National Plaza, the two million square-foot

3: New Supreme Court building by competition-winning Israeli architects Ram and Ada Carmi. Financed by the Rothschild Fund





► mixed-use Foreign Office site, and the mixed-use YMCA project.

On any but the grandest jobs, the architects are strictly home-grown. This, however, is not just a matter of protectionism. The general run of Israeli projects present too many problems, and are executed at too low a level, to be worth the interest of foreign designers. And unless Israeli clients are building extremely expensive, prestigious projects, they are not generally interested in paying the price or putting up with the demands of the world's best architects. The essential problem is that Israel – a young country, and, until this decade, a Second World country – doesn't have a culture of architecture or a tradition of craftsmanship in the building trades. Because of limited economic resources, the pressures of rapid, large-scale immigration in the 1950s and 1990s, the political imperative in the 1980s to upgrade the housing of the poor, and the drive for most of the last three decades to build Israeli "facts on the ground" in the West Bank and East Jerusalem, high quality was not nurtured as a value in local architecture, and it was held in contempt by the construction industry.

#### Building an architectural culture

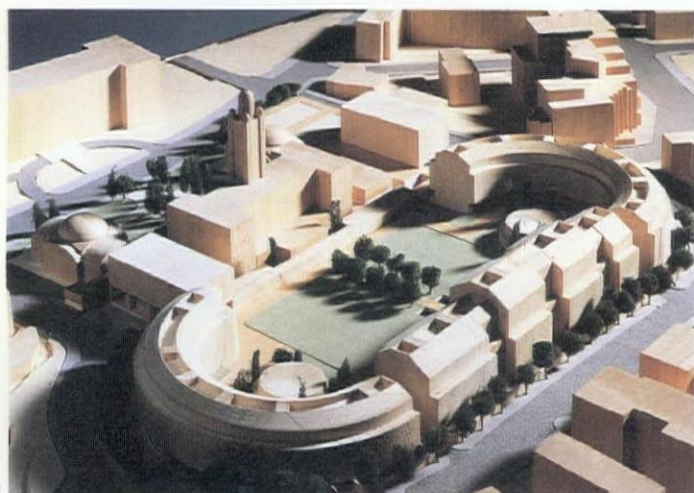
"The goal was to build as much as you can, as fast as you can," explains Tel Aviv architect Ami Ran, editor of *Architecture of Israel Quarterly*. The country is covered with cities and suburbs made up of block after block of drab, shabby stucco cubes and glaring white cottages with red tile roofs. This rush to build gave Israeli architects a tremendous amount of work and experience, far more than is typically available in Western countries, especially to beginners, Ran notes: "We had the opportunity to plan new towns, and to try out our own ideas." But it also created a

tradition of building on the quick and cheap.

Most construction work in Israel is a nightmare. Knesset Member Ran Cohen, former deputy minister of housing, says there are 3,000 unlicensed, unqualified building contractors operating in the country, not a few of whom are criminal, strong-arm types. Safdie says: "We've been plagued for years by unskilled labour, and a general mindset that accepts shoddy and sloppy work. Architects accustomed to North American and European standards see the kind of work commonly done here, and come away in a state of shock." There is little respect for the exactitude of architectural and engineering drawings, so a very high degree of supervision over the job is mandatory.

#### Beating bureaucracy

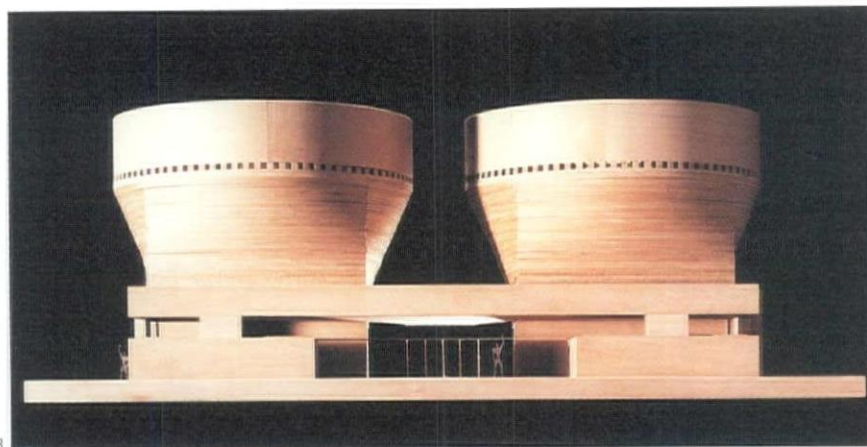
Getting a project completed in line with the architect's original conception requires "a major, major effort," Safdie notes. The bureaucracy of building in Israel is a *Via Dolorosa*, especially the planning approval process. Most building sites are unzoned, and require new zoning ordinances before work can proceed. The law requires foreign architects to work in association with local firms, but Safdie says that between the bureaucracy and unfortunate idiosyncracies of the construction industry: "This law protects outsiders as much as the locals. It's almost impossible for foreign architects to come in here and function on their own." And it helps to work with someone who knows Hebrew. Another difficulty here is that in the majority of cases the contractor is also the owner. "They go out to the site and complain, and the architect literally has no control over the work," says Spector. "We determine who are the acceptable contractors, and we control the project." But few Israeli firms



- 1: Spector and Amisar's model for a mixed-use YMCA project in Jerusalem
- 2: Hebrew Union College in Jerusalem by Moshe Safdie

**"Architects accustomed to North American and European standards see the kind of work [in Israel], and come away in a state of shock"**

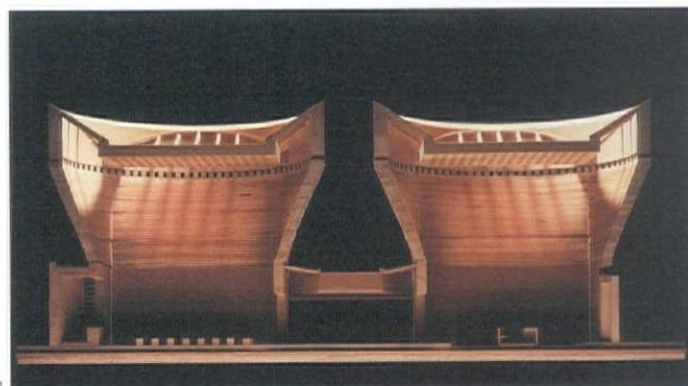
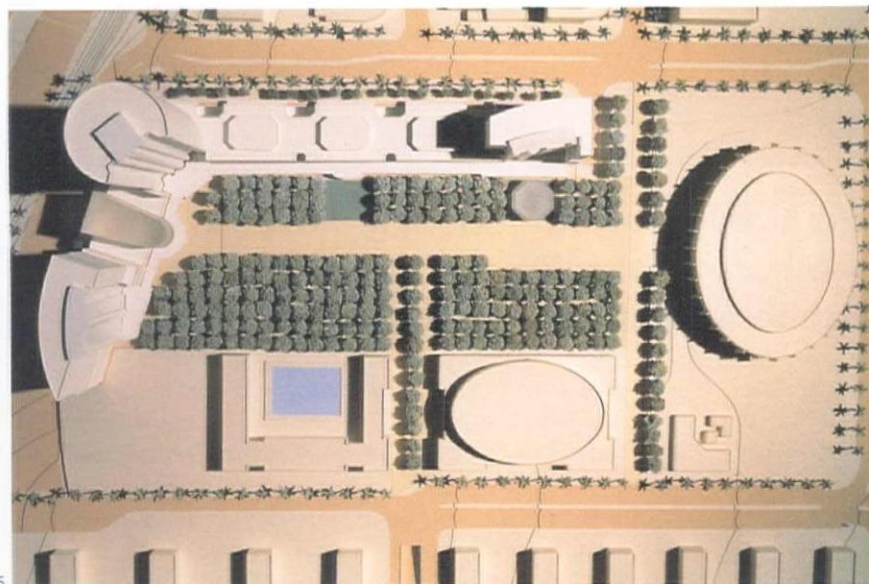




3: Mario Botta's model of a synagogue and cultural centre for Tel Aviv University

4: Section through Botta's model

5: Cesar Pelli's master plan for the Ayalon Business Centre in Tel Aviv



have the stature to set the rules and still get contracts.

The impatience and know-it-all mentality of many Israelis, especially the rich and *nouveau-riche*, create further headaches for architects. "Israelis are very stressed, pressured people. A good architect wants to take his time, and this isn't easy here," says Bilou Gilbert Sayada, an architect who set up his own office two years ago. "Israelis consider themselves experts on every subject, and think they can design their house themselves," Sayada continues. "I was doing a house for one man, and he insisted on having a red tile roof. I asked him why, and he said it was more 'impressive'. Luckily I managed to convince him that the heart of a house is in the interior, not the exterior, and eventually got him to agree to a flat, Mediterranean-style roof." As much as possible, Sayada seeks out "special clients – those who have a feeling for what architecture means".

Asked if he would work in Israel if he hadn't been born here, Moshe Safdie replies: "Yes I would, if I could get to work on certain projects," such as his Mamilla development, Ben-Gurion Airport 2000, the new Supreme Court building, or the planned marina in the wealthy Tel Aviv suburb of Herzliya. He says about a dozen projects in the last couple of years have come up to international standards. Below this level, a top-flight foreign architect cannot find a high enough fee or enough professional latitude to make Israel worth his while.

But the country's new prosperity, and greater exposure to the Western world, has raised the local appreciation for fine architecture and construction. "The notions of 'quality' and 'finish' are arriving here slowly," Spector notes. "In the last five to seven years people have begun to be willing to pay for quality,

which means higher costs for building and designing." This opened the way for an influx of world leaders in the profession.

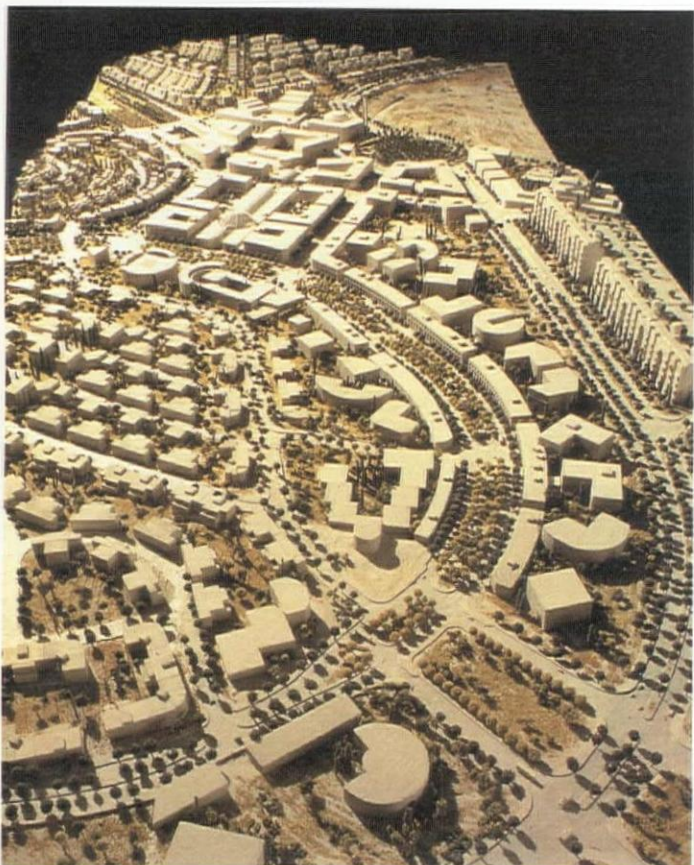
#### Globalisation of the architectural industry

The globalisation of high-end Israeli architecture reflects a change in the country's notion of its place in the world. The peace process, the linking of Israel's economy to the world's, the new frequency of foreign travel among its citizens, even the influence of cable television have made Israelis, on the whole, less nationalistic and suspicious of the outside world. National pride no longer demands that high-profile projects be "kept in the family". Before the 1990s, Spector says, an Israeli government never would have considered turning to an "outsider", like Toronto's Jack Diamond, to design a new foreign ministry, if for no other reason than that it wouldn't have trusted a non-Israeli with the building's secret, labyrinthine security specifications.

The Israeli construction industry is also feeling the effects of foreign influence. "Until ten years ago the building industry did everything with local materials. Now most materials on high-level projects come from the US and Europe. On the Children's Hospital we did at [Jerusalem's] Hadassah Hospital, we imported materials from 15 different countries," says Spector. Safdie adds: "You're now seeing such elements as skylights, curtain walls, and the highest quality sanitary fixtures being imported, and this is forcing local manufacturers to keep up."

The education of young Israeli architects is similarly going beyond national borders. Some 40 percent of local professionals now study abroad, notes Ram. Domestic architectural training is expanding; until a few years ago, the Technion was >





**"The high life for architects may be a year past... But another peak should be [close] and international architects would do well to watch for it"**

1: Model of Modi'in New Town by Moshe Safdie

2: Mormon study centre by David Resnick

the only university offering an architecture degree, and instruction there placed much more emphasis on practicalities than on aesthetic and social concerns. A few years ago Tel Aviv University opened its architecture school (due, in large part, to Azrieli's philanthropy), and a smaller architecture program began at Jerusalem's Bezalel School of Art.

In future, architects in Israel will be working on a differently proportioned canvas. Building here has always been concentrated in and around Tel Aviv, along the coastal plain and in Jerusalem. Even though it has such little land, the country is much more cramped than it needs to be.

### Major new developments

Over the next decade or so, three new dimensions will be added to Israel's development profile:

1) A long string of towns are being planned for construction along the country's central foothills, to draw people and business away from the badly overcrowded coastal plain. The most ambitious detail of this plan is Modi'in, which sits in the hills midway between Jerusalem and Tel Aviv, and is designed for an eventual population of 250,000. Construction on a new freeway, Route 6, is currently underway, and will bisect the country from the northern Galilee region to the Negev Desert. High-speed trains are planned to run throughout the Tel Aviv and Haifa metropolitan areas, and to connect far-flung population points with the heart of the country, but this project has been on the drawing board for many years – sophisticated train transport in Israel has always been more a matter of talk than action.

2) Cities, especially Jerusalem and Tel Aviv, will become even more cramped with the turn to highrise construction. Land in these cities is simply too expensive to continue building three-story apartment buildings there anymore. Large, extremely valuable tracts of Tel Aviv land taken up by the government and military – notably the "provincial" Government Precinct in the centre of the city, and Sde Dov Airport and Sde Dov Air Force base next to the coast – should ultimately be cleared for high-density development.

3) Tractors, developers and architects will head for the sea. Israel's Mediterranean coast is 180 kilometres long and relatively unexploited. Despite the objections of environmentalists who want to preserve the coast's innocence, marinas with luxury apartment buildings, country clubs, shopping malls and every other amenity are in the latter stages of planning in Herzliya, and in the southern coastal cities of Ashkelon and Ashdod. Plans for similar development on the Haifa coast are nearing final approval. These projects represent billions of dollars in investment. In all, 14 coastal municipalities have applied for approval to build marinas. One of them is the Arab village of Jaser A-Zarka, the poorest town in all of Israel. A marina would make Jaser A-Zarka not necessarily rich, but certainly a lot less poor.

And there are plans to go beyond the coast, to build 10 islands a kilometre offshore, and fill each with businesses, tourist sites and 20,000 residents. The originators of the idea, Technion engineering Professors Gedaliah Shelef and Yoram Zimmels, say that if planning approval goes forward, construction of the islands could begin in 2000 and be ready for development three years later. The government of Holland joined the Technion on a US\$2 million "pre-feasibility" study of the islands, and Netanyahu's office is considering whether to go ahead with an expanded US\$8 million study that would prepare the project for international bids. Minister of Infrastructure Ariel Sharon says: "I am in favour of the islands and intend to execute this project." It should be remembered that Sharon, more than any other Israeli politician, was responsible for the construction of West Bank settlements and housing for the former Soviet immigrants. It should also be noted that Sharon is often referred to as "The Bulldozer".

So there may be a recession on now in Israel, the high life for architects may be a year past, and foreign designers may have missed the peak of the action, but another peak should be no more than a year or two off, and international architects would do well to watch out for them. "To a certain extent, those who didn't come here in the last few years missed the boat," says Azrieli. "But there's still a great deal of work left to do, and a lot of money yet to be made."



## CONSTRUCTION FACTFILE

**Construction outlook:** In 1995 construction was a leading growth sector due to the large number of infrastructure projects. It accounted for 6.5 percent of GNP. Private sector investment was about 65 percent of the construction value. Residential construction is typically the largest sector of the industry. It usually makes up 70 to 75 percent of total value, but can be as high as 85 percent. Investment in infrastructure remains a high priority, especially in such sectors as power, ports/airports, housing, transportation and water. One of the top priorities is the improvement of public transportation.

**Rates of inflation:** Estimates of inflation for the construction industry in 1997 are about 20 percent.

### Economic data

| Consumer Price Index: 1990 = 100 |       | Exchange Rates: New Shekels per US\$ |       |
|----------------------------------|-------|--------------------------------------|-------|
| 1991                             | 119.0 | 1991                                 | 2.283 |
| 1992                             | 133.2 | 1992                                 | 2.764 |
| 1993                             | 147.8 | 1993                                 | 2.986 |
| 1994                             | 166.1 | 1994                                 | 3.018 |
| 1995                             | 181.5 | 1995                                 | 3.117 |
| 1996 (est.)                      | 204.4 | 1996 (Oct.)                          | 3.266 |

**Procurement of construction:** Designs and specifications are typically 80 percent complete by the design team when a project is tendered. The design team completes the design after the construction contract is awarded. The typical tender package includes drawings, specifications, forms of contract, bill of quantities, and form of tender. The design team or their consultants prepare the Bill of Quantities (BQ's). A tender period of four to six weeks is normal. The industry uses both General and Trade Contracting approaches. However, Mechanical and Electrical contracts are bid and awarded separately, even if a general contractor is used. Owners may use independent project/construction managers to coordinate separate trade contractors and oversee construction.

Most construction projects use Unit Price contracts with BQ's. The BQ becomes a contract document and the work is fully remeasured as construction proceeds. Contracts include a fluctuation clause that adjusts the contract amount for changes in labour or material cost using an official construction cost index.

**Design professions:** The architect traditionally leads the design team. Owners often have separate design contracts with the architect and the engineers. This is not a legal requirement, just a preference. No standard form of agreement between the owner and the architect and engineers exists for private sector work. There is a standard government form of contract for public sector work. The architectural and engineering professional organisations regulate professional fees.

**Contractors:** Israeli contractors do most of the work in Israel, so there are few foreign contractors operating there. When a project uses the General Contracting approach, subcontractors account for 60 to 90 percent of the total contract value.

**Governing codes and standards:** The national Law of Planning and Building establishes planning procedures applicable at local and national levels. There are national building regulations

based on the law. Local governments adopt and enforce the model codes and regulations.

The local industry uses Israeli Standards, prepared by the Standards Institute of Israel. British and European standards and codes are used when local codes do not cover an issue.

## CONSTRUCTION METHODS AND MATERIALS

**Material availability:** Israel manufactures many primary construction materials locally. Most construction materials are readily available. Europe and the US are the primary sources for imported materials such as structural steel, windows, marble, gypsum board, carpet, heating and A/C equipment, transformers and switchgear and light fixtures.

**Labour availability:** While a qualified labour force exists, only the mechanical and electrical trades are predominantly Israeli. Most skilled labour for other trades (ie structure, special finishes) is from overseas. Some labourers are from the West Bank and Gaza. Labour is unionised.

**Equipment availability:** A comprehensive range of equipment is readily available.

## CONSTRUCTION COST GUIDES

**Pricing manuals:** The Dekel Cost (bi-monthly) is a commercially available cost publication. It is published in Hebrew. For information on purchasing this publication telephone M Schneider Engineer on + 972 4833 8866.

**Approximate construction costs:** The following square metre unit rates for the Tel Aviv area are provided for rough comparison purposes. They exclude VAT of 17 percent.

|                            | NIS/square metre | Regional Cost Variations:     |     |
|----------------------------|------------------|-------------------------------|-----|
| Warehouse                  | 1,400 - 1,600    | Tel Aviv                      | 100 |
| Office building with       |                  | Golan Heights & Upper Galilee | 105 |
| AC (Low-Mid Rise)          | 2,600 - 2,900    | West Bank                     | 107 |
| Hotel, 5 star (excl. FF&E) | 3,800 - 4,200    | Gaza Strip                    | 115 |
| Mid-rise (10 Story)        |                  | Negev Desert (south)          | 120 |
| apartment                  | 2,400 - 2,600    | Negev Desert (east)           | 110 |
| Industrial buildings       | 1,900 - 2,100    |                               |     |

## USEFUL ADDRESSES

Israel Institute of Architects and Town Planners  
200 Dizengoff Street  
PO Box 3082  
Tel-Aviv 61030  
Tel: +972 3 524 0274. Fax: +972 3 523 5993

Standard Institute of Israel  
42 University Street  
Tel Aviv 69977  
Tel: +972 3 422 891

Building Centre of Israel  
40 University Street  
Tel Aviv 61390  
Tel: +972 3 425 222



*This table was compiled with information supplied by the practices listed.*

| Architectural practice   design firm                | Total architects | Total staff | Total offices | Area of specialisation | Area of specialisation |            |            |                  |                       |          |           |                              |                    |           |                         |           |       |
|-----------------------------------------------------|------------------|-------------|---------------|------------------------|------------------------|------------|------------|------------------|-----------------------|----------|-----------|------------------------------|--------------------|-----------|-------------------------|-----------|-------|
|                                                     |                  |             |               |                        | Health care            | Industrial | Commercial | Office buildings | Housing   Residential | Planning | Interiors | Sport   Leisure   Recreation | Hotel   Restaurant | Education | Laboratories   Research | Transport | Other |
| Simcha Afek-Shpak, Architects                       | 3                | 8           | 1             |                        |                        | ■          |            | ■                | ■                     |          |           |                              | ■                  |           |                         |           |       |
| Alon Architects                                     | 4                | 9           | 1             |                        |                        |            | ■          | ■                | ■                     |          |           |                              | ■                  |           |                         |           |       |
| Alrod Architects & Town Planners                    | 15               | 18          | 1             |                        | ■                      |            |            | ■                |                       |          |           |                              | ■                  | ■         |                         |           | ■     |
| Amav Promotion Planning Engineering Ltd             | 15               | 40          | 2             |                        |                        |            | ■          | ■                | ■                     |          |           |                              |                    |           |                         |           | ■     |
| Arad Architects                                     | 6                | 9           | 1             |                        |                        |            |            |                  |                       |          |           |                              | ■                  | ■         |                         |           | ■     |
| Amnon Bar Or Architects Ltd                         | 9                |             | 1             |                        |                        |            |            | ■                | ■                     | ■        |           |                              |                    | ■         |                         |           | ■     |
| Bar Sagi - Warshavsky Architects Ltd                | 4                | 8           | 1             |                        | ■                      |            |            | ■                | ■                     |          |           |                              | ■                  | ■         | ■                       |           | ■     |
| Blumenfeld Pinchuk Architects                       | 4                | 9           | 1             |                        | ■                      |            | ■          | ■                | ■                     |          | ■         |                              | ■                  | ■         |                         |           |       |
| I Bracha & M Shachar Architects & Town Planners     | 6                | 20          | 1             |                        |                        | ■          | ■          | ■                | ■                     |          |           |                              | ■                  | ■         | ■                       |           | ■     |
| Harry Brand Architects and Town Planners            | 12               | 14          | 1             |                        |                        | ■          | ■          | ■                | ■                     |          |           |                              |                    |           |                         |           | ■     |
| Peter Bugod, Eunice Figueiredo & Esther Niv-Krendel | 6                | 8           | 1             |                        |                        |            | ■          | ■                | ■                     | ■        | ■         | ■                            | ■                  | ■         | ■                       |           | ■     |
| Chyutin Architects Ltd                              | 10               | 20          | 1             |                        |                        |            |            | ■                | ■                     | ■        | ■         | ■                            |                    |           | ■                       |           | ■     |
| Concept Architecture Ltd                            | 4                | 10          | 1             |                        | ■                      |            | ■          |                  | ■                     |          |           |                              | ■                  | ■         |                         |           | ■     |
| I Eldar Architects Ltd                              | 56               | 62          | 2             |                        | ■                      | ■          | ■          |                  |                       |          |           |                              | ■                  |           | ■                       | ■         | ■     |
| Kimel Eshkolot Architects                           | 7                | -           | 1             |                        | ■                      |            |            | ■                | ■                     |          |           |                              |                    |           |                         |           |       |
| D Eytan & E Goshen Architects Ltd                   | 9                | 11          | 1             |                        |                        |            |            | ■                | ■                     |          |           |                              |                    |           |                         | ■         | ■     |
| Feigin Architects                                   | 15               | 30          | 1             |                        | ■                      |            | ■          | ■                | ■                     |          |           |                              |                    | ■         |                         |           | ■     |
| G.S.A - Gershon Shevach Architects                  | 10               | 18          | 2             |                        |                        | ■          | ■          | ■                | ■                     |          |           |                              | ■                  | ■         | ■                       | ■         | ■     |
| Gabai - Rubin Architecture & Town Planning          | 10               | 20          | 1             |                        |                        | ■          | ■          | ■                | ■                     |          |           |                              |                    |           |                         |           | ■     |
| Gavish Architects                                   | 4                | 8           | 1             |                        |                        |            | ■          | ■                | ■                     | ■        | ■         | ■                            | ■                  | ■         | ■                       |           |       |
| Gavrin Architects Ltd                               | 8                | 12          | 1             |                        |                        | ■          | ■          | ■                | ■                     |          |           |                              |                    |           | ■                       |           | ■     |
| Shmuel Gelbhart, Architects & Town Planners         | 3                | -           | 1             |                        |                        | ■          | ■          | ■                | ■                     |          |           |                              | ■                  | ■         |                         |           | ■     |
| Giladi Architects & Town Planning                   | 6                | 8           | 1             |                        | ■                      |            |            |                  | ■                     |          |           |                              |                    | ■         |                         |           | ■     |
| Guggenheim & Bloch Architects and Urbanists         | 10               | 15          | 1             |                        |                        |            | ■          |                  | ■                     |          |           |                              | ■                  | ■         | ■                       |           | ■     |
| Giora Gur Architects & Town Planners                | 17               | -           | 1             |                        |                        |            |            |                  | ■                     |          |           |                              |                    |           | ■                       |           | ■     |
| Haussmann Architects                                | 6                | 14          | 1             |                        |                        |            | ■          |                  |                       |          |           |                              | ■                  | ■         |                         |           | ■     |
| Kahana Architects                                   | 9                | 14          | 1             |                        | ■                      | ■          |            | ■                | ■                     |          |           |                              |                    |           | ■                       |           | ■     |
| Desmond Kaplan Architects & Planning Consultants    | 3                | 4           | 1             |                        |                        | ■          | ■          |                  | ■                     |          |           |                              | ■                  |           |                         |           |       |
| Louis Karol Architects International                | 35               | 100         | 4             |                        | ■                      |            | ■          | ■                | ■                     |          | ■         |                              |                    | ■         | ■                       |           | ■     |
| Amir Kolker, Ofer Kolker & Randy Epstein            | 18               | 26          | 1             |                        | ■                      | ■          |            | ■                | ■                     |          |           |                              |                    |           | ■                       | ■         | ■     |
| Avinoam Levin Architect & Town Planner              | 7                | 15          | 1             |                        | ■                      |            | ■          | ■                | ■                     |          |           |                              | ■                  |           | ■                       |           | ■     |
| Lothan Architects                                   | 6                | 7           | 1             |                        |                        |            |            |                  | ■                     |          |           |                              |                    |           |                         |           | ■     |
| Madanes Architects Ltd                              | 10               | -           | 1             |                        |                        | ■          |            |                  | ■                     |          |           |                              |                    |           |                         |           |       |
| Al Mansfeld, M Mansfeld, H Kehat, J Mansfeld        | 12               | 15          | 1             |                        | ■                      | ■          | ■          |                  |                       |          |           |                              | ■                  |           | ■                       |           | ■     |
| Moshe Margalith Architects & Urban Planners         | 16               | 19          | 1             |                        |                        |            | ■          | ■                | ■                     |          |           |                              |                    | ■         | ■                       |           | ■     |
| Avi Mayer Architects & Town Planners                | 12               | 16          | 1             |                        |                        |            | ■          | ■                | ■                     |          |           |                              |                    |           |                         |           | ■     |
| Nahum Meltzer & Guy Igra                            | 9                | 12          | 1             |                        |                        | ■          | ■          | ■                | ■                     | ■        |           |                              | ■                  | ■         | ■                       |           | ■     |
| Yoav Messer Architect                               | 3                | 6           | 1             |                        |                        |            |            | ■                | ■                     |          |           |                              | ■                  |           | ■                       |           |       |
| Z Mosessco, Architect & Townplanner Ltd             | 6                | 13          | 1             |                        | ■                      | ■          |            |                  | ■                     |          |           |                              |                    |           | ■                       | ■         | ■     |
| Architect Zvi Pasternak                             | 4                | 7           | 1             |                        |                        |            |            |                  | ■                     |          |           |                              |                    | ■         |                         |           | ■     |
| Ravina-Weiss-Halevy Architects & Town Planners      | 8                | 1           | 1             |                        |                        | ■          |            |                  | ■                     |          |           |                              |                    | ■         | ■                       | ■         | ■     |
| Yacov Rechter - Amnon Rechter Architects            | 25               | 37          | 14            |                        | ■                      |            |            | ■                | ■                     |          |           |                              | ■                  | ■         | ■                       |           | ■     |
| Aviva Rotbein Architect & Interior Designer         | 3                | 4           | 1             |                        |                        | ■          |            | ■                | ■                     |          |           |                              |                    | ■         |                         |           | ■     |
| Moshe Safdie Architects, Ltd                        | 40               | 50          | 3             |                        |                        |            | ■          |                  | ■                     |          |           |                              |                    |           |                         |           | ■     |
| Schocken Architects                                 | 8                | 10          | 1             |                        | ■                      | ■          | ■          | ■                | ■                     | ■        | ■         | ■                            | ■                  | ■         | ■                       | ■         | ■     |
| A Sharon Architects Ltd                             | 28               | 39          | 2             |                        | ■                      | ■          | ■          | ■                | ■                     | ■        | ■         |                              | ■                  | ■         | ■                       | ■         |       |
| M Shefy Ltd Architects                              | 4                | 15          | 1             |                        | ■                      |            |            | ■                | ■                     |          |           |                              |                    |           |                         |           |       |
| Shereshevski-Marash Architects Ltd                  | 8                | 15          | 2             |                        |                        | ■          | ■          | ■                | ■                     |          |           |                              |                    |           | ■                       |           | ■     |
| Rami Wimmer Architect                               | 6                | 12          | 1             |                        |                        |            |            | ■                | ■                     |          |           |                              |                    |           | ■                       |           | ■     |
| Yaad Architects & Planners                          | 11               | 21          | 1             |                        |                        |            |            | ■                | ■                     |          |           |                              | ■                  |           | ■                       |           | ■     |
| Yaar Architects Ltd                                 | 15               | 28          | 2             |                        |                        |            | ■          |                  | ■                     |          |           |                              | ■                  |           |                         |           | ■     |
| Yaron-Ari Landscape Architecture Ltd                | 12               | 16          | 1             |                        |                        | ■          | ■          | ■                | ■                     | ■        |           |                              | ■                  |           | ■                       |           |       |



# Harry Brand Architects and Town Planners



## Office

Harry Brand Architects and Town Planners  
California House  
120 Yigal Alon Street  
Tel Aviv 67443  
Israel

## Key Personnel

Harry Brand, B Arch (Witwatersrand);  
Dip T & C P (London)  
Eila Brand-Adel, B Arch (Technion,  
Haifa); M Arch (Technion, Haifa)

## Recent Clients

Ministry of Housing  
Ministry of Industry and Commerce  
Ministry of Defence  
Ministry of the Environment  
Jerusalem Development Authority  
Airports Authority  
City of Holon  
Rehovot Development Corporation  
Africa-Israel Development  
Corporation  
Caesaria Development Corporation  
Private Industrialists and Developers  
from Israel and abroad

## Practice profile

The firm was established in 1970 and is now incorporating its second generation. The practice spans the spectrum of regional planning through urban and local district planning, to detailed architectural design. The range in scale of projects is paralleled by the range in subject, including integrated regional studies, industrial parks and buildings, residential neighbourhoods, office and corporate parks and commercial centres. The recognised expertise of the firm is in the field of industrial planning and development.

Notable projects in this field are the Tefen Industrial Park, the Caesaria Business Park, the Jerusalem Technology Park and the Beck Science Center in Jerusalem. The firm also specialises in the development and application of advanced building techniques, including a variety of innovative design solutions which have led to significant savings in time and cost, while maintaining high standards of quality. Among these was the development of a modular building system for the Defence Establishment, which enabled the efficient building and redeployment of military camps after the withdrawal from Sinai.

## Additional information

Harry Brand was trained in South Africa and England and is currently part-time Associate Professor at the Architectural School at the Israel Institute of Technology at the Technion, Haifa. He is also involved in the accreditation of four architectural schools on behalf of the Council for Higher Education. Further activity includes the coordination of the Urban Sector Group on Sustainable Development for the Ministry of Environment and representing the Technion Architectural School at the Israel Standards Institute.

Eila Brand-Adel is the second generation in the practice and has specialised in marine architecture. Eila Brand-Adel has worked in Brazil and the US.

The practice is equipped with state-of-the-art technology for the production of all necessary design, presentation and production documents, and communicates with overseas clients and consultants.



1: Beck Science Centre

2: Jerusalem  
Technology Park

3: Retractable Roof  
over CIM facility



1: Center for Medical  
Research – Belinson  
Hospital Petah-  
Tiqua





# Arieh Sharon, Eldar Sharon – Architects & Town planners Limited



## Office

Sharon Architects  
70 Hayarkon Street  
Tel-Aviv  
Israel

## Key personnel

Arad Sharon AA Dipl, RIBA, IOCE  
Smadar Sharon BA(Hons)  
Michal Rom BA Dip Arch, IOCE  
Amos Rimon BA Dip Arch

## Size of firm

37 employees

## Recent clients

Beilinson Hospital,  
Petah Tikva  
Ichilov Municipal Hospital,  
Tel-Aviv Medical Center  
Rambam Government Hospital,  
Haifa  
Wolfson Medical Center,  
Holon  
Geha Mental Hospital,  
Tzrifin  
Soroka Medical Hospital,  
Beersheva  
Assaf Harofe Hospital,  
Tzrifin  
American Medical Center,  
Rishon Le Zion  
Municipality of Rishon, Le Zion  
University of Tel-Aviv  
Jerusalem Enterprises LTD  
KOOR Tourist Industries  
Technion Israel Institute of  
Technology

## Company profile

Sharon Architects was founded 65 years ago by the Bauhaus graduate Arie Sharon.

In 1965 he was joined by his son, the architect Eldar Sharon. During all the years of practising architecture, a wide variety of projects, both in Israel and overseas, have been designed in the office: universities, housing, hospitals, schools, sport facilities, theatres, cinemas, libraries, museums, banks, as all well as town planning schemes including a masterplan for the city of Jerusalem.

The architectural team in the office consists of older experienced staff together with younger architects, designers, technicians and students of architecture - thirty seven altogether, all working in a family-like atmosphere, which is typical of the practice.

A quality management system is operated within the Practice. The office has a powerful computer network for CAD, as well as Internet and modem facilities.

Today, two years after Architect Eldar Sharon death, the office is run by the third generation: architect Arad Sharon and his sister Smadar Sharon, in association with Michal Rom and Amos Rimon.

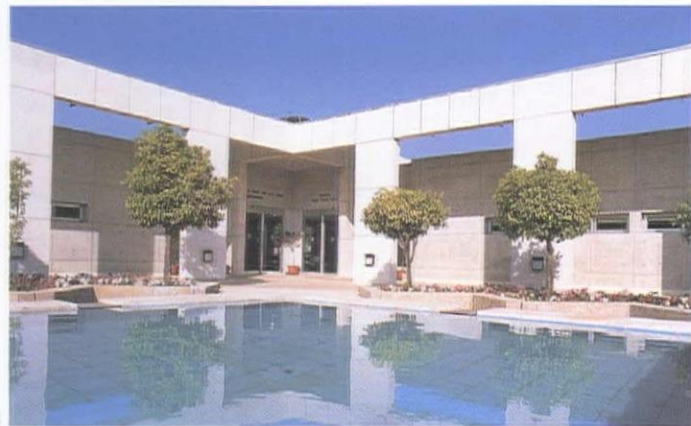
While working on projects in the office, a special effort is being made to combine creative and original architectural thinking, with client's requirements, such as budget and timetable considerations.

The firm has also participated in a number of architectural competitions, winning several in recent years. The firm have received the Israeli Prize For Art And Architecture on several occasions.

Every project is conceived as a singular conceptual entity focusing on the users and their needs.

Harmonious integration with the environment, as well as the use of hi-tech and other architectural elements appropriate to the local climate have always been a top priority.

This conceptual approach to design has helped to create valuable architecture even in functionally complex projects, such as hospitals, creating atmospheres of hope and optimism in places where pain reigns.



2: Auditorium building  
– next to the  
Medical School,  
University of Tel-  
Aviv

3: Central Atrium –  
Children's Hospital,  
Beilinson Hospital  
Petah-Tikva. In  
collaboration with  
Cannon Architects,  
Jerry Schwitters  
USA

4: Israel-America  
Tower – Office  
Building, Tel-Aviv



# Giora Gur Architects and Town Planners



## Office

Giora Gur Architects  
I Hagefen st. P.O.Box 9436, Xlaifa  
31094, Israel.  
Tel: +97248510878  
Fax: +97248510918  
Modem: +97248529581

## Key personnel

Giora Gur, Arch, Urbanist, Israel  
Institute of Technology.  
Sylvia Gur, Arch, Urbanist, Israel  
Institute of Technology.  
Silvia Constantinescu, Arch, Urbanist,  
Jon Mincu University of Bucharest.  
Sergei Anikin, Arch, MSC Techn Univ  
Minsk, MSC Arch Moscow.  
Vera Anikin, Arch, MSC Techn Univ  
Brest, Byelorussia.  
Lena Gamer, Arch Techn Univ Minsk,  
Byelorussia.  
Yuri Putschinski, Arch, MSC Industrial  
Arch Faculty, Sverdlovsk Univ, Msc  
Economy and Marketing, Economic  
Inst Sverdlovsk.  
Michal Shein, Arch, Urbanist, Israel  
Institute of Technology.  
Sagi Haim, Arch, Urbanist, Israel  
Institute of Technology.  
Alisa Jedit, Designer, Acad Systems.  
Ziva Eilam, Arch Urbanist, Israel  
Institute of Technology.

## Areas of specialisation

Architecture  
Town planning  
Commercial Design  
Public Building Design  
Industrial Design

## Company profile

Giora Gur Architects offers full architecture, master planning, space planning and interior design services. It has a reliable and much appreciated network of consultants.

The office is fully equipped with two and three dimensional computer aided design facilities.

The professional practice of the firm dates from 1976.

The firm's particular areas of competence are urban planning, public housing, commercial buildings, religious facilities and design of industrial architecture.

The company's orientation throughout the years was to upgrade the existing environment of a project, independent of the project's size, by daring and farsighted planning and high standards of implementation.

The above philosophy has proved itself in a number of projects beyond expectations

The office is directed by Giora Gur, member of the Board of Directors of the Israeli Association of Architects, delegate to the Contractor's Association. He dedicates a great deal of time to learning about the precise requirements, use patterns and sensibilities of the client, in such a way creating an environment of trust, which enables such closed societies as various orthodox religious groups, to become appreciated and long term clients.

The office is currently involved in the planning and completion of 200,000 square metres of commercial space, 1,200 apartments, two master plans of 3,000 housing units each and a variety of smaller projects

## Recent clients

- The State of Israel, Housing Ministry: master plans for up to 5000 housing units in Nazareth, Rechasim, Beit Shean
- The State of Israel, Land Administration: master plan in Nofit Arim Limited: master plan for 3000 housing units in an industrial area near Haifa
- Israeli development companies including: Azorim, Shikun Upituach, Uri Dori, Shikun Ovdim, Malibu, Ramet, Africa Israel, Ashdar
- The city of Maalot: master plan for the city and surroundings
- Lev Yasmin: shopping mall, and apartments in Natania
- Horn et Leibovitch shopping mall in Afula
- Hyatt Regency: terrace apartment complex. Tiberias
- Malibu Limited: housing units in Modiin, Natania, Nes Ziona
- Open University: technological study centers.
- Showrooms: Suzuki Motors, Mitzubishi Motors, Mercedes Benz
- Karlin Hasidic Group: World Center, Jerusalem; Boarding Schools in Beitar
- Wiznitz, Boyan, Erloy hasidic Groups; Torah Schools, Synagogues in Beitar
- Haifa Municipality: soldier's memorial and community center
- Co-op chain stores: outlet in Caesarea
- Hai Investment Group: shopping mall in Migdal Haemek and industrial buildings for rent in Caesarea

1: Project Number 847  
Co-op chainstores -  
Caesarea

2: Project Number 862  
Hyatt Regency  
Terraced  
Apartments -  
Tiberias

3: Project Number 868  
Ashkad -  
Apartments in the  
Ashkelon Marina





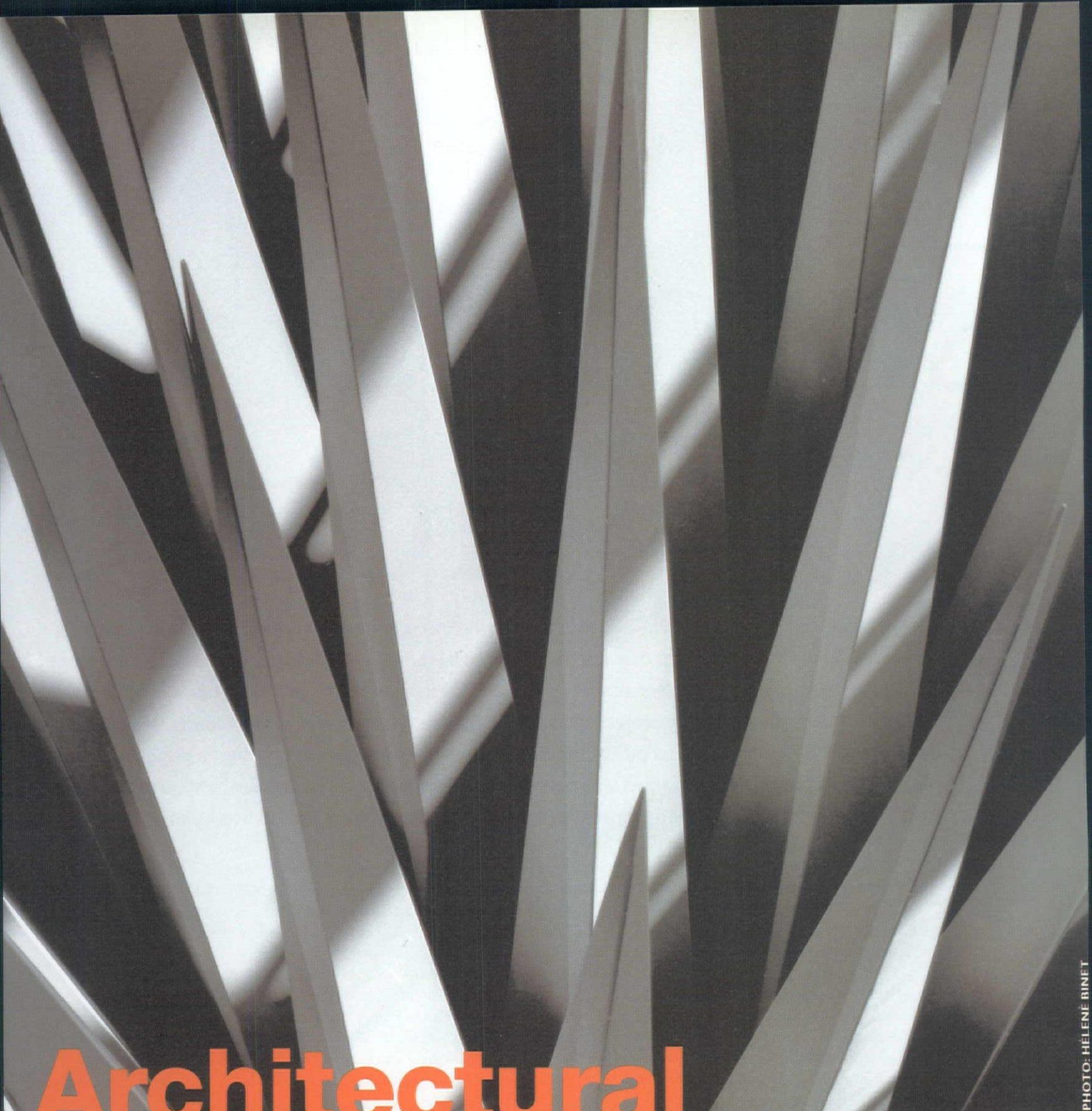


PHOTO: HÉLÈNE BINET

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## Face to face

# Coming home

**Born in Israel, educated in Canada, based in the US: the transcontinental trajectory of Moshe Safdie's career reinforces the notion that one sure-fire route to becoming a leading architect in one's homeland is to move away, make a big international splash, and then return, more or less on one's own terms. In Safdie's case his splash-making project was Habitat '67; the great success of this Montreal housing development was soon followed by an invitation from Israel's Minister of Housing to design a Habitat for Jerusalem. Although that project was never realised, Safdie has since worked continuously in Israel. Nancy Levinson met him at his Boston office. Photograph by Michal Ronnen Safdie.**

Today Safdie and Associates' Israeli resumé comprises prestigious institutional buildings such as the US\$32 million Hebrew Union College complex; large urban projects, including the restoration of Jerusalem's Jewish Quarter and the design for the city's 28-acre Mamilla section; and, most ambitiously, the master plan for Modi'in, a new city of 200,000 now being built between Tel Aviv and Jerusalem.

In Israel, says Safdie, his office is perceived as "a curious mix of insider and outsider". The curiosity of this mix is underscored by the firm's structure and process. While most American and European architects working in Israel associate with a local firm, Safdie set up a branch office in Jerusalem early on – establishing, in effect, his own local associate.

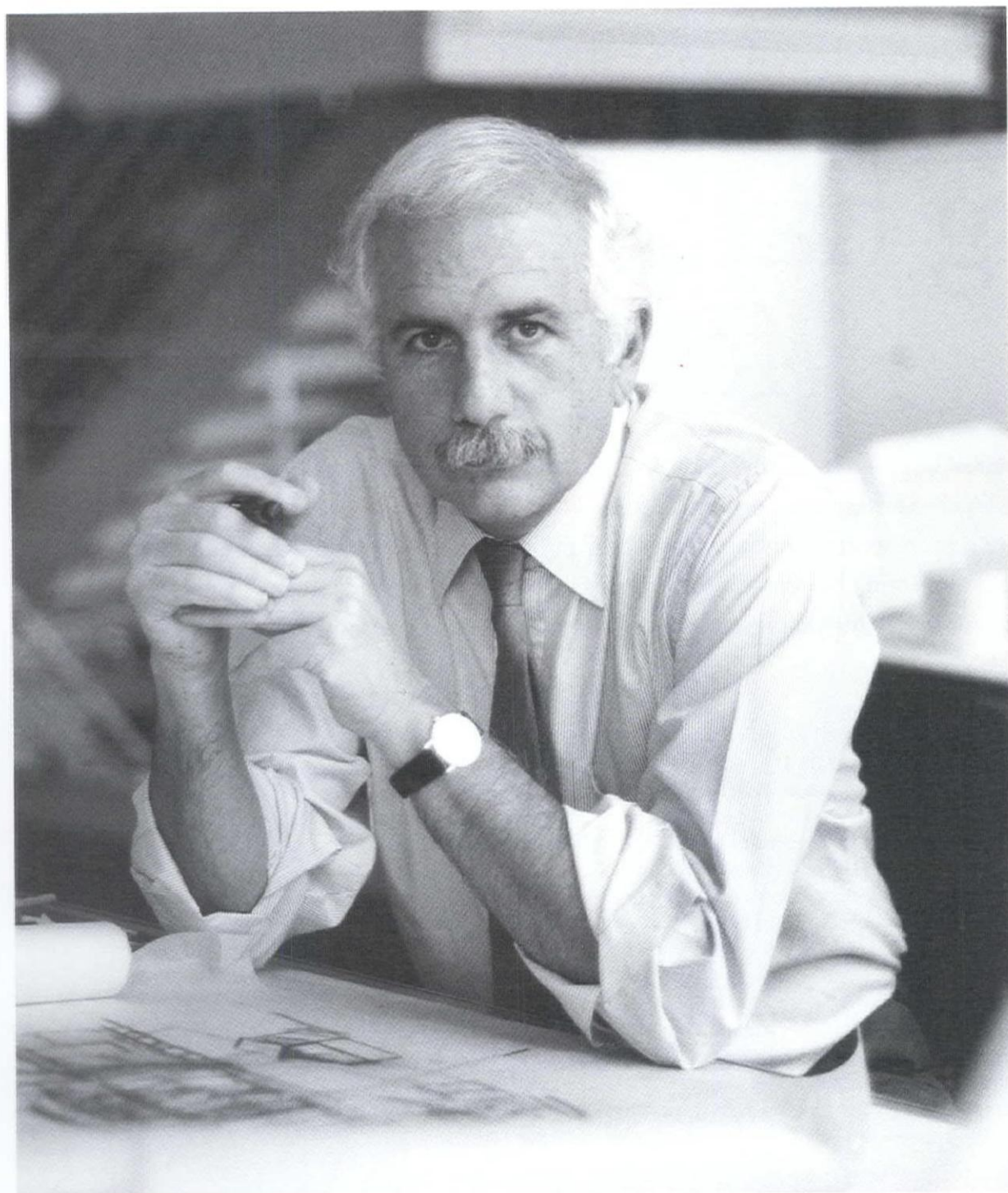
While the advantages of this might seem apparent, it nonetheless took several years for the firm to evolve its current – and quite unusual – relationship between head and regional offices. At first, says Safdie, "the two offices worked as if independent," with Safdie himself shuttling back and forth, spending one week every month in Israel. Despite this arduous commute, however, Safdie felt his presence in Israel was insufficient, and the office was restructured, with design being done in Boston and construction documentation and supervision being handled in Jerusalem. But this *modus operandi*, too, proved frustrating. "The Israeli office did not embrace the projects designed in North America," he recalls. "When we imported the design, they would try to find its faults – its incompatibility with local conditions..."

This realisation inspired the firm to develop its successful and atypical working method: during project design, architects

from the Jerusalem office work in Boston for several months, becoming key members of the design team from the start; later, during construction, architects from Boston move temporarily to Israel to participate in construction supervision, rounding out the collaboration. "We even purchased the house next door to our Boston office," says Safdie, "to provide the Israelis with a comfortable place to stay." This singular arrangement of headquarters to branch has given Safdie an advantageous position in Israel, where his office is perceived as offering indigenous knowledge and experience along with North American expertise and repute. "In Israel," says Safdie, "I am seen as both local and international."

While acknowledging the psychological edge of simultaneously being a local and an outsider, Safdie attributes his success in Israel to the more tangible achievement of designing buildings whose standards of detailing and construction surpass the typical native product. The Israeli architectural scene, he notes, "differs fundamentally" from that of North America or Europe: it is characterised not by the sort of large offices that set the pace in New York and London – firms with frequent-flying principals and long-standing associates of wide experience – but rather by numerous small offices equipped mainly to build modest projects. Safdie ascribes this local professional culture to a decades-long building boom, which has provided enough work to support many offices, and also to what he calls "an Israeli trait" of not feeling fully successful until you've set up your own shop. Unfortunately, one result of these circumstances is a generation of buildings that Safdie terms "ill conceived programmatically and badly constructed technically." For this reason the





**"Working in Israel has to do with much more than business. It has to do with emotional involvement. It has to do with roots."**

architect sees the chief challenge of building in Israel as meeting the highest international standards of construction.

"To do this we've used various strategies," he says. "For instance, in the case of the Hilton Hotel in Mamilla [the new residential/commercial complex in Jerusalem], which will open later this year, we convinced the developers to hire foreign consultants in those disciplines where the locals didn't have the necessary experience, and to use imported building systems where the foreign products were superior. The lighting consultants, for instance, are from Los Angeles; the hotel interiors were fabricated in Italy. But just as important in ensuring the quality of the building," says Safdie, "is intensive, even vigilant, construction supervision. During construction we set up an office on the site; we build full-scale mock-ups of any unusual or tricky detail. That kind of on-going presence allows

us to make sure that even the most complicated parts of the building will be constructed as designed."

Although proud of the quality of his firm's Israeli work, Safdie readily admits that their unusual process and exacting standards – their efforts "to elevate the local building standards" – do not yield high margins of profit. Indeed, Safdie's professional life in Israel, based upon and marked by his personal and complex relationship with his birthplace, does not offer a blueprint for other architects seeking to work there. "Obviously my situation in Israel is very individual," he says. "In a sense, I see my Jerusalem office as a kind of educational institution. Many Israeli architects have worked there, learning how to build well before setting up their own practices. So my motivation for working in Israel has to do with much more than business. It has to do with emotional involvement. It has to do with roots."



## Projects in Israel

# A long hall for Jerusalem

**Conceived in the 1930s, revised ten times and now finally being realised in the form of a City Hall Complex for Jerusalem, this project is a layered enterprise – not only does it bring together municipal functions previously scattered in 36 locations but it represents a symbolic mediation between the city's divided communities. Peter Wislocki spoke to the project team and discovered that although the Complex has suffered considerable financial set backs and alterations to the brief, the final result is a testament to international cooperation and trust.**

### Client's perspective

In Jerusalem's recent history, observes Uzi Wexler, the former Municipal Treasurer closely associated with the new City Hall's construction, two professions have prospered: architects, who have prepared countless plans; and carpenters, who made the shelves on which these – mostly unexecuted – plans were uselessly deposited. The project which finally came to fruition (although, at the time of writing, is still not entirely complete) is the tenth since the 1930s.

The Complex brings together municipal functions previously scattered in 36 locations. Shortly before the 1967 war, a site was identified in the western part of the Jerusalem, surrounded by areas rapidly urbanised by the young Israeli state, but remote – psychologically as much as physically – from the ancient city, then under Jordanian control. Immediately following the reunification of the city, work on the west Jerusalem site, already in an advanced stage of planning, was abandoned at

1: Main entrance reinterprets the layering and solidity of Jerusalem's traditional buildings

2: Jack Diamond building is conceived as a backdrop for Jerusalem's new civic outdoor space

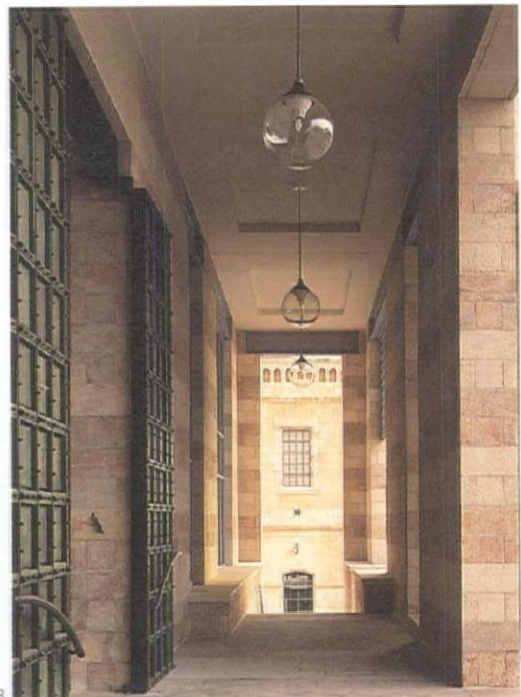


Steven Evans

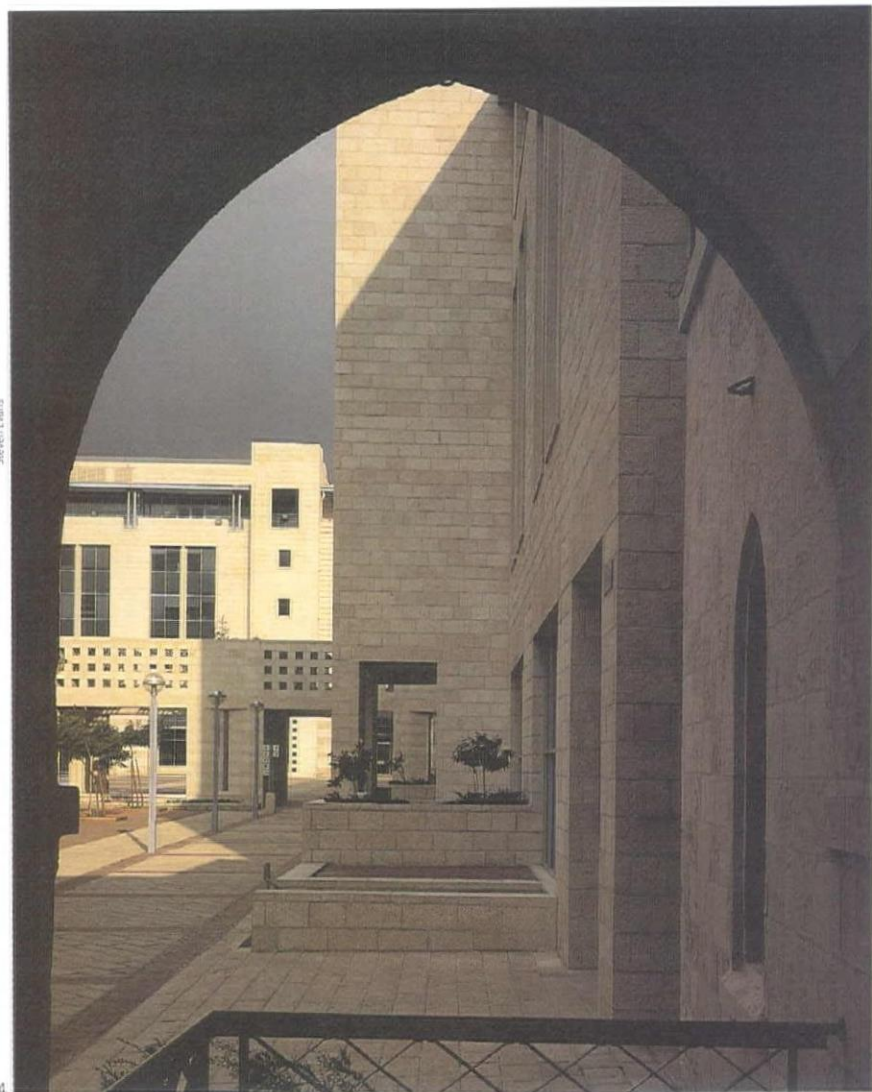


3: A new pedestrian axis links new and refurbished buildings

4: Intermediate zones afford shelter and celebrate the building's civic status



Steven Evans



Steven Evans

the insistence of Teddy Kollek, Jerusalem's charismatic mayor, who desired a more appropriate location for his administration, in terms of a symbolic mediation between the city's historically divided communities.

After the megastructural proposals of the 1960s, the post-1967 designs became concerned with finding a suitable architectural expression for the city government, and not merely its efficient execution. The site, for which studies were carried out by the city's in-house architects and planners, stood at the edge of the Russian compound, overlooking the walled city from just outside its northern flank. The capital's population had increased six-fold in only a couple of decades, and following the numerous abortive schemes, the urgency of the venture – and the imperative of its success – became clear to Kollek, Wexler and their colleagues.

The project required managerial skills and financial resources beyond the administration's means. It was therefore decided to hold a developer competition, in which Olympia and York, the Canadian-based firm run by the Reichman brothers, emerged victorious. The Reichmans employed Jack Diamond, a Canadian architect of Jewish descent, to develop the city's nascent masterplan into a subtle and workable design. O & Y also provided a substantial proportion of the project debt finance, and the project management skills

required to coordinate a development of greater size, complexity and political importance than the Israeli norm.

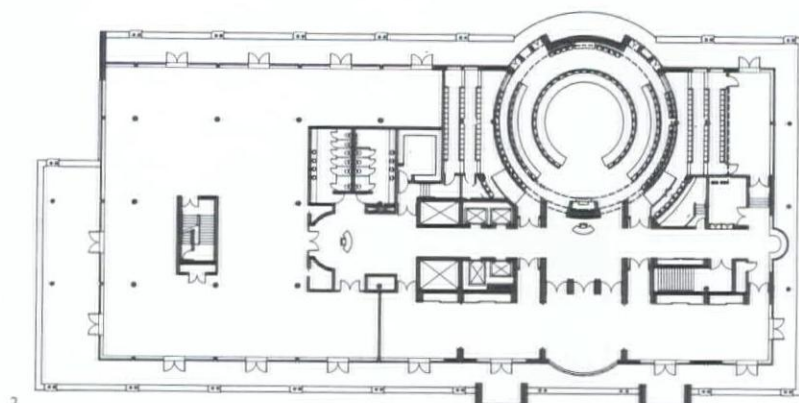
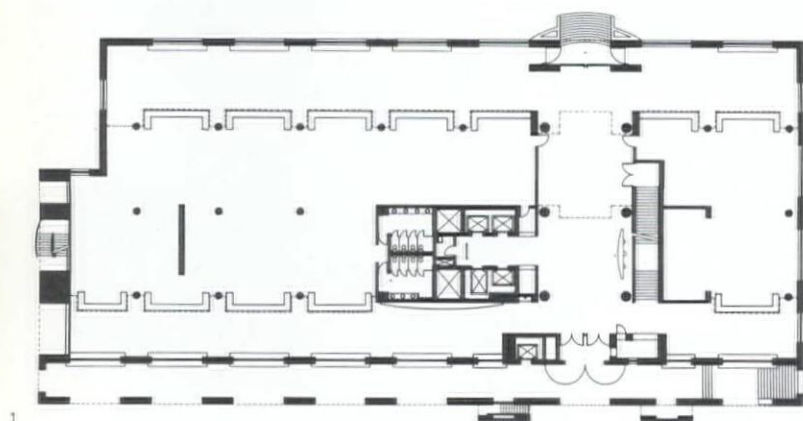
A number of setbacks befell the project since the foundation stone was laid in 1988. O & Y's bankruptcy, following the collapse of the London property market, made it necessary to refinance the development, retaining the firm in a purely advisory capacity. An increase in the number of staff to be accommodated in the Complex, from 1,400 to 2,000, reduced the scope for letting office and retail space to the central government and private businesses respectively, thereby compromising the scheme's cashflow, and depriving the newly created public spaces of activities which could bring life after the office workers left for the evening. Nevertheless, Uzi Wexler hardly conceals his satisfaction with a project which has taken up so much of his energy over nearly two decades.

#### Architect's perspective

Jack Diamond's scheme respects the framework established by the city authority's architects, which it develops with some subtlety and sophistication. The most bulky new building – the City Hall itself – is set furthest from the ancient walls, avoiding any danger of overwhelming the historical monuments. The complex is highly permeable, with a primary axis running north-south from the ceremonial entrance to the Hall, in

**"A symbolic mediation between the city's historically divided communities"**





between a variety of refurbished buildings, through an unusual skylit space, reminiscent of a covered bazaar, towards the city walls. This axis is crossed by a number of secondary pedestrian routes, linking established (but remodelled) gardens along Jaffa Street to the west with less busy quarters to the east.

The main new building faces a new civic plaza near the highest part of the site, on a ridge overlooking Arab East Jerusalem on one side and the more modern Israeli metropolis on the other. This ceremonial urban space, one metre above the original ground level, is in reality an artificial plateau, forming a roof to, amongst other things, the city archives and the emergency control centre, colloquially known as the "war room", buried five levels deep in the solid rock. A palm grove provides a "lobby" between Jaffa Street and the new square.

Jack Diamond selected the Jerusalem practice of Kolker, Kolker and Epstein to act as executive architects for the new buildings, with other local firms retained for the refurbishment of existing structures, the focus of activities switching from Canada to Israel once the project reached detailed design stage.

Olympia & York, in their capacity as project managers, carried the responsibility for the efficient use of the office spaces. Drawing on their exhaustive North American commercial experience, O & Y specified that the new buildings should be of a deep plan configuration (generally 32 metres between external walls, with a central service core) with minimal subdivision of office floorplates. The developer's philosophy stemmed from the reality of the City Hall being, in effect, an office block – offering the flexibility demanded by commercial tenants – with some additional specialised accommodation,

such as the sixth floor Council Chamber.

The complex aims to integrate old and new elements. As Henry Abramovitch and Ilan Kariv note (see appraisal below) Jack Diamond's design reinterprets such traditional details as Mamluk style yellow-red stone work in the elevations, Arab *mushrabiyyah* latticework screens; *kizan* roof balustrades and stone relieving arches. The architects' contextual references also include a pergola derived from that of Hisham's palace in Jericho, and an aqueduct, recalling an antique structure unearthed during construction. Bullet holes on the southern facade of the old City Hall have been retained as a testimony to Jerusalem's troubled recent history.

#### Engineer's perspective

Yaron-Shimon-Shacham, a Tel Aviv-based engineering practice selected by the Canadian project managers, worked closely with the architects in developing a structural system for the major new buildings which allowed exceptionally rapid construction. "Almost the entire building," explains Shimon Yaron, "is based on a grid of 8.1 metres squared which enabled us to combine precast with *in situ* concrete elements". Pre-tensioned, 25 centimetre deep planks were mounted on the 60 centimetre diameter cast *in situ* columns; with the floors completed using hollow-core precast units. Using this system, the contractor was able to erect 3,000 square metres of structural frame each month – sometimes up to 5,000 square metres – an output far above the Israeli norm.

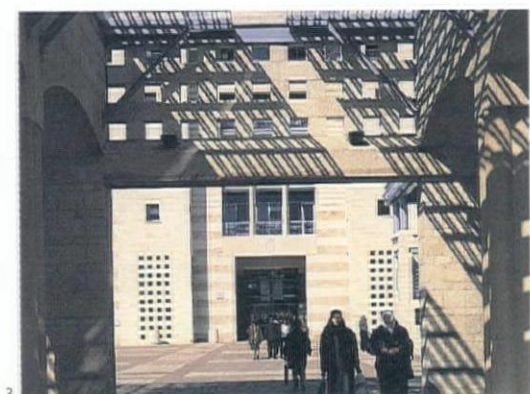
The City Hall and ceremonial plaza stand on top of a single, continuous concrete platform, spanning 90 metres by 90

1: Ground floor plan showing areas to which public enjoy easy access

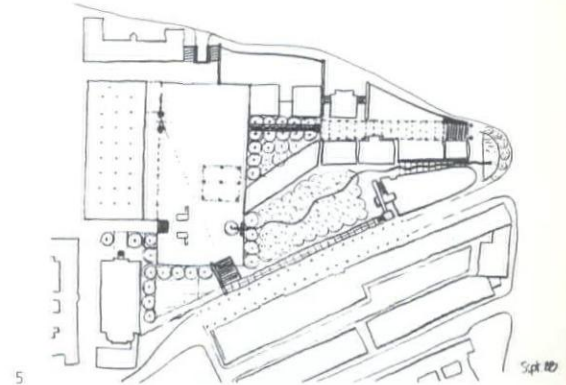
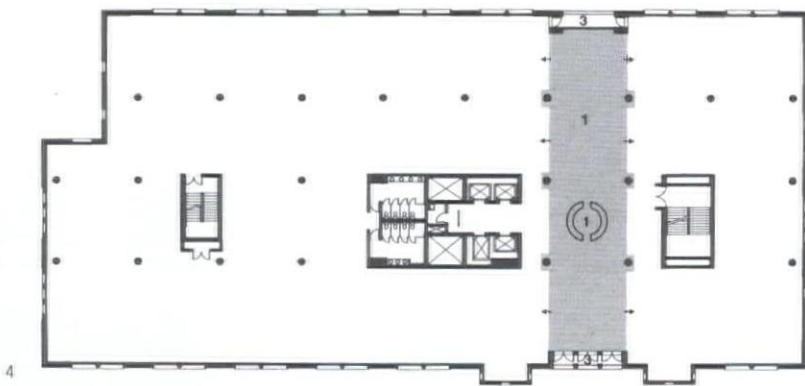
2: Fourth floor plan showing main Council chamber

3: Pergolas filter sometimes harsh sunlight

**"Bullet holes on the southern facade of the old City Hall have been retained as a testimony to Jerusalem's troubled recent history"**





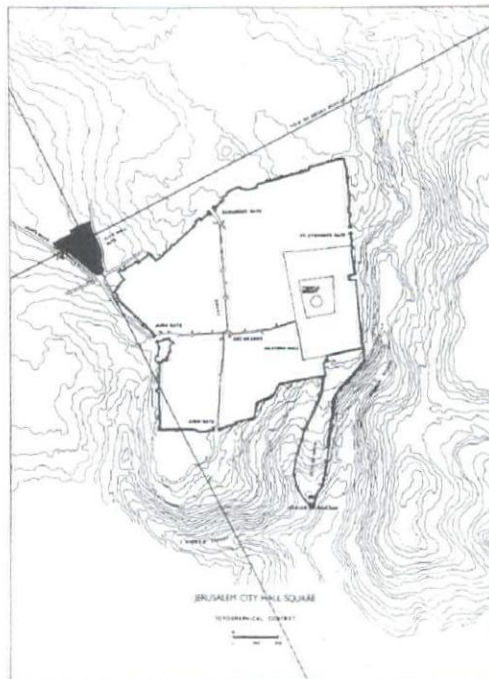


metres. "The architects wanted to minimise the risk of water penetration," Yaron continues, "so we designed the largest, post-tensioned flat slab ever built in Jerusalem."

The cladding system used in the new buildings was exceptionally thin – with sixcentimetres of stone mounted over four centimetres of insulation, held by steel shelf angles well clear of the waterproofed concrete structure – allowing rapid erection, yet satisfying the universal requirement of stability in earthquakes. The thinness of the external walls of Jack Diamond's buildings contrasts with the massive retained facades – sometimes up to 60 centimetres thick – onto which new *in situ* concrete could be cast without undue difficulties.

#### Appraisal

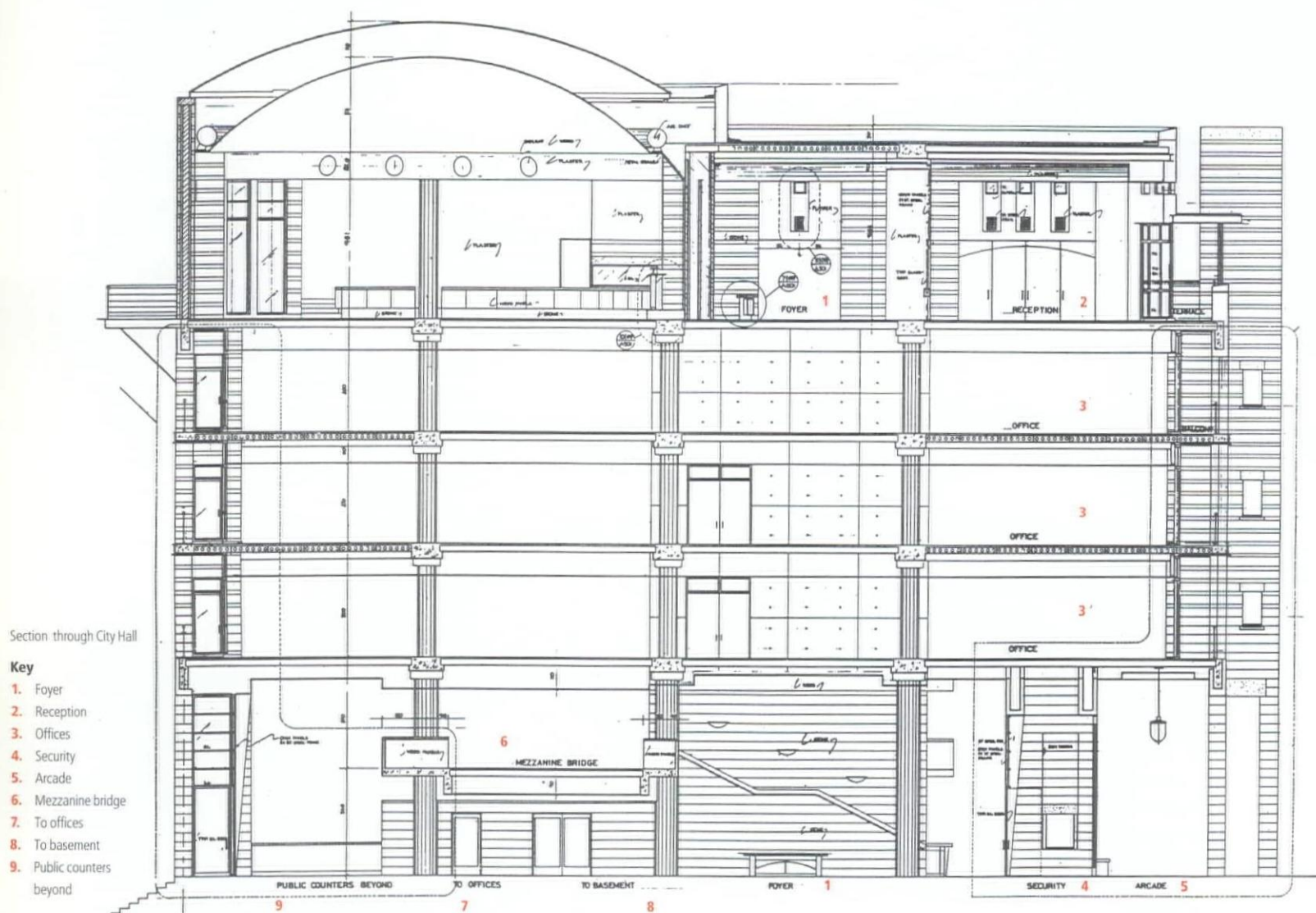
The cultural, political and religious importance of Jerusalem can hardly be overstated. Tel Aviv is Israel's business capital, and host to many countries' diplomatic missions. Despite the fact that the controversy surrounding the unification of the 3,000-year old city under Israeli control remains unresolved; anyone visiting ➤



Steven Evans

- 4: Typical office floor
- 5: Jack Diamond's master plan
- 6: Topographical map of the ancient walled city of Jerusalem, showing site to left
- 7: Buildings facing Jerusalem's oldest park have been restored as park of Jack Diamond's masterplan





► the Holy City cannot fail to be moved by the place. Even ignoring its unique history, the city's topography and architecture are unique and memorable. The City Hall Complex rightly seeks to meet the twin challenges of providing a functional building serving the a major civil administration, whilst recognising the project's inevitable symbolic and cultural significance.

Inevitably, the project has provoked much debate and publicity – most of which has been favourable. Unlike national politicians, the municipal councillors command considerable respect in their city; and their new seat of government is evidently an object of pride to many of their citizens. Nevertheless, a variety of criticisms have been voiced – including some stemming from an appraisal of the project in the context of the history city halls throughout the world, compiled by the anthropologist Henry Abramovitch, and Ilan Kariv, an architect and project manager involved in the scheme's realisation.

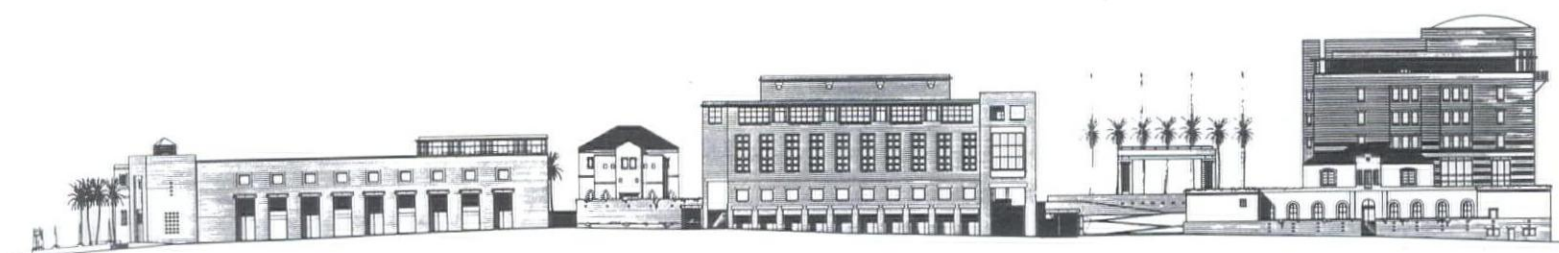
"Each city hall," Abramovitch and Kariv believe, "has at least three audiences: municipal employees, citizens and visitors." These interested groups are not homogeneous; and whereas function is most important to the former groups, for occasional visitors "the symbolic function of the building as an impressive monument is paramount." Whilst outsiders clearly have no concern with the everyday operational convenience of such buildings, "even for the mayor and the citizens, there is often an explicit tension between the function and symbolism." The most conventionally efficient of buildings can lack the necessary sense of monumentality and permanence which I M Pei, for example, achieved in the Dallas City Hall design.

Abramovitch and Kariv make a number of criticisms of the project, the most pertinent of which relate to issues of the diversity and lifestyles of Jerusalem's population. The fact that the public square – the only one of its kind in Jerusalem – remains a purely ceremonial space, and has failed to become used with the intensity the architect might have desired might be due to a simple misunderstanding of the differences in local ecology or urban anthropology between Middle Eastern and North American contexts.

Teddy Kollek's decision to exclude all functions beyond the secular from the brief has also been criticised. "The city of Jerusalem includes members of many faiths. Yet the City Hall contains no formal place of prayer," Abramovitch notes, "indicating how little the municipality is able to bridge the religious divide between even municipal workers of different faiths, let alone, in the city as a whole."

In its context, Jerusalem's City Hall Complex appears as appropriate as Richard Meier's Hague City Hall is to the altogether more homogeneous and agnostic Dutch. The test for the project lies in its ability to combine a sense of authority and political stability with an ease of accessibility and civic generosity. By drawing on the qualities of intimacy and permeability of the site, abstracting the details found throughout the ancient city, and informed by Olympia and York's commercial experience, Jack Diamond and his team have given Jerusalem a building which substantially meets both local and global expectations. The challenge now falls to Jerusalem's numerous factions to seek the representation they have not, in many cases, so far achieved in the government of their city.





| Cost Breakdown                    |                                                                       |              |                    |
|-----------------------------------|-----------------------------------------------------------------------|--------------|--------------------|
| Item                              | Description                                                           | Cost in \$US | Total cost in \$US |
| 1. Excavation and demolition      |                                                                       |              | 2,007,000          |
| 2. Foundation                     |                                                                       |              | 1,012,726          |
| 3. Structure                      | Structure                                                             | 23,076,787   | 24,605,008         |
|                                   | Water proofing                                                        | 233,952      |                    |
|                                   | Metals and carpentry                                                  | 858,853      |                    |
|                                   | Stone                                                                 | 128,949      |                    |
|                                   | Structural steel                                                      | 306,467      |                    |
| 4. Finishing works                | Flooring and coverings                                                | 1,115,136    | 4,561,707          |
|                                   | Partitions and ceilings                                               | 2,770,530    |                    |
|                                   | Painting, signage                                                     | 676,042      |                    |
| 5. Aluminum                       | Curtain wall, doors and windows                                       |              | 1,323,745          |
| 6. Special finishes               | Special finish/metal, arc woodwork, flooring and misc                 |              | 3,335,494          |
| 7. Electromechanical systems      | Plumbing                                                              | 13,370,825   | 19,453,542         |
|                                   | Electricity                                                           | 5,019,599    |                    |
|                                   | HVAC (AC)                                                             | 8,242,569    |                    |
|                                   | Elevators                                                             | 1,344,549    |                    |
|                                   | Communications, low voltage and controls (BMC)                        | 3,476,000    |                    |
| 8. Work station and furnishing    | Open space work stations                                              | 3,737,113    | 5,542,087          |
|                                   | Movable furniture, plants art, security, operating equipment and misc | 1,804,974    |                    |
| 9. Landscaping & site development | Central plaza/gardens and lighting                                    | 3,107,006    | 5,522,167          |
|                                   |                                                                       | 2,415,161    |                    |
| Total Cost                        |                                                                       |              | 67,433,476         |
| Items 1-9                         |                                                                       |              |                    |

| Areas analysis and cost per square metre |                                             |                       |                            |
|------------------------------------------|---------------------------------------------|-----------------------|----------------------------|
|                                          | Description                                 | Area in square metres | Cost in \$US/ square metre |
| A Primary spaces                         | Offices                                     | 25,595                |                            |
|                                          | Commercial                                  | 3,449                 |                            |
|                                          | Shelters (dual purpose)                     | 2,209                 |                            |
|                                          | Total area                                  | 31,253                |                            |
| Total cost                               |                                             | 46,127,469            | 1,476                      |
| B Parking and Service                    | Machine rooms and maintenance rooms         | 5,485                 |                            |
|                                          | Underground parking                         | 23,027                |                            |
|                                          | Service tunnels and loading/unloading docks | 4,371                 |                            |
|                                          | Total area                                  | 32,883                |                            |
|                                          | Total cost                                  | 15,783,840            | 480                        |
| Grand total (gross)                      |                                             | 64,136                | 965.31                     |

- 1: Continuity of new and refurbished building across the site
- 2: Covered area and forms symbolic gateway, with City square looking towards East Jerusalem



## Project

Jerusalem City Hall Complex

Client

Municipal Treasury

Architect

A J Diamond, Donald Schmitt and Company

Associate Architect (New Buildings)

Amir Kolker-Ofer, Kolker Randy Epstein

Associate Architect (Historic Buildings)

Peter Bugod-Eunice, Figueirido-Esther, Niv-Krendel

Engineer

Yaron-Shimon-Shacham

Space planners

Murray Cohen, The Design Associates Ltd

Project Management

Jerusalem Development Authority

Interior Design

Liora Vinograd-Tamar Carmi Architects

Contractor (New building)

A Aronson

Contractor (Historic Buildings)

Hassan Hatav Ltd



Architects

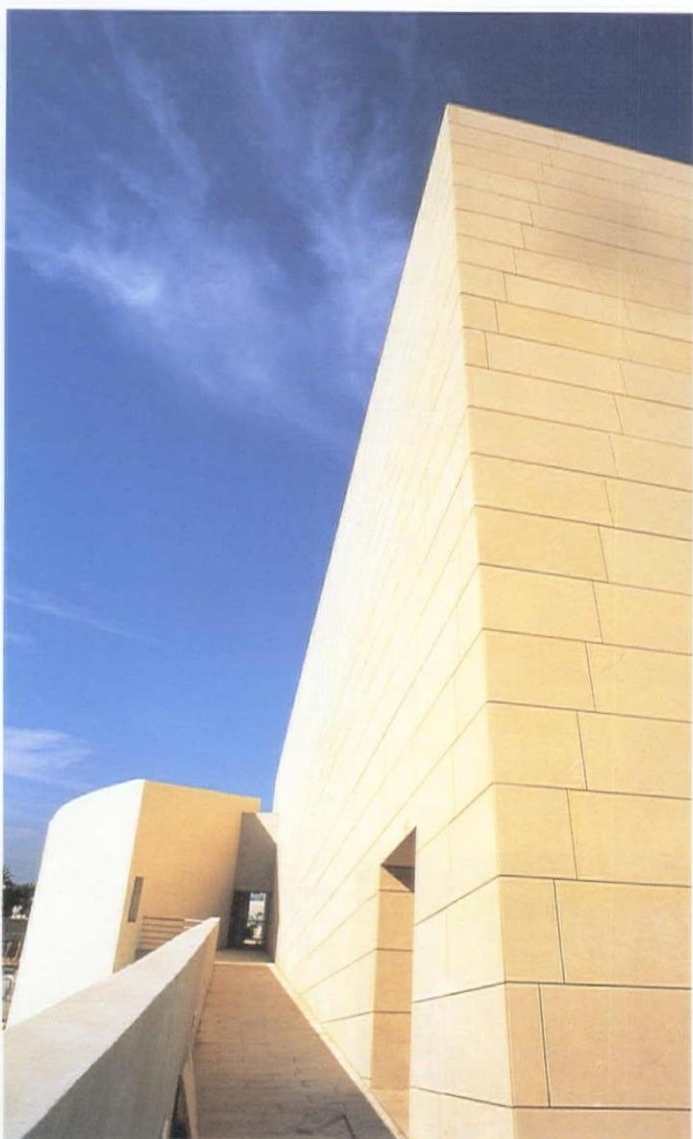
**Chyutin Architects**

Reviewed by

**Peter Wislocki**

# Youth culture

*Esslingen House, Tel Aviv*



1: Detail of the corner of the linear residential block

2: Detail of the main stairway to the elevated forecourt

3: The dynamically curved walls of the foyer



**B**racha and Michael Chyutin's success in winning one of Israel's most prestigious architectural design awards with their recently completed Esslingen House – a unique combination of a community cultural centre and a youth hostel, funded by the German town from which it takes its name, for the benefit of young visitors to Tel Aviv – has divided local critical opinion. A thoughtful, progressive project; or an attempt to jump on an international deconstructivist bandwagon?

Bracha Chyutin concedes that her practice's work is influenced by contemporary stylistic trends, but sees both post-modernism (in the broadest sense) and deconstruction as instruments for the creative reinterpretation of the canonic modern movement essential joys of light, movement, transparency and spatial dynamism. The Chyutins place authenticity and recognition of the *genius loci* above the seductions of fashionable aesthetics.

The separation of the building's major elements is not without functional justification. A traditionally proportioned theatre, contained within an orthogonal volume, is pulled away from a linear block of regularly partitioned, cellular spaces, linked by a foyer enclosed by dynamically curving walls. The generous dimensions of the site – most of which is designated as a public park, amidst a cluster of new office buildings – have allowed the architects to explode the essentially logical planning into a collage of memorable formal gestures.

The building presents a generous and legible face to its users. Arriving from the car park to the south, one ascends a monumental stairway, policed by an external booking office window. An elevated forecourt – spatially continuous with the main auditorium foyer and exhibition gallery – provides a



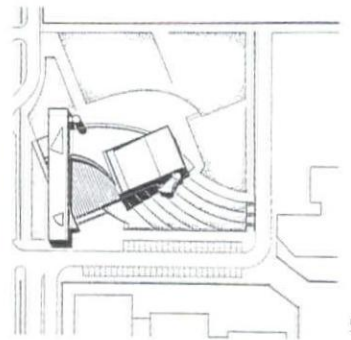
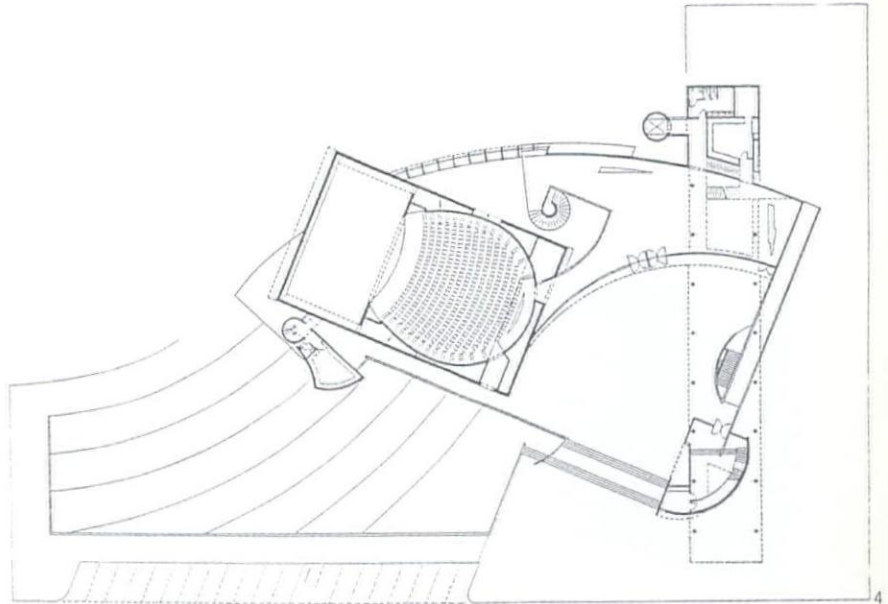


means of access and orientation for each of the Esslingen House's functions. From the main foyer, visitors are immediately made aware of the drop in ground level across the site, finding themselves on a mezzanine, facing a bay window looking out to the park running the length of the northern part of the site. The auditorium can be entered directly from the main entrance level, or from a lower foyer, which is reached by a dynamically spiralling stairway.

The youth hostel accommodation can be entered independently of the cultural centre, by a small foyer and stairway adjoining the box office, near the top of the dynamically skewed ramp. The hostel accommodation (which is used for adult education and other community functions when guests are not in residence) is linked spatially with the more public parts of the Esslingen house, through a triple-height, top-lit void at the eastern end of the main entrance foyer.

Some of the finishes reflect the relatively tight budget of US\$3.2 million, for a 3,500-square-metre building. At the time of writing the building is virtually complete, but not, as yet, occupied. There is every probability, however, that the Chyutins' design will serve its functions more than adequately, notwithstanding any purely aesthetic delight generated by the building's formal gestures.

WA



4: Plan of the theatre showing the main auditorium away from the linear block but linked by a foyer

5: Block plan of site

6: Interior view of the foyer

7: The elevated, linear youth hostel block



Client  
**Givataim Municipal**  
 Main contractor  
**SGS Building Co Ltd**  
 Structural design  
**Israel David Engineers Ltd**  
 Project manager  
**Baltsan-Epstein Engineers**  
 Electricity  
**GB Engineers**



Architects

**Rechter Architects**

Reviewed by

**Peter Wislocki**

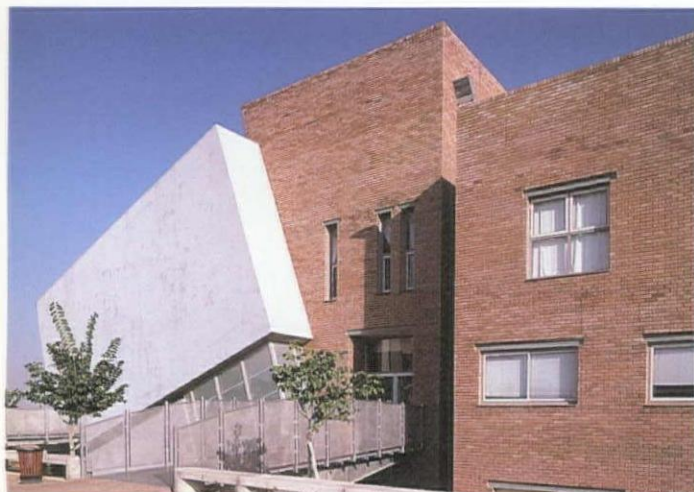
# Law of the land

## Faculty of Law, Rishon le Zion

**T**here can be few architectural practices anywhere in the world which have flourished, as family businesses, through three generations. The firm's founder, Zeev Rechter, has become a hero of modern Israeli architecture, lending his name to one of the country's most coveted design awards – although, like many of his generation, some of his more radical urbanistic thinking is now out of fashion. Yacov Rechter, respected for such projects as the Golda Meir Arts Centre (the Opera House, completed in 1994, incorporating Ron Arad's exuberant foyer interior), now leads the practice, in partnership with his son Amnon. The Faculty of Law building at Rishon le Zion, completed in 1996, was the first project to have been led by the youngest member of Rechter dynasty – a great challenge for an architect not long having completed his training at London's Architectural Association.

The Faculty of Law is one of two buildings so far completed within the Rechters' campus masterplan (the other being a "crab-like" post-modern Business School). The campus will, in due course, develop into an urbane, gridded, highly ordered precinct, with each building designed by a different architect, but always filling a square block surrounded by a moat, and therefore entered across a bridge at the intermediate of three levels. The masterplan is thus intended to establish a theme of continuity (in terms of an overall uniformity of massing) in dialogue with discontinuity (as expressed by the moats around each building). Similar concepts underlie Amnon Rechter's building's design.

The Law Faculty building is conceived as a densely layered "onion", with spaces for teaching, study and administration grouped in two L-shaped blocks, enclosing the main lecture

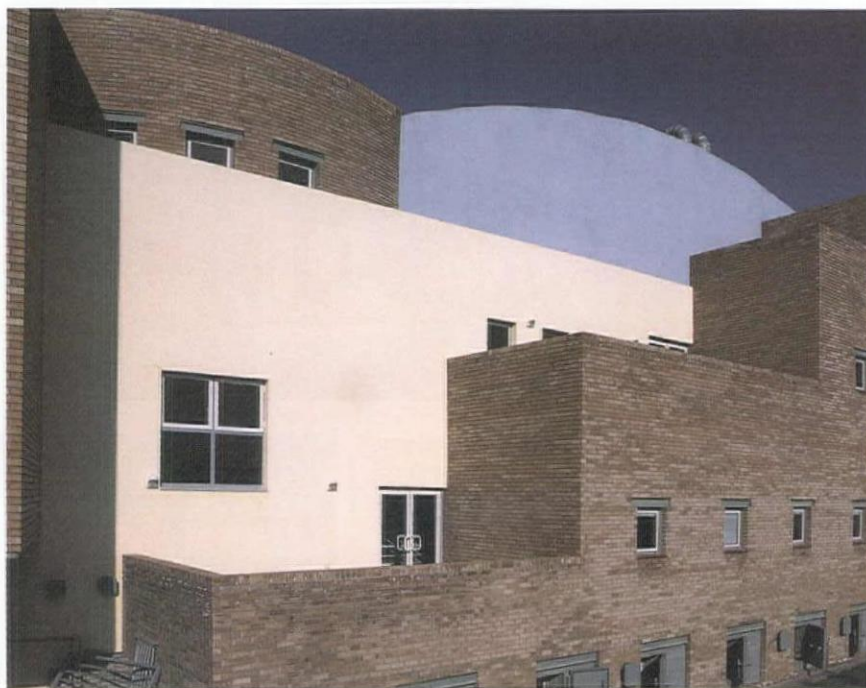


1: Main entrance is reached by a bridge over the moat

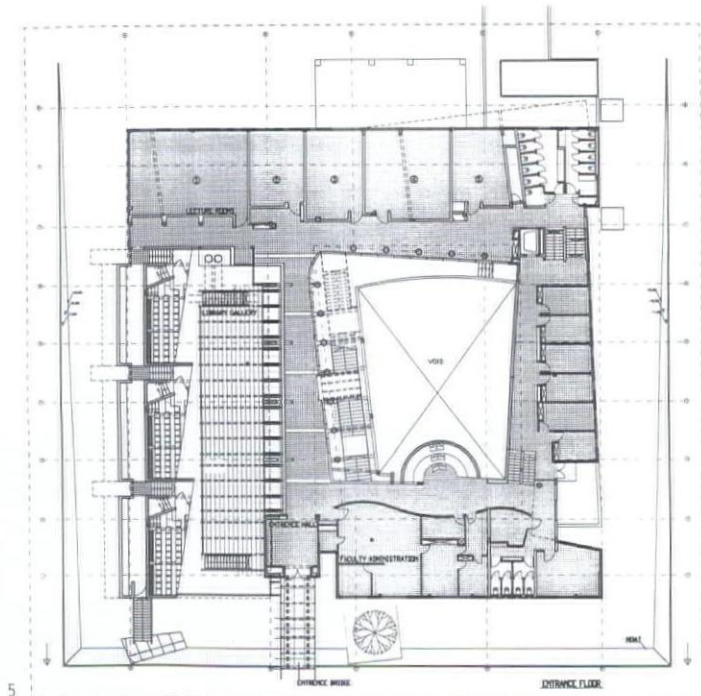
2: Simple block form of individual teaching and meeting rooms

3: View from the entrance

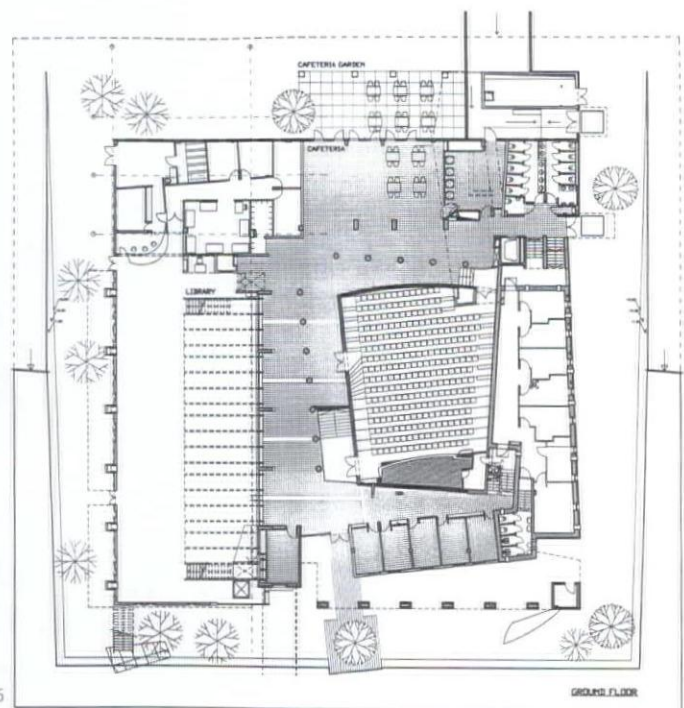
4: Although still isolated, the building will one day be surrounded by other faculties



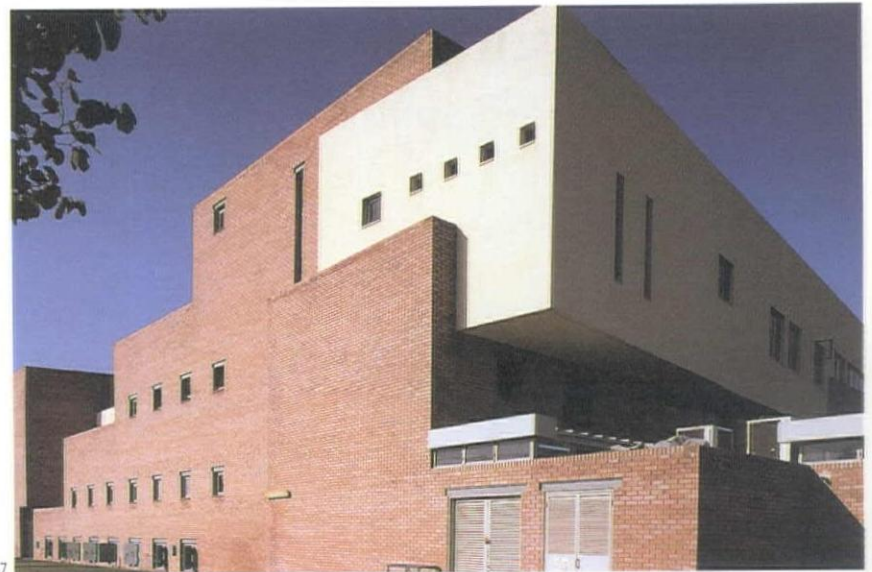




5



6



7



8

5: First floor entrance level

6: Ground floor

7: Brick is seldom used so single-mindedly in Israel

8: The main lecture theatre to the left is a "building-within-a-building"

## Client

**The College of Management**

Structural engineer

**M Pery S Ravin**

Landscaping

**M Paul Friedberg**

Electrical

**A Gilad Ltd**

## Plumbing

**Hendler Engineers**

Project manager

**Nizan & Inbar**

Main contractor

**Gazit & Shacham**

theatre – a "building-within-a-building", with a cafeteria on its rooftop.

In true constructivist fashion, Rechter has taken the cue of the rake of three lecture theatres, grouped along the building's western flank, to tilt their cubic volumes, expressing their function on the building's exterior, and making space for diagonal views down from the entrance area to the lower level library, across a suspended mezzanine. Sadly, the academic authorities have placed utilitarian and obtrusive bookstacks along the mezzanine's entire length, almost completely blocking the desired views. This is just one of several instances where Rechter's architectural inventiveness proved too fecund (or too contrived) for the client's appreciation.

The relatively straightforward and entirely rational

typology is made legible by a variety of fractured forms, skewed geometries and articulated structural elements, with the intention of allowing sufficient transparency and internal vistas to provide occupants with a strong sense of orientation throughout the building. To a very considerable degree, the fashionably fragmented architectural vocabulary, with skews in both vertical and horizontal planes, can indeed be justified in these terms. The building is aesthetically exhilarating, yet reassuringly comprehensible. Its failings – the source of Amnon Rechter's evident frustration – lie in an occasional over-elaboration of spatial and tectonic inventions. Perhaps a more conventional design – or one whose logic was more consistently self-evident – would have stood up better to misuse at the hands of its less aesthetically literate users?



Architects

**Yoav Messer**

Reviewed by

**Peter Wislocki**

## Urban restraint

### House at Ramat Hasharon



1. The ground floor is spatially transparent
2. Ground floor plan
3. Monumental exterior belies the modernist plan
4. First floor plan



**T**he abundance of commissions for private houses in Israel has spawned a spirit of experimentation and creative freedom which architects in other countries might envy. Freedom, however, requires responsibility – and in a land whose population, and hence culture functions in a mode of incessant, dynamic assimilation, the tendency towards eclecticism is understandable. In this context, Yoav Messer's recently completed house in a northern suburb of Tel Aviv appears a model of sobriety and restraint. "Easily identifiable among the surrounding UFOs," says Ami Ran, Editor of *Architecture of Israel Quarterly*.

For Messer, occasional domestic commissions from wealthy individuals provide a contrast to the challenges of the variety of socially-orientated work with which his practice is generally occupied. A native Israeli, Messer has grown up with the realities of his country, and views much of the haphazard development of the young state's first few decades as an incomplete project in need of urgent rationalisation. Many of his jobs involve direct improvements to public buildings constructed in the 1960s and 1970s – a field of work in which contemporary Israeli architecture's concerns with national identity are poignantly juxtaposed with earlier Israeli architecture's concerns with national survival.

Houses, however, provide the best opportunities to develop architectural ideas at a manageable scale, often (as here) with relatively generous budgets. The three principal themes of Messer's project are hardly unique: working with the site, to

integrate the interior with the exterior; exploring the dynamics of inhabited space; and moulding the dwelling to the lifestyle of the clients, recognising the cultural and climatic contexts.

On entering the house, one is immediately struck by the interior's openness, and constantly aware of the garden to the rear of the site. Whilst Messer's spaces open into each other in a modernist manner, they retain a sense of being domestic rooms, with a scale and degree of enclosure in which one feels sheltered, and never uncomfortably exposed. The upper living space, with direct access to balconies overlooking both front and rear gardens. Each of the three bedrooms is entered directly from this space (with the master bedroom reached across a wooden bridge); yet despite their physical proximity, each is given a unique aspect, giving a sense of individuality to each of the most private dwelling spaces.

Informed by Israel's Bauhaus tradition, Messer's architecture combines the transparency of modernism with the decorum of more traditional urbanism. The establishment of a uniquely Israeli identity in this work is, however, more problematic. Who could say that Messer's house would feel alien to the suburbs of London, Berlin or Madrid?

Client

**Private commission**

Structural engineer

**Vera Neustein**

Main contractor

**Yaron Pick**



Architects

**Hillel Schocken with Ari Avrahami**

Reviewed by

**Peter Wislocki**

# Learning experience

## *Bernard M Bloomfield Museum of Science, Jerusalem*

**C**urrent proposals for an extension to Jerusalem's Science Museum, completed by architects Hillel Schocken and Ari Avrahami some five years ago, and very much a product of its times, illustrate how Israeli architecture is keeping pace with global developments in both museographical and architectural thinking.

The first phase of the museum complex, completed in 1991, responded directly to the intrinsic paradox of presenting science to the public. "Museums", Schocken explains, "have traditionally been seen as places in which authentic objects of historical or cultural interest are displayed". The significance of the sciences, however, is intangible and abstract. The information being exhibited is conceptual, and not directly embodied in any artefacts. Whilst the facades of Schocken and Avrahami's building, clad in the stone which has been mandatory in Jerusalem since the British Mandate (1919-48), are formal – abstractly classical – and thus compatible with an orthodox notion of public enlightenment, the interior is an informal, flexible shell within which a variety of interactive displays can be accommodated. A triple height gallery, brightly daylit under an exposed space frame structure, resonates with the sound of excited visitors of all ages.

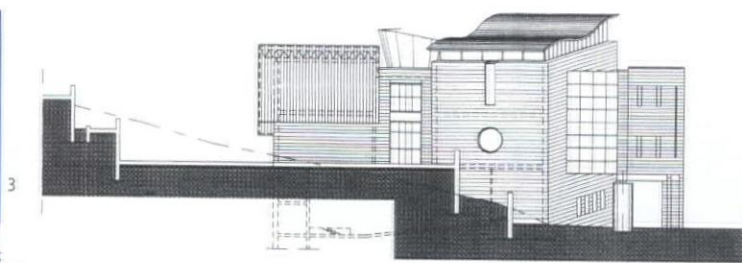
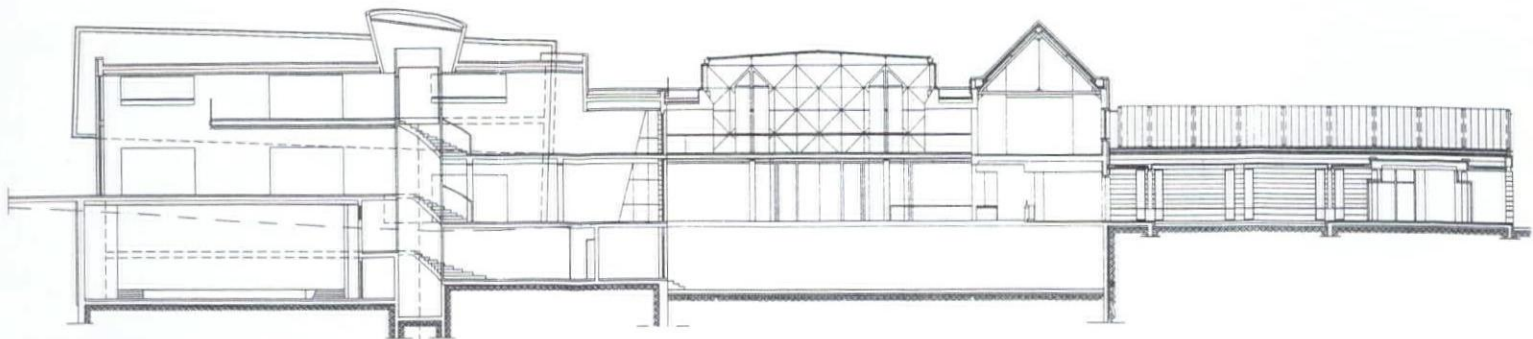
The museum's first phase is thoughtfully planned. Schocken and Avrahami's populist language is limited to such gestures as

the entrance canopy roof, detailed in a manner to suggest mechanical movement, and the rather dated triangular windows and gables of the museum's elevations. In other respects, the planning is timeless, with its quite classical disposition of four major spaces (an external cloister, the main exhibition gallery, a children's gallery and a garden) around the intersection of two circulation spines – the *Cardo* and *Decumanus* of the museum urban concept.

Schocken's plans for an extension to the museum, adding a further 2,500 square metres of accommodation, matches the existing building's stone detailing and circulatory logic, but reflects current aesthetic trends. Unlike the first phase, the museum's extension is to contain a number of smaller spaces, separated by sliding partitions. Locked into the existing building's primary circulation spine, the most striking quality of the later design is its skewed geometries and explicit avoidance of even residual classical motifs. Schocken, as ever, explains the formal gestures of the design in pragmatic terms (the slanted volumes providing spaces of varied proportions, in accordance with curatorial requirements). Just as the first phase now appears very eighties in style, however, it can only be a few years before its successor is recognised as a product of a particular moment in architectural evolution.

1. Section showing post-modern completed building on the right linked to future extension
2. Existing building's rhetorical, stone-clad facades now look dated

VA 3. Side elevation



Client

**The Jerusalem Foundation**

Structural engineer

**Sircovitz-Lavaton engineers**

Electrical engineer

**Shmuel Shoklender**

Services engineer

**Amnon Yosha Engineers**

General contractor

**Kricheli Alon**



# The supreme achievement of symbiosis

## Kisho Kurokawa architect & associates

World Architecture profiles the work of Kisho Kurokawa, an architect whose achievements over a 35-year career mark him out as one of the twentieth century's architectural greats. The first overseas architect to be selected as Honourary Fellow at both the Royal Institute of British Architects, in London and the Ordre des Architectes in Paris, Kurokawa's reputation for both his built work and for the diversity of issues and theories addressed within it is unsurpassed. Peter Wislocki went to meet the man for whom building is a vehicle for philosophical expression.





Interior view of the cone at the Ehime Prefectural Museum of General Science, Shikoku Island, Japan. The cone, a

primary form used regularly by Kurokawa, communicates notions of centrality and cohesion



Photography: Tomo Choshi

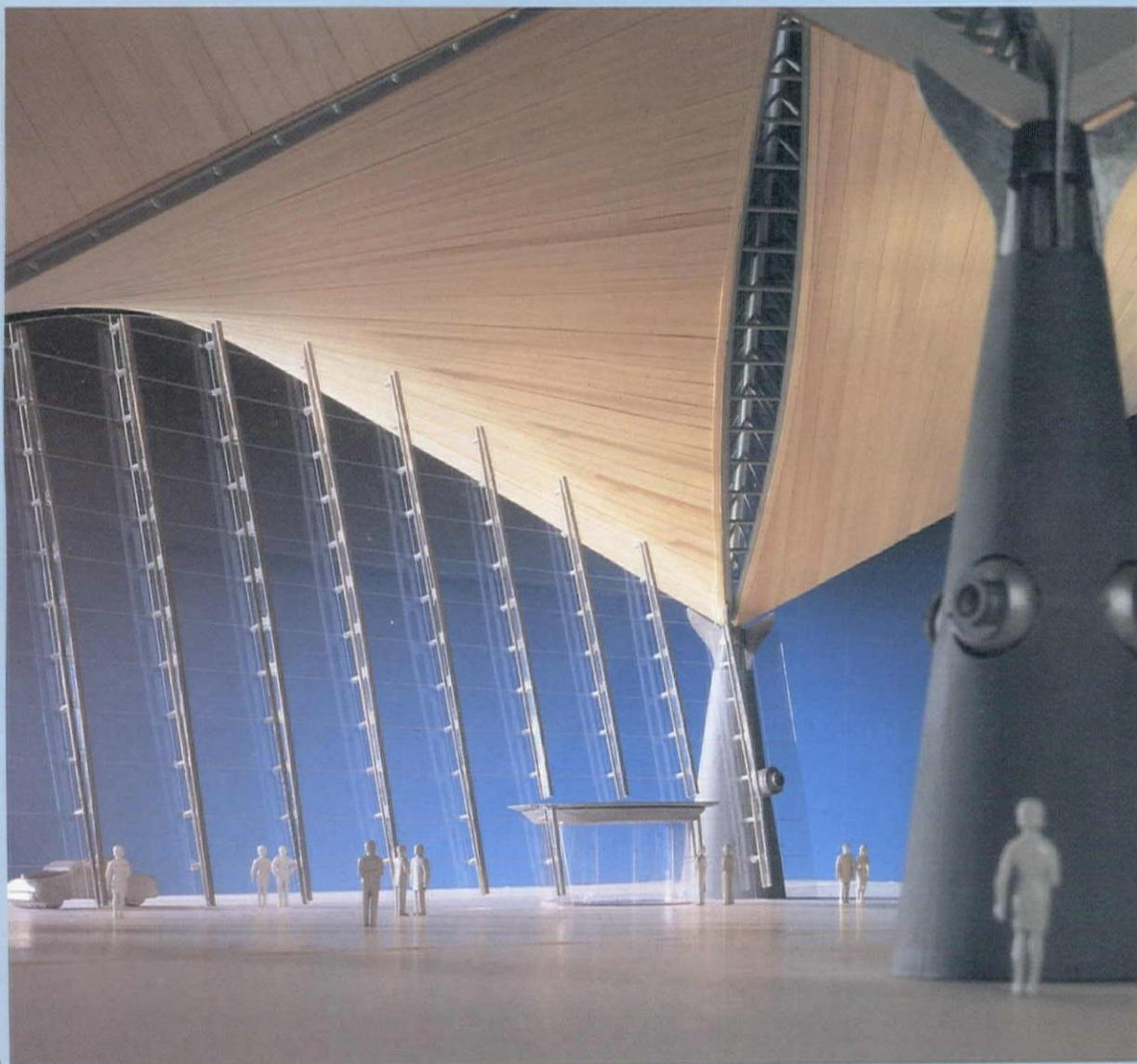


**K**isho Kurokawa was 11 years old when, with his architect father, he gazed in bewilderment at the smouldering ruins of his native Nagoya. In an instant, the decision to follow in his father's footsteps was confirmed. Yet, though Kurokawa was something of a prodigy, setting up his office immediately on qualifying at the age of 24, and becoming internationally known for his metabolist theories and projects whilst still completing his doctorate in city planning at Tokyo University, architecture was never his sole intellectual pursuit. A Buddhist secondary education gave Kurokawa the seeds of a philosophy which he has since made his own. Whenever time could be spared from his architectural studies, Kurokawa immersed himself in Buddhist texts – mastering Sanskrit in the process.

Any ranking system for contemporary architects would have to put Kurokawa near the top of the global super-league. Not every project can be a masterpiece – yet, despite the fact that he has designed more buildings than he cares to remember, there are few if any dull works in the Kurokawa oeuvre. Awards, honorary degrees and invitations to lecture and participate in conferences have come from every corner of the world. A library of monographs, translated into the majority of the world's major languages, testifies to the quality (and photogeneity) of the realised designs. This alone would fulfil most

architects wildest ambitions. Yet, for Kurokawa, the interest taken in his philosophy is equally gratifying. *The Philosophy of Symbiosis* was awarded the Japan Grand Prix of Literature; and its English translation – available on Kurokawa's Internet home page (see company data) along with his other major writings – is consulted by 2,000 net-surfing enquirers every day.

Renaissance Men were a product of their time. Back in the fifteenth century, Leonardo da Vinci could credibly claim to have mastered most of the disciplines – artistic and scientific – at the cutting-edge of his civilisation. In the West, conventional wisdom holds that, the diversity and universality of knowledge today demands specialisation – a complete understanding being possible only of a fragmentary, often self-referential reality. The profession of architecture, intrinsically a holistic discipline even in the context of twentieth century relativism, has on occasions produced exceptional individuals who have sought to address the human condition in a wider context. One such was Le Corbusier – regarded as the “architect of the century”, at least in the Eurocentric view of history – not so much for the merit of any individual building or text, as the sheer diversity of issues addressed in his work. Yet Le Corbusier's thinking was always tied to his architecture. For Kurokawa, philosophy and architecture constitute more autonomous disciplines. His buildings are expressions of his



1: Model shot of KL International Airport terminal complex, Kuala Lumpur, Malaysia. The project was designed by Kurokawa, in association with local firm Akitek Jururancang, and is currently on-site





**"Architecture...even in the context of twentieth century relativism, has on occasions produced exceptional individuals who have sought to address the human condition in a wider context"**

philosophy; yet his philosophy, Kurokawa insists, must not be judged (as architects and architectural critics might presume) by his buildings alone.

Kurokawa's name has become synonymous with metabolism – that most quintessentially Japanese avant garde. An architecture of growth, – a living, autonomous life force, driven by its own metabolism – the movement anticipated many of today's concerns with building intelligence, responsive environments and design for change. Kurokawa's Helix City and Osaka Expo pavilions and Nakagin Capsule Tower provided a Japanese counterpart, and often a precedent, for much of the corresponding avant garde of the west, such as Archigram's paper architecture in the UK.

"A turbulent image of a future architecture, in which the time honoured boundaries between nature, culture and technology would be dissolved at an oceanic scale", is Kenneth Frampton's description of metabolism, a movement for which the critic sees roots in Italian Futurism and Le Corbusier's Algiers megastructure. Kurokawa largely rejects this interpretation, citing the Japanese cultural and architectural acceptance of impermanence and perpetual change as the movement's generating context. "Metabolism might not have looked traditional. But to me it is perfectly traditional. Its extendibility is simply a characteristic of traditional Japanese architecture."

**Kurokawa's office: body and soul**

In recent years 100 architects have worked alongside 50 CAD technicians, administrators and other support staff in Kurokawa's central Tokyo office. Despite the considerable scale of the business, Kurokawa delegates little to the members of his atelier, remaining in sole charge not only of the firm's design and technical services, but also of its management and financial administration. Despite the limited scope for individual creativity in such an organisation, several of Kurokawa's senior staff have stayed with him for 20 or 30 years. Younger, more ambitious designers often pass through the firm more rapidly. To make his practice more democratic would be to change its fundamental nature – so Kurokawa prefers to foster young talent by assisting former staff and other promising designers in setting up on their own. Kurokawa has promoted his many protégés through his publications – notably that on *New Wave Japanese Architecture* – and by co-curating exhibitions in many cities around the world.

"This is my practice," Kurokawa emphasises. "My office is an extension of my body. My staff are my limbs." But the total control of an office by one individual does not imply any wider megalomania. "A city full of Kurokawa buildings would not be a good city," Kurokawa gestures towards the Tokyo skyline beyond his eleventh floor window. "The establishment of the whole era – the development of the philosophy – involves many >

2: Kisho Kurokawa at work (front right)

3: Senior staff. Back row from left to right, Tatsuaki Tanaka, Akira Yokoyama. Middle row, from left to right, Hiroshi Kanematsu, Kazunori Uchida, Masahiro Kamei, Seiki Iwasaki, Nobuo Abe, Yukio Yoshida, Ichiro Tanaka. Front row, sitting, from left to right, Naotake Ueki, Iwao Miura



people." The philosophy which Kurokawa refers to is intrinsic to the spirit of the age; and therefore an inescapable reality within which every human, and every architect, must articulate their own position.

To witness Kurokawa at work is to behold a minor ritual. Every new project receives his personal attention, with design sessions typically lasting a couple of hours scheduled every day or two. On each of these occasions, a secretary prepares paper, pencils and pens for the architect, who sits at an expansive boardroom table, the project team standing in a circle, looking on. At the end of the allotted period (Kurokawa's office runs with the uncompromising punctuality for which Japan is justly famous) the architect hands over his sketches to his assistants, who have a day or two to develop and test – through more accurate models and scale drawings – the practicality of the proposal. Usually, Kurokawa develops several options in response to any brief, presenting all to the client, and inviting comments. "I ask clients for their opinions," the architect explains, "but I insist that the final choice should be my own."

Kurokawa insists on initiating all designs, and presenting schemes to clients in person. "The questions may range from the philosophical to the highly technical, but I try to answer them personally." The structure of relationships between the practice and its clients is consistent with the former's hierarchical nature – almost resembling inter-governmental exchanges, with all decisions of substance taken at summit meetings between Kurokawa and the heads of the client organisations. Visitors to the Aoyama offices have included foreign prime ministers and domestic politicians, countless Japanese company presidents and the most senior executives of multinational corporations. Kurokawa accepts that some institutional or bureaucratic clients might feel uncomfortable dealing with a single, powerful individual, but then such clients are unlikely to commission an architect of such ambition. "I don't need to keep on increasing my company's turnover," says Kurokawa. "I don't want to design many hotels, or many offices...only the creatively challenging ones."

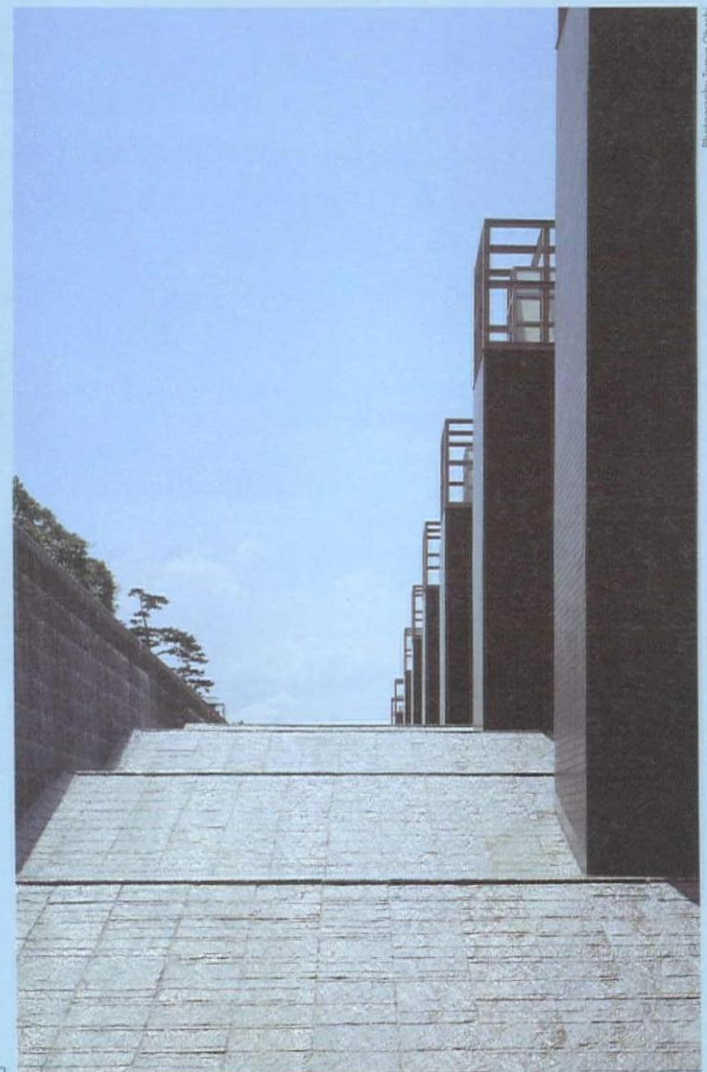
As several recently realised projects demonstrate, commercial



Photography: Tomoo Ohashi

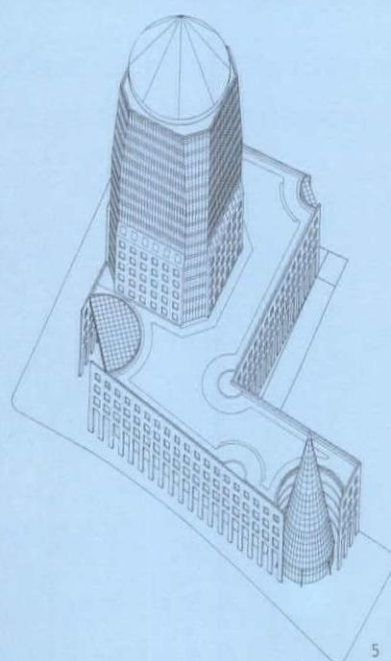
1: Kurokawa's design for the Toshiba-IHI Pavilion (1968-70) – an early completed example of the architect's Metabolist theories

2: The Museum of Modern Art Wakayama, Japan (1994)



Photography: Tomoo Ohashi





3: The Pacific Tower, Paris, France. One of Kurokawa's largest projects in Western Europe

4: Fukui City Museum of Art, Fukui, Japan (1995-1996)

5: Axonometric drawing of Lane Crawford Place, Singapore (1991-1993), a city-centre office and commercial development

clients have not hesitated to commission this overtly individualistic artist-philosopher. "My fees are the same as other architects, and my buildings are no cheaper and no more expensive." Kurokawa has been working on a major commercial project in Singapore of late, in which his design and his reputation are clearly being used as marketing assets. "The clients come to me for added value."

No individual could master the complexity of some of the programmes which the practice has undertaken, and Kurokawa acknowledges the help of his assistants in researching the issues surrounding new designs. In the case of the most complex brief which the practice has so far been given, the Kuala Lumpur Airport terminal, it was however the principal himself who was already an expert in the field. Kurokawa's campaign to make Kansai Airport the subject of an international competition, and his role as chairman of the jury which selected Renzo Piano to design it, gained him an intimate knowledge of latest developments in this most technically and programmatically challenging of building types.

In the case of the Kansai Airport, Kurokawa recalls that four options were presented to the Malay Prime Minister within two months of the project's inception. Yet he concedes that he sometimes needs months to take crucial design decisions. "I do have doubts. I have to be absolutely certain of what I am doing."

### The symbiosis of architecture and philosophy

Our age, Kurokawa asserts, is one in which buildings are, by their nature, becoming less standardised, and therefore more individually complex. "Standards were important in an industrial society," he explains, "but in today's information society, identity and difference matter more." This belief is central to Kurokawa's philosophy of symbiosis, within which the dualism of Western thought is superseded by an acceptance of ambiguity, irresolution and impermanence derived from the fourth-century Buddhism to which the architect-philosopher adheres. "Buddhism is by its nature inclusive." Unlike the monotheistic faiths of the West, Buddhism has no absolutes, no exclusive eschatological claims. "A Buddhist can simultaneously be a Muslim, or practice Shinto as the majority of Japanese people do."

Symbiosis – a term first used by Kurokawa three decades ago, long before its now widespread application to fields as diverse as microbiology and management theory – offers a framework for reconciling the conflicts intrinsic to architectural design. In discussing his projects, Kurokawa constantly refers to symbioses of nature and architecture, inside and outside, history and the present. Kurokawa's application of the term symbiosis to such architectural phenomena has led many to suppose that the "philosophy" of the same name is derived from his experience as a practising architect. Doubtless



► Kurokawa's architecture and philosophy are inseparable – but the relationship between them is not one of simple derivation, or of cause and effect. "Architecture cannot be the equal of philosophy. It's a physical thing. It can only touch on the easiest aspects of philosophy."

Reading any of Kurokawa's texts reveals an eclecticism of encyclopaedic proportions, prompting some to question how anyone can arrive at more than a superficial understanding of such a range of topics. Kurokawa answers this criticism directly and pragmatically. "My interest is very narrow and very exact – the change from the principle of the age of the machine to the age of life principle. I can focus my research across many disciplines, but always study this central change." The slogans under

which Kurokawa has preached and practiced have certainly changed over the decades: "metabolism", "metamorphosis", "information"...and now "symbiosis". But whilst the language has developed, its intuitive basis remains constant. "My intention is to stimulate the Western world, to help it overcome its limiting dualism." Kurokawa is satisfied with the progress of this grand mission. Whether or not any changes derive directly from his own actions, he detects an emerging consensus founded on the same concepts which have driven him over more than three decades. More straightforwardly, Kurokawa expresses his mission in terms most architects can support. "The architect's responsibility is to create architecture representing the spirit of the next era: the twenty-first century."

**"Standards were important in an industrial society...but in today's information society, identity and difference matter more"**

Photography: Tomoo Ohuchi

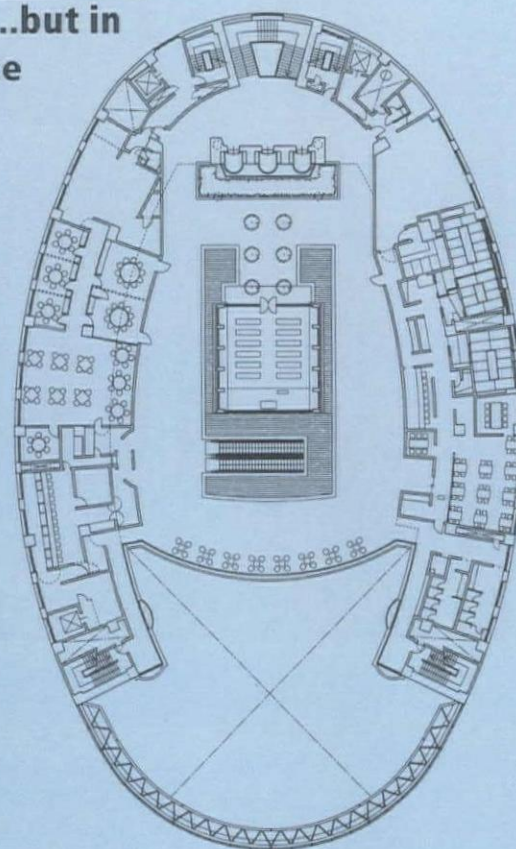


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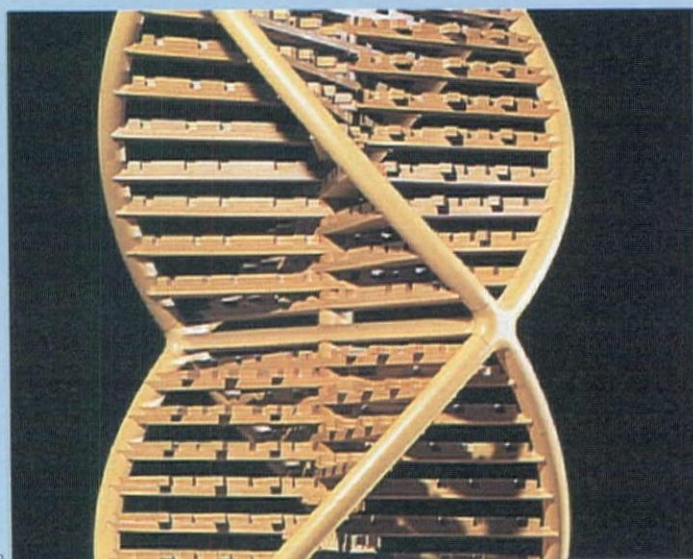
1: Nagoya City Art Museum (1985-1987), set in Shirakawa Park

2: Typical floor plan of Hotel Kyocera (1993-1995), whose elliptical form has been likened to two hands clasping

3: Helix City Plan, an unrealised mixed-use and accommodation project dating from 1961



2



3

Photography: Tomoo Ohuchi



- 4: Sony's showroom and office tower in Osaka, Japan (1973-1976). High quality aesthetic and ergonomic design was required to reflect the identity of the client



Photography: Tomio Ohashi

4

#### Kurokawa company data

##### Title of firm

Kisho Kurokawa architect & associates (KKAA)

##### Head office

11th Floor, Aoyama Building  
1-2-3 Kita Aoyama  
Minato-ku, Tokyo 107  
Japan  
Tel: +81 3 3404 3481  
Fax: +81 3 3404 6222  
Internet: kurokawa@kisho.co.jp

##### Branch offices

Osaka, Morioka, Nagoya

##### Overseas offices

Kisho Kurokawa architect & associates  
66 rue Cantagrelle  
75013 Paris  
France  
Tel: +33 1 47 72 62 79  
Fax: +33 1 47 72 58 23

Tadao Shibata  
Room 2708, Shangri-la Hotel  
11, Jalan Sultan Ismail  
50250 Kuala Lumpur  
Malaysia  
Tel: +60 3 232 2388  
Fax: +60 3 234 3517

##### Established

8 April 1962

##### Registered

First Class Architects  
Office no 7903

##### Board of executives

|                   |                      |
|-------------------|----------------------|
| President         | Kisho Kurokawa       |
| Executive MD      | Iwao Miura           |
| Executive MD      | Nobuo Abe            |
| Managing director | Tadao Shibata        |
| Director          | Naotake Ueki         |
| Director          | Seiki Iwasaki        |
| Director          | Yoshiyuki Umabayashi |

##### Major completed projects

National Ethnological Museum, Japan  
National Bunraku Theatre, Japan  
Nagoya City Art Museum, Japan  
Hiroshima City Museum of Contemporary Art, Japan  
Museum of Modern Art, Wakayama, Japan  
Japanese-German Centre, Berlin, Germany  
Chinese-Japanese Youth Centre, Beijing, China  
Melbourne Central, Melbourne, Australia  
Pacific Tower, Paris, France



# The Shape of Knowledge

## Ehime Prefectural Museum of General Science

By Kisho Kurokawa Architect and Associates

**W**hat order is there in the universe? Kisho Kurokawa's Ehime Prefectural Museum of General Science provokes such questions with respect to its museographical programme, and its collagist, formally fragmented architecture.

Museums displaying "science" are fundamentally different to museums displaying art or other "authentic" artefacts. The subject matter being at once more conceptual and – in the context of increasing concerns with environmental and technological threats to our civilisation – more inescapably relevant to each and every one of us, the museum's mission must be to communicate at an intuitive (and often entertaining) level that to which great minds have devoted a lifetime's study. Inevitably, the result often appears superficial. As Kurokawa himself admits, the life-size, animated model dinosaurs found in the Ehime museum are, if anything, less convincing than many of Disneyworld's didactic experiences. Yet visitors, particularly children, not only enjoy such places, but come away somewhat the wiser.

In the case of Ehime's Museum of Science it is the building itself which, in far more subtle ways, invites inquiring minds to consider fundamental questions of scientific "reality". The play of forms which are recognisably pure and ordered, yet juxtaposed in a less immediately obvious fashion, immediately suggests that the building's form answers not only to function



Photography Tomio Ohara



- 1: Exhibition hall lobby. Pure and recognisable forms organised in a less immediately obvious fashion
- 2: The cone, a form often used by Kurokawa, suggests spatial and organisational focus



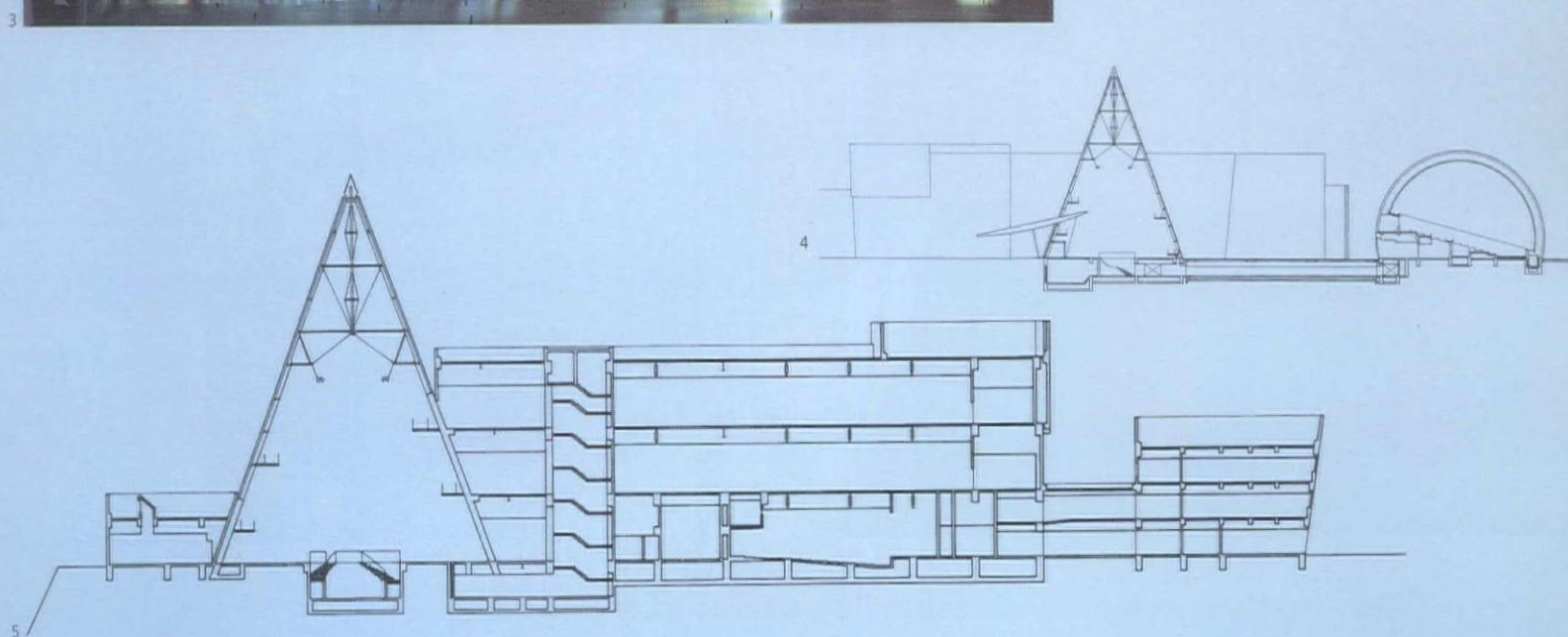


3: The Museum can be read as an exercise in the abstract interrelation of forms and symbols

4: Section from south-east

5: Section from north-west

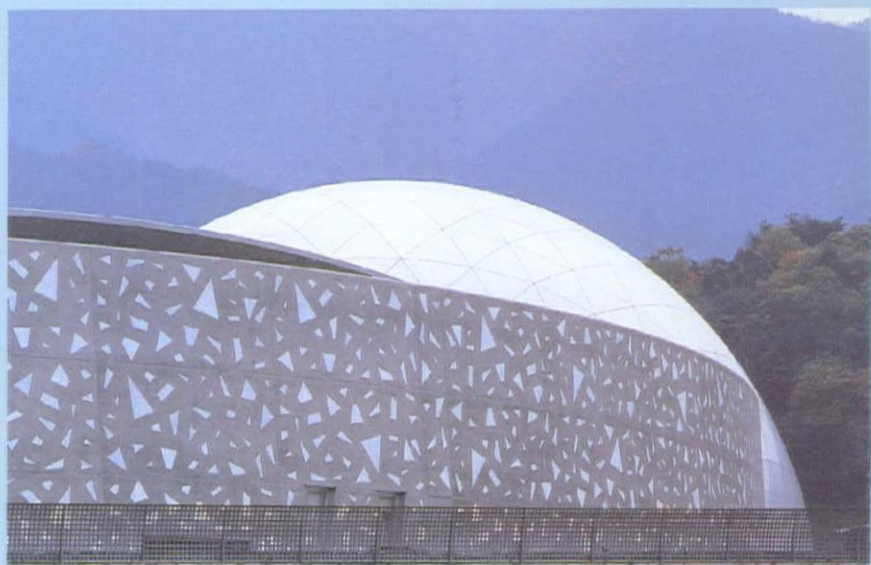
6: The sphere of the planetarium is an immediately recognisable form



but to the designer's will to communicate – to express some thoughts or feelings, whether philosophical or poetic. Standing at the foot of the tallest mountain in Western Japan, just outside Niihama City on Shikoku Island, Kurokawa's familiar, yet always original collage of primary (though sometimes distorted) geometrical volumes is visible from some distance. Due to the micro-climate of the hillside, the museum can often be brightly daylit, whilst its backdrop is dramatically clouded. At the level of architectural conventions, the giant, glowing cone of Kurokawa's building – the most recognisable of landmarks when first sighted from the approach road – fulfils visitors' expectations in its function as the entrance and circulatory node of the museum complex.

If a conical form is easily associated with notions of centrality, and spatial and organisational focus, Kurokawa's other primary volumes are not always so intrinsically communicative. With the exception of the sphere of the planetarium, floating above a pool of water – a form whose function is all too readily apparent – the architectural vocabulary is abstract and not symbolic, or *parlante*, in any traditional sense. For this is an exercise in abstract symbolism, and abstract interrelation.

"Architecture, in a classical society, is stable and permanent. >





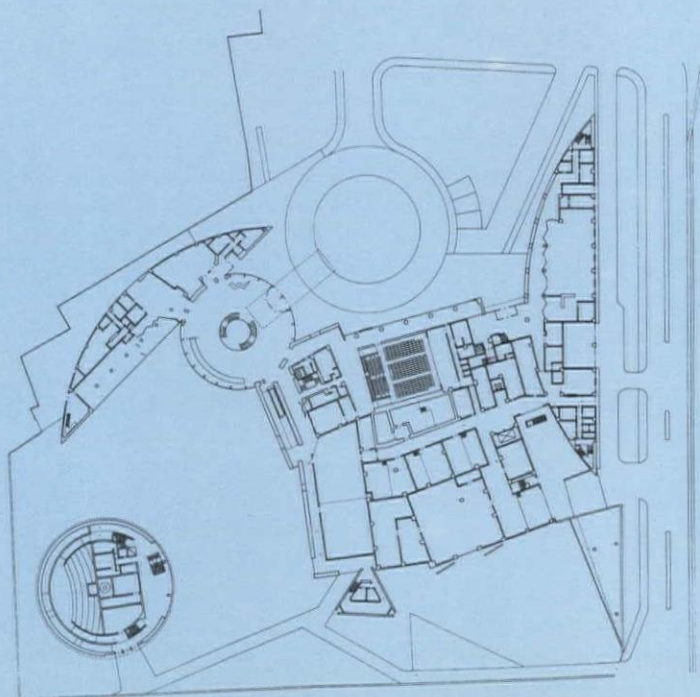


- 1: The rhetoric of formal disorder is extended to the interiors where apparently arbitrary shapes and materials intersect
- 2: Ground floor plan, illustrating the asymmetry and fragmentation of the entire site
- 3: The random patterning of granite and marble cast into the *in situ* concrete external walls

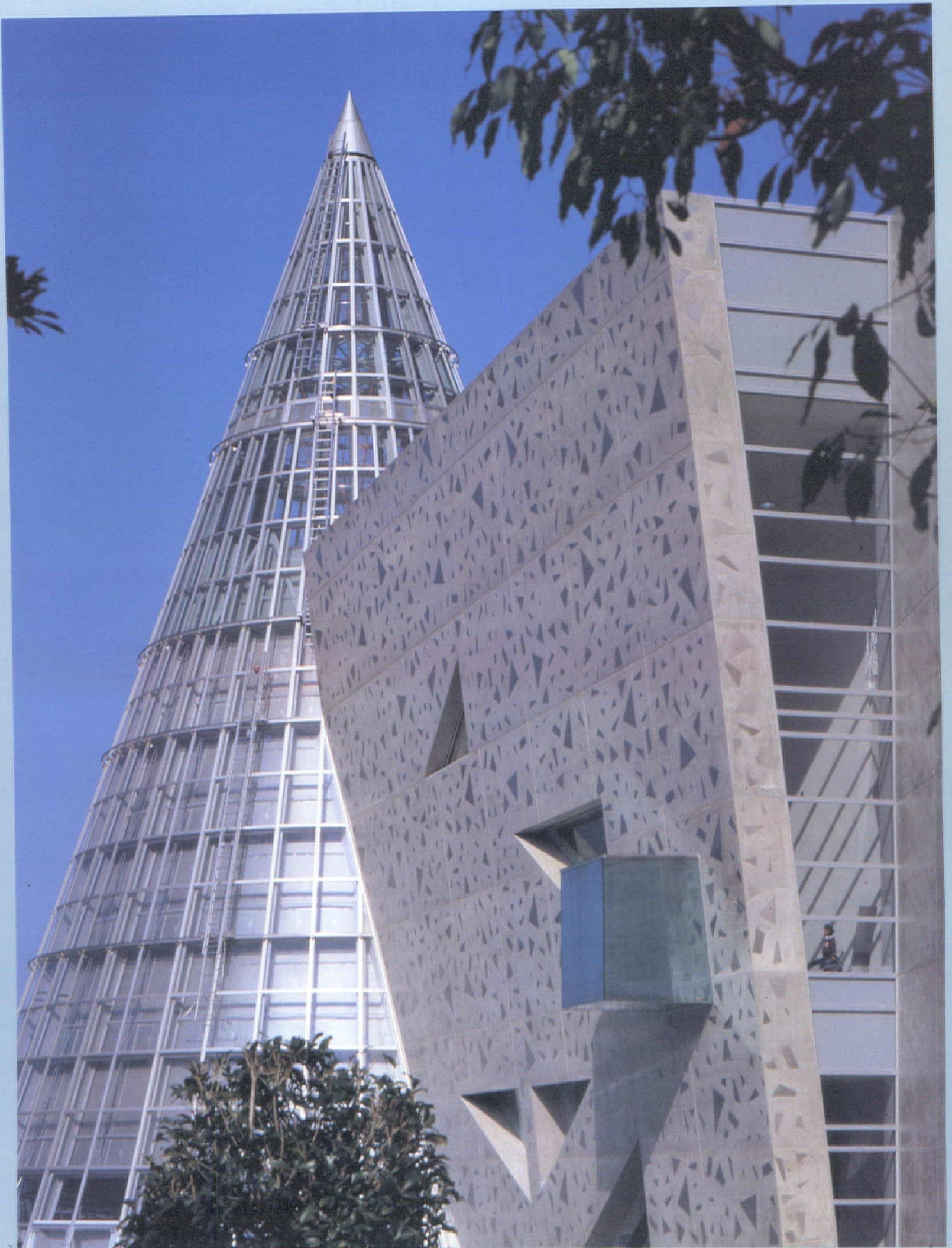
## **"Our society is dynamic, unstable. The design of the building refers to this reality"**

›Our society is dynamic, unstable. The design of the building refers to this reality." There is, indeed, much that could be described as unstable in the design: the slanting planes; the random patterning of granite and marble cast into the *in situ* concrete external walls; the irregular, angular fenestration; the asymmetry and fragmentation of the entire site plan. At the level of interior details, too, Kurokawa's building continues with its rhetoric of disorder, evident in randomly skewed floor tiles, for example, and even the irregular design of door handles.

The abstraction of Kurokawa's architecture acknowledges the historical fact of modernism in its numerous incarnations. Abstraction, the architect believes, is a characteristic phenomenon of the twentieth century – and of the "age of the machine", in which Le Corbusier's houses, and even Marinetti's futurist poems, were polemically likened to mechanical devices. Yet abstraction is also present in ancient and diverse cultures, from the formally pure pyramids of Giza, to the Chinese architecture of the sixteenth century, founded on a notion of the roundness of the heavens and the squareness of the earth. Kurokawa's own Buddhist tradition ›



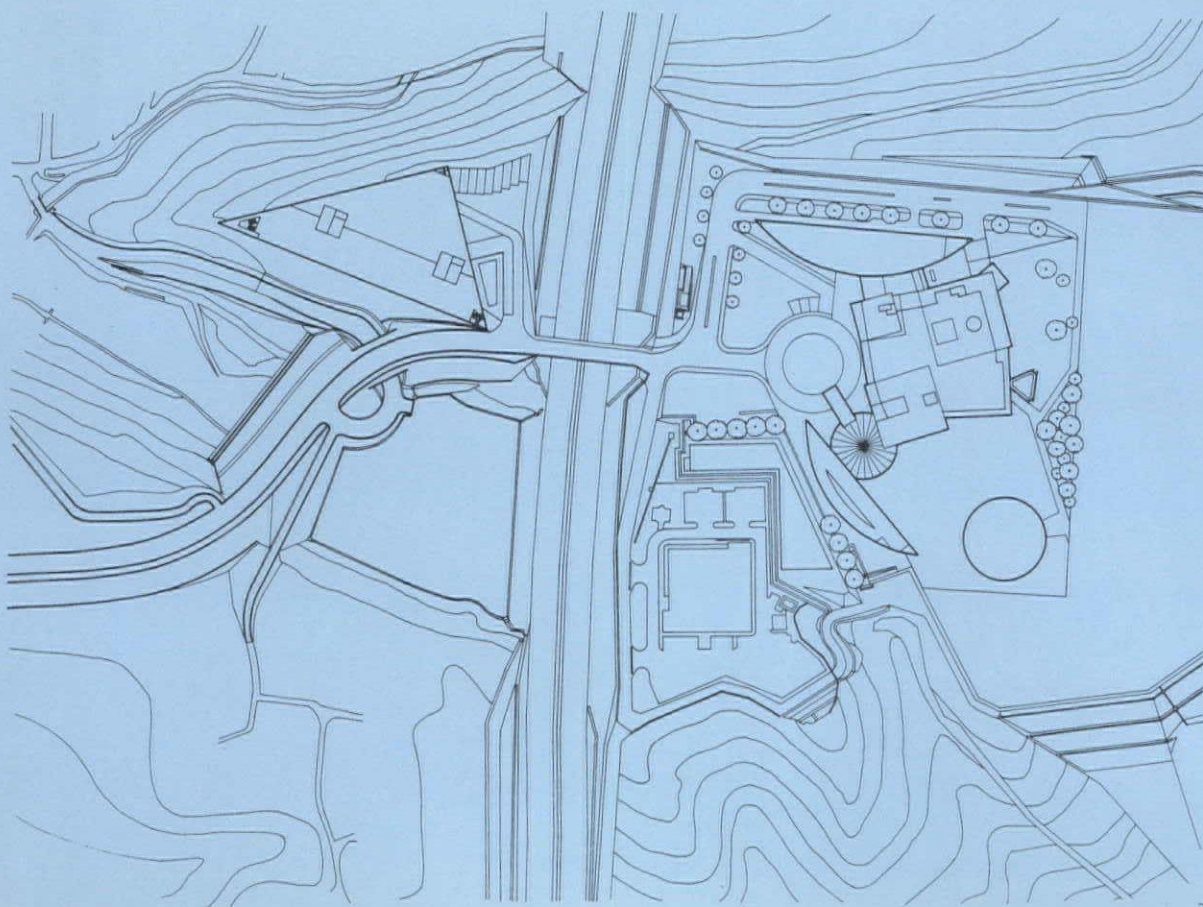
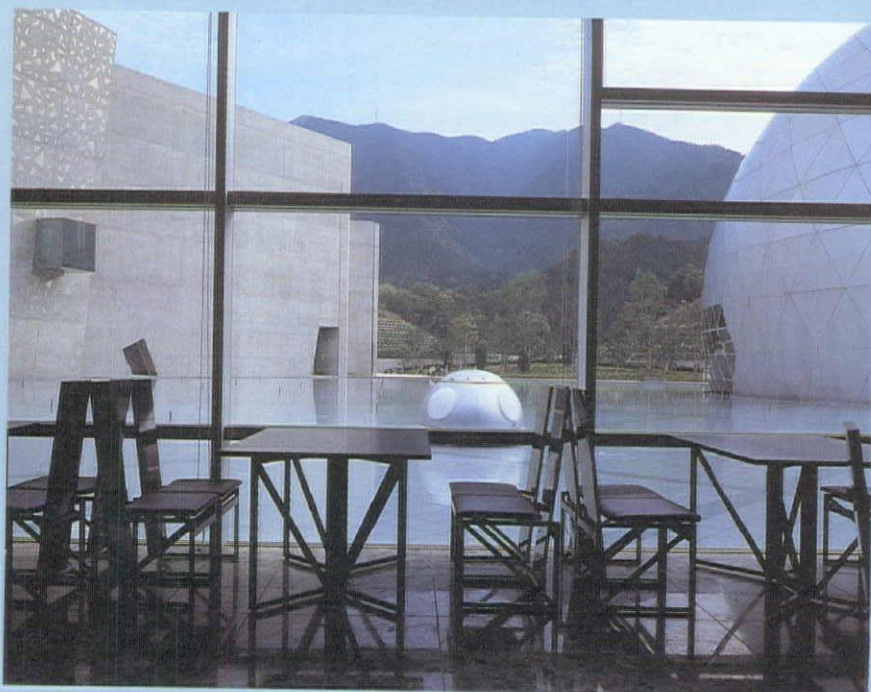








**"In contemporary science, chaos theory, fuzzy logic and an axiom of relativism have superseded notions of absolute knowledge and fact"**



**1:** Exhibition hall on the fourth floor. The Museum must be both an entertaining and intellectually invigorating environment

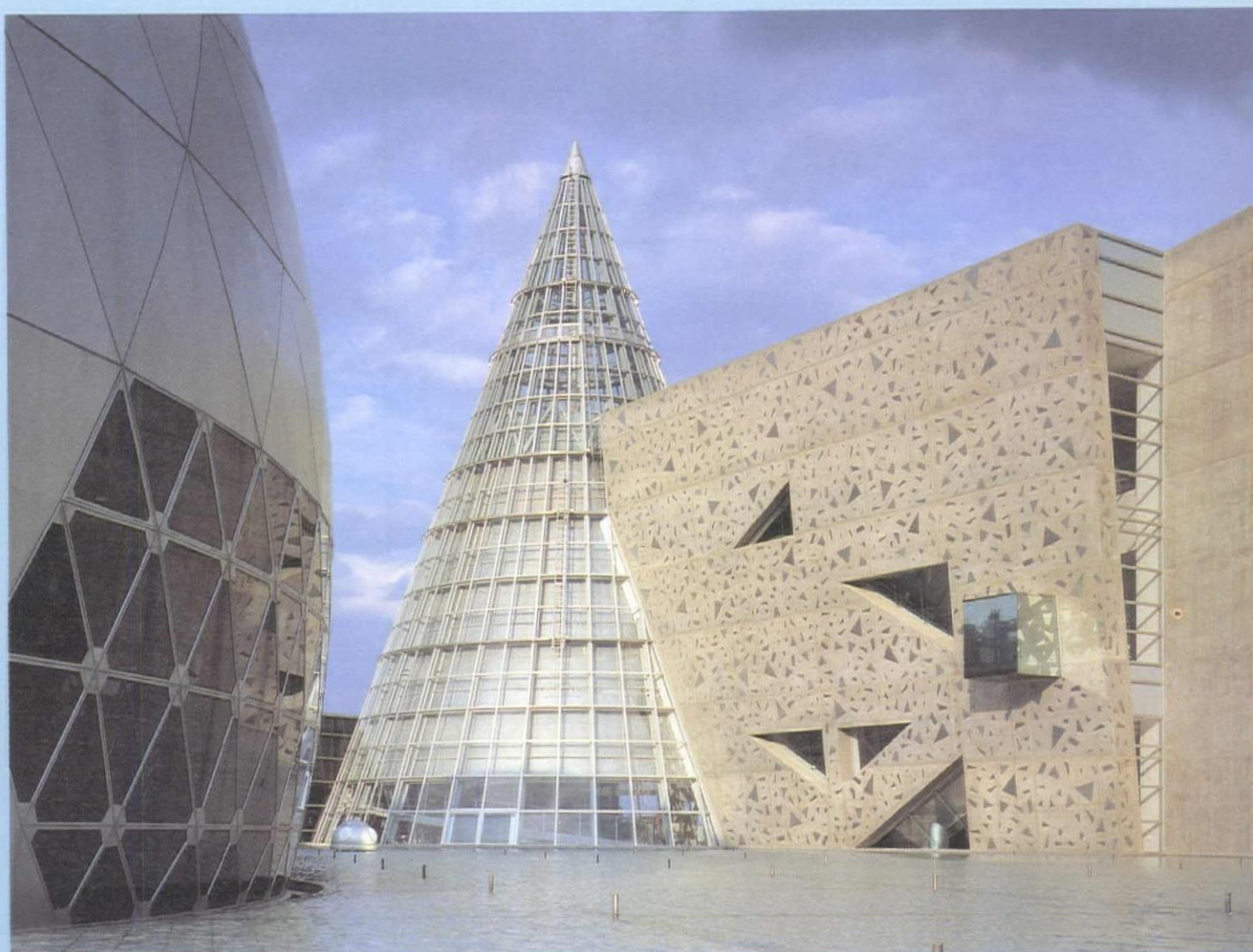
**2:** Internal and external spaces combine to contribute to the overall cohesion of the whole

**3:** Site plan



4: It is Kurokawa's belief that if there is to be an architectural style for the twenty-first century it will be abstract symbolism; meaningful to all, and linking both past and present.

5: Axonometric of the site

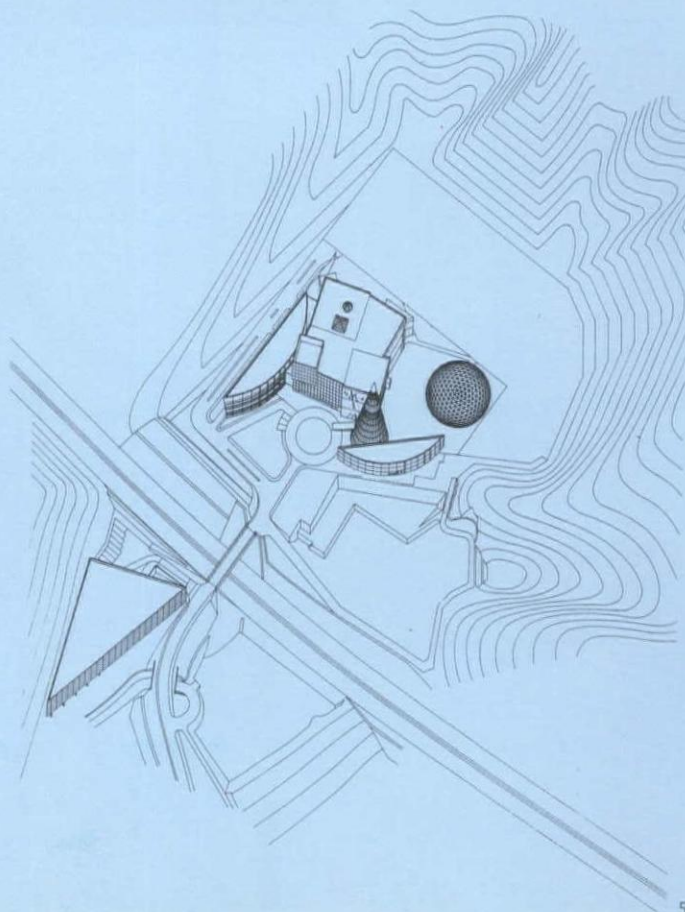


›overlays squares and circles in its mandalas. The commonality of abstraction across these traditions, argues Kurokawa, is the key to the symbiosis of past and present, Western and Oriental, in an “ambivalent and polyvalent” architecture meaningful to all. “If there is to be a new architectural style for the twenty-first century, it will probably be abstract symbolism.”

In contemporary science, chaos theory, fuzzy logic and an axiom of relativism have superseded notions of absolute knowledge and fact. The design of a science museum has given Kurokawa an ideal opportunity to express these philosophical transformations in a project of considerable status and tectonic presence.

Despite these theoretical concerns, Kurokawa's architecture remains well suited to its purpose. The entrance cone can be a magical space under certain lighting conditions, and its connections with each of the major volumes and functions of the museum complex is direct, legible and efficient. Circulation spaces are appropriately dynamic, whilst those areas in which one dwells longer are restful. The experience of ascending the escalators, or descending the spiralling ramp can be exhilarating; whilst eating lunch in the poolside restaurant can be contemplative. Kurokawa controls his complex forms, designed using countless study models, introducing subtle three-dimensional juxtapositions and occasional spatial overlaps, but retaining a sense of the primary identity of each element.

The Ehime Prefectural Museum of General Science repays its visitors with equal interest in its content – both in the explicit message of its exhibits, and the equally enjoyable, but more implicit, rhetoric of its architecture.





# Memorial Hall for the Shirase Expeditionary Party to the South Pole

## Permanent exhibition gallery, Akita, Japan

### Programme

The building serves as a memorial to the explorer Nobu Shirase – it is located in the vicinity of his birthplace in Northern Japan – and as an exhibition gallery displaying artefacts related to his expeditions, complete with rooms for undisturbed study and administrative offices.

### Design

A 20-metre high conical hall lends the building a degree of monumentality befitting its commemorative purpose, whilst the permanent exhibition is accommodated in a ring-shaped volume, 50 metres in diameter.

### Significance

"A laser beam may be placed at the top of the cone to express the consensus existing between the history and the future, the individual and the cosmos."

### Date

Design 1988; construction 1988-1990



Photography Tomio Ohashi

1



2

1: The 20-metre high conical hall not only dominates the Memorial, but also lends the site an air of monumentality

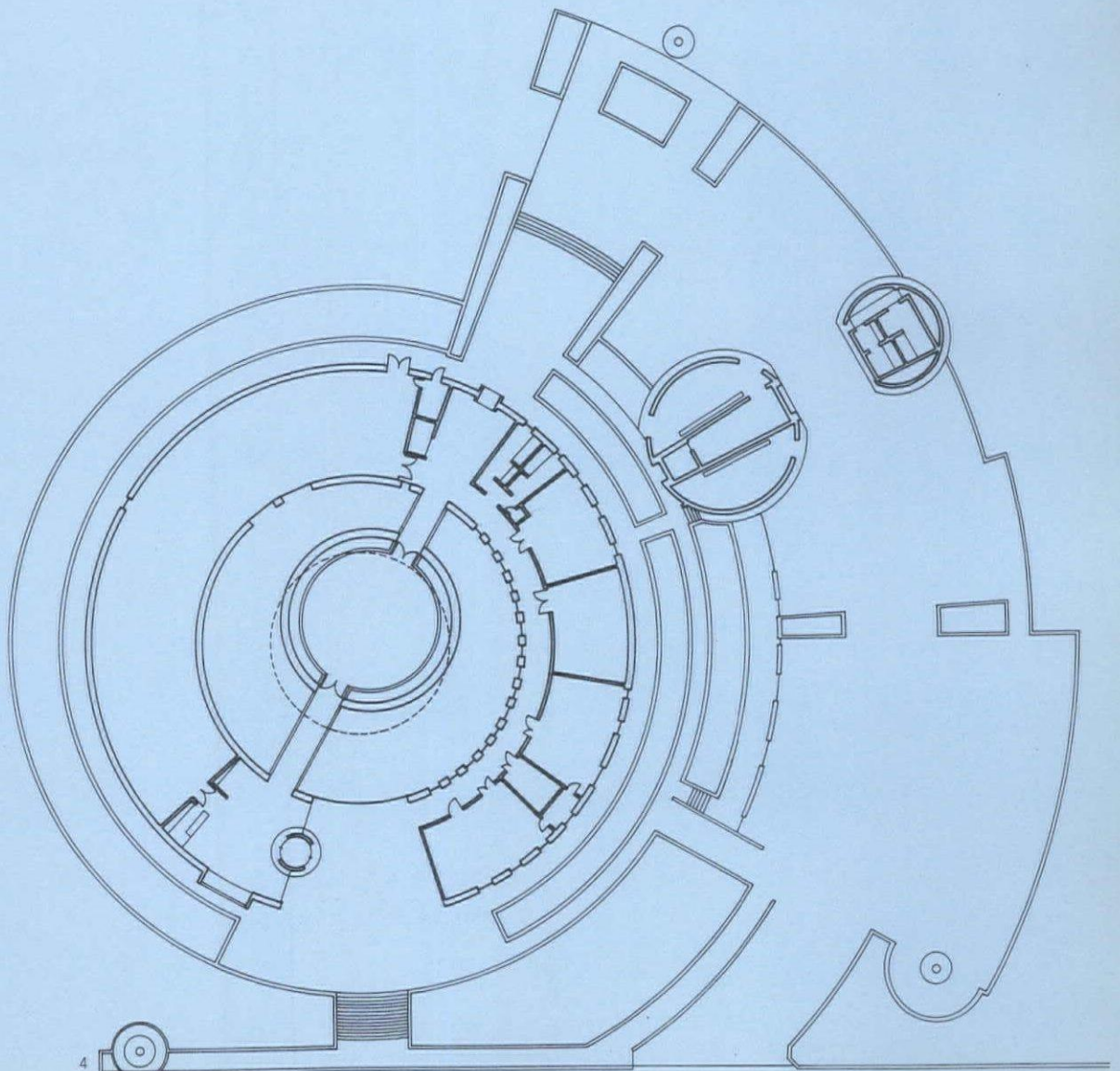
2: The ring-shaped volume – 50 metres in diameter – which houses the permanent exhibition





3: View of conical hall

4: Ground floor plan of the Memorial Hall for the Shirase Expeditionary Party to the South Pole





# Toshiba IHI Pavilion, Expo 70, Exhibition pavilion for Toshiba, Osaka, Japan

## Programme

Total of 4,849 square metres of exhibition accommodation, distributed over two storeys above ground and two basement levels, with a 800-seat theatre.

## Design

Celebrating the potential for organic growth and adaptability, the building's characteristic steel space frame structure is composed of tetrahedral units, which are capable of being combined in an infinite range of configurations. The domed auditorium is suspended from the frame.

## Significance

"Standardisation and mass production are both prone to monotony and inhumanity," Kurokawa writes. "This design was an attempt to create a symbiosis of technology, mass production and human sentiments."

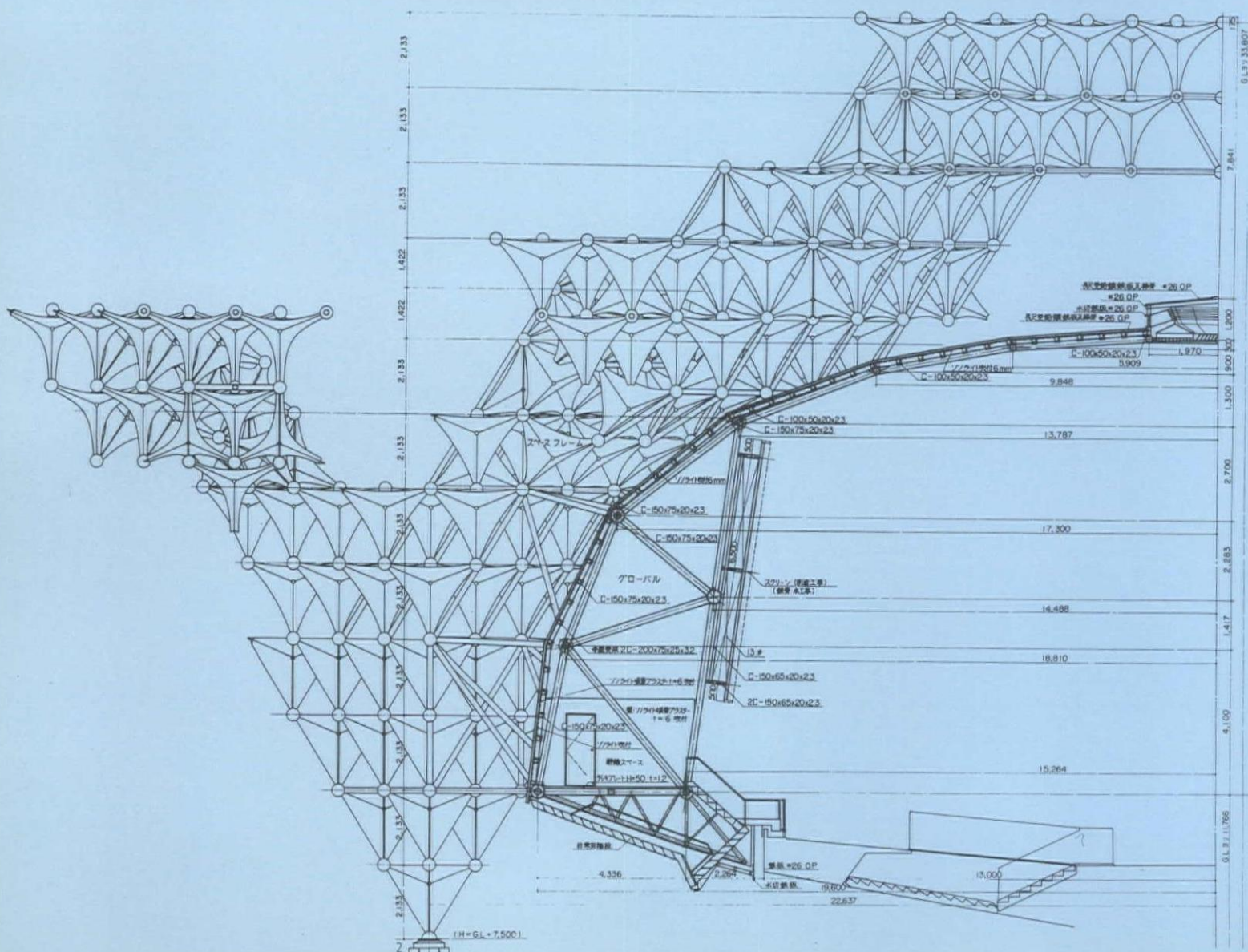
## Date

Design 1967-68; construction 1968-70

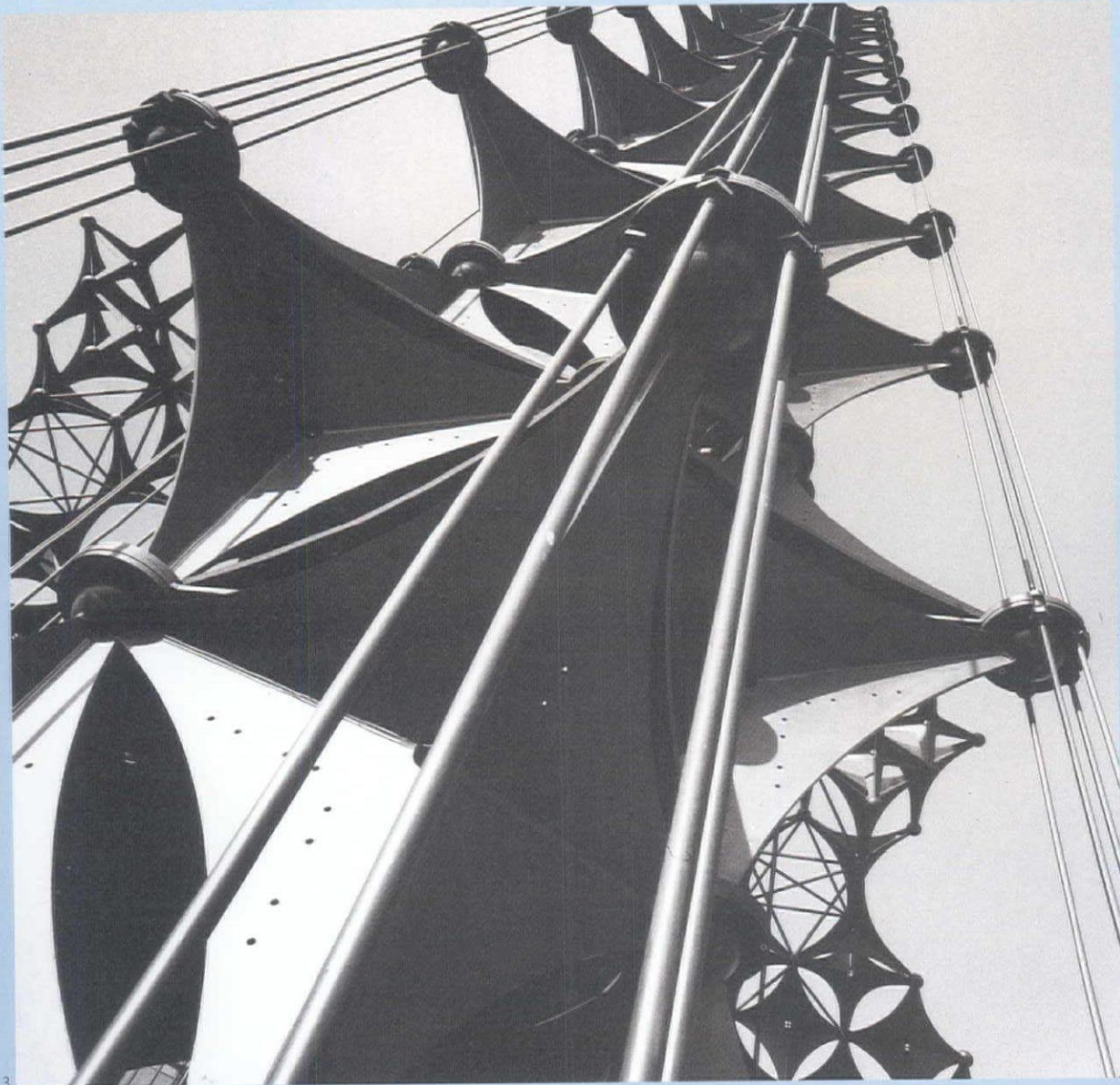


1: Interior view of the main exhibition hall

2: Diagram of one of the tetrahedral units, from the steel frame structures that comprise the Toshiba IHI Pavilion. These can be combined in an infinite number of configurations





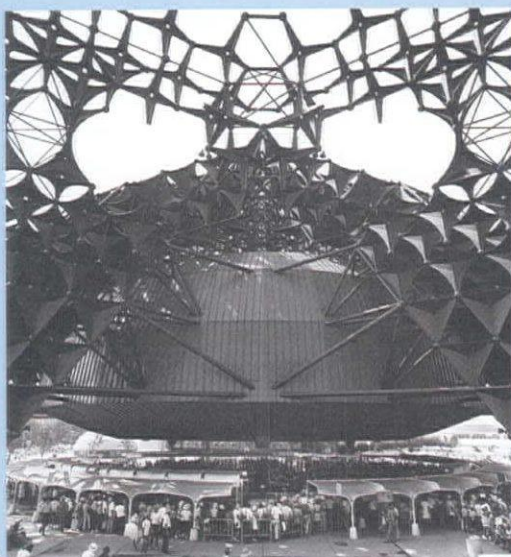


3: Detail of the steel frame structure

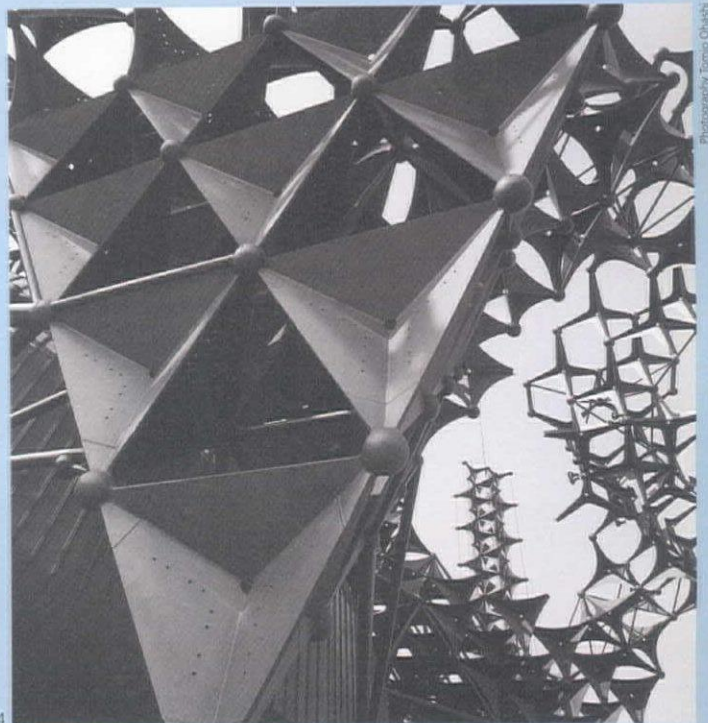
4: The design of the Expo 70 Pavilion was an attempt to harmonise technology, mass production and humanity

5: The domed auditorium is suspended from the steel frame

3



5



4

Photography: Tomo Choshi



# Oita Main Stadium

## Oita, Japan

### Programme

The stadium has been commissioned as part of Japan's bid to host the 2002 soccer World Cup, and is also intended to serve other sports, including athletics.

### Design

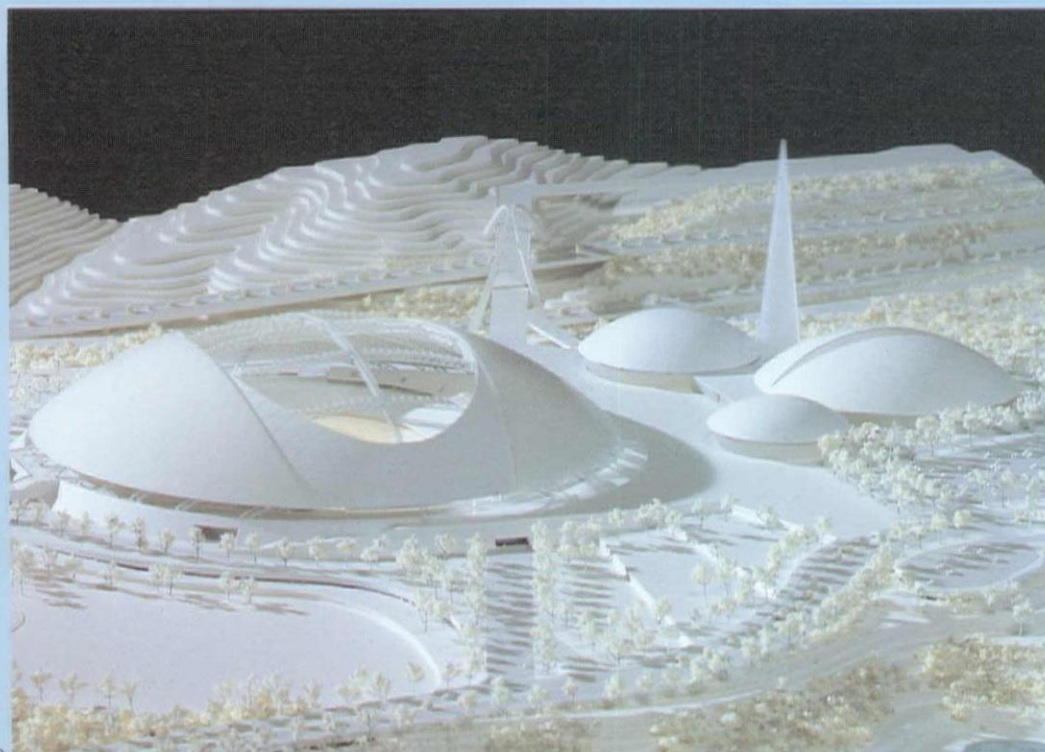
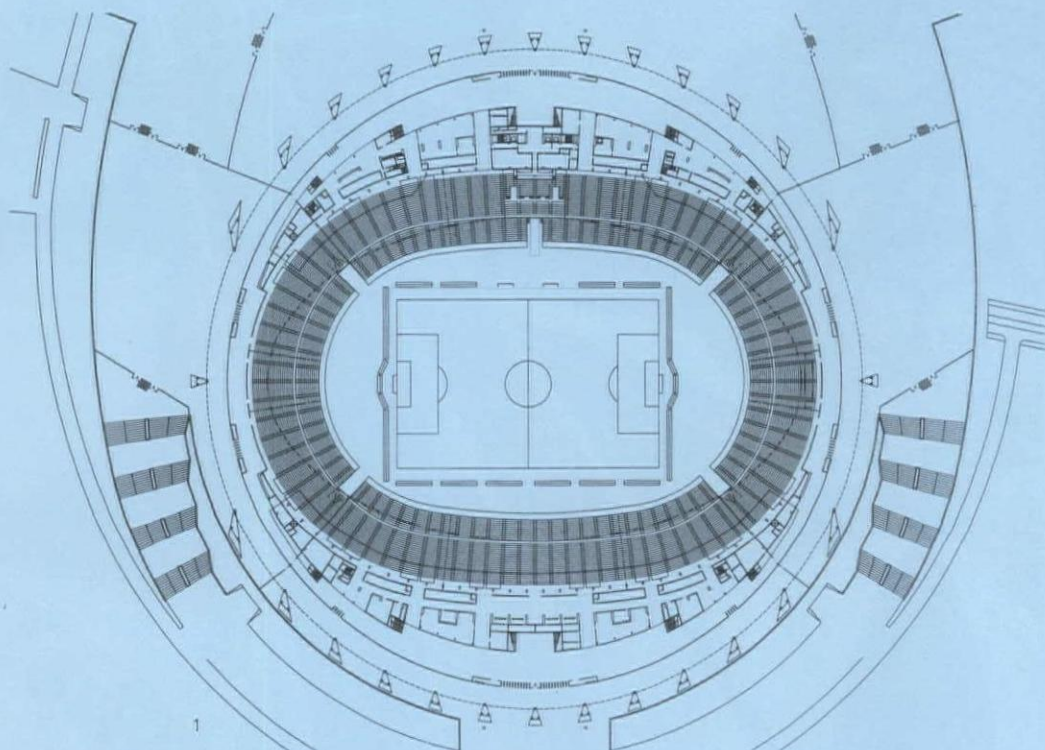
In common with other facilities being constructed within the new prefectural sports park, overlooking the Oita urban district, the stadium's primary geometry is spherical. The roof over the playing surface is retractable, making the stadium suitable for all-weather, year-round use.

### Significance

Kurokawa states that the design "achieves aesthetic harmony with the surrounding hilly terrain...and expresses the simple and pristine nature of traditional Japanese architecture."

### Date

Design 1995-1997; construction 1998-2001



- 1: Overhead view indicating the spherical form of Oita Main Stadium
- 2: Section through the Stadium
- 3: The model demonstrates the scale of the stadium's retractable roof, and its dominance in the context of the hilly terrain and subsidiary structures

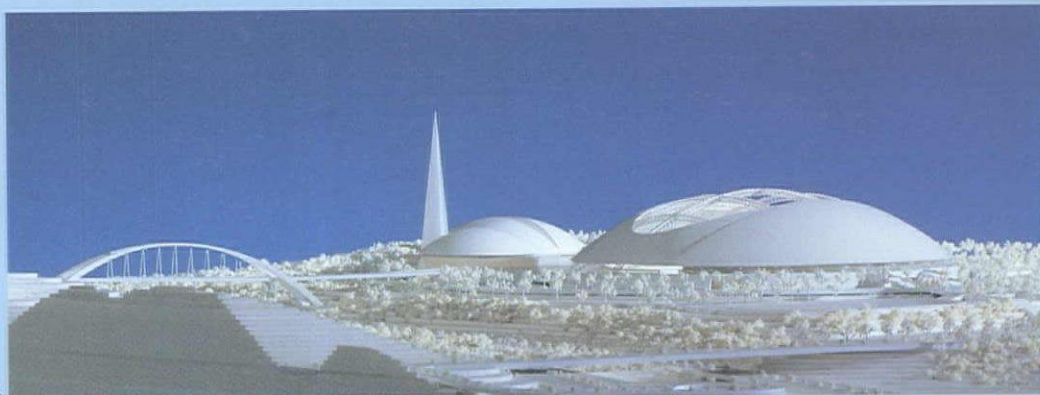




4: Model detail of the retractable roof

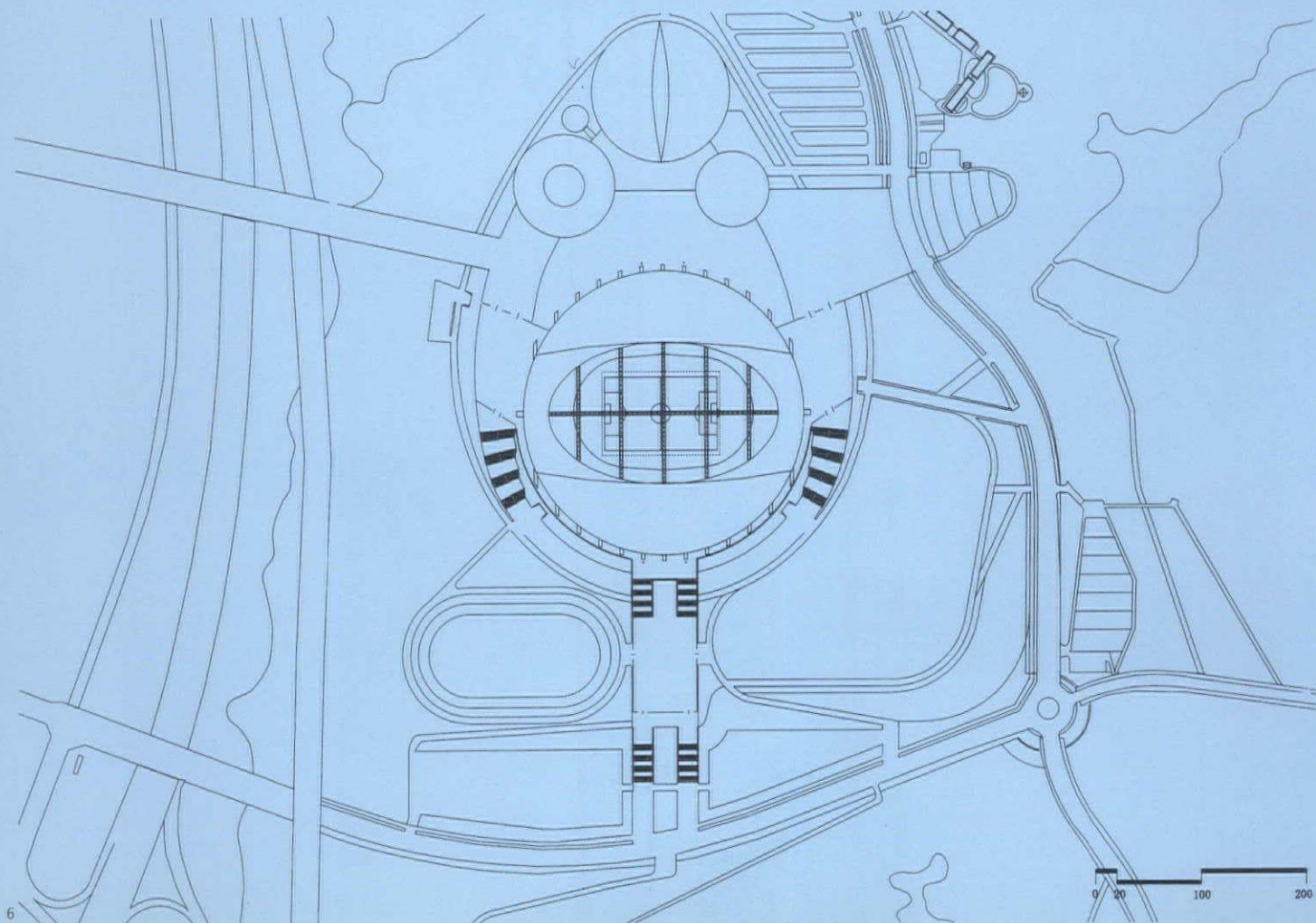
5: Model of ground-level view of the stadium in its context. In the view of the Kurokawa, the stadium "expresses the simple and pristine nature of traditional Japanese architecture"

6: Site plan



5

Photography: Tomo Chachi



6



# Wakayama Museum of Modern Art and Prefectural Museum, Museum, incorporating permanent and temporary exhibition galleries, Wakayama, Japan

## Programme

The site adjoins Wakayama Castle, severely damaged during World War Two, but now restored to its former splendour as one of Japan's three most celebrated castles. The client's brief required the greatest possible flexibility in the use of large, unobstructed, and (for reasons of environmental control) entirely enclosed gallery spaces. The project consists of two buildings: the larger containing both permanent and temporary displays of modern art from around the world; the smaller accommodating exhibits of local and regional interest.

## Design

Like the Nara Museum of Photography, the Wakayama design relates to its sensitive context by abstracting elements of traditional Japanese architecture. In this instance, the recessed terraces at the museum's upper levels refer to traditional forms in two ways: typologically, the inside-outside loggias are firmly in the tradition of the Japanese engawa intermediate space; whilst formally, the monumental, overlapping, curving roofs resemble those of the nearby castle, yet remain contemporary in their materials and structural ambition.

## Significance

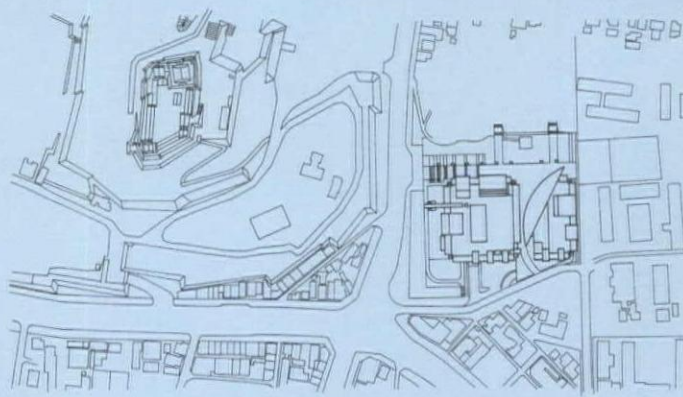
In Kurokawa's search for a symbiosis of past, present and future forms, the Wakayama museums comes closest to historicism, yet does not resort to pastiche.

## Date

Design 1990-1991; construction 1991-1994



Photography Tomio Ohachi



2



Photography Tomio Ohachi

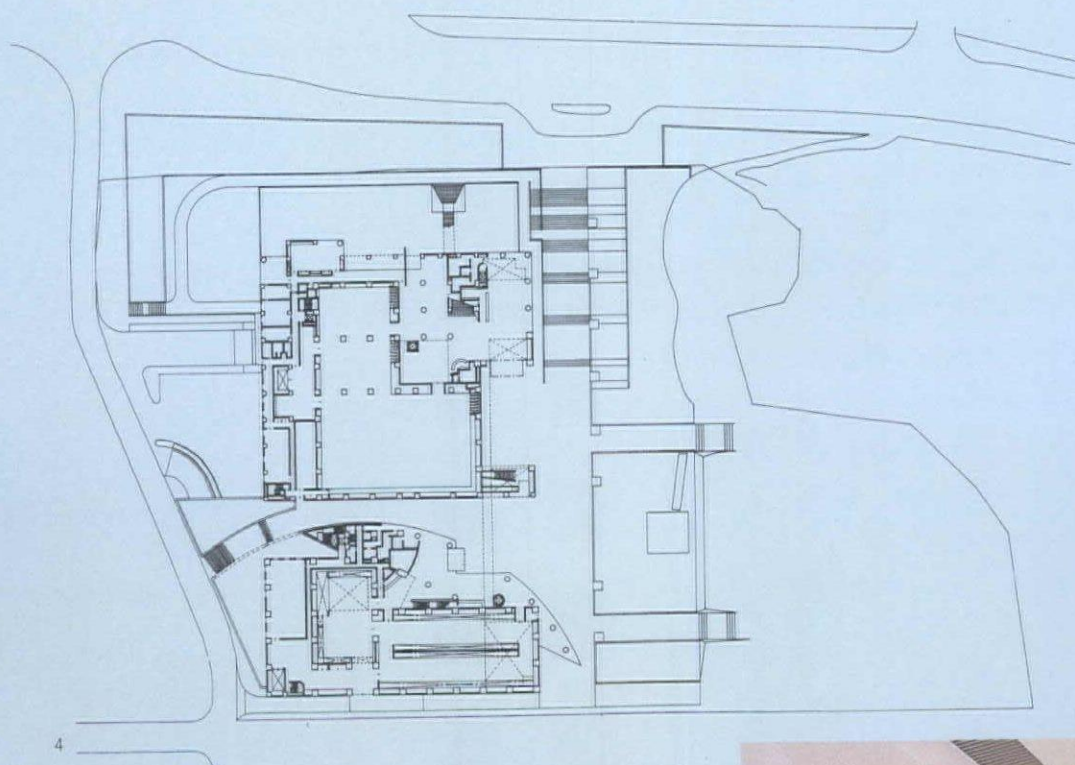
1: The Museum is in the shadow of Wakayama Castle, from which the basic forms – recessed terraces and overlapping/curving roofs – have been taken

2: Site plan

3: Kurokawa sought to harmonise interior and exterior spaces

3





**4:** Ground floor plan. The Museum, which is made up of two main buildings, has been designed for maximum flexibility

**5:** Interior view

**6:** Though based on traditional Japanese forms, in terms of materials and structural ambition the Museum is overtly modern



Photography Norihisa Ohnishi



Photography Norihisa Ohnishi



## Lane Crawford Place, Shopping centre Singapore

### Programme

The building is located on one of Singapore's busiest commercial thoroughfares, and contains a department store (subsequently subdivided into a number of smaller retail units) within a five-storey podium covering much of one urban block, surmounted by a tower of offices, with two penthouses at the highest level.

### Design

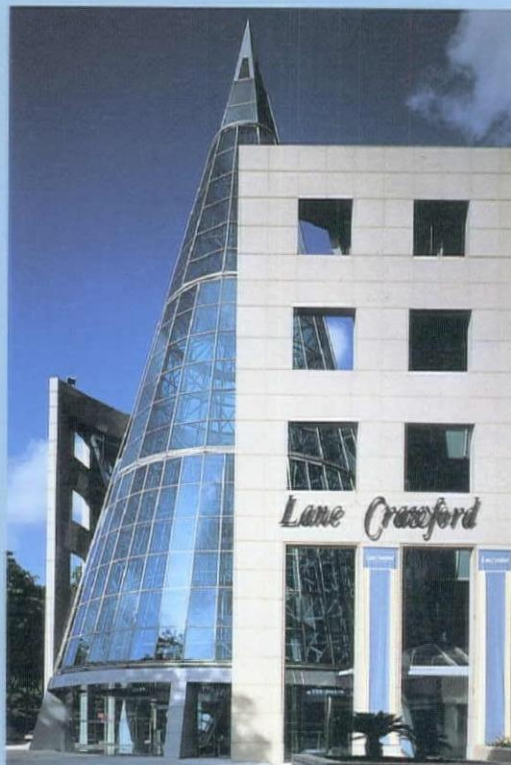
Kurokawa's design addresses the urban and climatic context with a single architectural device: behind a perforated, stone-clad facade, the curtain wall which forms the environmental skin of the building is inclined outwards, reducing solar gains, and creating an intermediate zone between the street and the commercial interior. Cones (and inverted cones) clearly mark the building's principal entrances. The office tower is clad in granite at its lower levels, establishing a continuity with the podium, and glass curtain walling above. The outer glazing is tinted; whilst the inner glazing is inclined outwards, reducing heat gains from the equatorial sunshine.

### Significance

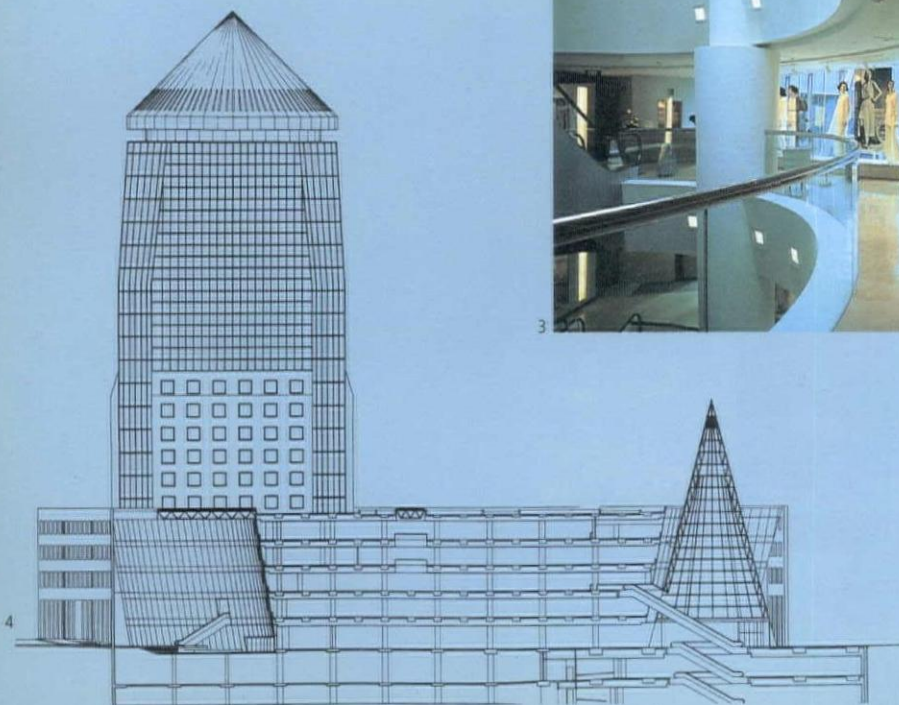
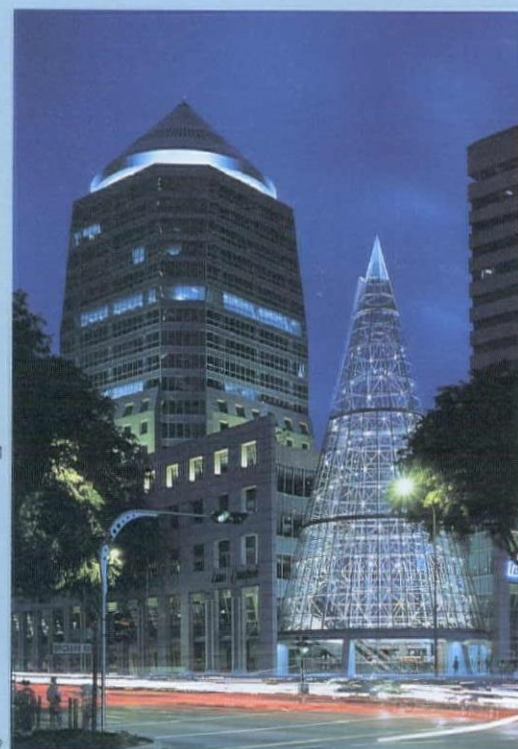
A scheme driven by commercial imperatives, but nevertheless aesthetically generous to its urban context.

### Date

Design 1990-1991; construction 1991-1993



Photography: Shinkenchiku-sha



- 1: Cones (and inverted cones) mark the principal entrances to the building
- 2: Night view of Orchard Road corner, with a dramatic contrast between the granite-clad office block, and the glass cones in the foreground
- 3: View of interior shopping atrium
- 4: Section through Lane Crawford Place

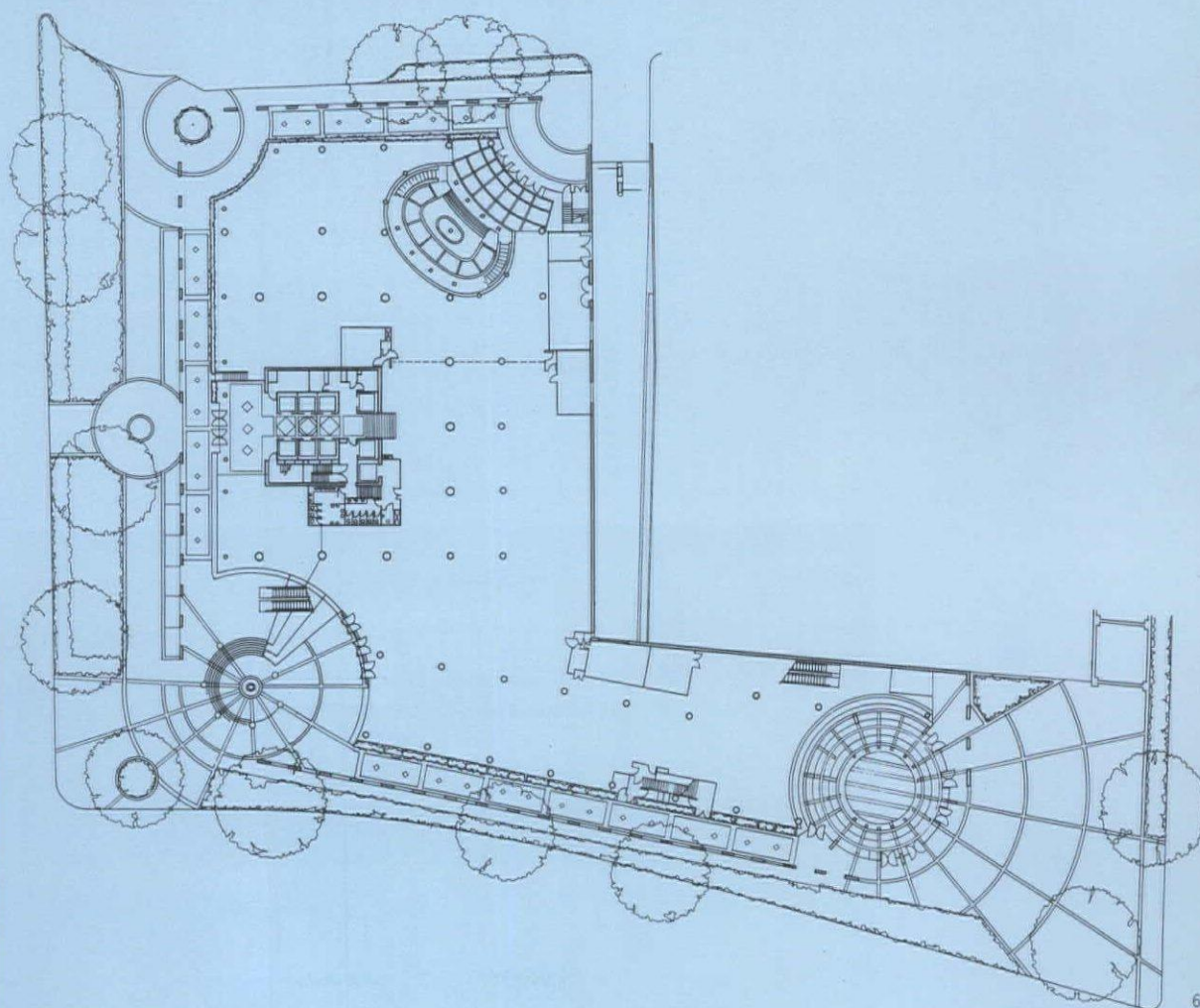




5: Main entrance and atrium. The curtain wall is inclined outwards, reducing solar gains, and creating an intermediate zone between the street and the commercial interior

6: Ground floor plan

7: View of interior walkway



6



7



# Nagoya City Art Museum Aichi, Japan

## Programme

The building's situation within the Shirakawa Park, near the centre of Nagoya, demanded an extended layering between the exhibition galleries and the exterior.

## Design

The clashing geometries of the site have been used to generate skewed axes within Kurokawa's building. The structural frame is eroded, producing a monumental entrance porch, with the added potential as an external display area – one of several elements within the design which further develop Kurokawa's interest with inside-outside, intermediate zones.

## Significance

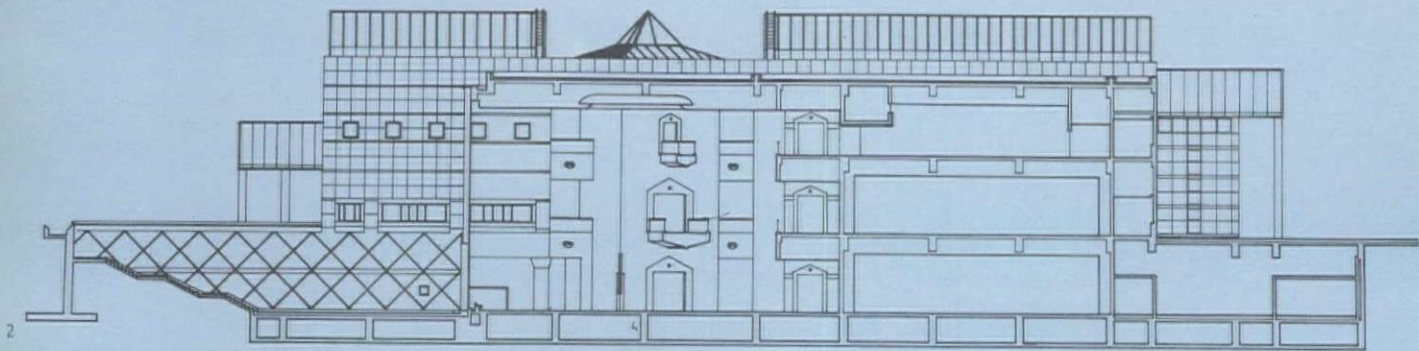
Noted by Kenneth Frampton for its "gratuitous and unstable" formal clashes and intrinsic eclecticism, the building represents Kurokawa's response to the characteristic asymmetry and complexity of Japan's established cities.

## Date

Design 1983-1984; construction 1985-1987

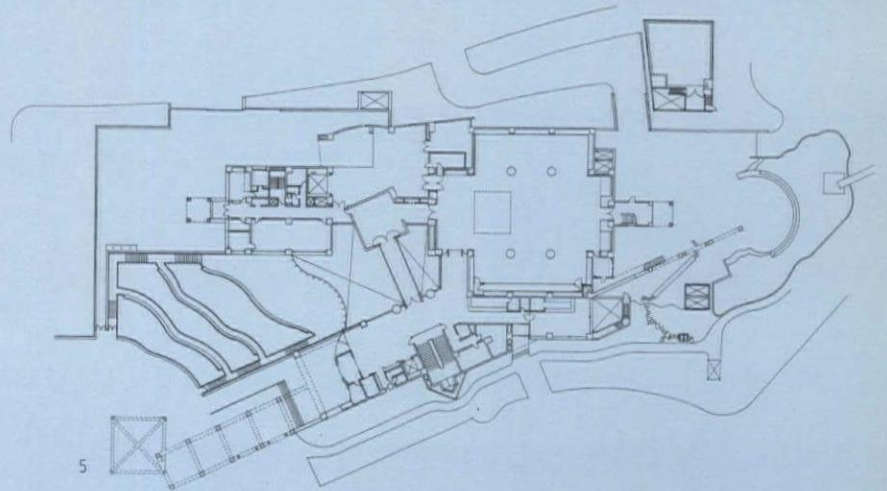
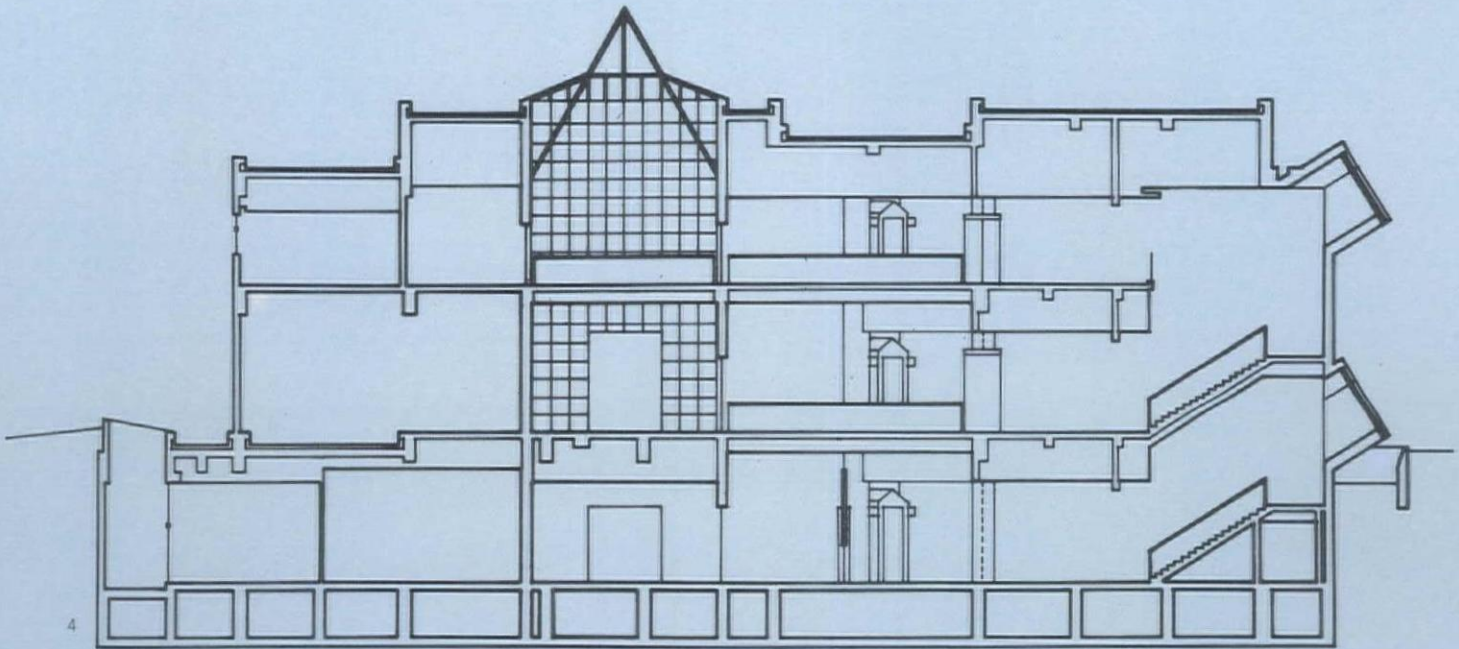


Photography: Tetsuo Ohashi



- 1: View of the monumental entrance porch, which has potential for use as an external exhibition space
- 2: Section through the museum
- 3: Interior view, demonstrating the architect's development of "inside-outside" intermediate zones





4: Section through the museum

5: Ground floor plan – the geometry of the site dictated the skewed axes of the building

6: The museum has been noted for its formal clashes and intrinsic eclecticism



## Hotel Kyocera Kagoshima, Japan

### Programme

The hotel was designed to cater for visitors to the Kokubu Hayato Technopolis Centre, adjoining Kagoshima Airport, and was seen as a catalyst for local economic development. A total area of 25,555 square metres includes bedrooms measuring 20 square metres each – well above the Japanese average – and the requisite conference facilities and social function rooms.

### Design

Thirteen storeys of accommodation are distributed in two, symmetrically curving wings (likened by the architect to "a pair of hands, gently enclosing the central atrium") with conference suites below ground level, and lounges, a bar and a boardroom at the highest level. The 60-metre high atrium is designed to allow smoke to escape naturally in the event of fire.

### Significance

A majestic, abstract form standing in a sea of undistinguished urbanisation – and a remarkable place to stay.

### Date

Design 1991-1993; construction 1993-1995



Photography: Tomio Ohuchi

1

1: The ground floor entrance lobby has been designed for use as an exhibition space

2: View of the hotel's 60-metre atrium

3: The design of the structure is composed of two symmetrically curving wings

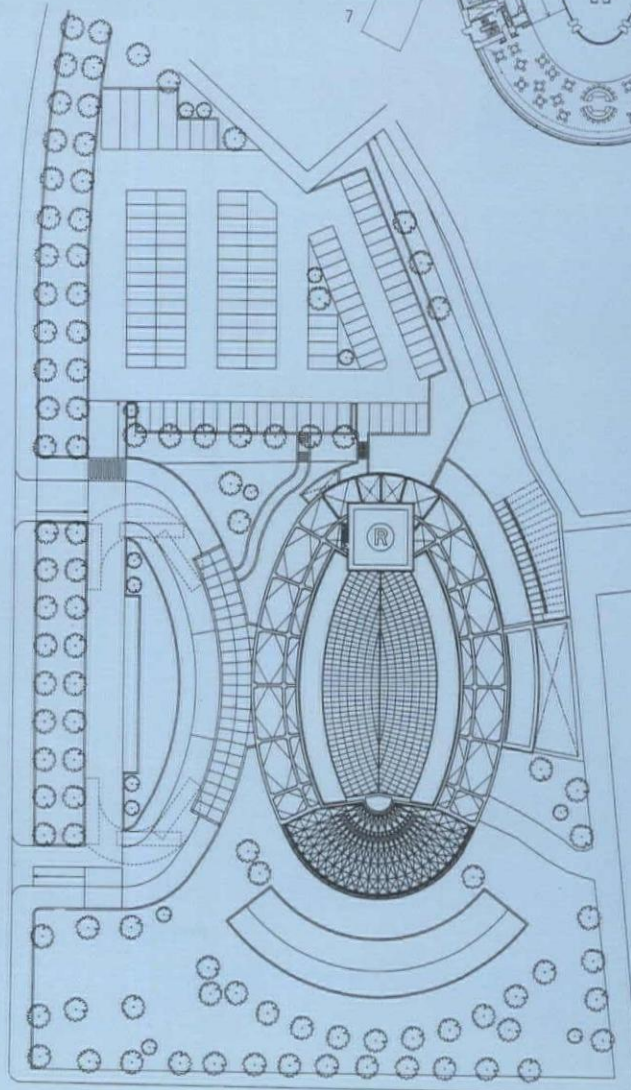
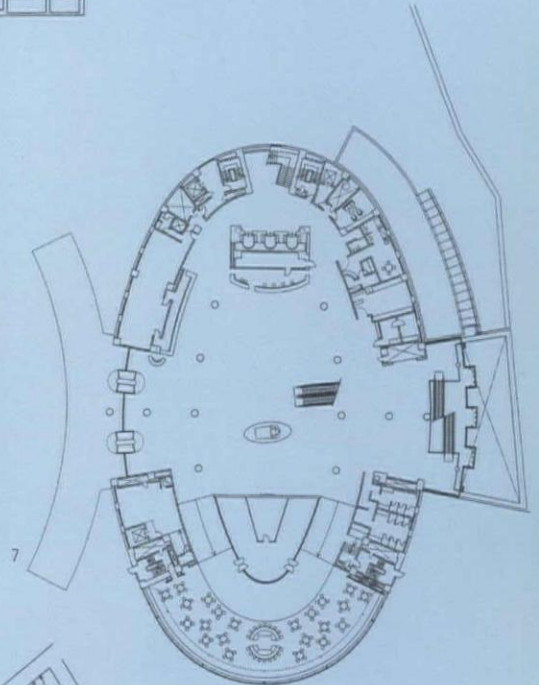
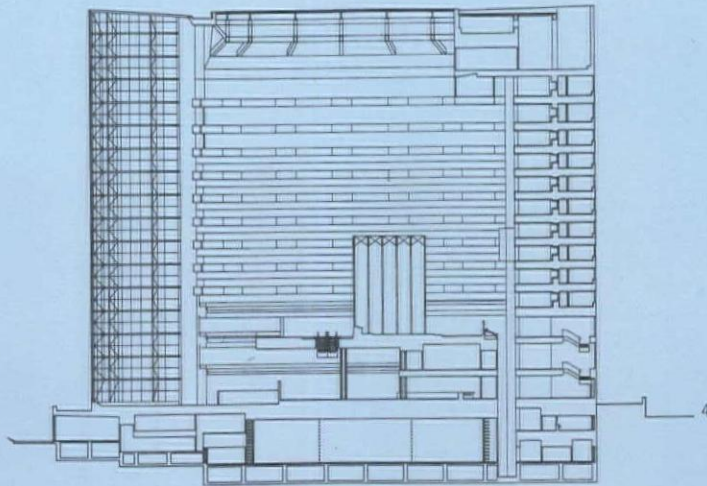


3



2





4: Section through the museum hotel

5: As well as providing 25,555 square metres of accommodation, the hotel also houses the requisite conference and social function spaces

6: The hotel is seen as a catalyst for economic growth

7: Ground floor plan

8: Site plan





# Hiroshima City Museum of Contemporary Art

## Hiroshima, Japan

### Programme

The city whose tangible history effectively began with the detonation of the atomic bomb, was seen as an appropriate setting for the first museum in Japan entirely devoted to contemporary art – a place where art's intrinsic optimism can be contemplated in relation to the reborn city's, hopefully more peaceful future. Kurokawa's masterplan for the 75-acre, acropolitian ridge includes exhibition galleries, a sculpture park, an outdoor school, set in extensive landscaped grounds, with sites identified for future museum and library buildings.

### Design

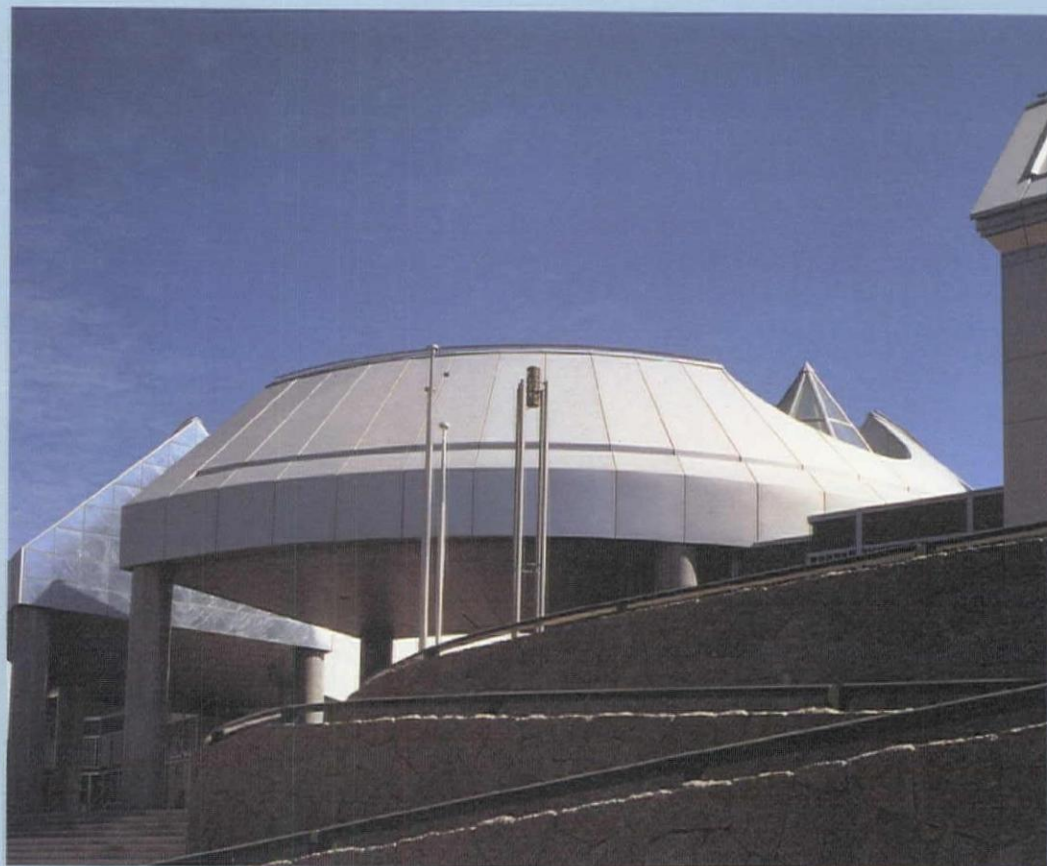
Out of consideration for the unique nature of the site, which is surrounded by primeval forest, 60 percent of the 9,290-square-metre museum building has been situated below ground level. Organised around a single major axis, linking other facilities on the site, the museum combines the tiled roof of nineteenth century *kura* warehouses with a variety of more contemporary elements, clad in stone, tile and aluminium.

### Significance

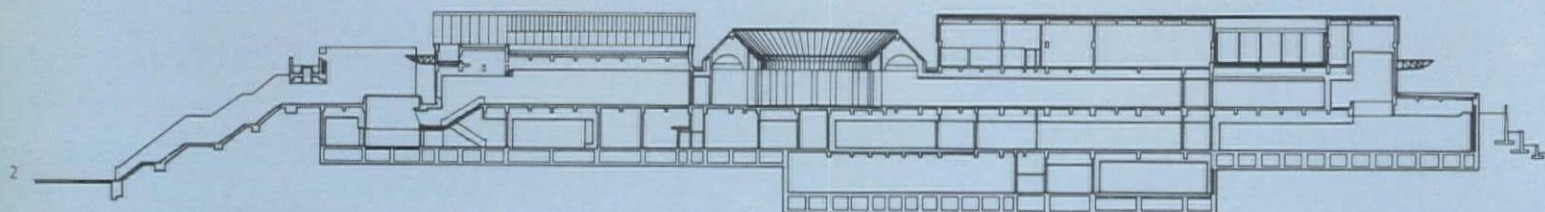
A city in miniature, clearly appreciated in aerial views.

### Date

Design 1984-1986; construction 1986-1988



Photography: Tetsuo Ohgaki



- 1: View of structure from ground level
- 2: Section of the building, 60 percent of which is located below ground level
- 3: Set in 75 acres of forest land, the museum's design combines expressly modern materials, – aluminium – with those closer to the land – natural stone, and tiling





4

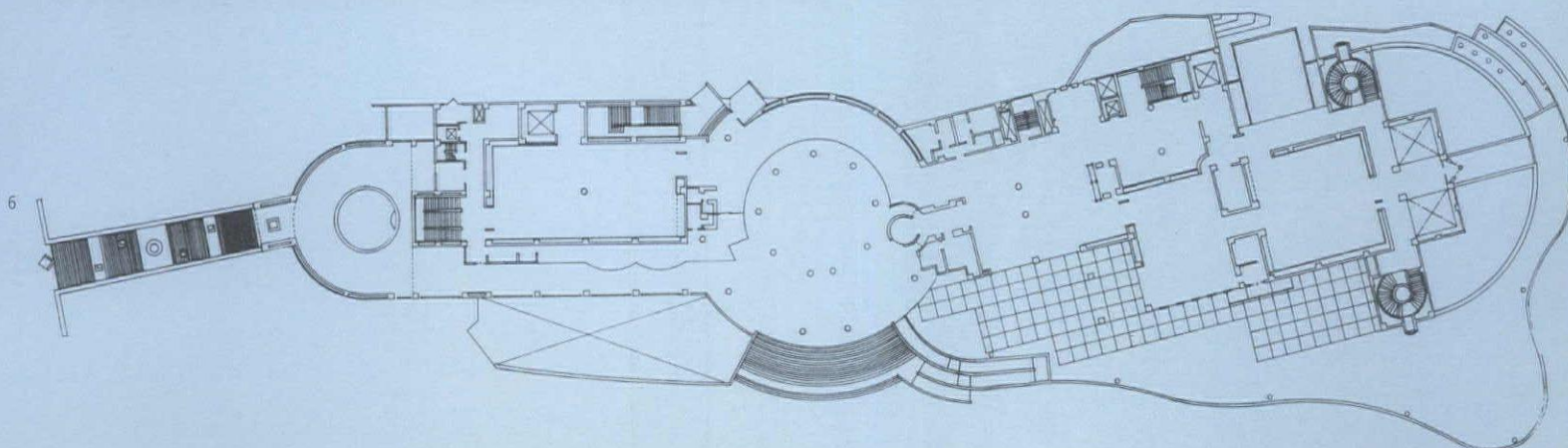
4: The masterplan for the site includes exhibition galleries, a sculpture park and an outdoor school. Sites have also been identified for future museum and library buildings



5

5: Viewed from the air, the site can be appreciated as a miniature city

6: The 9,290-square-metre museum is organised around one major axis



6



## Helix City Plan, Urban megastructure proposal (unrealised) Tokyo, Japan

### Programme

Mixed use accommodation, on reclaimed land in Tokyo Bay.

### Design

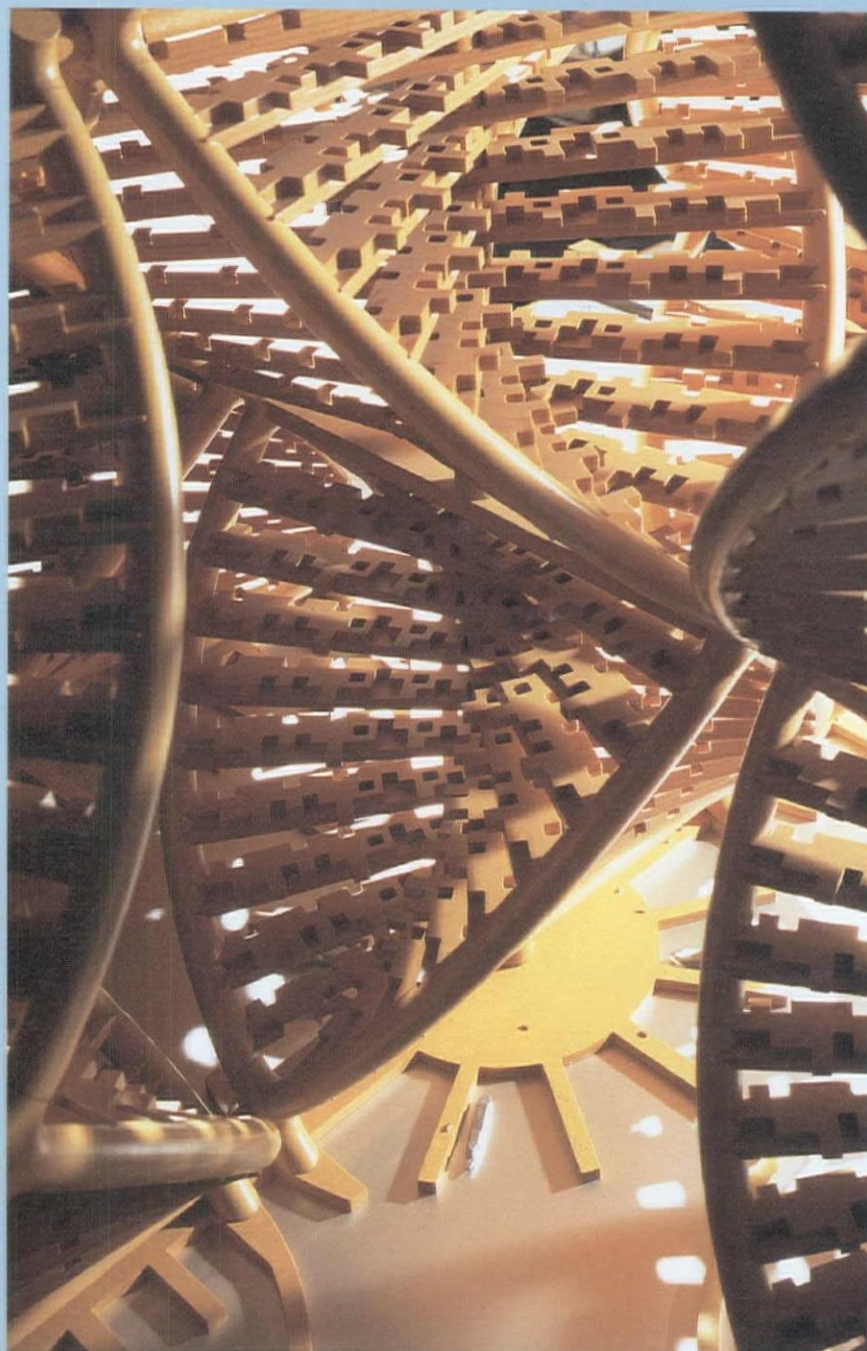
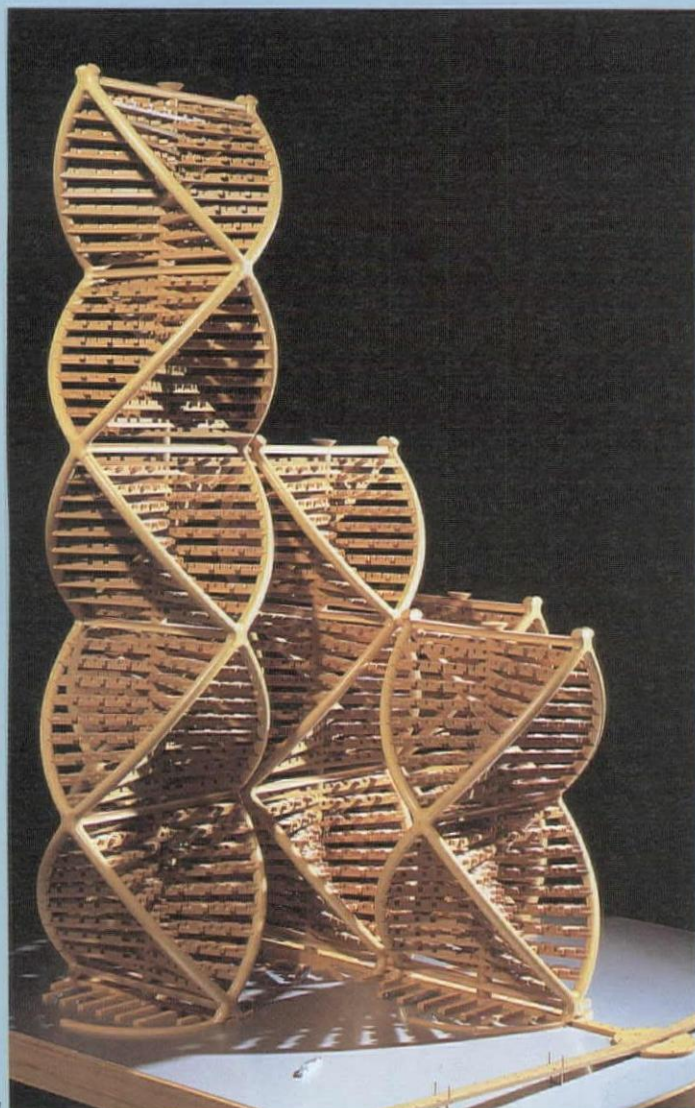
A three-dimensional cluster system, distributing accommodation around a redefined notion of urban space.

### Significance

A polemical project, but ultimately one addressing some of the very real issues facing the Japanese capital. The design provides perhaps the purest, and most literal, illustration of Kurokawa's Metabolist theories. "Just as in the case of the chromosomes – or DNA – in the life system", the architect wrote, "the helix structure acts as a space frame for data transmission."

### Date

1961



1: Detail of the three-dimensional cluster system, which provides a clear example of Kurokawa's metabolist theories

2: In the words of the architect, Helix City Plan was designed so that the "structure acts as a space frame for data transmission"



# Fukui City Museum of Art

## Fukui, Japan

### Programme

The Fukui City administration's brief was for a cultural centre, on a four-hectare site at the edge of the city, with spaces for the exhibition of art, including a collection of the work of the local sculptor Hiroatsu Takada – and an auditorium seating 1,000. The centre also accommodates a library containing material on the life of the Fukui-born actor, Shigeyoshi Uno.

### Design

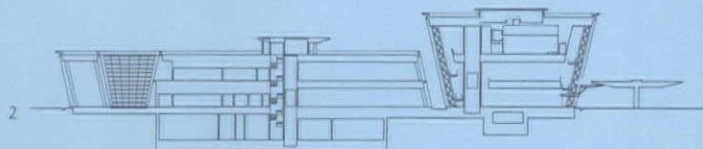
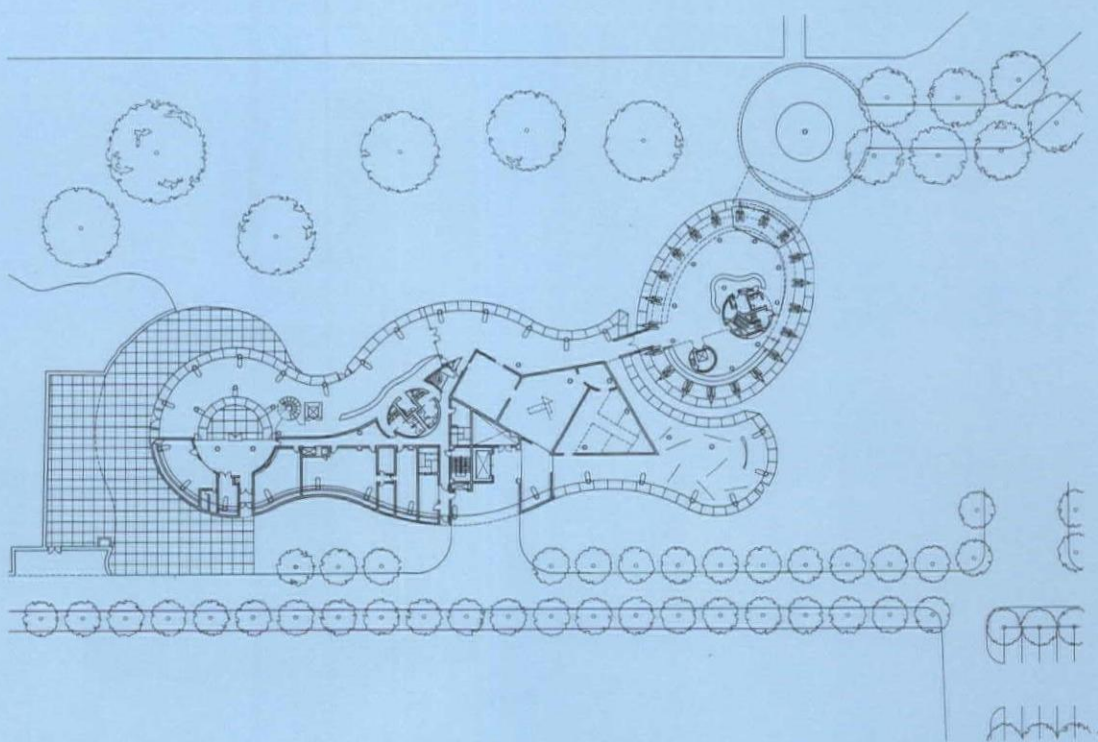
The building's appearance from the adjoining park was a prime concern for Kurokawa. A three-storey entrance hall, cafeteria and lecture theatre serves each of the facility's twin functions, with the exhibition spaces accommodated in a low volume at the centre of the complex, ancillary and storage spaces being sunk underground to minimise the building's apparent height when seen from the park, and the performing arts venue in a taller block on the site's eastern side. Extensive glazing maximises the spatial connection of the interior with the natural environment outside.

### Significance

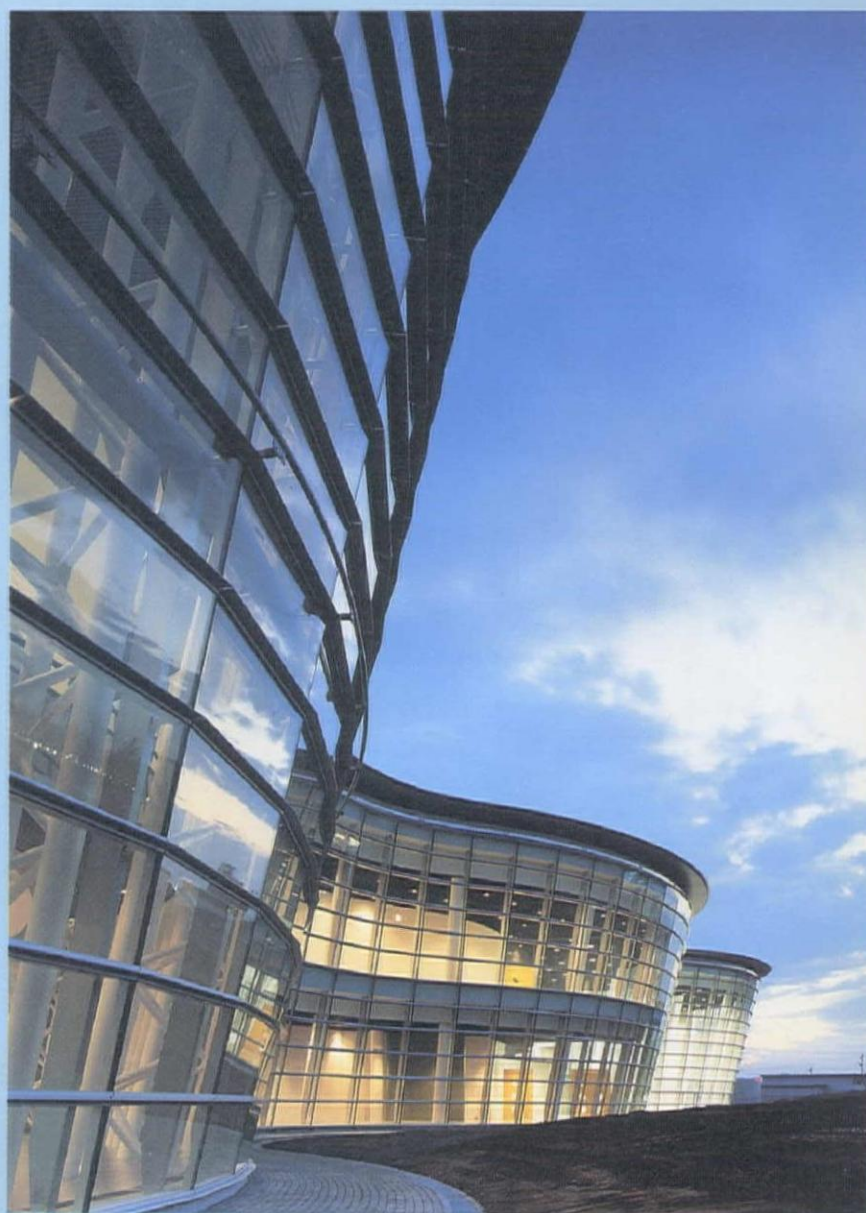
The intrinsic conflict between the transparency of the building's skin and the need to maintain a stable internal environment has been resolved by the use of double-framed glazing, sealed heat-deflecting sashes, and semi-opaque rolling blinds. The 15-degree incline of the external walls is also intended to reduce insolation.

### Date

Design 1993-1994; construction 1995-1996



- 1: Ground floor plan
- 2: Section through the museum
- 3: Extensive glazing maximises the spatial connection between the interior and the natural environment outside





# Softopia Japan Centre, Information Technology Development Centre Gifu, Japan

## Programme

Kurokawa describes the building as "an incubation centre for multi-media related enterprises" – a place for the development of software, and the promotion of information technology throughout the community. Softopia Japan is one of a network of centres making up the Gifu Eco-Media City – an experiment in the combined use of natural resources, eco-technology and IT.

## Design

A central, three-storey atrium provides a point of entry and orientation, and is served by a bank and a giftshop. Ground level facilities also include a multi-purpose hall and seminar rooms, with an external auditorium located beside an ornamental pond. Typical floors contain a range of meeting rooms (with teleconferencing and audiovisual equipment), spaces for research and offices. The taller of the two blocks of accommodation also houses a restaurant and a public information gallery on its two upper levels. Kurokawa has clad the lower parts of the mainly steel-framed building in stone, with progressively lighter materials employed higher up the building.

## Significance

"Avant-garde artists and members of the Japan Academy of Arts have contributed to the completion of this building, as a symbol of the symbiosis between sensitivity and reason."

## Date

Design 1990-1993; construction 1993-1996



Photography: Tomio Ohashi

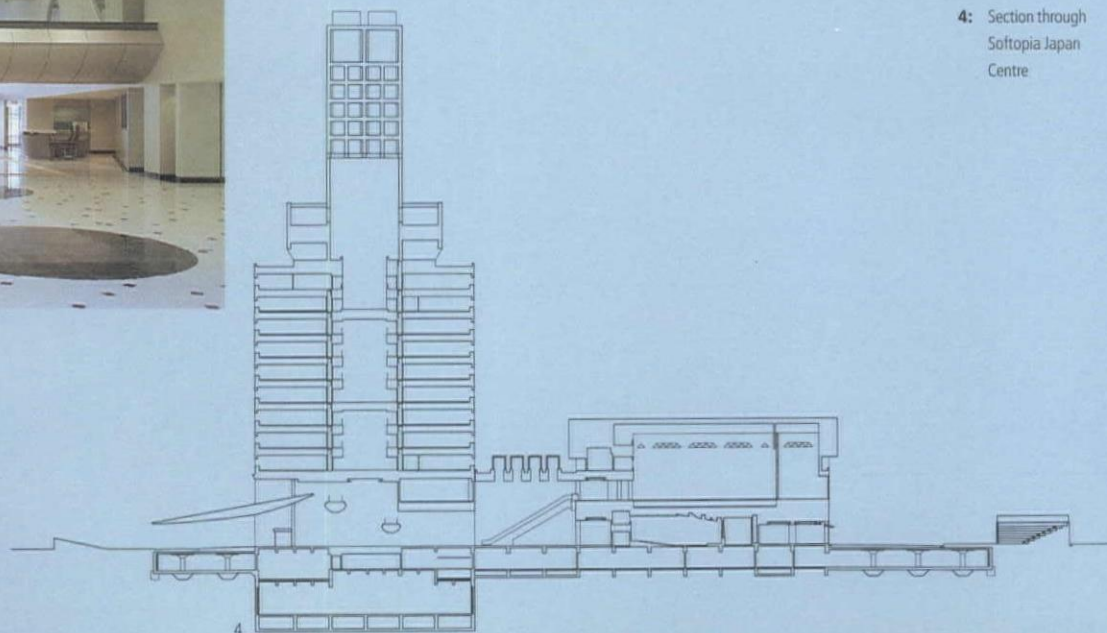


1: The lower levels of the main block are clad in stone, "lighter" materials were used higher up the building

2: A multi-purpose hall and seminar rooms are located on the ground floor

3: Interior view of the central three-storey atrium which provides a point of entry and orientation

4: Section through Softopia Japan Centre





# Melbourne Central, Multi use urban complex

## Melbourne, Australia

### Programme

The complex provides a total of 263,435 square metres of offices, shops and entertainment facilities which are distributed over 52 storeys of this city centre complex. The scheme incorporates the Shot Tower, a building retained more for its familiarity to Melbourne's citizens than for any outstanding architectural qualities.

### Design

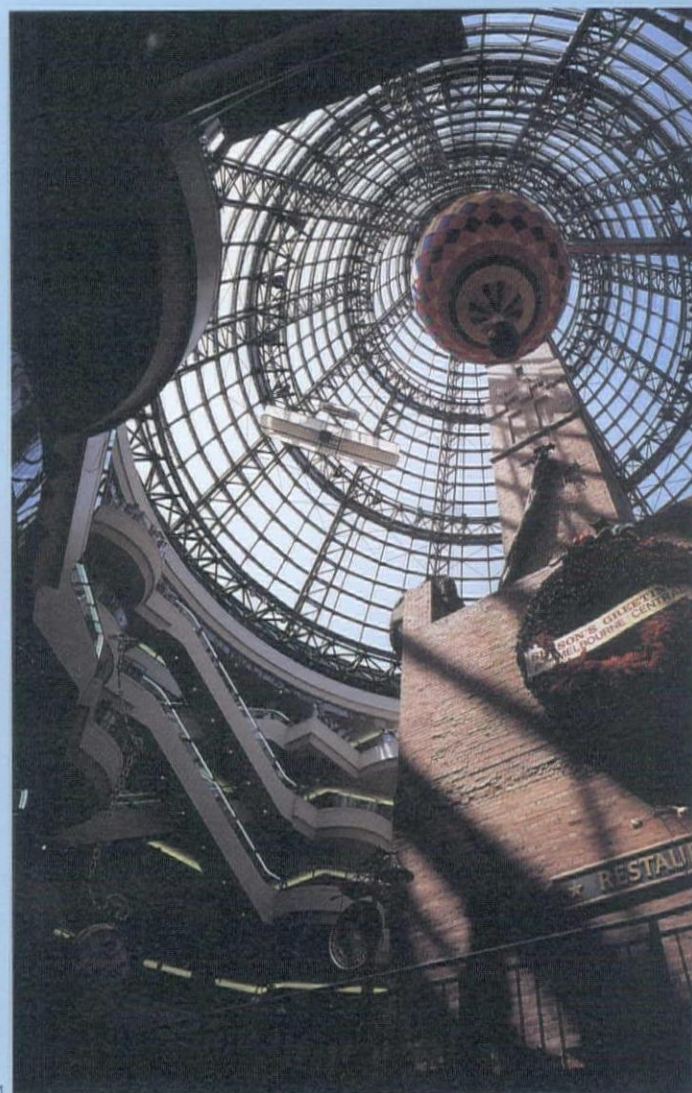
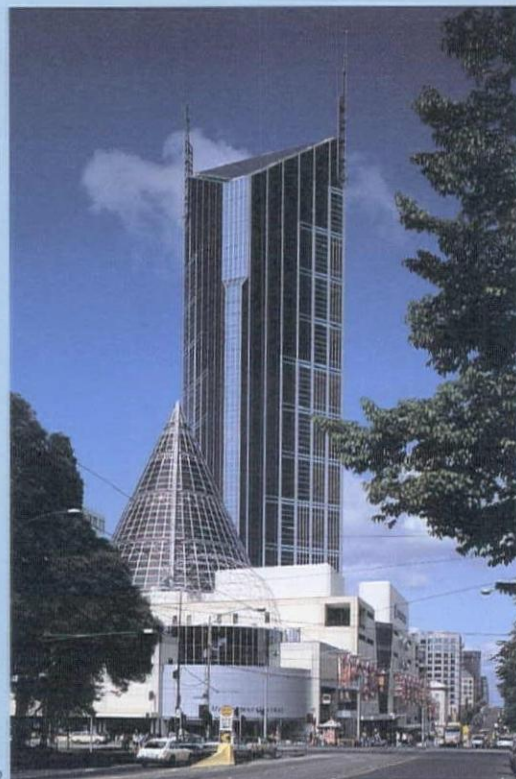
The office tower is conceived of as a "crystal cut volume", with a variety of materials including stone, aluminium and different types of glazing revealed within its smooth profile, breaking down the monotony of the potentially banal form. The building becomes lighter and more transparent as one ascends, from the relatively solid and urbane base to the state of the art telecommunication equipment at the peak. The Shot Tower is captured within one of Kurokawa's distinctive glazed cones – a direct expression of the symbiosis of history and the present. Otherwise, Kurokawa has avoided figurative elements, relying on abstracted rectangles, cones (some of which are inverted) and spheres which "can be freely interpreted, to produce multivalent meaning."

### Significance

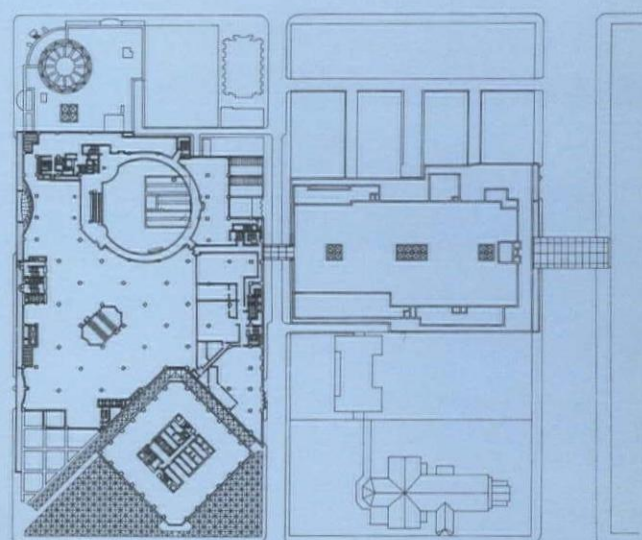
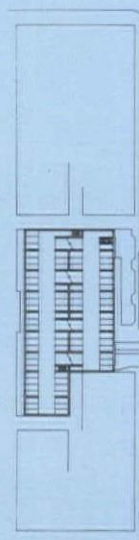
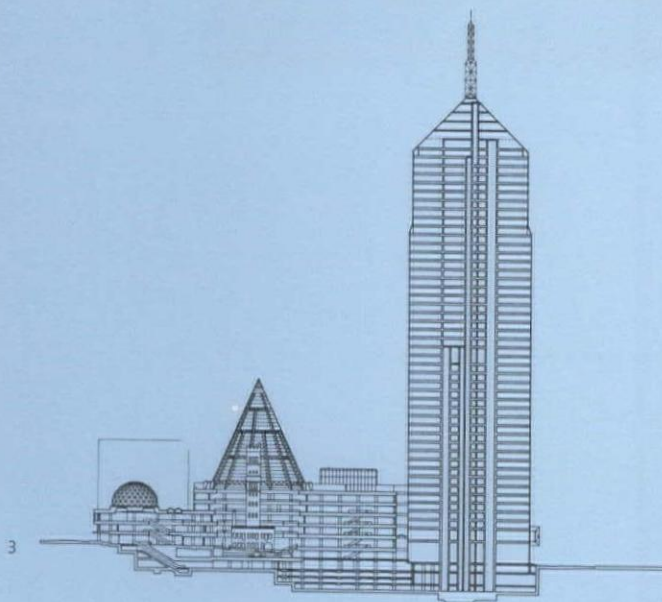
This project allowed Kurokawa an opportunity to explore a symbiosis not found in his many museum projects: the symbiosis of the variety of functions of a traditional city centre, often lost in monofunctional twentieth-century developments.

### Date

Design 1986-1990; construction 1987-1991



- 1: A view, from the ground up another of Kurokawa's distinctive cones. The structure becomes more transparent as one ascends
- 2: Shot Tower, in the background, was retained for its familiarity to Melbourne's citizens rather than for its architectural merit
- 3: Section through the complex
- 4: Fourth floor plan (European)





## Sony Tower, Showrooms and offices for Sony Osaka, Japan

### Programme

Sony's global reputation has always been founded on good aesthetic and ergonomic design, as well as high technical specifications. The building was intended to be consistent with this corporate philosophy, allowing the public unconstrained and undistracted access to displayed products, retaining its own sense of identity.

### Design

Only the toilets are autonomous, prefabricated units; yet, in its organising concepts, the building is more authentically organic than its Tokyo forerunner. Described by Kurokawa as an "information tree", served and servant elements are clearly articulated within the tower, with lifts, escalators, ducts and toilet capsules exposed externally, clad in materials ranging from stainless steel and aluminium, to copper and marble.

### Significance

A more metaphorical interpretation of metabolist principles, evolving the polemical experiment of the Nakagin Capsule Tower in response to a more spatially homogeneous programme.

### Date

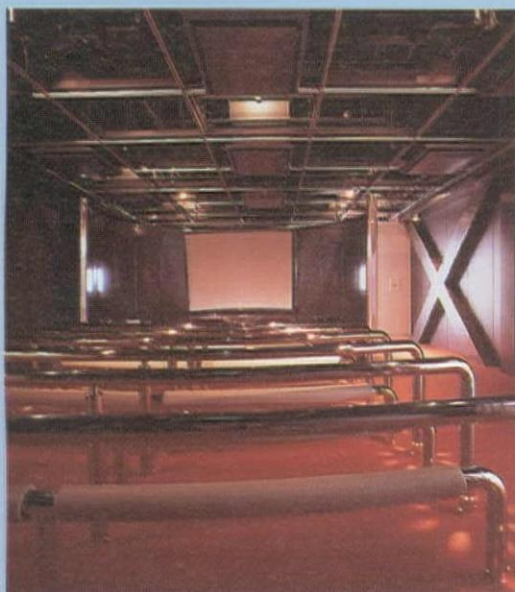
Design 1972-1973; construction 1973-1976



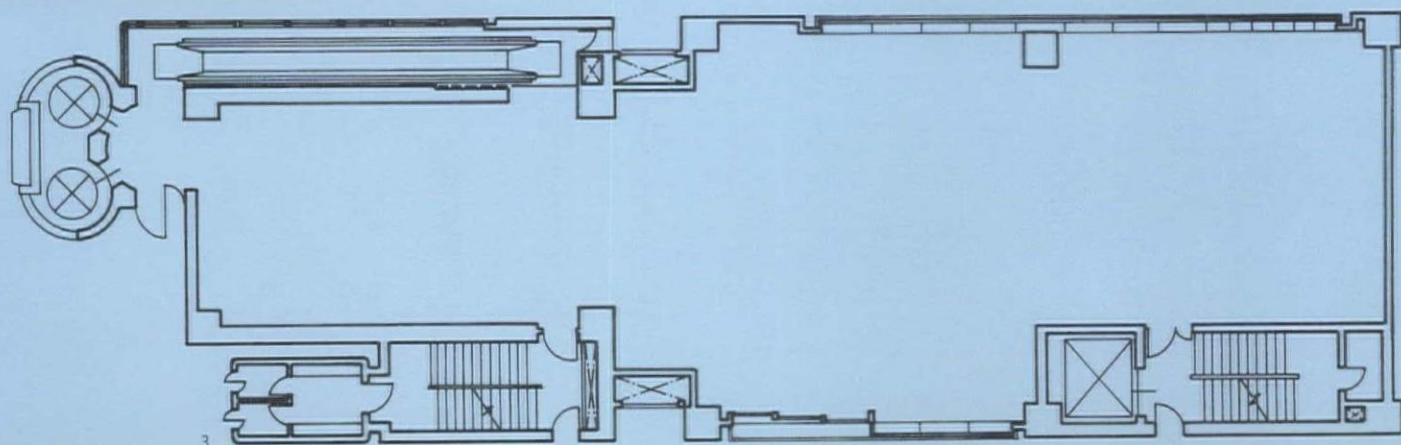
1: Sony's Osaka base is organised around a single tower, from which served and servant elements are articulated

2: Interior view

3: Typical floor plan



Photography: Sony Osaka





# KL International Airport, Kuala Lumpur, Malaysia

## Programme

The Malay government required an airport to act as a regional hub, anticipating developments in air transport for at least the first two decades of the next millennium. Functionally and technologically, the airport terminal is required to meet the latest global standards. KL International Airport is also intended to act as a symbolic gateway to the country, and to incorporate something of a Malay national identity within an uncompromisingly contemporary design. The project was also guided by requirements for flexibility, allowing for future changes, and minimising the environmental impact of the facility.

## Design

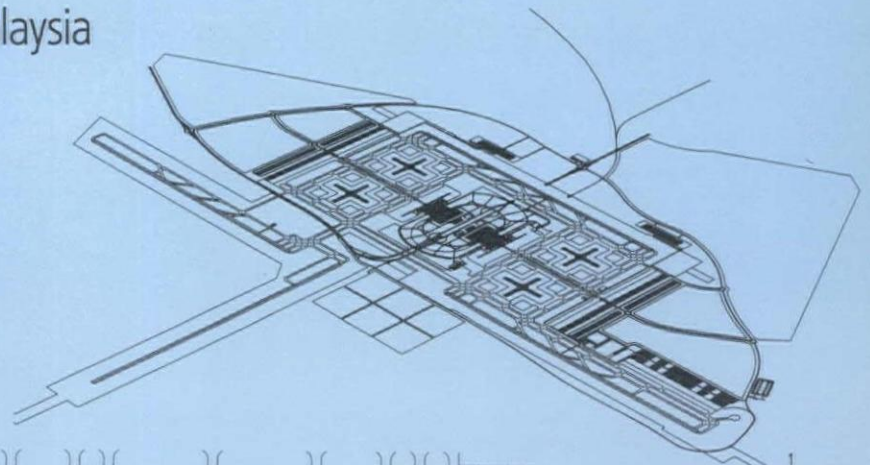
The interior combines the spatial dynamism of Kansai, Japan with the repetitive structural logic of Stansted, UK adding a concern for *genius loci* quite unlike that of any other world airport hub.

## Significance

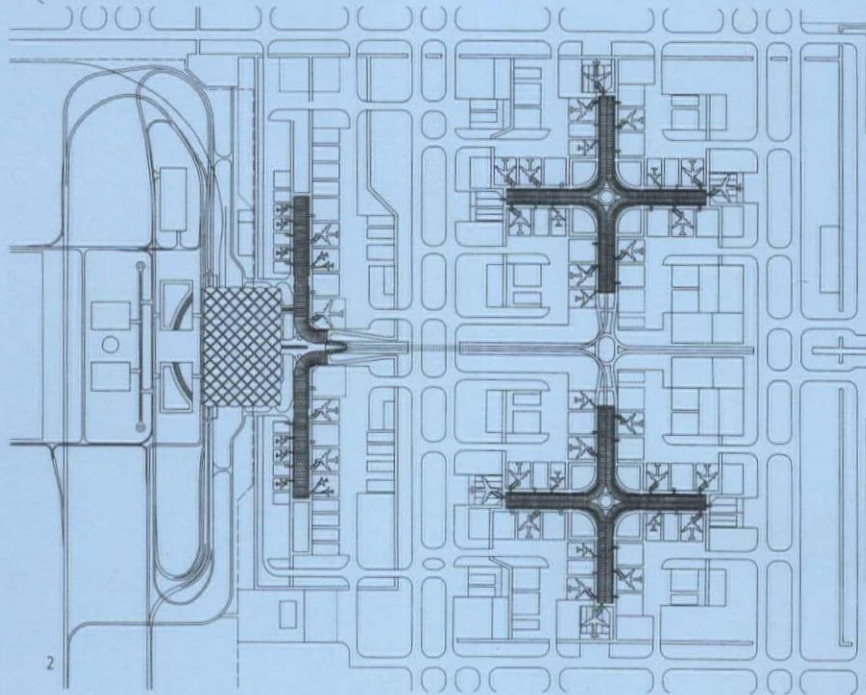
"The design philosophy of the new airport is to marry the distinctive traditional Malaysian culture with the state-of-the-art technology required of an airport...The philosophy does not aim to merge the two aspects into one and therefore dilute their individuality, but by the processes of abstraction, juxtaposition and interrelation, to heighten the potency of their separate identities."

## Date

Design 1993; construction 1994-1998



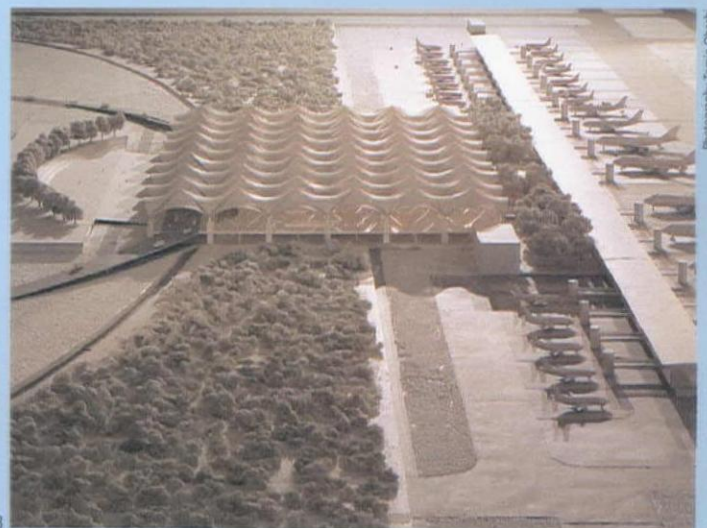
1: Site plan



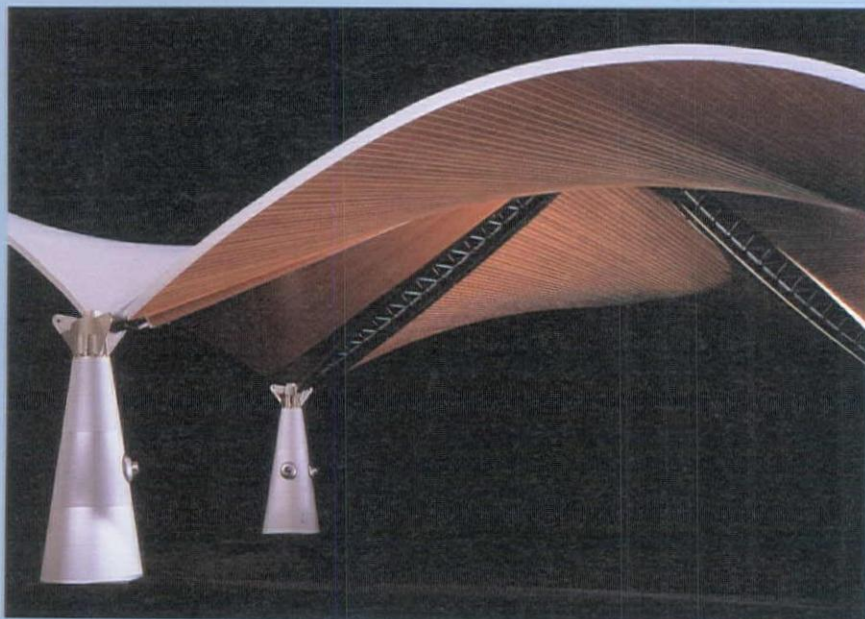
2: Detail of site layout

3: Model shot of main terminal. The design was required to meet contemporary standards in both functionality and technology, as well as being flexible enough to incorporate future developments

4: Detail of repetitive sculptural motif



Photography: Tomio Ohashi





## Toyota City Stadium, Sports stadium Aichi, Japan

### Programme

Located in the central park, on the banks of the Yanagi River, the project commemorates the fiftieth anniversary of the establishment of the City of Toyota, and is designed to be completed in time for the 2002 soccer World Cup. In addition to football, the facility is intended to cater for other ball games.

### Design

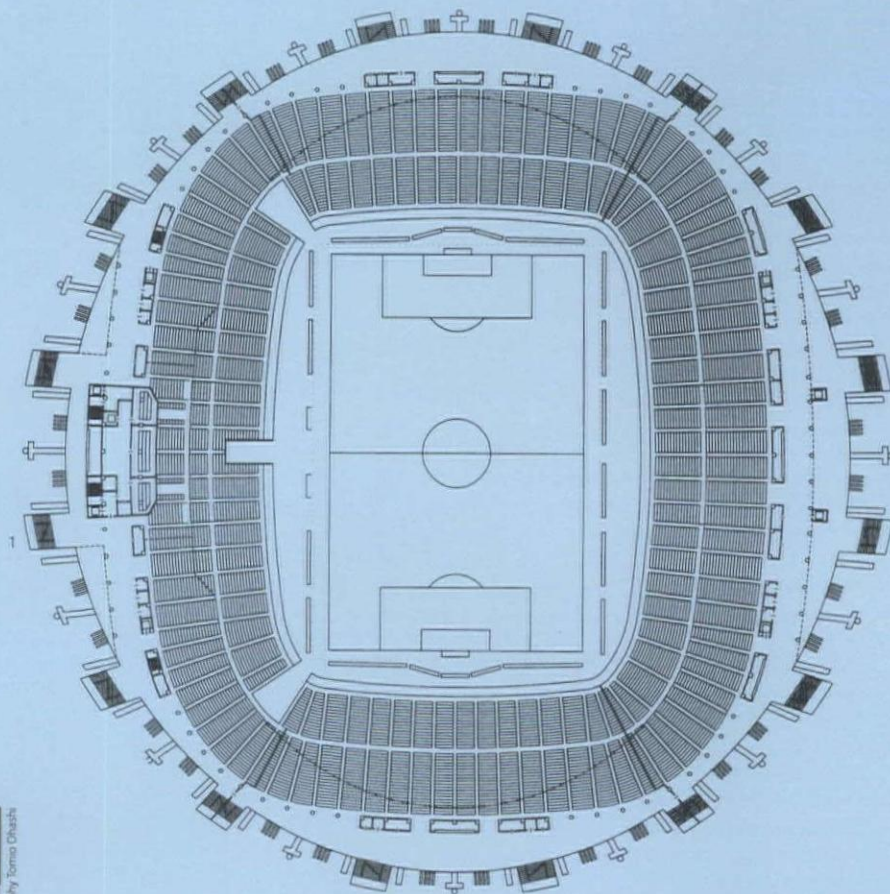
Kurokawa's strategy centres on connecting the stadium to the existing and proposed circulation systems of the site, with the stadium's main concourse located at an elevated level – 10 metres above the ground level playing surface – to link with an embankment and new bridge. The stadium's suspension roof structure resembles that of the Bridge of Toyota – a potent local reference, and symbol of the Toyota Corporation's global technological might.

### Significance

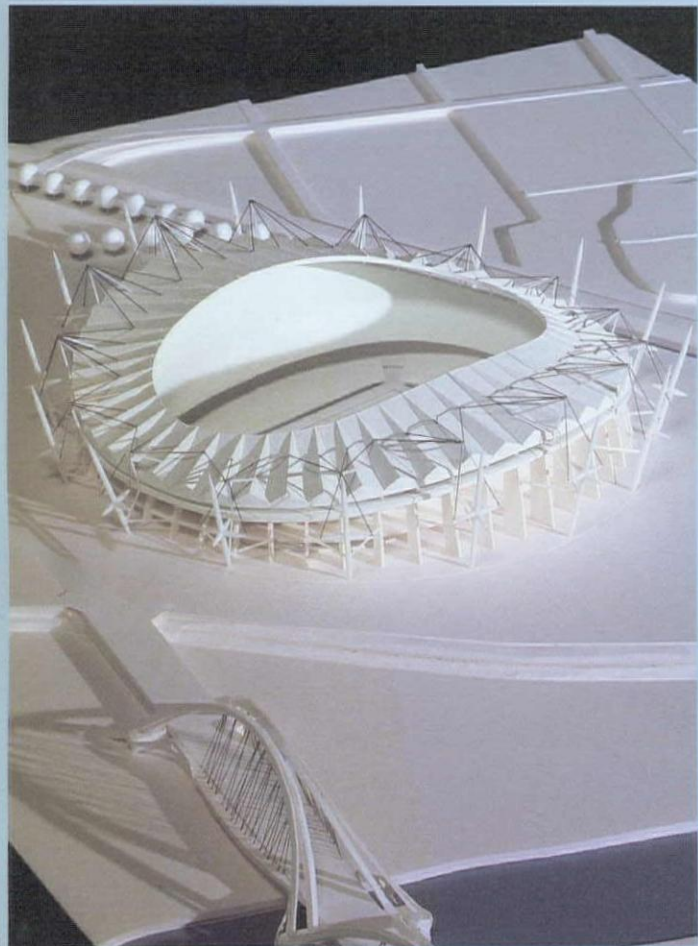
Kurokawa's contribution to a city built by the car maker for its staff.

### Date

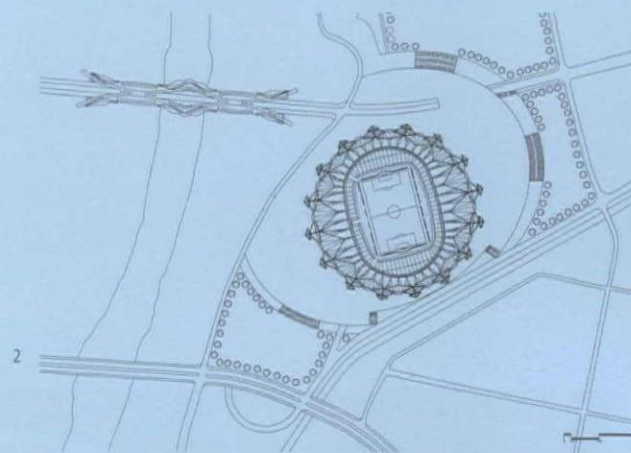
Design 1996–1998; construction 1998–2001



Photography: Tama Chashu



3



2



4

1: Site plan

2: View of the Toyota City Stadium in context, indicating relation to proposed and existing circulation systems

3: The stadium's suspension roof structure resembles that of the Bridge of Toyota, a symbol of local pride

4: Detail of roof structure



## Pacific Tower, Offices Lá Defense, Paris, France

### Programme

The 25-storey building stands adjacent to the Grande Arche at Lá Defense (a competition winning scheme selected by a jury of which Kurokawa was a prominent member). In addition to lettable offices, the Pacific Tower accommodates a "space for progress and innovation" in its basement, five storeys used by the Japan Service, and, at its highest levels, a Japanese tea house and garden. Often appearing deceptively small in photographs, the building has a total floor area of 56,000 square metres.

### Design

The Pacific Tower complements the Grande Arche, and acts as a bridge and a gateway for pedestrians crossing the urban motorway which runs between Lá Defense and the Valmy district. The building's rooftop is a venue for special events and general relaxation. Kurokawa sees the curving curtain wall as a product of the symbiosis between Japanese traditions of transparency, most obviously seen in *shoji* screens, and a Western sense of tectonic mass. The bridge (one of the last structures engineered by the late Peter Rice) is likewise influenced by Japanese precedents.

### Significance

The rooftop provides a surreal haven, in which one can become experientially detached from the commercial activity below.

### Date

Design 1988-1989; construction 1990-1992

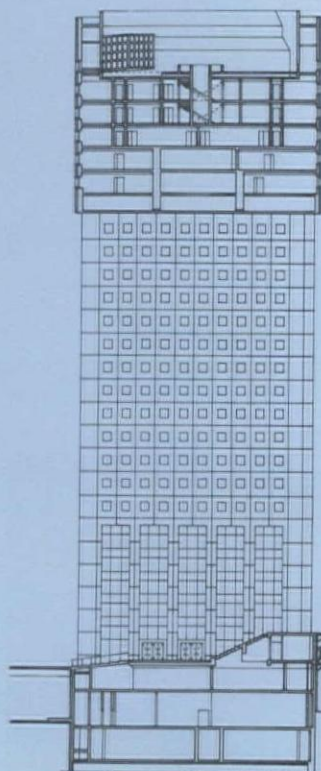


Shinichi Kurokawa

1: The bridge, running from the back of the Pacific Tower, provides pedestrian access to the Valmy district

2: Cityscape showing the Tower in relation to Lá Defense and the surrounding urban fabric

3: Section through Tower and bridge





## Miki House, Offices for clothing manufacturer Osaka, Japan

### Programme

This headquarter building was designed as part of a competition entry for the redevelopment of the Yao Station area of Osaka, and incorporates offices, conference rooms, an exhibition hall and warehouses. The site adjoins an airport, and was subject to strict height restrictions, conflicting with the requirement for the greatest possible clear height in parts of the accommodation.

### Design

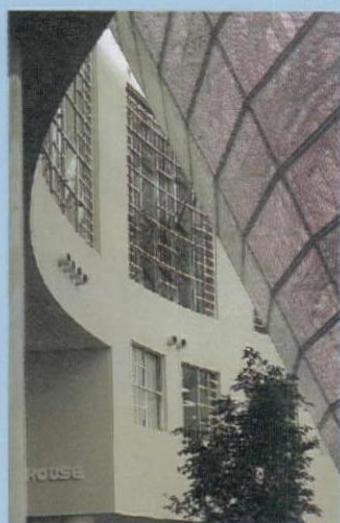
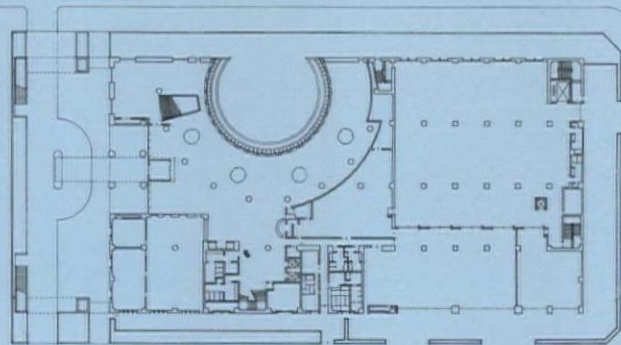
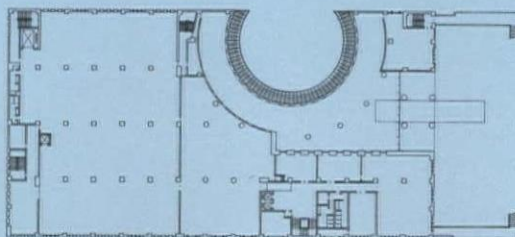
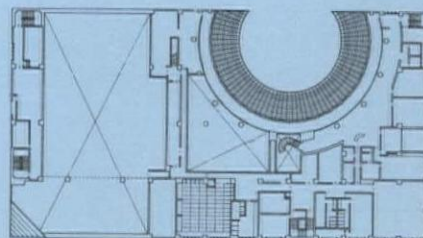
Two types of symbiosis are foremost in Kurokawa's design: that between the historic significance of the site (a subject of extended archaeological excavations) and its contemporary identity; and that between the essentially introspective interior and the heterogeneous exterior. The former is made explicit in the juxtaposition of a fashionable, inverted cone of glass and perforated metal, set within a massive wall of natural stone. The soft light, filtered through the perforated metal screens, and the presence of planting linking the interior and exterior, establishes the intermediate zone fundamental to much of Kurokawa's architecture.

### Significance

"When light fills the atrium of the building," Kurokawa writes, "it glows like the lights of the city, shedding a soft light on the faces of the people walking the streets nearby."

### Date

Design 1989–1990; construction 1990–1991

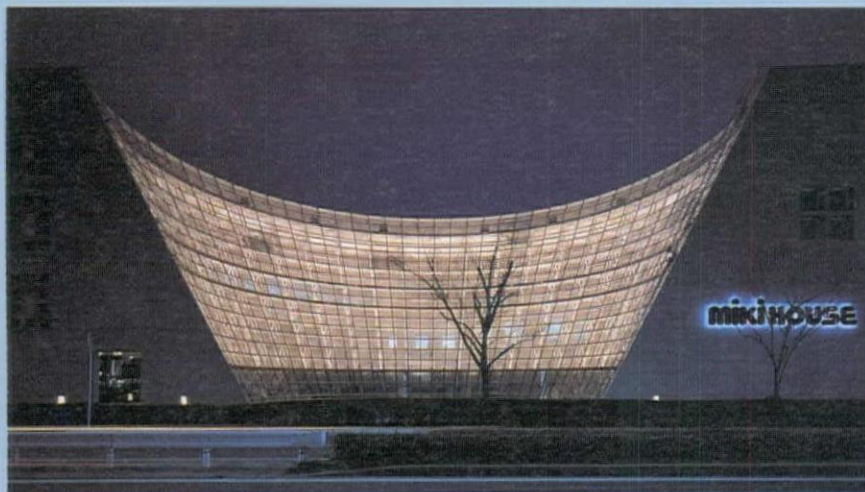


1: From top: typical upper floor plan; first floor plan; ground floor plan

2: Detail of the juxtaposition between the cone and the wall

3: The house is composed of an inverted cone of glass and perforated metal, set within a wall of natural stone

4: The combination of modern and traditional building elements reflects the function of the building – housing the private offices of a high-profile clothing manufacturer



Photography: Tomio Ohishi





# Vincent van Gogh Museum, Museum extension Amsterdam, Netherlands

## Programme

The existing Vincent van Gogh Museum was the last built design by Gerrit van Rietveld, and stands between the Rijksmuseum and the Stedelijk, facing the Museumplein, a triangular urban park. The decision to privatise the museum is expected to generate a significant increase in the number of visitors, necessitating an extension. The only available site for Kurokawa's competition winning project was the Museumplein, which is currently being reconfigured to a masterplan by the Danish landscape architect Sven-Ingvar Andersson.

## Design

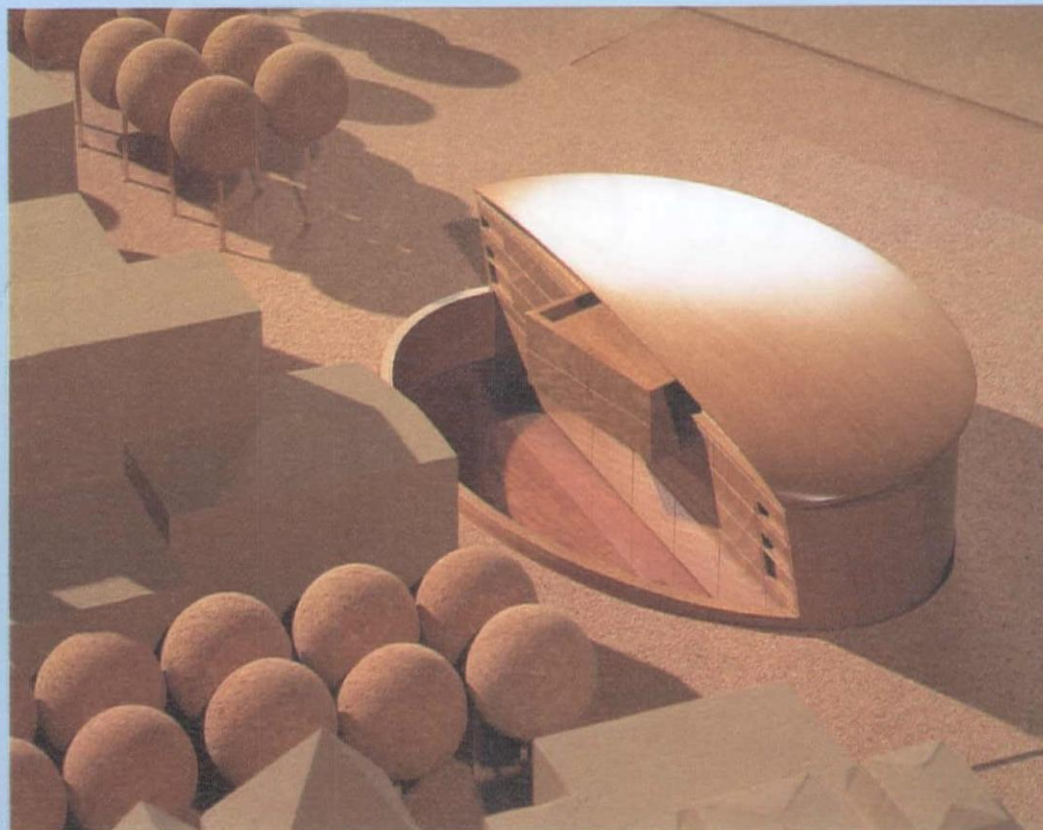
Taking the intrinsic abstraction of Rietveld's architecture as a point of departure, Kurokawa has organised his plan within the boundary of an ellipse, split in two by a radial sight-line derived from Andersson's masterplan. Only 25 percent of the new accommodation is located above ground, and is seen as a garden pavilion – a positive, solid addition to the Museumplein, and a counterpart to the sunken water garden of Kurokawa's scheme.

## Significance

The projects has been subject to lengthy delays, but is currently on site, and is set to become Kurokawa's most publicly accessible building in western Europe. Accordingly, Kurokawa emphasises the symbiosis between aspects of Japanese architecture (seen, for instance, in the plan's asymmetry, and in the water garden) with the very European formality of the Museumplein's urban context.

## Date

Design 1990-1995; construction 1996-1998

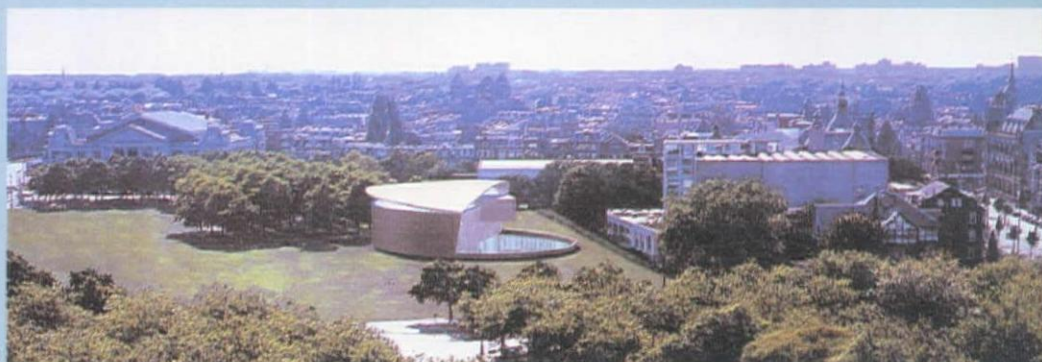


1: The museum extension is organised within the boundaries of an ellipse

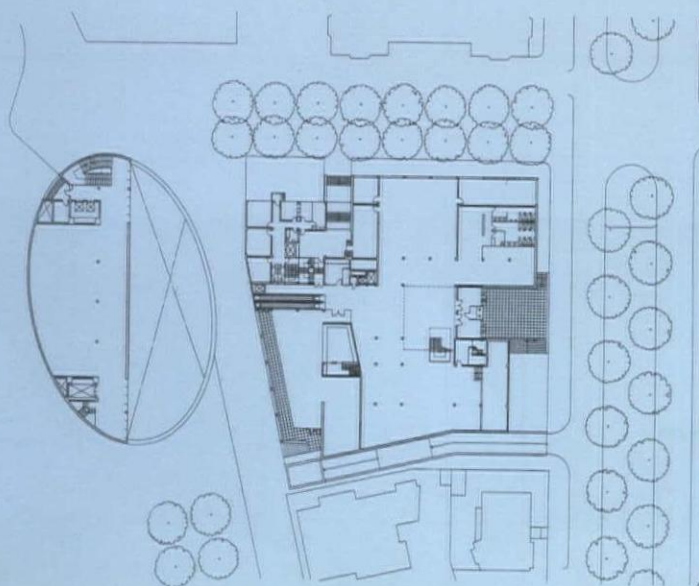
2: Photomontage of Computer Animated Design (CAD) in situ

3: Kurokawa's design in the context of Sven-Ingvar Andersson's masterplan for the redevelopment of the Museumplein park area

4: Site plan



2



3



4



## Special Report – Museums

# Positive exhibitionism



- 104 An analysis of worldwide trends in museum construction
- 114 Joseph Giovannini interviews museum consultant Arthur Rosenblat in New York
- 116 Museums on display from Europe, Asia and the Americas



Museums are benefitting from a significant percentage of the cash generated by tourism. World Architecture reveals the facts behind the newest projects. Holocaust museums are fostering stronger ties between eastern European countries; in the US children's museums are on the up, and art museums around the world are declining as the shift in emphasis turns away from academia and towards the museum as a popular educational tool.







James Morris, Axiom

If there is any clear trend in museums across the world, it is a resurgence in their popularity. Museums are attracting more visitors than ever before, and although the building boom in Europe is over, in many countries, especially in North America, architects are benefitting from opportunities for new galleries and museums to satisfy the demand. The key to their success is tourism, and the accompanying ticket and merchandise sales. Some run "blockbuster" shows to attract wider audiences, and these "popular" exhibitions mark a shift from the focus on the traditional "academic" museum, and hence a new focus on the design of cultural institutions.

Funding for the new buildings varies from one country to another, and in many cases there is an increased demand for private investment despite state funding which is often granted as an incentive for commercial development.

#### EUROPE Politics

The west European museum building boom is over and east European late entrants to the free enterprise zone have more pressing problems. Until recently museums had been almost exclusively state financed. In Germany, Frankfurt am Main's local government built 13 museums in

ten years to give the financial city a cultural infusion, and attract corporation headquarters. But the museums are currently suffering financially, and exhibitions are almost exclusively sponsored. Hamburg has seven publicly funded and 39 sponsored museums. The latest being OM Ungers' Contemporary Art Museum extension to the Kunsthalle and a Museum of Work housed in a refurbished nineteenth-century factory which previously belonged to the New York Hamburg Rubber Company. Recently completed Berlin museums – Josef Paul Kleihues' Hamburger Bahnhof, Heinz Hilmer and Christoph Sattler's Kavalier Haus, Helge Pitz's Railway and Transport Museum or Diener and Diener's Natural History Museum renovation, are the result of a 1980's boom. However, both the UK/German practice Alsop and Störmer's Erotic Art Museum which has opened on the Reeperbahn in Hamburg, and the highly publicised and soon to open Guggenheim Museum in Bilbao, by Los Angeles-based Frank Gehry, show that there is still room for foreign architects within the western European museum market.

#### Patronage

Only patronage now appears to instigate action. In France, President Jacques Chirac has announced plans for his first architectural *grand projet* – a 31,000-square-metre museum

**Previous page:**  
The Jewish Museum,  
Vienna, Austria by  
Eichinger oder Knechtl.  
Photograph by James  
Morris, Axiom

**1:** Nearing completion,  
the Guggenheim,  
Bilbao by Frank  
Gehry



dedicated to anthropology, prehistory and ethnology. The brief for a competition to be launched at the end of the year is being prepared by a 12-member presidential commission.

In Germany, Chancellor Kohl personally invited I M Pei to design Berlin's Historical Museum extension, (see News review). If Germany cannot afford museums, other than in such circumstances, what hope is there for east European nations reliant on western generosity?

### Museum design competitions in Europe

European museums have invariably been the subjects of architectural competitions, often by invitation only, or for limited categories of contestants. A recently-announced church-museum competition is open for architects living or working in Cologne and seven invited European architects.

Winning a competition however does not guarantee construction. Madrid's Prado Museum extension was the object of an international competition which produced no result. Now competitors are being asked to submit their designs for a book about the competition. Giorgio Grassi won the Berlin Neues Museum competition although Frank Gehry's fourth placed entry was preferred by the users. Procrastination means neither are likely to be realised. Berlin, short of cash, has stopped building maintenance on the Museum Island and cut Daniel Libeskind's Jewish Museum budget shortly before completion. Some

museum projects stutter on for years. Milan's Biblioteca Ambrosiana, due to open in 1992, is still undergoing restoration and modernisation.

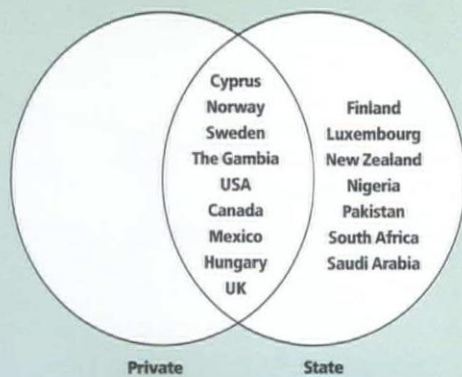
Competitions are rare but public announcements must be made, calling for interested architects to apply for particular projects with portfolios of their work. The original idea of museums as academic institutions has been overtaken by their value as tourist attractions and entertainment centres. A visit to a museum has become an "experience", and architects have to know more about film, video and lasers than the arrangement of glass cabinets.

### Funding

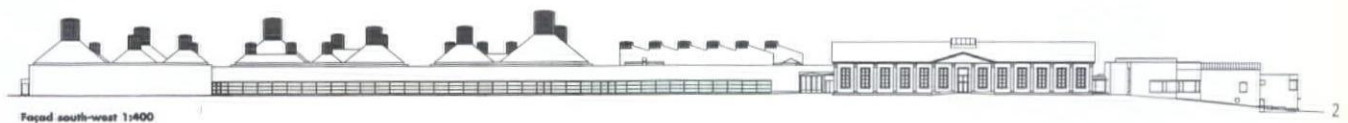
A "Museum without Walls", a nomadic series of conferences, is the ultimate irony in the search for a solution to the lack of government and private funding. The European Peace museum movement, for want of a site or funds, has been discussing the idea of a building in Britain for years. London's Imperial War Museum may build a Holocaust Museum but should it be sponsored by an institution set up to glorify military success? Greece provides "an endless excavation site" for historians of ancient culture. Here archaeology has priority and there are laws governing the funding, design and building of museums.

At a time of renewed nationalism museums are a nation's jewels but in the global economy museums cannot survive without making a return, and without investment there can be no profit.

### Some countries have no privately funded museums regardless of State supplements



Source: World Architecture Intelligence



2: Southwest elevation of the Museum of Modern Art which is currently on site in Stockholm, Norway by Rafael Moneo

3: Pawson Williams architects' minimalist interpretation of exhibition space in the Earth Galleries of London's Natural History Museum



## ► Eastern Europe

Hungary has no building plans – Budapest's new Modern Art Museum building and contents were the gift of a private German collector's foundation. Political turmoil in Albania, Bulgaria and the ex-Yugoslav states is not conducive to new building, for which there is no available money anyway.

The Czech Republic's problem is to keep up existing institutions. A cultural affairs spokeswoman said: "Prague's historical Burg must be maintained as a tourist attraction. Museum workers are badly paid and our tax system offers no advantage to cultural foundations or sponsoring". Prague's trade fair palace has been renovated for use as a Museum of Modern Art. For a year it has stood empty. Its slick and spartan institutional interior has earned it the nickname, "hospital without patients".

Poland has not had a new museum for decades, apart from the much criticised Krakow National Museum extension, which took ten years to build. Historical sites, such as Auschwitz concentration camp and museum – which the Germans eventually agreed to help Poland maintain – or Theresianstadt, in the Czech Republic, are heavy national responsibilities in need of international support.

## Scandinavia

Scandinavia's social programmes and architectural competitions have ensured high standards. Stockholm's Architecture and Art Museum, now under construction, was awarded to Spaniard Rafael Moneo after an open competition for Swedish architects with five invited international entrants. Norway has the advantage of being the seat of the Nobel foundation. There is talk of a Nobel Peace Prize Museum for the new millennium. In every country money problems dog museum programmes. A scheme in Denmark made ingenious use of unclaimed employees' holiday funds to top-up cultural budgets. This lucrative source was cut off after a request for US\$10 million (65 million Kroner) for Viking sites alone. The last beneficiary was Jutland's Viking Ribe museum.

## UK

Museum design work is set to boom following the award of US\$219.2 million (£137 million) in lottery grants to 23 libraries, museums and archives. The Heritage Lottery Fund hopes to encourage "a renaissance" of museums in the UK according to HLF chairman Lord Rothschild. "By the end of the century, we would like to have helped to sweep out the nation's attics and cellars and to enable a measure of this country to be accessible not only the people of the UK but also to the world through developments in information technology."

Daniel Libeskind's extension to the Victoria and Albert Museum in central London has finally been given English Heritage's approval.

1: The Children's Museum in Mexico City by Ricardo Legoretta is the most visited museum in the capital, largely attracting locals and providing educational exhibits in line with the country's social policy





## NORTH AMERICA

### US

#### Politics

Museum building in the US is said to be riding a wave that hasn't quite peaked since it took off in the mid-1960s, driven by demand for entertainment and education, and buoyed by traditional private sector financial support, rather than vulnerable government funding.

Much of that stable market turns on the enduring popularity of science and children's museums, to which should be added the rise of a highly specialised, sports/entertainment museum and "Hall-of-Fame" genre.

Unlike neighbouring Canada and Mexico, where similarly timed booms are tapering off, there is no shortage of museum work in the US, according to architect E Verner Johnson. His Boston-based architectural practice, devoted exclusively to that field, can't – or chooses not to – take on every commission that's offered. "We must have about a dozen museum projects in hand...and are able to pick and choose," says Johnson. "In fact we've never had a lull in the more than 30 years since I started the practice."

That is not to suggest the practice, which he keeps to a manageable 20-person size, has cornered that design/planning market or is the only worthy firm. Other architectural practices are busy in that field, he says, including some from other countries – Douglas J Cardinal, whose Ottawa-based firm designed the Museum of the American Indian, under construction in Washington, DC, for example, and Moshe Safdie, based in Canada and the US, whose museum of American Jewish experience for Hebrew Union College in Los Angeles opened recently.

There are golfing, basketball and rock and

roll music halls of fame in the US that are planned, under way or already opened, with budgets of US\$50 million to US\$100 million that would have defied belief just a few years ago.

#### Children's museums on the up

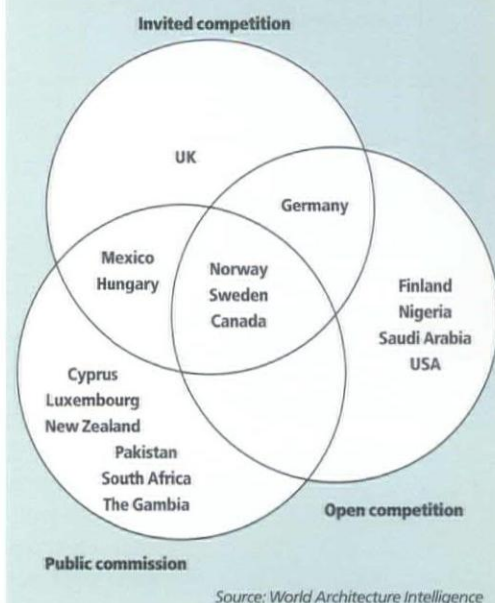
Children's museums preceded their hi-tech/interactive science museum counterparts by more than half a century. According to a survey published in December 1996 by the Association of Youth Museums (AYM), Washington, DC, nine children's museums were opened in the US between 1899 and 1950. Over the next 30 years another 40 such museums were opened, followed by another 87 over the next 11 years – making a total of 138. Thirty-nine of them are being expanded by an average of 30,621 square feet, within an average budget of US\$2.4 million.

Valerie Borden, AYM's association assistant, says about 200 of the 350-member children's museums are in the US. "There's been a real boom in the number of children's museums, where the focus is on the audience, including parents and grandparents, and not on objects. Some of these museums are geared to a specific age, others are not. Some museums are municipally-owned and operated, some by non-profit organisations."

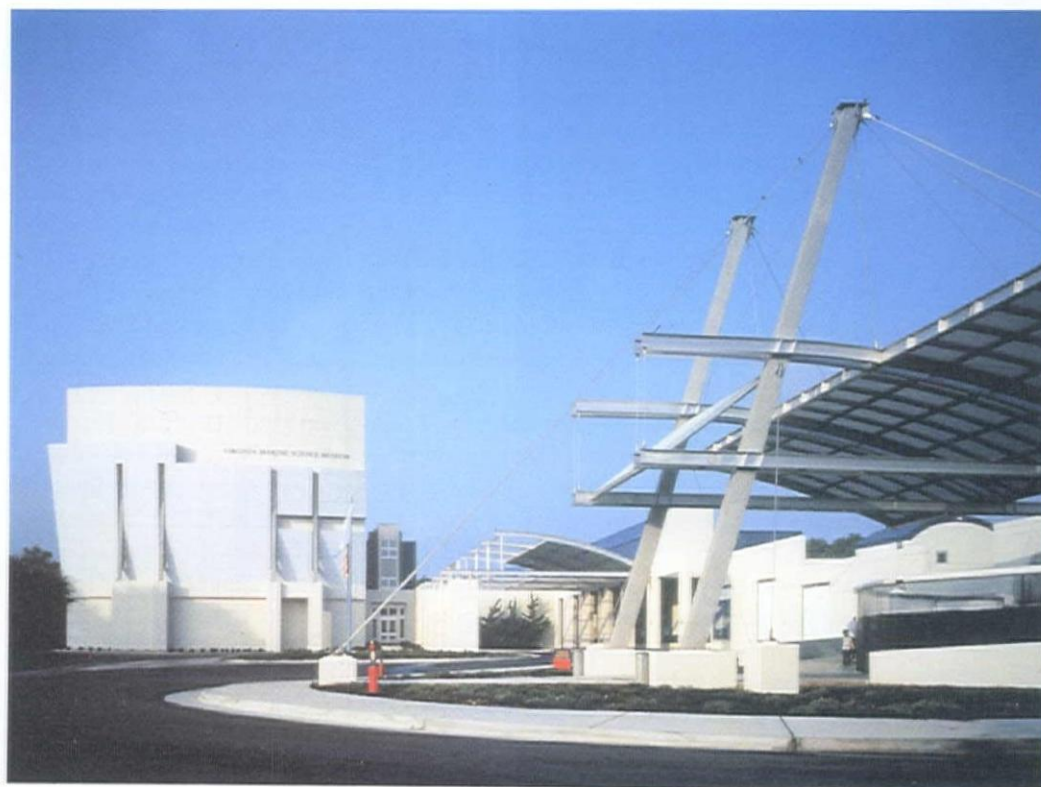
"Financial support comes from federal, state, municipal government or corporate, foundation and individual contributions, as well as earned income from admissions, memberships, gift shop sales, special events, fund-raising at the museum and among companies and individuals," Borden adds.

Most of these museums are in renovated or donated spaces, or as part of urban revitalisation developments. They may eventually move

#### How are the architects chosen?

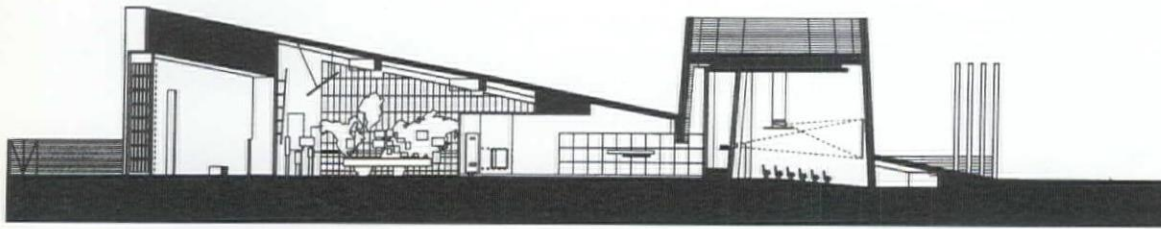


3: Virginia Marine Science Museum Expansion, Virginia Beach by E Verner Johnson and Associates

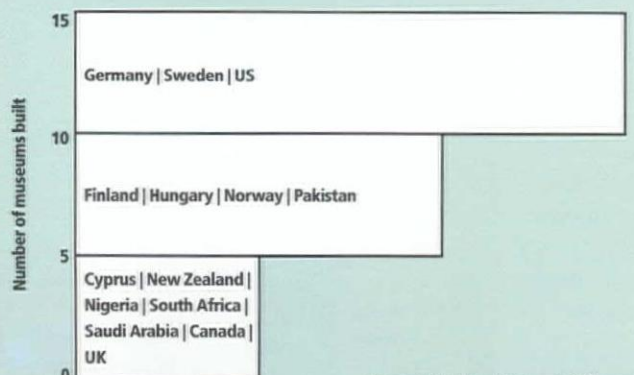


Timothy Huxley

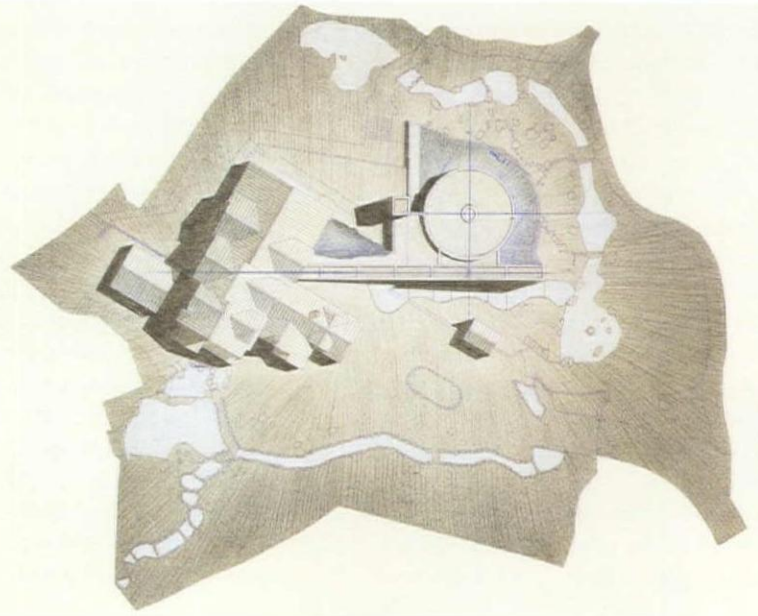




The most active countries in terms of numbers of museums built in the last five years



Source: World Architecture Intelligence



into their own new buildings, although that's not as likely, given the much higher cost.

An American Association of Museums spokesperson in Washington, DC confirms that science and children's museums continue to be in demand, notwithstanding a decline in government funding.

#### Art museums in decline

Art museums, on the other hand, are scrambling to compete with the more broadly popular interactive appeal of science and children's museums, and comparatively few are being built. "Thirty years ago they [art museums] were built as an expression of civic pride. Today they're built because they attract tourists and mainly for economic development reasons. The rationales are different" a spokesperson from the American Association of Museums says.

They also attracted more government support at one time. An association survey of members, issued in December 1996, indicates that funding from all government sources (federal, state and municipal) accounted for 42.5 percent of total operating income in 1979, and 39.2 percent in 1988. It is less than 30 percent today. Local governments account for an average 15.5 percent of total income, the single most important income stream, followed by endowments and state government funds, each more than nine percent of total income.

#### Canada

A recently opened \$US11 million (\$C15 million), 320-seat OMNIMAX domed theatre and renovated entrance at the Ontario Science Centre in Toronto appears to be one of the last major government or private sector-supported museums in Canada for some time to come. The makeover, designed by Toronto-base Zeidler Roberts Partnership Architects, was the largest building programme at the centre since it opened in 1969. Apart from the general need to upgrade an aging building, the centre felt it needed a stand-alone entertainment venue to resuscitate its flagging attendance. It worked.

Susanne Rowe-Knight, a museum advisor with Ontario's Ministry of Citizenship, Culture and Recreation, says provincial support for new museums has dried up. Operating grants for existing museums has dwindled to less than \$US2 million (\$C3 million) a year and will slip by another nine percent during the fiscal year ending 31 March 1998.

Corporate sponsorship, to the point of naming buildings after companies or individual philanthropists – not a well entrenched tradition in Canada – is under active consideration as museums feel the chill of government cutbacks.

According to John G McAvity, executive director of the Canadian Museums Association, architects may find some opportunities upgrading and redeveloping aging

1: Section through Holocaust Museum, Houston, Texas, US by Ralph Appelbaum Associates

2: Artist's impression of a bird's eye view of Tadao Ando's Ashi Beer Oyamazaki Villa Museum, Japan



museums now more than 30 years old. Museums might be in a better position to pay for some improvements from higher levels of earned revenue. A consortium of museum gift shops hopes to be able to use a computerised database system to raise income levels by developing gift products jointly, economies of scale, selling from a national mail order catalogue and generally sharing that effort for their mutual benefit.

## SOUTH AMERICA

### Brazil

Oscar Niemeyer's mushroom shaped Contemporary Arts Museum in Rio de Janeiro was completed at the end of 1996. This sculptural architect demonstrates that many Latin American designers have a free hand as a result of flexible, rather than politically-correct building standards. Brazilian architect, Lidia Smoleanschi commented that there are no facilities for disabled people but Rio has benefited from the publicity that this building has attracted.

### Mexico

When Ramirez Vasquez's flagship Museum of Anthropology opened in 1964 in Mexico City it heralded a wave of new museum construction throughout the country. Miriam Kaiser, a director/coordinator at the national council for the arts in the capital, says six or seven archeo-

logical museums near excavation sites, and seven children's museums, have opened within the past five years. The most recently opened museum celebrated hydro-electric power.

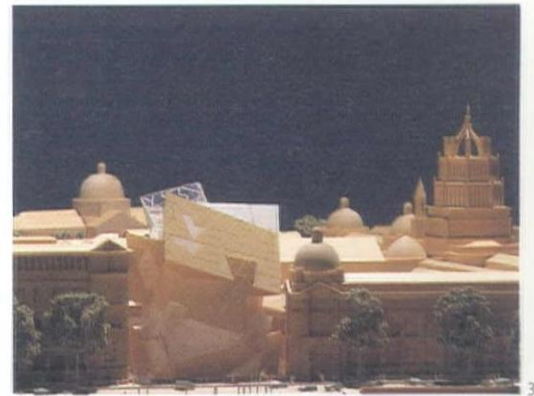
The federal government funds archeological museums in particular, and most of the others, she says. "Private sector support is not yet commonplace in Mexico." Not all the museums are housed in the spectacular architecture produced by the country's gifted designers. The abundance of historic architecture throughout the country encourages the conversion of former office and institutional buildings into museums.

## ASIA PACIFIC

### South Korea

"New National Museums" was the subject of an international competition won by Junglim Architects of Seoul in 1995. Ten new projects are planned for local and provincial museums before the year 2000. The increase in museum building was sparked by the government sponsored war memorial museum by Lee Sung Kwan of Korea which opened in 1994. The provincial museum of Kyeong province by the noted young Korean architectural practice Space Group, was sponsored by local governments although there are privately funded museums such as the Cheju Cinema Museum, in Cheju province by Seok-Chul Kim. Major projects pending are the National Natural

3: Model of Daniel Libeskind's Boilerhouse extension to the V&A museum, London



## HOUSING A COLLECTION

- The galleries need to direct the visitor's attention to the collection, not to the building itself. This does not mean that the room should be a simple drywall box – there is plenty of latitude for innovative design without it becoming distracting. For instance, alcoves and the like can add a sense of discovery and adventure to a tour of the museum.
- Usually only a portion, and sometimes a small portion, of the total collection is displayed at any one time. Consequently, there is usually a need for storage space for the remaining part of the collection. Ideally this storage space should be organised in such a way as to make it easy to find individual items, either for incorporation into the public display, or for researchers to study.
- In addition to the storage space, and normally associated with it, there is often a need for workshops where exhibits can be repaired, conserved, prepared for display, maintained, or studied.
- Often the exhibits need special climate control to prevent them from deteriorating. This may be achieved by special air conditioning of the building as a whole, or specially air conditioned display cases (or a combination of both).
- Likewise, the exhibits need to be protected in the event of a fire. Often, water is an equally potential source of damage so regular automatic sprinkler-type fire protection may not be desired as the first line of defense.
- Security issues are important, but requirements vary with the exhibit.

We spoke with Jonathan Marvel of Rogers Marvel Architects in New York about museum design issues. He sees the basic issue

facing museums, particularly in the US, as the reduction in public funding for museums. They must pursue funding from foundations and corporations more actively. Correlating with this is a trend toward larger in-house restaurants and gift shops. They are now important sources of revenue, perhaps contributing as much as 30 percent of the museum's overhead. However, some criticise this tendency towards "shopping malls of culture". Mr. Marvel further highlighted the following design issues and trends:

- The existing broader appeal of museums increases the importance of accessibility. Signage and spaces that can handle large volumes of people, specifically large weekend crowds, are important considerations. There is a trend toward permanent designs for particular spaces or particular exhibitions. "The ultimate flexible museum space" is no longer the ideal.
- Open storage is another new concept in museum design. Since the typical museum will only have a small portion of its collection in galleries, some museums are putting glass walls in their basements and allowing visitors to view the storage areas.
- Historically, the two most significant design issues for museums are circulation and lighting. These are important to help visitors avoid "museum fatigue". Circulation must provide a variety of paths and there must be a reference point for natural light.
- Specific technologies currently of importance in museums include low voltage lighting, which provides better light and can be more discrete, and environmental controls, where there is a trend toward the use of alternative energy sources.



►History museum the design of which may be open to international competition in 1998.

### Hong Kong

Museum building on the soon-to-be-Chinese British colony has increased in the last five years with both international and national firms of architects making their mark before the hand-over on 30 June. Hong Kong and the Architecture Services Department have built the Law UK Museum in the Historical Chinese House, the Hong Kong History Museum, Kowloon Park, the Space/Art Museum and the Hong Kong Railway Museum in the Old Tai Po Market railway station. Three major non-government projects include the Sam Tung UK Museum in the Historical Chinese Village by Design Consultants Limited, the Visual Arts Centre at the Hong Kong Museum of Art by Wong Tung and Partners Limited and the Hong Kong Science Museum designed by P and T Architects and Engineers Limited.

### Taiwan

In the last five years Taiwan has seen the emergence of four major government funded museum projects, with two others in the pipeline. PS Chen Architects have designed the Kaohsiung Municipal Art Museum and then joined with JJ Pan for phase IV of the National Palace Museum. The National Museum of Marine Biology and Aquarium and a National Museum of Anthropology are at final planning stages. In both cases the local project architects are Haigo Shen and Associates who combined with KCM International of the Marine museum and the US-based Michael

Graves Architects on the Anthropology Museum.

### Singapore

In Singapore use is made of existing urban fabric to create new museums. For example, the Singapore History Museum is soon to be housed in a disused National Museum building. Renovation works will start next year, and the architect will be provided by the Public Works Department (PWD). It is targeted primarily at Singaporeans, especially the younger generations.

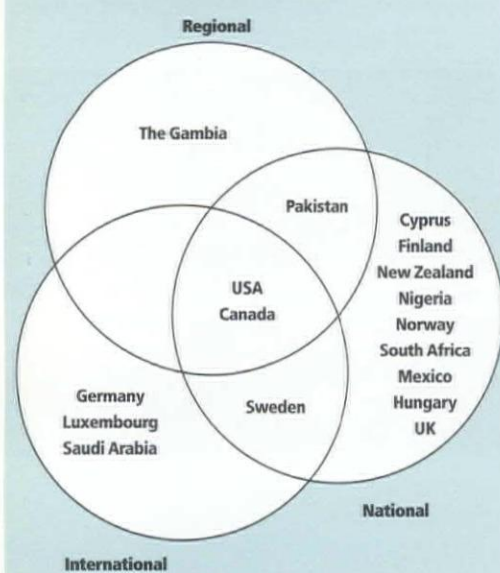
The government-funded Singapore Art Museum (SAM), housed in a renovated old school building – the old St Joseph's Institution, a preserved monument in Singapore – was opened in early 1996. Designed by the PWD, SAM's targets are both Singaporeans and tourists. Its collection focus is on Southeast Asian art.

The Asian Civilisations Museum (ACM) is housed in a converted school building on the Singapore river and is the second museum to be opened by the National Heritage Board. Located in two separate buildings, the first section opened in April this year with completion of the second half scheduled for the millennium.

### Japan

Akira Suzuki suggests that in Japan, media centres are the new museums and confirms that there is extensive museum building going on in Japan as the two projects, the M Juan Bautista and the K-Museum projects which follow this introduction, testify. Manabu Kunieda has designed the NTT

### How international are museum builders?



Source: World Architecture Intelligence

## COST ANALYSIS

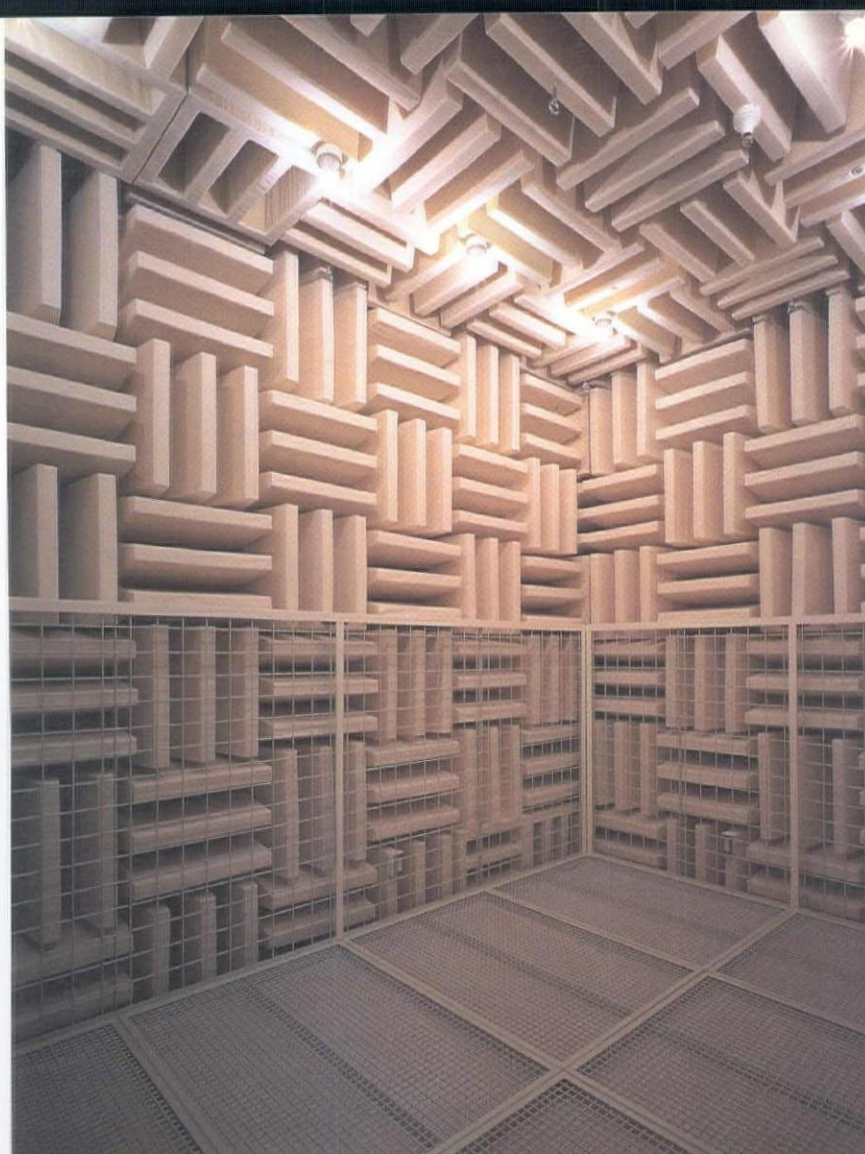
With the variety of types of buildings that may house museums, and the various special conditions that a particular museum may require, costs vary widely from less than US\$1,000 per square metre to atmospheric levels of over US\$6,000. The accompanying costs are based on a study of museums of modern art. They show a range of costs that may be encountered with museum buildings. Actual project costs were adjusted, so that each total represents the same quantity of work – ie the same floor area, exterior wall area, etcetera. Since a lot of the information is proprietary, we are unable to identify the particular museums included in the study.

### Museums of modern art

US\$ per square metre

|                       | Museum 1         | Museum 2         | Museum 3         | Museum 4         |
|-----------------------|------------------|------------------|------------------|------------------|
| Foundation            | 52               | 47               | 50               | 46               |
| Substructure          | 550              | 540              | 538              | 541              |
| Superstructure        | 571              | 563              | 538              | 545              |
| Exterior Closure      | 1,052            | 558              | 612              | 706              |
| Roofing               | 125              | 113              | 116              | 125              |
| Interior Construction | 868              | 468              | 295              | 458              |
| Conveying System      | 286              | 252              | 272              | 231              |
| Mechanical            | 726              | 736              | 668              | 477              |
| Electrical            | 391              | 386              | 351              | 351              |
| Equipment             | 306              | 311              | 241              | 275              |
| <b>TOTAL</b>          | <b>US\$4,927</b> | <b>US\$3,974</b> | <b>US\$3,681</b> | <b>US\$3,755</b> |





## Anticipated development of museum construction in the next five years

### More private museums

Finland  
Sweden  
UK

Nigeria  
Saudi Arabia  
USA

Cyprus  
New Zealand  
Norway  
The Gambia

Germany  
Pakistan  
Canada

### No change

### More public museums

Source: World Architecture Intelligence

1: Two interior views of the Intercommunication Centre, Tokyo, Japan by Manabu Kunieda

Intercommunication Centre to promote dialogue between science, technology, art and culture, which opened in April this year, and Hajime Yatsuka is planning the Shirooshi Media Centre sponsored by IBA in Berlin. This is connected to the Kumamoto Artpolis programme, the longest running cultural building initiative in Japan, directed by Arata Isozaki and Hajime Yatsuka. (See Kisho Kurokawa architect + associates profile in this issue).

### Australia

The most recent major museum project in Australia is the \$US19 million (\$AU25 million)-plus extension to the Art Gallery of South Australia, which opened in March 1996. The next major project to be completed will be the temporary exhibitions annex to the National Gallery of Australia in Canberra, currently underway and expected to open late this year or early 1998. The refurbishment of the National Gallery of Victoria by Mario Bellini, and the completion of the new Museum of Victoria by Denton Corker Marshall are also expected to be completed by 2000. **WA**

Contributors to the report: Hanscomb Cost Consultants; Layla Dawson; Albert Warson; Teo Kai Lin; Ryu Choon Soo; Wah Sang Wong; Joshua Jih Pan and Peter Ward.



# Marketing museums

**"Yes it's a growth field," confirms Arthur Rosenblatt, commenting on the global prospects for museum building "but not in the traditional sense". As a Museums and Cultural Facilities consultant, Rosenblatt gives architects advice on presenting anything from modern art to modems. He pronounces on the initiation, programme development and construction of the museum's architectural plan, and the physical requirements of all curatorial and operating departments. Joseph Giovannini talks to Rosenblatt about the market for museums around the world to find out which countries are investing in what types of museums and why.**

Veteran of numerous large-scale, high-profile museum projects, Arthur Rosenblatt is a principal of New York City-based RKK&G, Museum and Cultural Facilities Consultants Incorporated. For 18 years he steered the Metropolitan Museum of Art in New York through its extensive expansion and renovation programme, before moving on to the restoration of the New York Public Library and the creation of the US Holocaust Memorial in Washington DC. But what does he feel about the prospects for the construction sector on which his career has been founded?

"Yes, it's a growth field," confirms Arthur Rosenblatt, sanguine about global prospects of future museum building, "but not museums in the traditional sense." Rosenblatt insists that this is an issue which should be seen from both sides. From a business point of view, museums need to attract funding on a macro and micro level – the museum is funded both by the client and the visitor.

#### **The macro-level**

The nature and type of museums may be changing, but long-established funding mechanisms are perpetuating themselves. "In America, museums have been privately

funded" confirms Rosenblatt. "Emerging nations are generally following the model of museums in Europe, which have been publicly funded for the most part – though now many city rather than state governments have been taking the initiative, particularly in Germany. Look at Stuttgart and Frankfurt."

"What I find extraordinary in France is that Pompidou and Mitterand took the initiative as public leaders with the Pompidou Centre, the Gare d'Orsay and the renewal of the Louvre; they gave courage to other political figures around the world. In the UK, the accident of the millennium is a terrific opportunity to serve as a kind of surrogate Mitterand for public building projects – funded by the lottery. I only wish they had gone forward with Zaha Hadid's Cardiff Opera House, and I don't know what's going to happen with Libeskind's prize-winning entry for the Victoria and Albert [Museum]. But symbolically, it's important that the UK is entertaining what I consider a courageous and progressive attitude toward the celebration of a national culture."

"In Japan, there's an enormous amount of effort underway now, where governments and corporations are creating not just art

**"In the UK, the accident of the millennium is a terrific opportunity to serve as a kind of surrogate Mitterand for public building projects – funded by the lottery."**



## **"You might say a common thread in emerging nations is the expression of national pride through a national museum."**

museums; you're talking about natural history, science, and performance centres – all forms of cultural activity. In Korea, corporations like Daewoo and Samsung are funding museums." Rosenblatt is encouraged by the example of a new museum going up in Shanghai, but sees no emerging pattern of patronage in Russia and the former 'Eastern bloc' nations. "With the collapse of the Soviet Union, there's no mechanism in place to take care of the treasures that were well maintained under that socialist economy."

Rosenblatt believes that a US\$40 million museum his firm is working on in Puerto Rico, the Museo de Arte de Puerto Rico, funded jointly by the government development bank and the commonwealth's department of tourism, will have implications for Latin American countries. "It's the first museum in Puerto Rico to be devoted to the art of Puerto Rico. They won't be buying works of art in Europe, New York, etcetera, unless it's to purchase a Campeche, the first great Puerto Rican portrait artist and landscape painter." The volatility of Latin America, however,

makes the future of museums difficult to predict. "Museums in different societies have different origins, and there's no simple pattern to how finances work. Colombia has enormous pride in its heritage, but it's bogged down by the horror of the drug trade, so anything positive they try to do is immediately negated by all these other things."

"I think that there are a couple of building types that architects dream of doing and the museum is one of them. It has the potential to have a lasting impact on people's lives, and it's an opportunity to build meaningful, lasting architecture. But building a museum is one of those once-in-a-lifetime commissions – few architects get to build a single museum, and fewer still, more than one."

"In Europe, competitions are the norm for winning a commission to design great public institutions, though competitions are not always successful, I might add. Usually, it's very difficult for an architect who has not already done one to get museum work. The ideal way, and I've seen it many times, is to associate with a museum consultant, which

gives them credibility. There are a number of consultants besides ourselves, who understand the special nature and character of museums. Then, too, social connections mean a great deal, particularly in the museum world where money, power and influence are very important. But there are also architects like [New York architect] Richard Gluckman who has done many galleries and is now doing museums. You start small and build up credibility and become a legitimate candidate for larger and more prestigious projects."

### **The micro-level**

Rosenblatt sees new ways of presenting subjects like science and popular culture that lead away from traditionally elitist institutional attitudes: connoisseurship is slipping as the dominant paradigm. "Interactive technologies encourage museums to reinvent themselves in a form that isn't really precious," he says. "The presentation now is accessible to the largest number of people ever, reaching every part of a nation, and if you look at attendance figures for art museums, their numbers are growing every year because people, especially young people, understand so much about what's being discussed."

Rosenblatt describes the type of "non-traditional" museums which are attracting the ticket buyers. "In Miami, there's a youth museum with computers located in a supermarket, and it's all about daily life and fascinating science and technology. They have collections of live animals children can care for and feed." Museum architects will need to reinterpret traditional space requirements to suit the demands of anything from technologically serviced flexible space to highly subject-specific areas.

Museum types are also proliferating, to house new institutions dealing with popular culture. "In the US, there's enormous interest in the culture of the twentieth and twenty-first centuries, so there are new museums for television and film in New York and Los Angeles, and then I M Pei's Rock and Roll Hall of Fame in Cleveland, Ohio and so on."

Rosenblatt says that current and projected museum projects around the world seem to be evenly divided between new build, renovation and expansion. "You have to remember that nations that are becoming more successful economically want to celebrate that achievement by creating institutions that affirm national identity. You might say a common thread in emerging nations is the expression of national pride through a national museum."





Architects

**Arbeitsgemeinschaft Architekten Klaus Leitner and Walter Hans Michel**

Photography

**Margherita Spiluttini**

# A museum, but not as we know it

*Ars Electronica Centre, Linz, Austria*

**O**n 2 September last year in the town of Linz, Austria the Ars Electronica Centre was inaugurated. Based on the original idea of Dr Hannes Leopoldseder, Director of the Austrian Broadcasting Company's (ORF) Upper Austrian Studio, the Ars Electronica Centre anticipates what we might expect of a museum in the twenty-first century. The guiding principle, in terms of both design and content, was that the museum should provide a meeting point for the arts, technology, business, academia and society. In the words of Mayor Dr Franz Dobusch, chairman of the supervisory board of the Centre: "The town of Linz now boasts a digital media centre which is unique in Europe".

Located on the banks of the River Danube, for centuries one of the principal means of

trade and communication between European nations, the opening of the Centre coincided with the seventeenth Ars Electronica Festival, which Linz has hosted since 1979 – the festival provides an open meeting place for artists and researchers dedicated to furthering links between technology, the arts and society.

The fact that, of the US\$15.6 million (öS 180 million) the building cost to produce, US\$7 million (öS 80 million) was spent on equipment, says much about the priorities of the museum's financial backers, Linz Town Council. But how does the building that houses this paean to the digital age reflect its content? The architects, Klaus Leitner and Walter Hans Michel have designed what is in effect a flexible shell that allows its internal form to be dictated by the nature of the ever evolving exhibits within it. "False floors and trunked lighting systems cater



1: The Ars Electronica Centre, with views over the Danube and Linz Town Hall

2: Solid wall of the main building with the transparent sections on the third and fifth floors



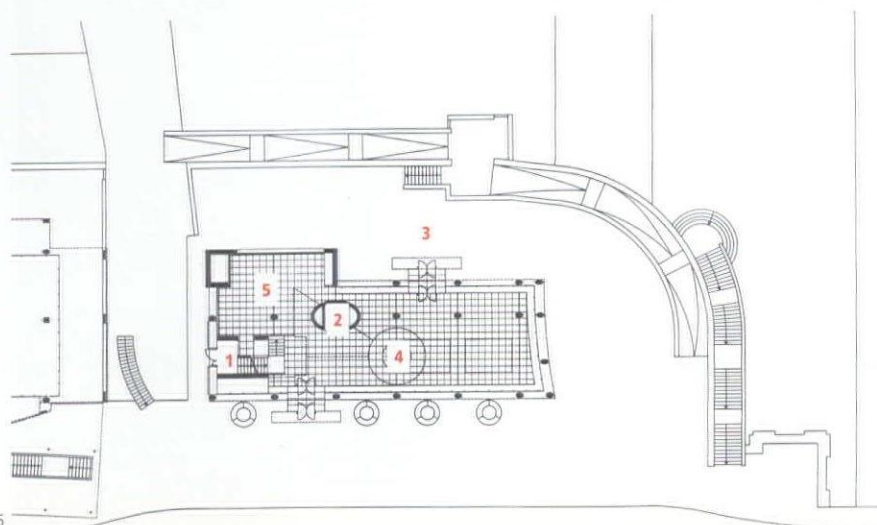




3: Two openings in all the floors allow vertical elements to be incorporated over the full height of the building

4: View from the Ars Electronica Centre towards Linz Tower Hall

5: Plan of third floor/ service level



#### Key

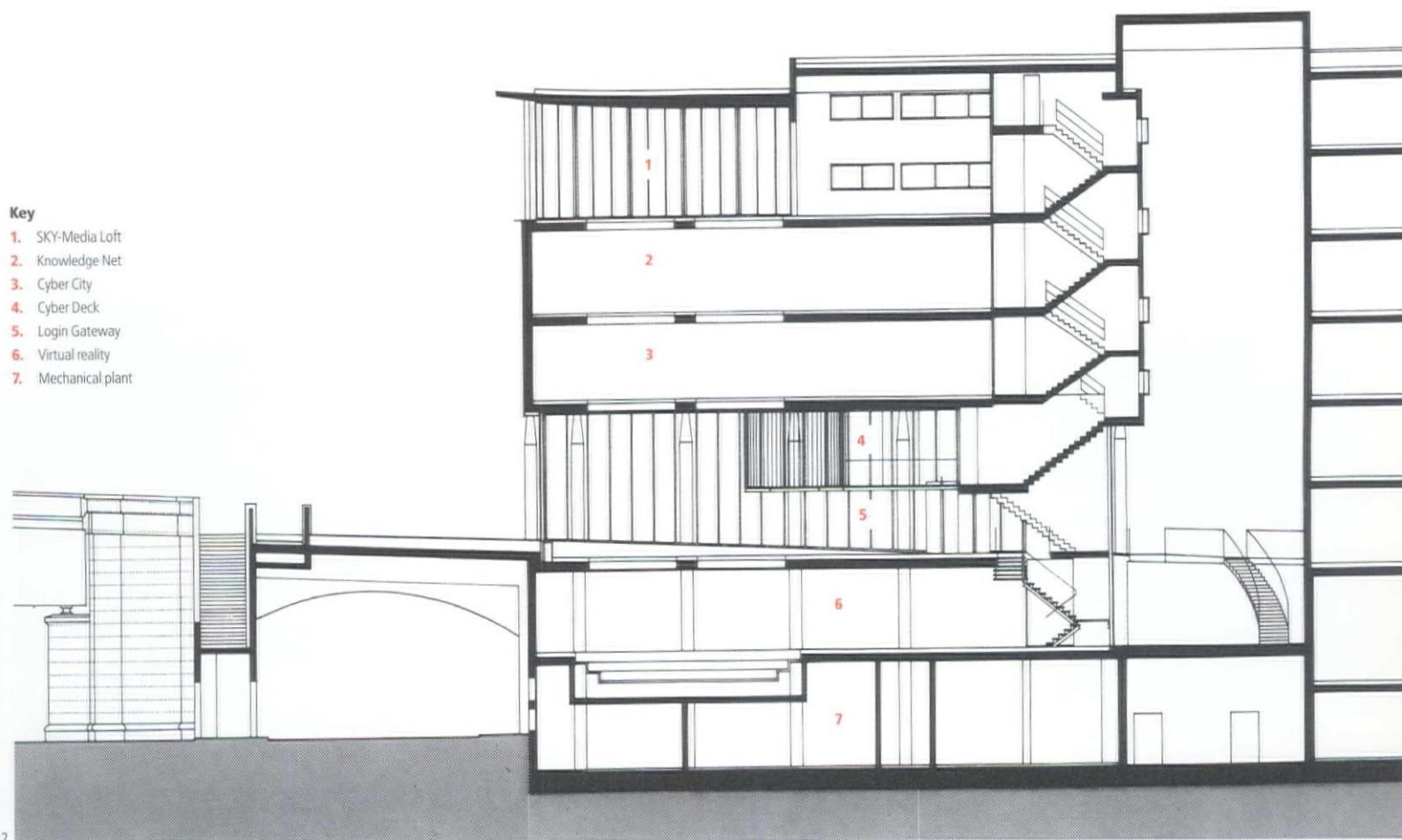
- 1. Staircase
- 2. Elevator
- 3. Entrance
- 4. Login Gateway
- 5. Exhibition space



- 1: The blue glass in the stairwell is intended to counteract the rough concrete walls and create the impression of the stairs "leading up through the building as if through unlimited space"







## Key

- 1. SKY-Media Loft
- 2. Knowledge Net
- 3. Cyber City
- 4. Cyber Deck
- 5. Login Gateway
- 6. Virtual reality
- 7. Mechanical plant

for changing installations, with two big openings in all the floors to permit vertical elements to be incorporated over the full height of the building." However this does not mean that the style of structure is, or will be, an irrelevance. The building's context, overlooking the Danube and opposite Linz Town Hall, demanded a structure of dignified authority – an example of this can be seen in the four seat-height, glass covered cylindrical structures on the road-side entrance, which reveal the secrets of the two below-ground floors.

The idea of the building as a shell is furthered by the extensive use of glass throughout the structure. According to Leitner and Michel, the use of the transparent material in the elevator shaft and in the floors "leaves the visitor floating", emphasising the new, "virtual" experience. The blue glass in the stairwell soaks up the rough concrete wall surfaces creating the impression of the stairs "leading up through the building as if through unlimited space".

In the organisation of the internal space, the architects decided that the goal of providing a forum for the instigation of communicative processes could be best achieved by focusing on five application fields. Each of these fields has a dedicated room: the visitor arrives at the Login Gateway, on the ground floor, where he/she logs-into the Ars Electronica Centre's information

space; the upper basement is dedicated to virtual reality – a three-dimensional installation provides access to "virtual worlds"; Cyber City, on the first floor gives an overview of the virtual reality tools currently available for urban and architectural planning; Knowledge Net, on the second floor is a multi-media project which aims to aid the development of new structures for learning and collaboration and finally on the third floor – the SKY-Media Loft – a media cafe, affords an impressive view over Linz.

The Ars Electronica Center is certainly a museum with a difference, but whether it becomes regarded as a prototype for the future or as a fondly thought of, but ultimately misjudged interpretation of human needs in the twenty-first century, remains to be seen. **WA**

## Client

**Linz Town Council, Austria**

## Architect

**Arbeitsgemeinschaft Architekten Klaus Leitner and Walter Hans Michel**

## Structural engineers

**PGH Preisinger Gangl, Heintzel**

## Service engineer

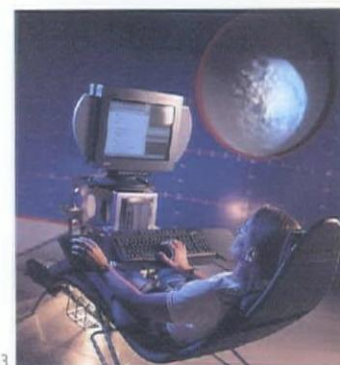
**Prof DI Alexander Sommerfeld**

## Structural consultant

**Wernly & Wischenbart KEG**

## Contractor

**Polensky & Zöllner Bau GmbH**



2: Section through the Centre

3: A computer terminal offers access to the internet



Architect

**Kazuhiro Ishii Architect and Associates**

Reviewed by

**Peter Wislocki**

# The essence of exhibition

*Miyagi Sant Juan Bautista Museum, Miyagi Prefecture, Japan*

Unlike the majority of museums and art galleries, in which a variety of objects are exhibited in a setting whose architectural neutrality acknowledges neither the exhibits nor their geographical location, Kazuhiro Ishii's Miyagi Sant Juan Bautista Museum is entirely deferential to the relationship of a single artefact to its *genius loci*.

The museum's principal exhibit is a fully functioning restoration of the vessel in which the Keichou Delegation – Japan's first mission to Europe – set sail from Tsukinoura on the Ojika peninsula, in 1631. The historical significance of the Sant Juan Bautista is explained to visitors through a variety of supplementary displays, including animated waxwork models, of the kind which blur the boundaries between theme parks and "proper" museums. The fact that the vessel is largely a reconstruction – albeit an extremely accurate one – and that its setting only approximates to the Keichou Delegation's point of departure, raises further questions of authenticity, but does not detract from the experience of visiting the museum.



1



1: View of the glass covered escalator linking the observation ridge to the Sant Juan Bautista below

2: Minimalist, entirely glazed entrance foyer

2





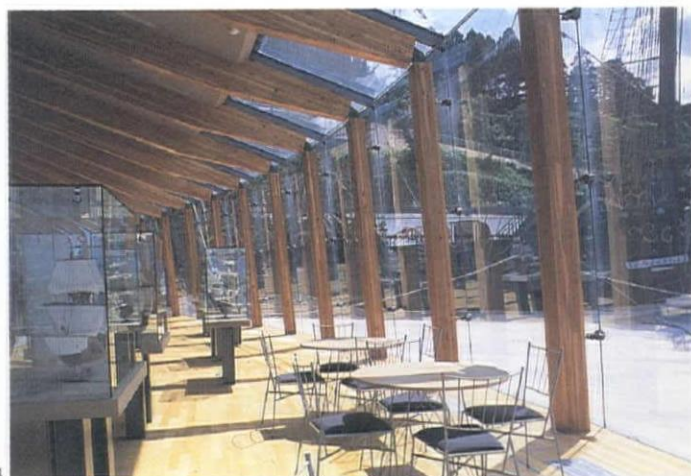
3: Aerial view of the dramatic cove in which the museum and the vessel are located

4: Public restaurant and shop area in the West Wing

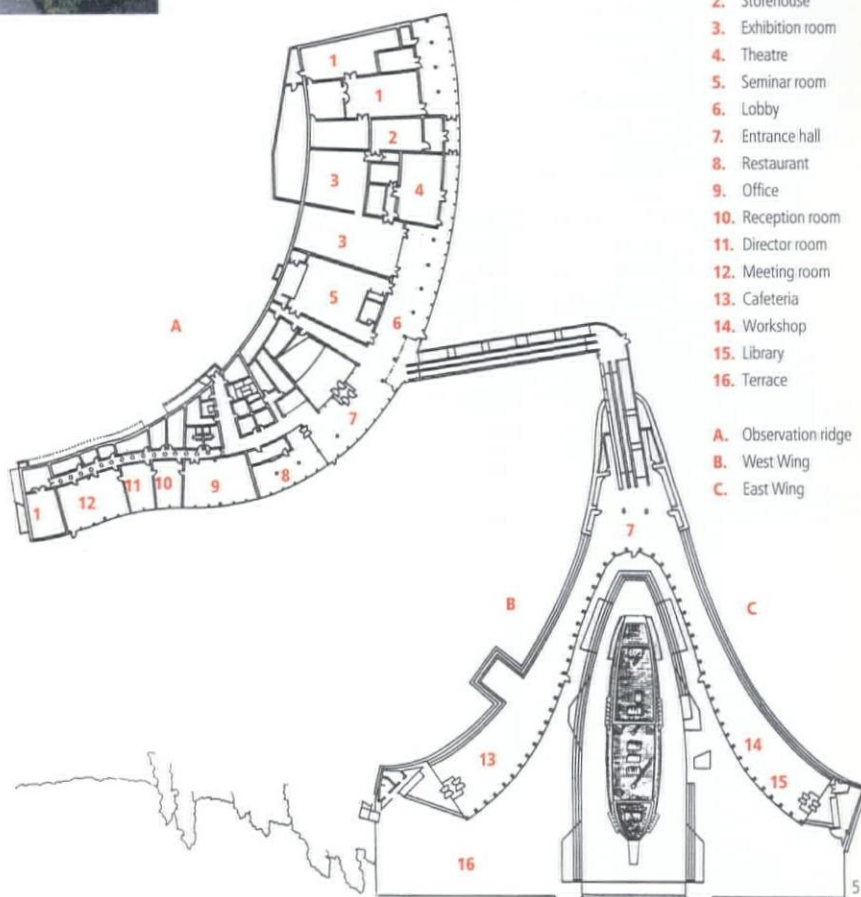
5: Site plan

The premise shared by the architect and his client was that the ship sailed not from an industrialised port (Japan having little history of seafaring in the seventeenth century), but from a natural harbour. With representatives of the Miyagi Prefecture, Ishii chose a particularly dramatic cove, and designed his building to have a minimal impact on its scenic context. Visitors approaching from the car park and access road (sadly developed in a bombastic gesture quite at odds with Ishii's contextualism), perceive only a minimalist, entirely glazed entrance foyer, cut into a terrace overlooking the sea, with the ship's mastheads visible from afar. The foyer gives direct access to a shop and cafe to one side, and an exhibition gallery to the other, all of these public spaces enjoying views of the ship below. The museum sequence thus commences with physical and historical orientation, preparing visitors for the escalator ride down the hillside, to the lower galleries, wrapping around the Sant Juan Bautista's latter day haven.

At a variety of scales, Kazuhiro Ishii's building is reticent to the point of invisibility, its form moulded to the site's natural contours. In the detailing of the lower gallery's glazed walls, laminated timber has been used to combine the warmth of the material used in the historical ship's construction, with the slender, visually unobtrusive sections possibly using contemporary techniques. The two, curving planes of sloping glass allow continuous views of the entire ship throughout the gallery interiors. Few architecturally significant buildings are so directly the result of their site and their brief. **WA**



4



#### Key

1. Machine room
2. Storehouse
3. Exhibition room
4. Theatre
5. Seminar room
6. Lobby
7. Entrance hall
8. Restaurant
9. Office
10. Reception room
11. Director room
12. Meeting room
13. Cafeteria
14. Workshop
15. Library
16. Terrace

- A. Observation ridge
- B. West Wing
- C. East Wing

Client  
**Miyagi Prefectural Government**  
 Structural engineer  
**Moritani Structural Engineers Inc**  
 Service engineer  
**DAN**  
 Cost consultant  
**Yamada Cost Consultancy**  
 Contractor  
**Toshiba, Wacoh ENCJV**



Architects

**Richard Meier & Partners**

Photography

**Scott Frances/Esto Photographics**

# More white walls

*Museum of Television and Radio, Los Angeles, California, USA*

**R**obert M Batscha, president of the Museum of Television and Radio since 1981, regards broadcast media both as an art form and a political force: "Some of the work that has been done in TV and radio has been among the most creative of our time. Yet critical appreciation of television and radio media is in its infancy, much like cinema was a generation ago."

Richard Meier's brief was to create a building that would portray both the accessibility and dynamism of media as a museum subject, and the museum board's desire to treat broadcasting seriously. "Our design attempts to create a vibrant and open environment for the museum's collections" explains Meier.

Meier's shows his signature stylistic restraint with the smooth sinuous lines and

curved white surfaces that we have come to expect, but he stresses accessibility through transparency. Batscha notes with satisfaction that: "Almost everywhere you look, you see glass walls and doorways that let you see in. That is very important when you have an audience that doesn't exactly know what to expect."

The exterior is a combination of glass and steel. Movement is expressed in the carefully choreographed relationship between the rotunda and tilted stair ramp.

The programme archives, in the interior, are buried deep in dumb spaces at the centre of the building. The 150-seater theatre, radio-listening room and the library on the second floor – where the visitor can access the exhibits – are less imaginative: watching and listening takes place in bland, open, office-type

areas with few windows.

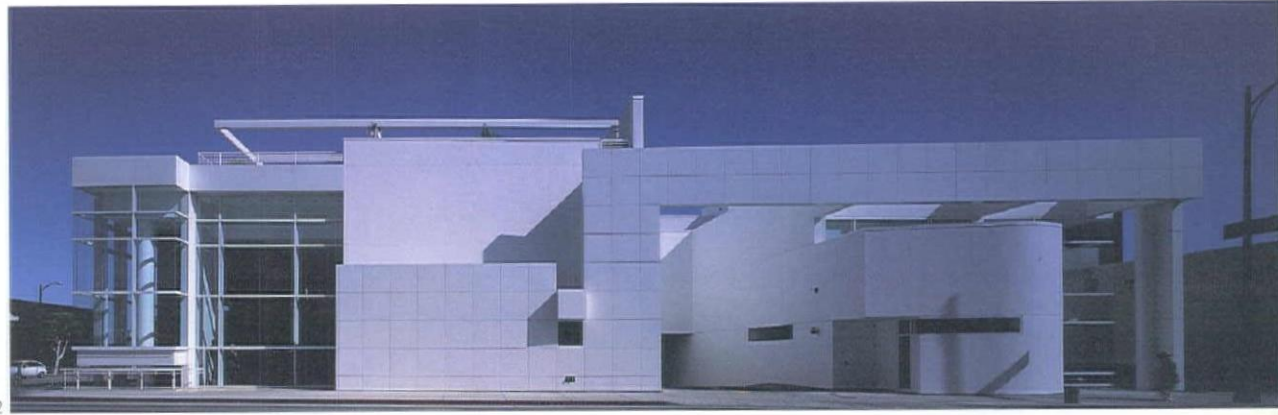
The potential contrast between classical restraint and the media has, some feel, not been fully explored. Although the structure's restrained dignity does contrast with the commercial buildings in the rest of the district, a more even balance would require more animated surfaces – video screens moving images and audio pieces.

While the design does encourage academic reverence for a "popular" medium, Meier's rigid and oft repeated "white walls" formula does not seem to provide a stimulating interpretation of broadcast media's effect on space. Architecture and media are, in this instance at least, entirely distinct. In terms of the exterior this is dictated by context – the building conforms to Beverley Hill's 45-foot height limit.

1: Meier's signature stylistic restraint is displayed in smooth sinuous lines and curved white surfaces







2



3

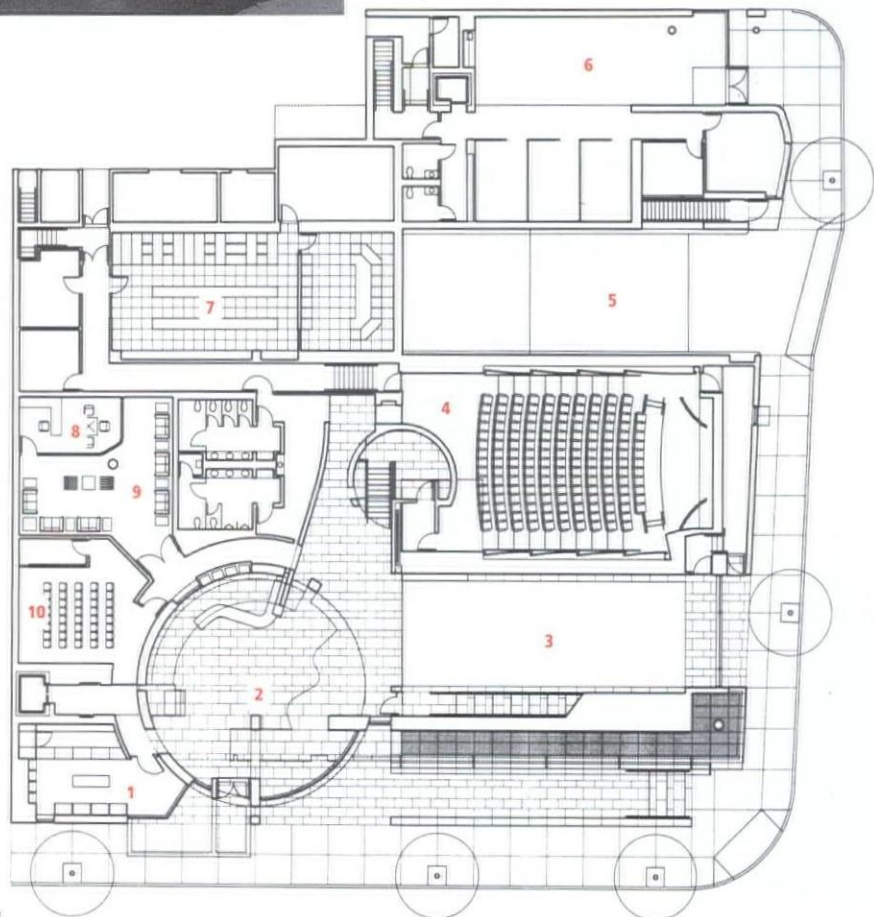
2: The relationship between historical classicism and forms associated with television and radio in the twentieth century, is not fully explored

3: Glass and steel combine on the exterior. Movement is expressed in the relationship between the rotunda and the tilted stair ramp

4: First floor plan

#### Key

- 1. Museum shop
- 2. Lobby
- 3. Gallery
- 4. Theatre
- 5. Ramp to parking garage below
- 6. Offices
- 7. Computer room
- 8. Radio studio
- 9. Radio listening programme
- 10. Education room



4

#### Client

**Museum of Television and Radio**

#### Design Team

**Richard Meier and Michael Palladino**

#### Structural Engineer

**Robert Engelkirk Inc**

#### General Contractor

**Peck/Jones Construction**

#### Mechanical Engineer

**Altieri Sebor Wieber**

#### Lighting Consultant

**Fisher Marantz Renfro & Stone Inc**



Architect

**Makoto Sei Watanabe**

Photography

**Makoto Sei Watanabe**

# Tombstone for a boom town

*The K-Museum, Tokyo, Japan*

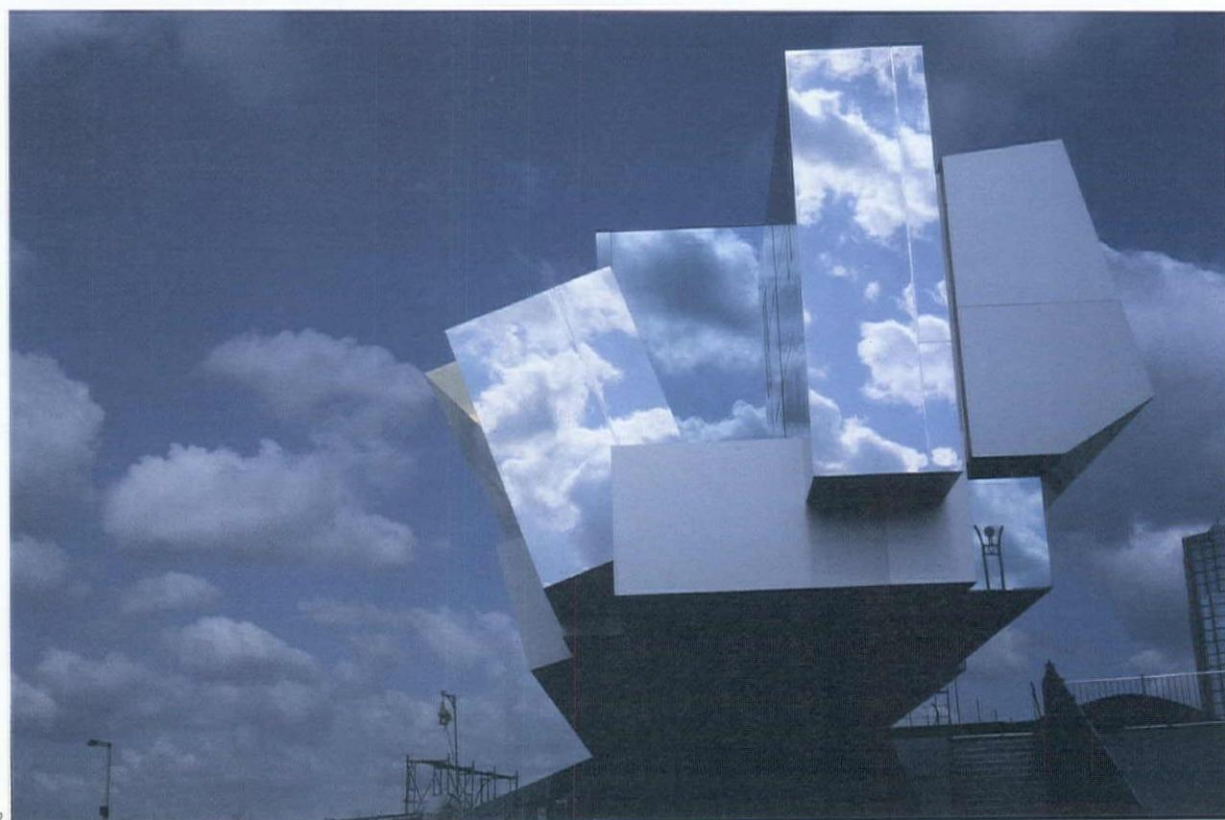
**T**he K-Museum is located on Tokyo's waterfront, near the site of what was originally intended to be the centre of a new urban development on the outskirts of Tokyo. Makoto Sei

Watanabe's original design concept was that the building itself was to be the item on display: the structure exists to provoke visitors into considering the concept of a city, rather than to provide a flexible display space.

The K-Museum is an architectural response to a context devoid of any identity. The area has been described, by Akira Suzuki, as "a tombstone for the ghost of a boom town" because, during the 1980s boom, the suburban district was primed for a dramatic reinvention. A system of vast superstructures, high rise offices and a comprehensive infrastructure network were planned for the area. The service infrastructure necessary for a project of this scale included a tunnel system for information and energy and provision for the disposal of refuse. Construction started in the 1980s during the "bubble business boom" but because of the recession of the early 1990s

**1:** "Acry honeycomb", a new material made-up of aluminium honeycomb sandwiched between two sheets of acrylic, lines the interior

**2:** The exterior is composed of aluminum and stainless steel panels in four different finishes



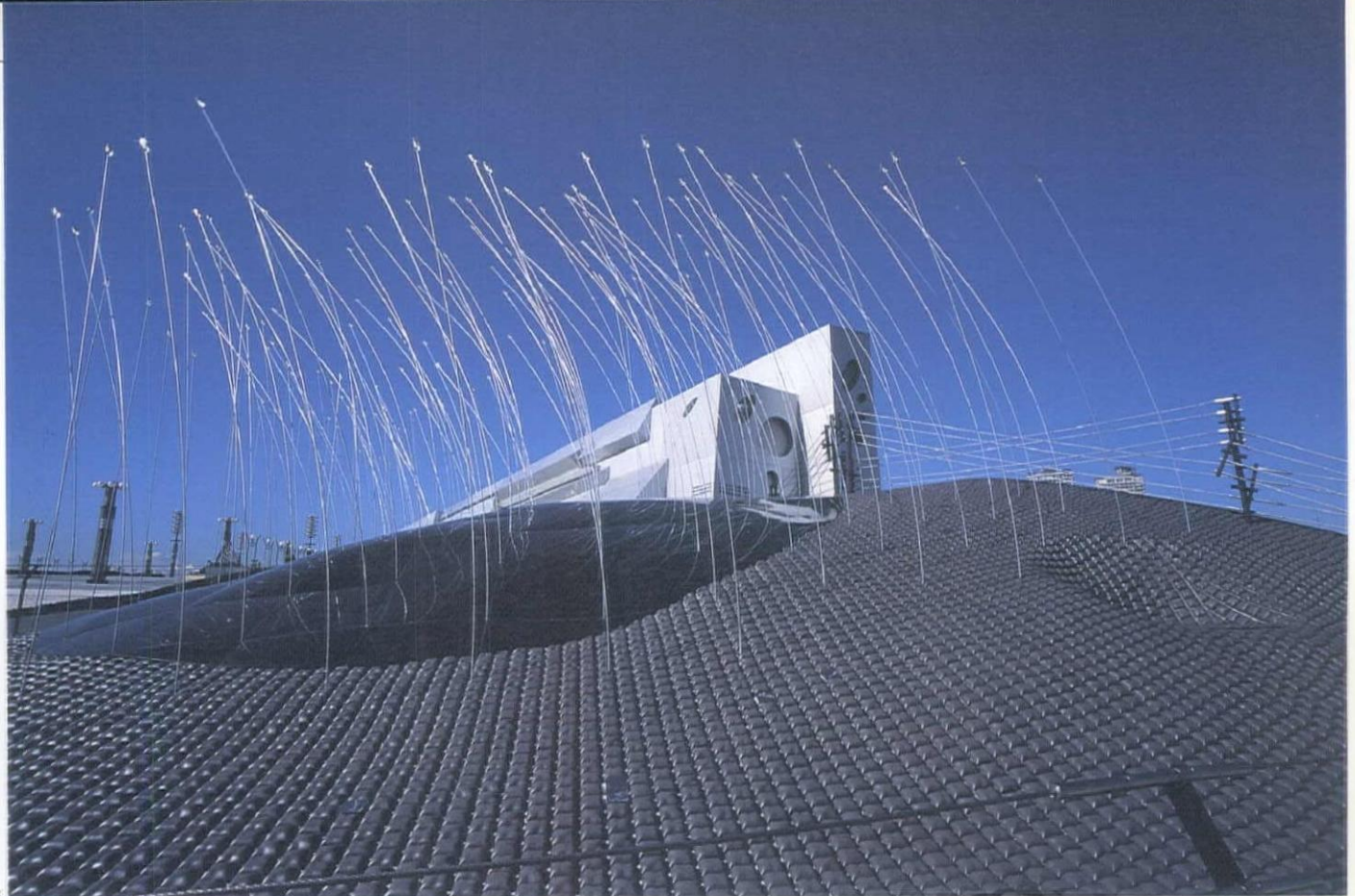


3: A sculpture made of carbon fibres moves in the wind, punctuating an otherwise lifeless landscape

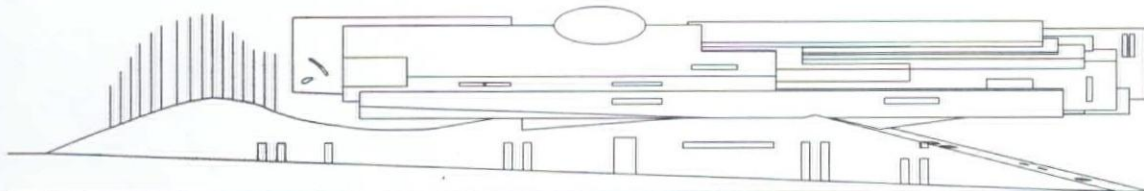
4: North elevation

5: Site plan

6: Entrance area, with simulation of the underground city in the background



3



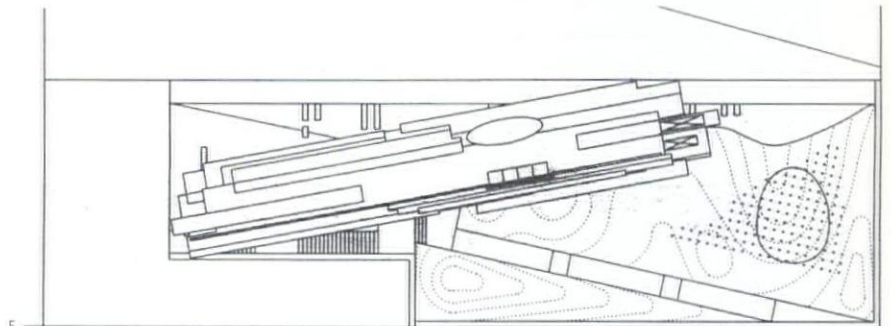
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the superstructures were never built – although the money that had already been spent on the preparation of the site was the equivalent to the cost of building a new nuclear power plant.

The government-sponsored K-Museum – designed between April 1994 and September the following year – has been built to make sense of this extraordinary situation – it was completed in September 1996. It exposes this urban fabric, which only came into being at the expense of the local ecosystem, and attempts to explain the nature of the incomplete, subterranean development to a public who live day-to-day with the surface desolation.

Structurally, the 246-square-metre museum was realised through models translated into CAD, giving it a sculptural quality. On the exterior, aluminium and stainless steel panels in four different finishes – aluminized, fluorine coated, mirror surface and gold-coloured – are combined to dramatic effect. A sculpture composed of carbon fibres, which moves in the wind, animates an otherwise dead landscape. The interior walls use a new material, called “acry honeycomb”, whereby aluminium honeycomb is sandwiched between two sheets of acrylic. The top-light curved surface was created with semi-transparent fibre reinforced plastics. The internal floor are covered with zinc coated steel sheets.

WA



5



Client

**Tokyo Waterfront Development Inc/  
The Bureau of Port and Harbor/  
Tokyo Metropolitan Government**

Structural engineer

**Daiichi Kouzou Engineering**

Contractor

**Obayashi-Daitoko JV**

Service engineer

**CDR**

6



## Architects

Zamp Kelp and Julius Krauss, Arno Brandhuber

## Photography

Michael Reisch

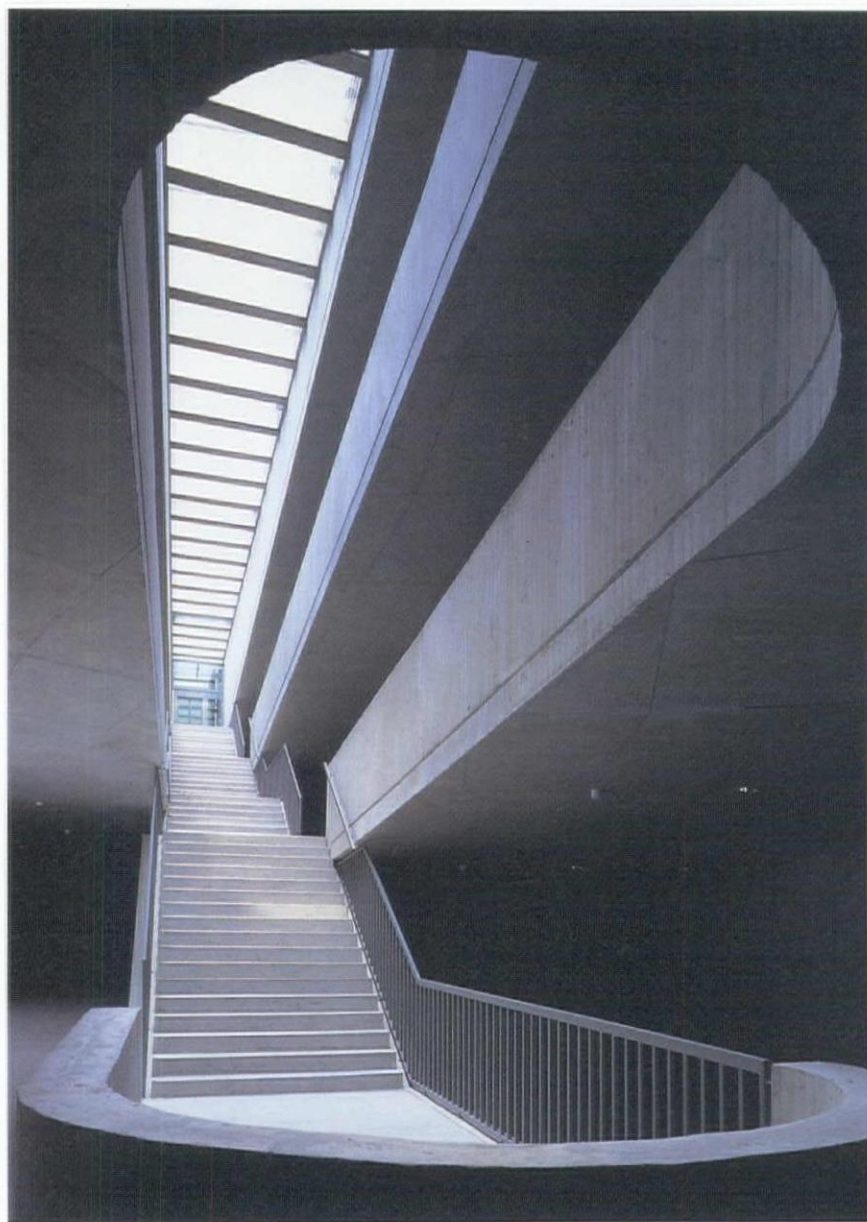
# Evocative evolution

*The Neanderthal Museum, Mettmann, Germany*

**N**eanderthal man was discovered in a limestone quarry in a valley between Mettmann and Düsseldorf. The site was subsequently declared a conservation area. Zamp Kelp's Neanderthal museum is situated in this valley and takes its proportion from an existing stone house, on the foundation of which the museum's education department is built. The form also responds to other architectural elements in the valley – namely a glass tower, a bridge and a silo.

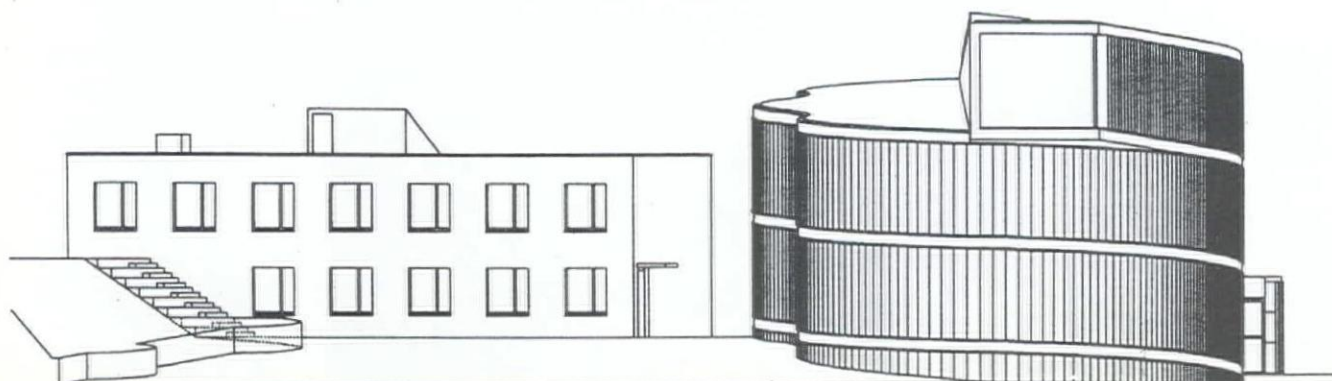
The museum is built around a spiral ramp which gives access into each of the five exhibition rooms. As circulation space and exhibition area, the spiral leads from the basement and its auditorium to the uppermost floor where the cafeteria forms the architectonic conclusion – opening towards the valley with an enormous panorama window. This spiral has been variously interpreted as representative of the double helix of DNA – the focus of evolution – or a "symbol of eternity, of which mankind is a part". The shape can be read on the buildings facade because the shell is formed from a series of glass profiles each made-up of two C-shaped elements. An aluminum structure connects the row of glass sheets on the facade to the building's bearing walls behind.

Zamp Kelp was aiming to create a curiosity – a cave like quality using a glass outer skin with fair-faced concrete surfaces on the inside. In this way the building responds both to the modern context and the troglodyte past in a manner corresponding to the museum's function as a medium between the past and future of human evolution.

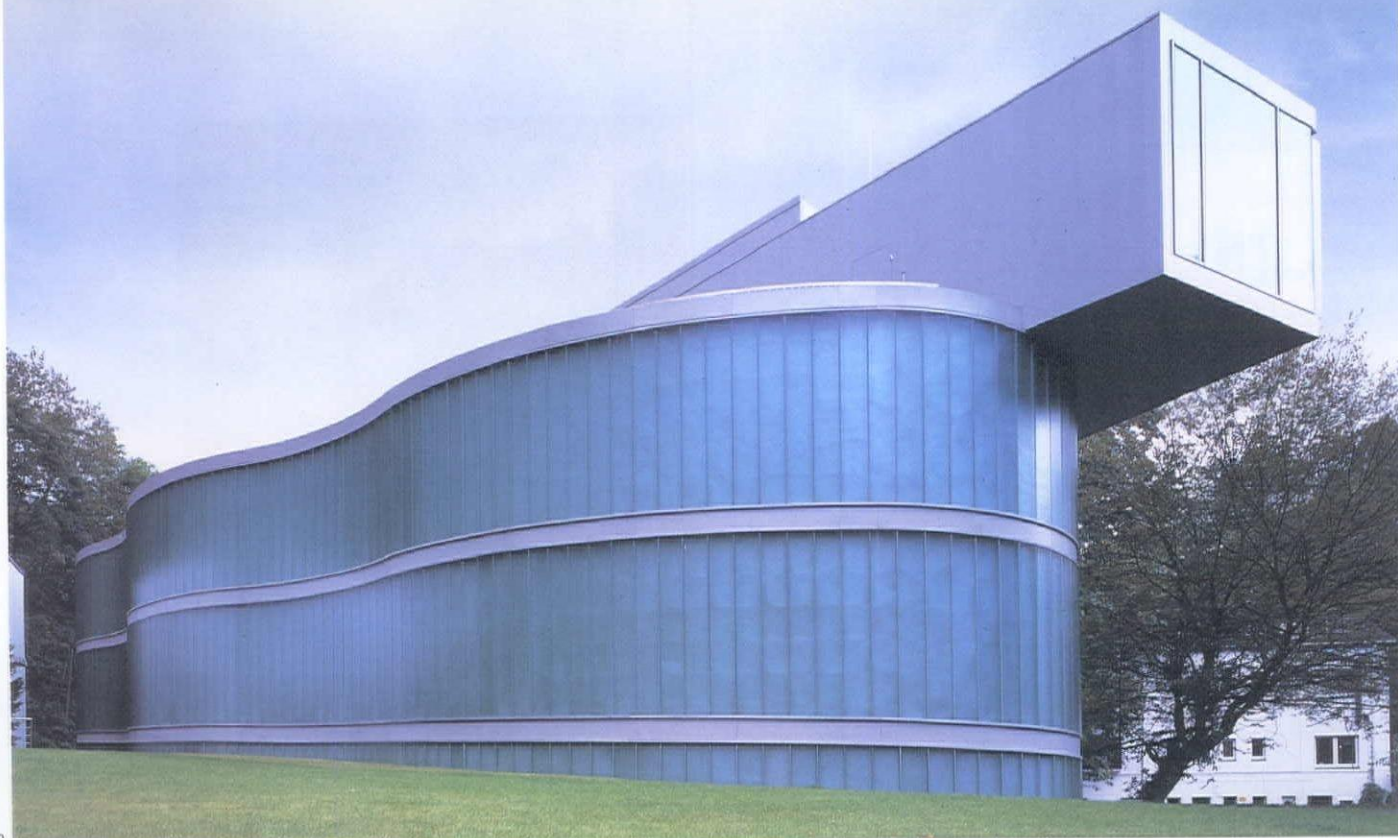


1: Stairwell opening, with a narrow strip of light at the top providing illumination. The rough concrete walls are designed to suggest the interior of a cave

2: Section of west facade







3: View of the main exhibition building from the north east

4: Interior view of cafeteria space

5: Site plan

#### Client

**Stiftung Neanderthal Museum, Mettmann**

#### Developer

**Nordrhein-Westfalen-Stiftung Rwe**

#### Project architect

**Thomas Gutt**

#### Associate architects

**Astrid Becker, Marko Glashagen, Carlos Gonzales, Alex Kouzmine; Götz Leimkühler**

#### Subcontractors

**Hocktief AG, Düsseldorf**

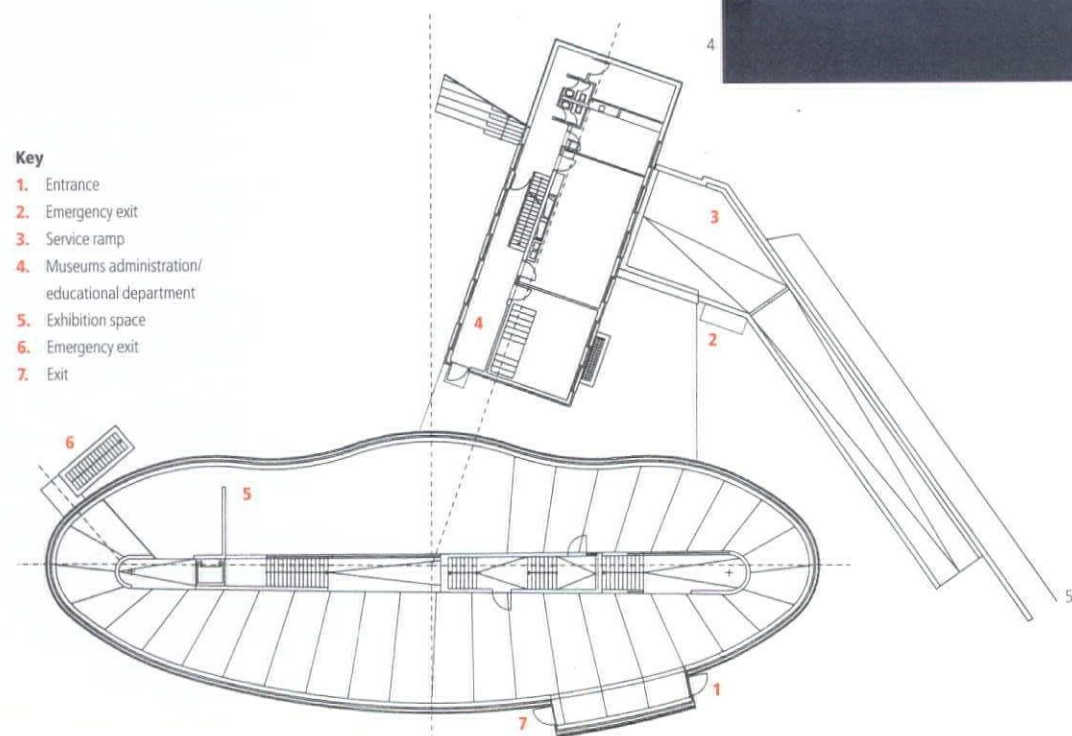
#### Exhibition architect

**Creamuse, Strasburg**



#### Key

- 1. Entrance
- 2. Emergency exit
- 3. Service ramp
- 4. Museums administration/educational department
- 5. Exhibition space
- 6. Emergency exit
- 7. Exit





Architects

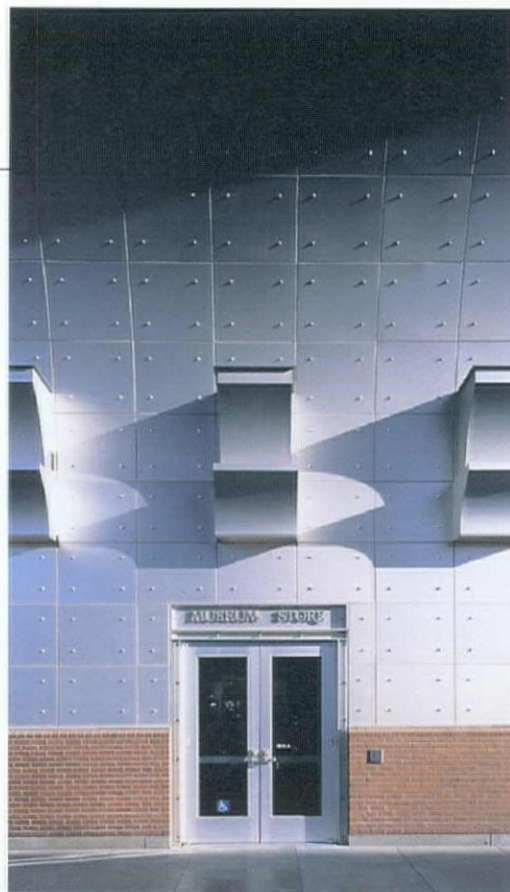
**Moore/Andersson Architects**

Photography

**Timothy Hursley**

# State of the art

*Washington State History Museum,  
Tacoma, USA*



1: Detail of polished aluminium panels which line the underside of the arches

2: The four arches of the Washington State History Museum line Tacoma's Pacific Avenue

3: Ground floor plan

Charles Moore and his partner Arthur Andersson, who had worked together since 1981, won a competition to redesign the Tacoma's Union Station into a museum on the tenth anniversary of their association. It was one of Moore's last projects – he died in 1993 – ten days after work started. Andersson says of his ex-partner: "His conversations [with the design team] were about what the lobby would be like: spaces that were like Piranesi's etchings. Without his energy and guidance we would not have won the competition."

The original copper domed Beaux Arts

building was designed in 1911 by Reed and Stem, the same architectural firm that planned the heart of New York City's Grand Central Station. The brief was for 30,000-square-feet of exhibition space, an auditorium, cafe, bookstore, education centre, administrative offices, exhibition space and outdoor amphitheatre.

The project, which cost US\$21,397 932, was a joint venture between the Moore/ Andersson and the Seattle firm of Olson Sundberg – each firm contributed specific skills. Moore/ Andersson led through the schematic phase and Olson Sundberg became involved with sub-consultants in the latter stages.

Client

**Washington State Historical Society**

Associate architects

**Olson Sundberg Architects**

Structural Engineer

**Chalker Putnam Collins & Scott**

Mechanical and electrical engineer

**Affiliated Engineers Inc**

Landscape Design

**Nakano Dennis Landscape Architects**

## Key

- 1. Amphitheatre
- 2. Lobby
- 3. Bookstore
- 4. Cafe
- 5. Permanent exhibits



FIRST LEVEL



Architects

**Henningson, Durham & Richardson Inc (HDR)**

Photography

**Tom Kessler**

# Heritage on the fast track

*Western Heritage Museum, Omaha, Nebraska, USA*

**H**oused in the nation's first restored art deco railway station, the Western Heritage Museum is located on a commanding site overlooking the Missouri River and the Union Pacific Railroad main lines.

HDR's main task focused on restoration. Gilbert Stanley Underwood, who designed the building in 1931, was responsible for everything from the bench heating vents, brass door plates and light fixtures to the filing cabinets and office chairs. Union Pacific Railroad donated the station to the City of Omaha two years after passenger services from the station ceased on 2 May 1971 and the Western Heritage Society has operated it as a museum ever since.

Much of the US\$13.5 million budget for phase one was used to create a new build addition of 28,000 square metres. The old station was designed in a style that was considered to be appropriate for a machine age in the 1930s. The new addition is designed in the minimalist manner of modern stations, with a corrugated metal roof. This addition encloses one train track – that can hold up to six restored trains – a train orientation exhibit and artefacts from the Union Pacific Historical Museum.

In keeping with the museum's art deco style, HDR designers retained and refurbished the original exterior light fixtures and specified concrete stanchions that were cast in the same form and painted the same colour as the original structure. The interior renovation also incorporates air conditioning in the main hall, providing improved climate control, as well as facilities for exhibition standard lighting. **VA**

Client

**Western Heritage Museum, Omaha, Nebraska**

Mechanical and structural engineering

**Henningson, Durham & Richardson Inc**

Contractor

**Kiewit Construction Company**

Surveyors

**Ehrhart Griffin & Associates**

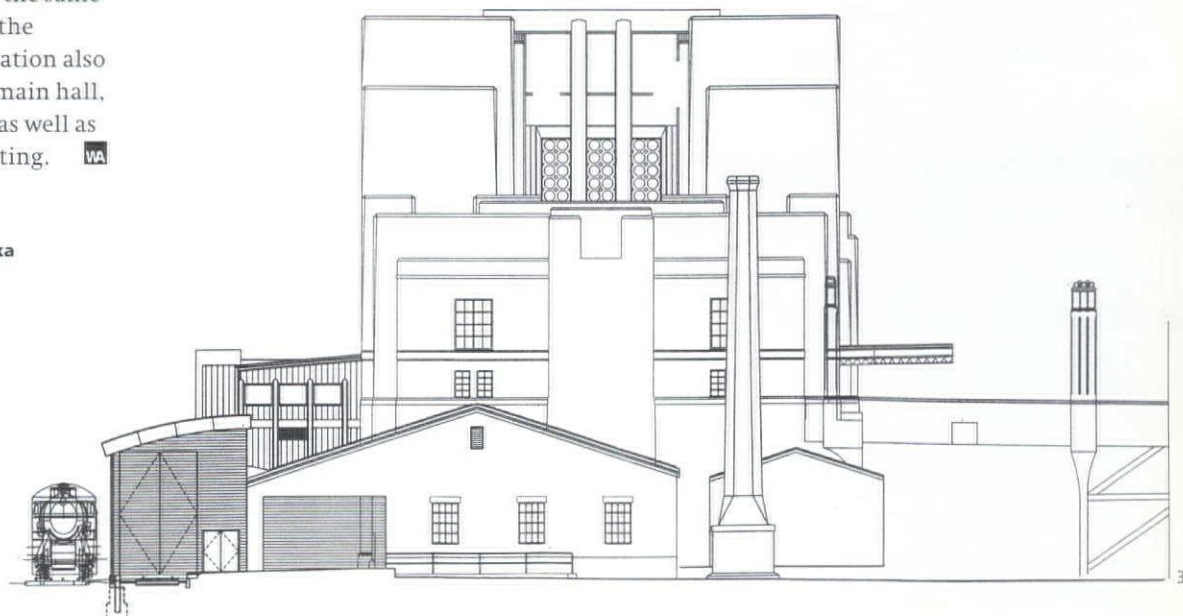
Soils Consultant

**Woodward-Clyde Consultants**

**1:** Gilbert Stanley Underwood designed the original art deco structure in 1931

**2:** The majority of HDR's renovation budget was spent on the 28,000-square-metre addition, at the back of the building

**3:** Section – note extension on left





# Floored genius

**The first ever International Flooring Exposition (IFE) was held earlier this year in Orlando, Florida and with the renaissance of interest in colour and texture, the floor is, indeed, "where it's at". It is high time that architects left the three dimensional space alone for a while to take a good look down at what's under their feet. From new to old there is a huge range of materials available from cutting edge synthetics through imitation to traditional materials. Kelly Shannon and Katherine MacInnes examine the possibilities of enlivening a surface that is literally overlooked.**



## The shock of the new

An acceptance of the innovative is altering architecture – including the materials used for flooring. Recent technical and manufacturing revolutions have provided increased flexibility in the development of new engineered materials for the building industry:

**Glass** – The lightness and transparency of glass, now processed with adequate strength, has recently been exploited in several important projects. Sir Norman Foster's Carré d'Art in Nîmes, France features a central glass staircase, interior glazed partitions and glass floors, conceived as galleries around the central space, and the Tokyo International Forum, by Rafael Viñoly boasts a large illuminated glass floor.

**Bamboo** – In an age of environmental friendliness, the marketing of "Tomorrow's Timber – Bamboo" by the American-based company, Plyboo, heralds the grass as nature's substitute for the endangered rain forest hardwoods – easier to produce and equally versatile. Tongue and groove bamboo flooring is constructed by laminating three layers of bamboo-veneer glued together under high pressure and finished with an acrylic polyurethane. It is appreciably harder than the majority of oak floors and does not shrink and swell as do most hardwoods used in flooring.

**Rubber** – The manufacturing of rubber has provided the building industry with a "soft" material which offers resilience, dimensional stability, endurance and underfoot

comfort. It also enables wheeled equipment to roll freely and quietly, as well as providing non-slip footing. Rubber flooring tiles and sheet rubber are available in a variety of patterned designs and colours. It can also be poured-in place, a process recently employed by Rem Koolhaas in his design for the banquet space of the Lille Grand Palais, Euralille in Lille, France.

**Lava Tiles** – Pyrolave, a French manufacturer, offers speciality tiles, produced from an enamelled lavastone of the volcanic flows at Volvic, France. The product builds upon the inherent hardness, yet highly tactile qualities of lava. A rich, natural colour palette is accented by an enamelling process, which also enhances the thermal, physical and chemical resistance of the tiles.

**High Pressure Laminate** – Cost-saving faux materials are quickly gaining wide-spread acceptance in the industry; they are no longer considered second-rate products. Wood grain patterns are laminated into high density core board with a melamine coating, mimicking a hard wood floor look at a fraction of the cost, with low maintenance and possible as a "floating floor system".

## Historical reinvention

There are signs of a revival in the use of once-common but recently overlooked materials beginning to make their way onto the commercial flooring market. New manufacturing techniques have improved product life span, resistance and issues of toxic production:

1: Glass floor of the staircase in Sir Norman Foster's Carré d'Art, Nîmes, France





2: The rubber used in the floor of Rem Koolhaas's design of the banquet space of the Lille Grand Palais was poured in place

3: San Prospero Rio Kerfin "La Fornaci" tile product line

4: Illuminated glass floor at Tokyo International Forum by Rafael Viñoly Architects

**Ceramic** – Many tiles on the market give an air of antiquity, almost a patina from the wear of years of traffic, to a newly installed stain-resistant floor. Decorative accent tiles, borders and trims with unique, hand-crafted appearances are also very popular. The technology in ceramics has progressed to the point where reality and illusion are difficult to distinguish. For example, the Alabastro Collection of porcelain tiles from the Italian manufacturer Ariostea imitates the veins and patterns of alabaster marble. The veining extends through the full thickness, not just the surface, of the tile, enhancing the illusion that the Alabastro Collection is made of real

stone. Ariostea also manufactures ceramic tile resembling porphyry, limestone, marble and granite.

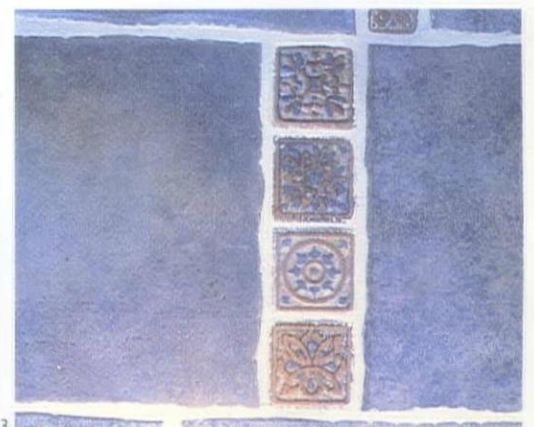
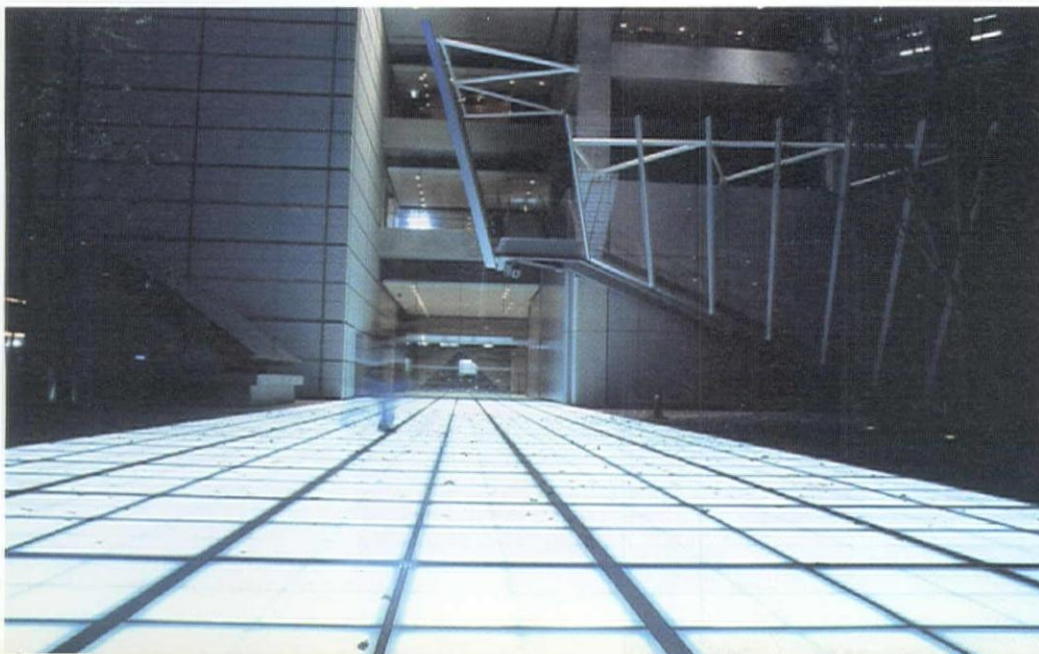
**Cork** – Cork, for more than 100 years used as a flooring product, owes much of its renewed notoriety to the "environmentally friendly" drive for responsible materials. The low-density, compressible, yet strong material, available in sheets or tiles, is renowned for its durability, acoustical and thermal insulation, resistance to moisture damage and decay, and the ability to cushion the foot. Cork is available in sheets and tiles as well as a new tongue and groove product – Grupo Amorim of Portugal are amongst the world's largest producers of cork products.

**Concrete** – Bomanite's Chemical Stains produce mottled and drifted colour tones when applied to interior and exterior concrete surfaces. Made of various combinations of metallic slats in a blend of water and acid solutions, the stains are formulated to "colour etch" new, existing or worn horizontal surfaces. Eight standard stains can be mixed or diluted to produce an extensive palette of colours. They are also suitable for porous tile, stucco and marble surfaces.

#### Traditional for a reason

Despite the increasing acceptance of new materials, continuity of the traditional still prevails. Society's collective memory provides cultural

weight and solidity to the age-old materials of wood, stone and tiles. Wood, symbolising the passage of time and warmth, remains the most popular flooring material of Scandinavia. The durability of stone and the coolness of tiles make these materials a preferred choice in the Mediterranean. Tiles were first used in Morocco and were adapted by the Portuguese in the fifteenth century using feldspar and kaolin, raw materials indigenous to





► Portugal before it went to Spain. Azulejos painted tiles that decorate the facades of many buildings. The word derives from "al zuleiq" the Arabic word for a small polished stone. The tile tradition can be traced back to the Moorish presence during the Middle Ages.

### Wood and stone

**Wood** – This warm material has often been dismissed for use in high-traffic areas because it lacks the resistance of other materials and requires considerable maintenance. Wooden flooring has an application of stain and finish but recent advances in technology have enabled it to be used for flooring in

high-traffic situations. WearMaster have brought out a complete range of woods – oak, maple, hickory and basswood – that are impregnated with acrylic, making the end product 40 percent harder than normal woods. This not only increases durability but reduces maintenance: a scratch would not be seen because the stain penetrates through the surface. Wood is often used in shops where fixtures and fittings are wooden to produce an homogeneous design.

**Stone** – can be used wherever it is practical. High technology polishing techniques can change the permeability and therefore maintenance of stone. Architects are specifying the



use of natural stone both for its technical properties of stability and durability as the aesthetic quality of beauty and prestige. The famous London department store Harrods specified Pisani's granite and marble stone tiles for the floor of the Egyptian owner, Alfyad's high profile conversion of the main hall into the Egyptian room.

PEIV abrasion resistant, highly resistant to acids and bases with a non slip effect and, in many cases, can be cut with a waterjet tool to architects specifications.

The floors of the Ascer headquarters building in Castellón, Spain are inlaid with "allegorical signs". Ascer (Asociación Española de Azulejos, Pavimentos y Baldosas Cerámicos) which groups together 171 ceramic firms has recently opened its headquarters in Castellón, Spain, the design of which incorporated Spanish tile ranges especially adapted for public areas with a high volume of traffic including Gres de Nules Fabresa, Saloni, Porcelansa, Venis, Porcelanatto and Taulel. On the first floor, the selected signs are four elements that represent the different work lines of the institute: prime materials, pavement end covers, artistic ceramics and crockery. The second floor is themed on the elements of the ceramic procedure: air, earth, fire and water. The tile area was specified by the design team. Information as to how many and what shaped tiles are required to fit the space is transmitted through digital programme. Each tile is then subject to a precise hydraulic cut and inlaid without joints into the central pieces of the panel.

The hispanic tradition of tiles is thriving in Latin America where Javier Senosian's Tile House in Mexico City was awarded the 1996 Spectrum International Special Award of Merit. The tile manufacturers Alfareria Moctezuma of Mexico

1: The Spanish based, Banul tile company's products are used for a swimming pool.

2: WearMaster's maple wood flooring in a retail space

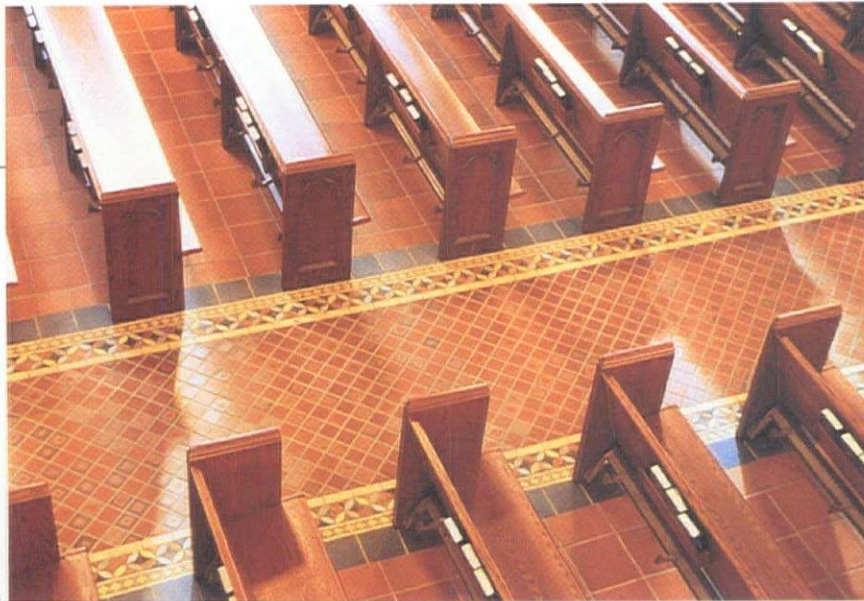
3: Pisani's stone is cut in the stone yards and high technology tools can produce smooth finishes

### Tiling technology

State-of-the-art technology in the production of tiles means that they can now be used in public spaces (hospitals and schools), industrial environments, sports areas and for exterior flooring. Floor tiles are generally classified according to the type of moulding used in the manufacturing process and according to their porosity, measured by water absorption. They are fired at a very high temperature, glazed, frost resistant,







4

produce original hand-crafted tiles that the architect specified for the floor of his original organic house for their ability to fit the non-standard space and for their impermeability – since they are simultaneously the floor of the terrace outside and the roof of the building.

Tiles can be used in public buildings to define areas: the St Casimir Church in Shenandoah, Pennsylvania, for example, uses flooring to define the aisles and set off sections such as the baptismal stands. The basic colouring is quarry field tile which changes into an intricate tile pattern to frame the pews and a striking quatrefoil to bring attention to the

baptismal stand with a central tile medallion to accent the church's main aisle.

A literal pictorial representation was used: on the 50 foot staircase from the second level of Spec's Music Super Store, in Miami Beach, Florida slip resistant porcelain tiles form giant black and white piano keys. The local interior design firm Dolan Interiors designed the Spec's Music Super Store using the signature motif of stars and waves cut from Crossville's "Windsurf" and "Doges Gold" in giant patterns with the aim of emphasising the dramatic the floor space.

The natural conclusion to this is a

*trompe l'oeil* effect – an example of which can be found in the Dragon City Mall in Calgary's Chinatown which was designed by the architects Abugov-Kaspar. They use a repetitive ceramic tile field pattern inspired by cobblestone imagery and the dynamics of an ever-changing streetscape. A space like a stream of water is created from tiles and it meanders down the stairs and public corridor like a path that ties all the floors together.

WA



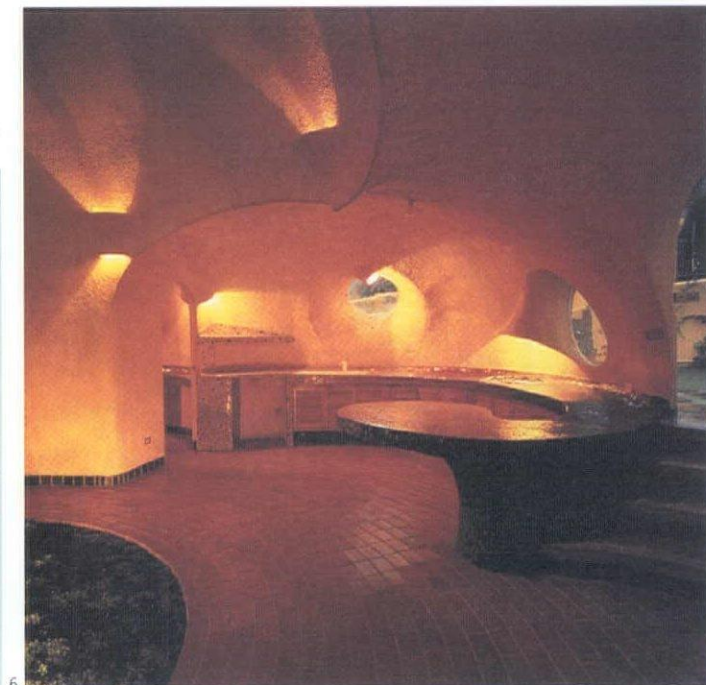
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## BUSINESS OUT ON THE TILES

According to the Spanish Tile Association ASCER's research: world production of ceramic floor tiles increases by approximately 17 percent per year. Europe is the main producing continent with 50 percent of world supply but it is also the main consumer using 42 percent. The countries with the highest consumption per head of population (Spain, Italy Taiwan etcetera) are those which have the greatest ceramic tradition.

Despite all their attempts, neither South America nor the Far East have been able to penetrate the European market in ceramic floor tiles. High transport costs and the need to support high outlays over long periods of time prevent their products from being competitive in Europe despite their low prices. Consequently, for the moment, non-European producers are not considered to be serious competitors in the European ceramic floor tile market. It is possible to use price per product to distinguish two basic groups of the main manufactures through the world: Italy, Germany, Spain, France and Japan export products of a high price; Turkey, Portugal, eastern Europe, Mexico, Brazil and Thailand sell products of a low price.

Due to heavy investment in the infrastructure, China has quickly become a considerable producer and can supply its own domestic market and even close it to European exporters.



6

- 4: Separating the aisle from the pews in St Casimir Church in Shenandoah, Pennsylvania, US
- 5: Tiles transform the stairs in the Spec's Music Superstores into a giant black and white piano keys, Florida, US
- 6: Javier Senosian's Tile House in Mexico City uses local tiles for the floor



## Rieber & Søn BV

### Member of Reiber & Søn Group, Norway

This naturally non-slip and extremely hard-wearing natural stone from Norway is exported world-wide for both internal and external use, and is especially suitable for public areas with heavy traffic, such as offices, schools and walkways. This, combined with its natural lustre, makes Alta Quartzite a unique and high quality building product.

Rieber & Søn BV is the producer of Alta, Canyon, Clarks, Dovre, Fåvang, Oppdal and Otta quartz, containing natural splitting stones.

**Rieber & Søn BV**  
**h/o Beisterveld Natuursteen**  
**Protonweg 4**  
**Postbus 40208**  
**NL-3504 AA Utrecht**  
**The Netherlands**  
**Tel: +31 30 24 10350**  
**Fax: +31 30 24 11 700**



## Bruce Hardwood Floors



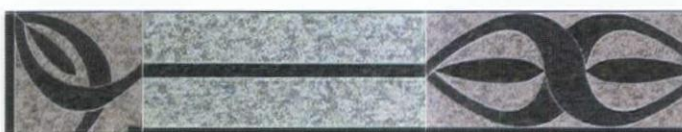
WearMaster™ floors are state-of-the-art acrylic impregnated floors available in oak, maple, hickory and basswood. The 76.20 millimetre planks have tongue and groove construction, square end and side edges and a smooth low gloss commercial finish. Available in a full range of colours, WearMaster floors carry a full lifetime structural warranty and a 25-year commercial wood wear surface warranty.

**Bruce Hardwood Floors**  
**16803 Dallas Parkway**  
**Dallas, Texas 75248**  
**USA**  
**Tel: +214 887 2594**

## Ariostea Spa

**Ariostea Spa**  
**Via Cimabue 20**  
**I-42014 Castellarano (RE)**  
**Italy**  
**Tel: + 39 536 816 811**  
**Fax: + 39 536 816 850**  
**e-mail: ariostea@sirnet.it**  
**Internet:**  
**<http://sirnet.it/ariostea.htm>**

Ariostea has created a decorative line for its polished porcelain stoneware range. Coordinated borders and rosettes have been produced by means of the water-jet cutting technique. These prestigious decorations create a high-impact effect with a lot of personality in any kind of environment. The picture shows a rosette and a coordinated border for the Graniti Collection.



Geo Natura is a new collection of porcelain stoneware, featuring an impressive chromatic mixture in seven different versions. The surface texture recalls natural stone such as slate, while maintaining a visual and tactile smoothness which is truly unique. The picture shows a floor in the Britannia colour, enriched by a mosaic decorative insert and a coordinated border.



## Pisani Limited

**Pisani Limited**  
**Transport Avenue**  
**Great West Road**  
**Brentford**  
**Middlesex TW8 9HF**  
**Tel: +44 181 568 5001**  
**Fax: +44 181 847 3406**

**High Peak**  
**Cromford**  
**Near Matlock**  
**Derbyshire DE4 5HN**  
**Tel: +44 1629 823481**  
**Fax: +44 1629 825611**

**Trinity Wharf**  
**Warspite Road**  
**Woolwich**  
**London SE18 5NU**  
**Tel: +44 181 317 3377**  
**Fax: +44 181 317 3374**

Pisani Limited supplied over 200 square metres of two centimetres and 100 square metres of four centimetres Polished Blue Pearl Granite to A Andrews and Sons Limited of Leeds. They in turn produced and fixed not only this elegant water feature but the floors and external entrance cladding to the Co-operative Bank, Kings Valley, Stockport.



The Leeds Permanent Headquarters, Lovell Park, Leeds, is an example of the way in which Pisani can satisfy the demand for both the amounts of marble and granite required and also the variation in specifications of the slabs.

An example of the way in which Pisani Limited can satisfy the demand for a variety of different marbles and granites in large quantities. The Mount Royal Hotel, London, benefited from substantial refurbishment of the reception area, individual bathrooms, bar tops and toilets.

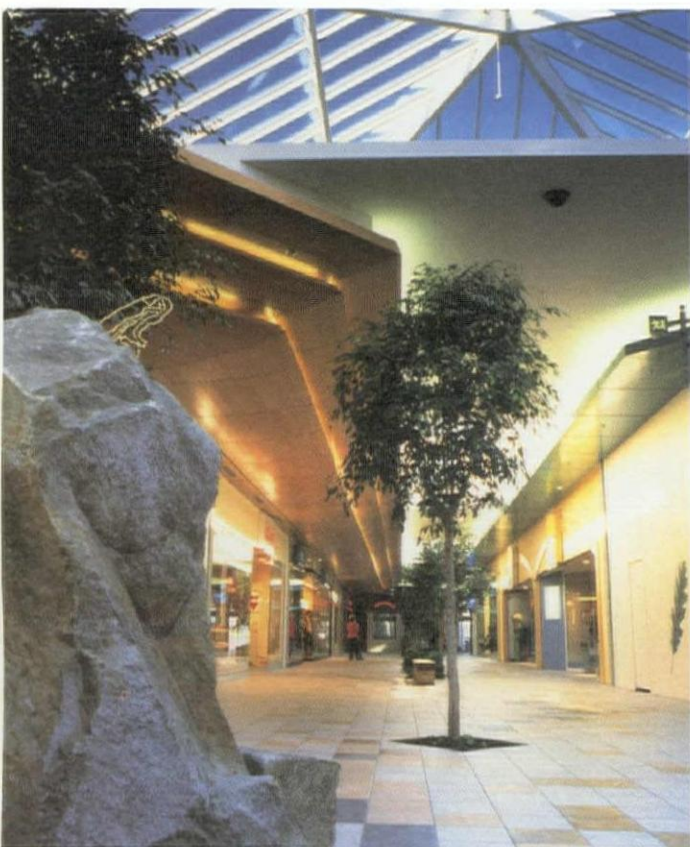


Pisani production facility at Matlock in Derbyshire, UK where granite blocks sourced from all over the world are processed into slabs of varying thicknesses and finishes.

Two further distribution outlets in the south of England supply the largest selection of marble and granite from stock, in the UK.



# ARIOSTEA®



## Head Office

Ariostea Spa  
Via Cimabue 20  
I-42014 Castellarano (RE)  
Italy  
Tel: + 39 536 816 811  
Fax: + 39 536 816 850  
e-mail: [ariostea@sinet.it](mailto:ariostea@sinet.it)  
Internet:  
<http://sinet.it/ariostea.htm>

## Other Offices

Ariostea Paris  
Tel: +33 1 41 16 98 89  
Fax: +33 1 47 88 30 40  
Ariostea London  
Tel/fax: +44 181 3486246  
Ariostea Berlin  
Tel: +49 30 43 64 835  
Fax: +49 30 43 61 848  
Ariostea North America -Toronto  
Tel: +416 966 9974  
Fax: + 416 966 9942

## Company profile

Ariostea is one of the leading manufacturers of porcelain stoneware, a flooring material that has increasingly expanded its application in architecture, for residential, commercial and institutional buildings.

Ariostea product research and development has led to the creation of prestigious materials, combining outstanding technical features, such as a very low absorption rate and a high shock and scratch resistance, to an incomparable level of aesthetic value. The company is also providing its clients and architectural firms with design service and water-jet cutting technology. Ariostea products are available worldwide.

The company's in-house quality system has been certified accordingly to the standard from the ISO 9000 series.

## Recent projects

Metropole Arcade and Hotel, Am Steinertor Shopping Centre (Austria)  
Tefal Company Building (Belgium)  
Confederation Life Head Office (Canada)  
Fafalios Building (Cyprus)  
McDonald's restaurants (Czech Republic, the Netherlands)  
Netto Supermarkets (Denmark, Germany, UK)  
Scandinavian Center (Denmark)  
Nouveau Marché St Germain, Logisud "Purpan" Hospital (France)  
Law Courts, Hotel Schools, University of Provence (France)  
Dern Passage Shopping Centre, Famila-Centre (Germany)  
Sophienhof Shopping Centre, Isenburg Shopping Centre (Germany)  
Interspar Shopping Centre, Kereskedelmi Bank (Hungary)  
New Yuen Long Centre, Kowloon City Plaza (Hong Kong)  
Sony Building (Greece) - Rover Shopping Centre, Rocchetta Head Office (Italy)  
Hunters Plaza Shopping Centre, ASB Bank (New Zealand)  
Citra Center (Sweden)  
Migros Shopping Centres (Switzerland)  
Abu Hail Shopping Centre (UAE)  
Heathrow Airport, Marks & Spencer (UK)  
Centennial Bank, Motor Ford Showrooms (USA)

## Product range

Ariostea's product range of porcelain stoneware includes more than 100 different chromatic versions, allowing any kind of floor design and matching any style of interior decoration. Ariostea porcelain stoneware can also be used for exterior facade cladding or, in the appropriate anti-slip surface version, for outside flooring. Certifications for the technical properties of Ariostea porcelain stoneware have been issued by the main international official institutes.

1: Scandinavian Centre, Denmark, (Arch: Kim Skovgaard Sørensen)

2: Ariostea Headquarters, Italy (Studio Archilinea Progetti)

3: Shopping Centre Opéra, France (Agence Design Architectural)

4: Floor decorations in polished porcelain stoneware



# Marbres du Boulonnais



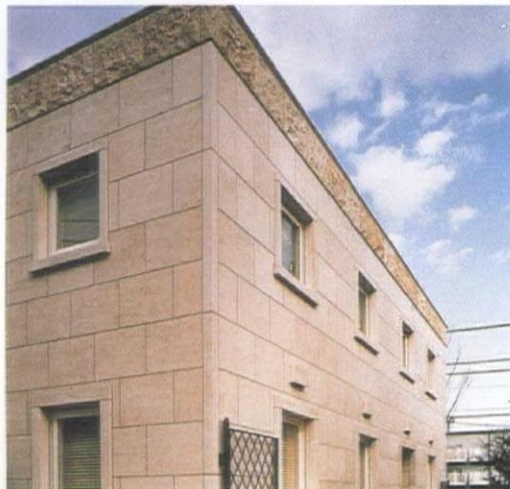
1



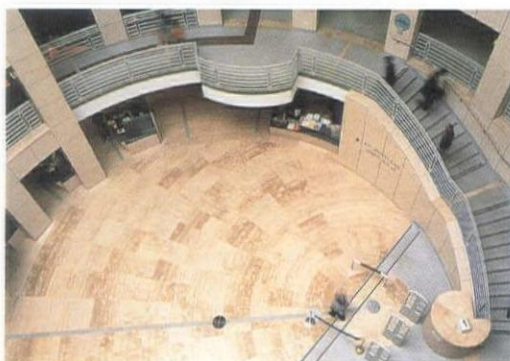
2



3



4



5

## Head office

Marbres du Boulonnais  
4 rue des Verts Pres  
59700 Marcq-en-Bardell  
France  
Tel: +33 320 746 320  
Fax: +33 320 746 330

## Company profile

Established in 1917 and dedicated exclusively to the extraction, production and distribution of natural stone, Marbres du Boulonnais has, over the years, acquired an enviable reputation and the highest levels of technical skill. Still family owned after four generations, the company is managed by a dynamic young team whose objectives are quality and reliability.

The aim of the company is to satisfy the customers needs by supplying within the particular context, the finest range of natural French stones.

## Areas of specialisation

Our natural stones can be found all over the world, from Japan to the US, as well as in Europe, the Middle East, Africa and Australia. We have worked with famous architects on some of the most prestigious construction projects in the world: from museums, hotels churches and office buildings, to luxury residential compounds and private places.

Having been involved with the stone business for nearly a century, we would be proud to share our knowledge of stone and talk you through our wide range of materials, for any given project.

## Product range

Our comprehensive range is principally composed of: *Fashionable and attractive limestones* – St Marc, St Martin, St Albain, Comblanchien, Chassagne, Beaumaniere, Beauharnais, St. Veran, Poiseul, Corton, Ruoms, Beaulieu, Tournus, Lunel, Dore, St. Pierre, Cabernet, Louvre, Amboise – *highly coloured and prestigious marbles* – Napoleon Grand Melange and Tigre, Notre Dame, Brun Fleuri, Lunel, Paloma, Henri 4, Breche Nouvelle, Saran Colin–, and *unique, high quality granites* – Lanhelin dark blue, Rose de la clarte, Silverstar.

These products come from 20 different quarries and are processed in our eight factories to meet the highest standards of the building industry. We can supply anything from raw blocks to finished, cut-to-size panels for cladding or flooring, as well as 10 millimetre thick tiles, or solid works such as columns, fountains or monuments.

With a range of over 70 different stone types, we have the resources to meet most requirements and feel that we can provide the outstanding material to add unique value to your project.

1: Société Générale  
HQ (Paris)  
Material: 20,000  
metres square of  
Beauharnais

2: Hyatt Fisherman's  
Wharf (San  
Francisco)  
Material: 2,000  
metres square of  
Beaumaniere, St  
Veran mixed

3: Nasu Golf Country  
Club (Japan)  
Material: 2,000  
metres square of St  
Marc

4: Do Family Building  
(Tokyo)  
Material: 2,000  
metres square of St  
Marc – 1,000  
metres square of  
Beauvillon

5: San Francisco  
Library  
Material: 2,000  
metres square of St  
Marc





# Ceramic Tiles from Spain

## AZSEDER CERAMICA SA

Spain

Tel: +34 64 60 05 08

Fax: +34 64 60 46 30

UK - Active Marketing Limited

Tel: +44 127 369 5208

Fax: +44 127 369 6768

Azseder Cerámica, with a daily floor and wall tile production of 20,000 square metres, manufacture their products under the name ROYAL CERAMIC. The company present their new technical series, DIAMANTE, ideal for high traffic areas (Pei V and Mohs 8). This tile is decorated with a thick grain texture and is available in eight different colours in 33 centimetres X 33 centimetres and 45 centimetres x 45 centimetres. This picture shows an example of the parquet floor imitation series amongst which the COIMBRA, 33 centimetres x 33 centimetres, MADEIRA, 33 centimetres x 33 centimetres and the CAOBA, 45 centimetres x 45 centimetres stand out, all with a Pei III and Mohs V.



## BALLESMAR SL

Spain

Tel: +34 64 77 00 32

Fax: +34 64 60 34 90

UK - Bob Sawyer

Tel: +44 181 508 2999

Fax: +44 181 502 1932

Founded in 1949, Ballesmar SL have a professional I & D team and present their very latest CASTILLA series for interior and exterior use, available in 31.6 centimetres x 31.6 centimetres with a Pei IV and Mohs 7 in a wide range of colours - blue, grey, brown, white and black. This series is also manufactured in octagonal format in 31 centimetres x 31 centimetres with triangular dots of seven centimetres x seven centimetres. The picture shows the new ATHOS series, with a Pei V and Mohs 7, it is suitable for public places exposed to high traffic and is available in grey, beige, green, salmon and white together with complementary triangular pieces.





**CERMICAS FANAL SA**

Spain

Tel: +34 64 36 01 41

Fax: +34 64 36 08 60

Cerámicas Fanal specialise in the manufacture of earthenware floor tiles in 33.3 centimetres x 33.3 centimetres; 41.6 centimetres x 41.6 centimetres and 50 centimetres x 50 centimetres together with high gloss special pieces. During the last year the company have doubled their production, manufacturing 9,000 square metres daily and exporting almost 50 percent of their production. Cerámicas Fanal also present their rustic high transit series which is accompanied by a wide range of special pieces. Among their range of products we should mention the ROMANTICA series and the ONTARIO marble design series. The picture shows one of their latest wall tiles for interior use, the VISTULA collection in 33.3 centimetres x 33.3 centimetres (Pei III, Mohs IV) available in grey, beige, green, blue and black. It is accompanied by a skirting in 8 centimetres x 33.3 centimetres.

**INDUSTRIA ALCORENSES CONFEDERADAS SA "INALCO"**

Spain

Tel: +34 94 38 60 30

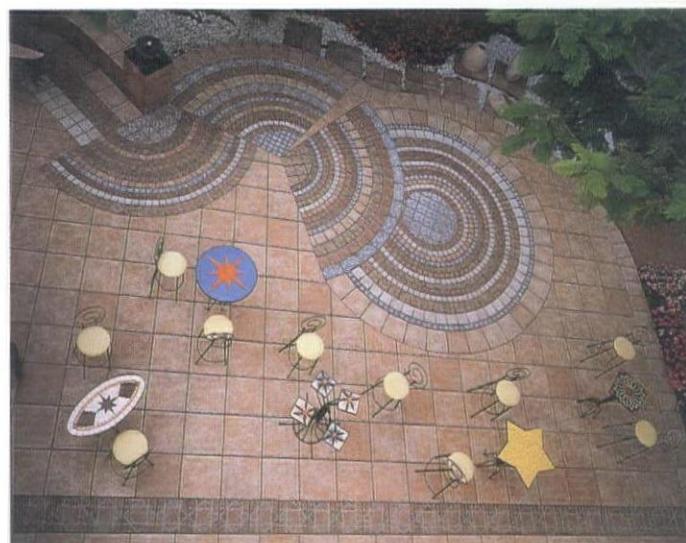
Fax: +34 64 38 64 80

UK - John Batter

Tel: +44 1480 812909

Fax: +44 1480 812910

Amongst INALCO's wide range of ceramic floor and wall tiles we should mention the rustic collection which incorporates the REAL series. Wall tiles are available in 20 centimetres x 20 centimetres, 20 centimetres x 30 centimetres, 23 centimetres x 26 centimetres and 28 centimetres x 41 centimetres, and floor tiles in 33 centimetres x 33 centimetres, 45 centimetres x 45 centimetres and 50 centimetres x 50 centimetres. The picture presents the RODAS collection, a warm earthy coloured exterior tile for use in swimming pools, terraces and public places. This collection complies with the Tortus Method regarding slip resistance, it is frost and chemical resistant and has a Pei IV and Mohs 8.

**CERAMICAS PEÑARROYA SA**

Spain

Tel: +34 64 34 90 00

Fax: +34 64 34 90 01

UK - Ernie Rogers

Tel/fax: +44 1255 822 308

The production capacity of this Spanish company has increased by approximately 40 percent over the past year. Cerámicas Peñarroya introduce a new line of large format wall tiles as well as increasing the production of their rustic style ceramic floor tile. The picture shows the COSTA DE AZAHAR floor tile which is available in beige, salmon and grey and is suitable for interior and exterior use due to its high frost resistance. With a thickness of 0.88 millimetres and square base (33 centimetres x 33 centimetres) it has a Pei IV and is accompanied by various complementary pieces: mesh border (11 centimetres x 33 centimetres), border in third fire (16 centimetres x 33 centimetres), skirting (8 centimetres x 33 centimetres), dot (16 centimetres x 16 centimetres). Recently the company has introduced collections in imitation wood. Other series of interest are MINDORO, UNIVERSAL, NUMANCIA and ITALICA.





**AZULEJERA LA PLANA SA "ALAPLANA"**

Spain

Tel: +34 64 53 65 60

Fax: +34 64 52 68 09

UK - John Melrose

Tel/fax: +44 141 886 6978

ALAPLANA present collections of floor and wall tiles which can be easily combined. The floor tile series DELTA, 31.6 centimetres x 31.6 centimetres, manufactured in single fire earthenware is available in white, honey, blue, green and pink. The corresponding wall tile series BLANCO BRILLO in 27 centimetres x 37 centimetres is manufactured using the twice fired short cycle process and is available in white, blue, honey, turquoise and pink. Both series have a water absorption level of 12 percent and a high resistance to crazing.

**CERAMICA CABRERA SA "CERACASA"**

Spain

Tel: +34 64 36 16 11

Fax: +34 64 36 09 67

UK - Mr Paul Garner

Tel: +44 1622 683375

Fax: +44 1622 763590

Founded in 1984, CERACASA invested in a new production plant in 1995. The new lines presented by CERACASA emphasise the aesthetic and technical value of their products. Examples are the rustic floor tile series OREGON (31 centimetres x 31 centimetres), with its aged natural stone design, and TOSCANA (50 centimetres x 50 centimetres), and also the single-fired porous wall tile models in the 30 centimetres x 45 centimetres format. CERACASA's imitation parquet floor tiles stand out due to their likeness to natural wood - the CAOBA series is available in 10 centimetres x 40.8 centimetres and is suitable for interior use.

**AZULEJOS PLAZA SA**

Spain

Tel: +34 64 36 01 75

Fax: +34 64 38 63 91

UK - Regionscope

Tel/fax: +44 1535 274538

Azulejos Plaza specialise in the manufacture of floor tiles (33.3 centimetres x 33.3 centimetres, 45 centimetres x 45 centimetres) and ceramic wall tiles (20 centimetres x 20 centimetres, 20 centimetres x 30 centimetres, 25 centimetres x 40 centimetres, 31.6 centimetres x 44.6 centimetres). Their latest successful collections include DUERO, ZAMORA, ROCA, PIRINEOS, ALPES and ALMEIDA in 33 centimetres x 33 centimetres and NEPAL, DADO, TREBOL and OREGON in 45 centimetres x 45 centimetres. The picture shows the ROCA beige series (33.3 centimetres x 33.3 centimetres) in soft tones with a rustic appearance, this tile is suitable for large surfaces and interior decoration - (Mohs 7, Pei V with high resistance to crazing and thermal shock). The company is expanding continually and has recently installed a new floor tile plant, with a production capacity of 8,000 square metres per day.





**ZIRCONIO SA**

Spain

Tel: +34 64 52 11 08

Fax: +34 64 52 39 38

UK - Joseph Victor Kingham

Tel: +44 1302 770501

Fax: +44 1302 771721

Zirconio has incorporated CAD technology into its design process. Production is very varied, although we should mention their products with a rocky appearance which are complemented by a range of special pieces with rich finishes. The BARCELONA series, shown in the picture, is available in 41 centimetres x 41 centimetres and is suitable for public places and high traffic areas with a Mohs 9 and Pei V. This floor tile also has a high resistance to crazing, and a high chemical and frost resistance. The series is presented in white, beige, grey, ochre and scarlet. Zirconio also present tiles in a combination of ceramic and other materials (natural stone...). An example of these lines are the PIETRA and CHARLESTON series.

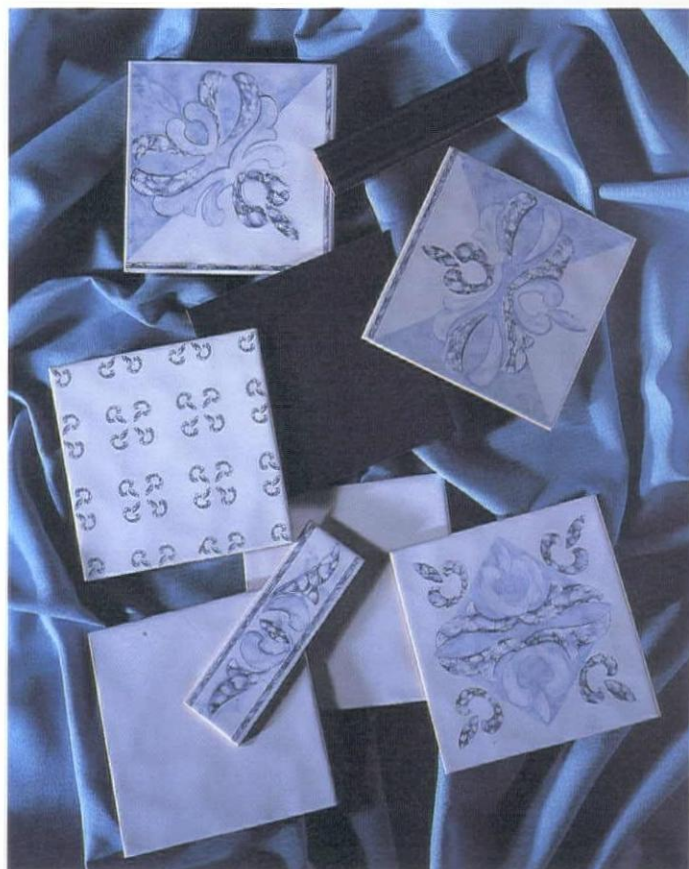
**CERÁMICALCORA SA**

Spain

Tel: +34 64 36 01 58

Fax: +34 64 38 62 41

Cerámicalcora specialise in the manufacture of twice-fired tiles in the traditional formats 20 centimetres x 20 centimetres and 20 centimetres x 25 centimetres in matt and gloss finishes. With many different combinations these formats are ideal as wall tiles for internal use (Mohs III). The R-60 series in 20 centimetres x 20 centimetres and 20 centimetres x 25 centimetres can be adapted using different borders in silkscreen print and third fire.











**Opposite page top** Groninger Museum, Groningen – Glass Mosaic Bisazza. **Below** Head Office Royal Ahold, Zaandam, Hergotinson – natural stone, Vetrorredo.

**This page top** Golden Tulip hotel, "Badhotel", Domburg – Crema Cotto and natural stone. **Above** Head Office, Royal Dutch Airlines (KLM), Amstelveen – Monovip, Quarella

# ZWAAN BV

LISSE HOLLAND

## Head Office

Vennestraat 10  
2161 LE Lisse  
PO Box 70  
2160 AB Lisse  
Netherlands  
Tel: +31 252 43 10 00  
Fax: +31 252 43 10 10

## Managing Director

Mr H A Klooster

## Contact name and telephone numbers

Ceramic tiles department: Mr D S Knetsch, Senior Product Manager  
Tel: +31 252 43 10 02

Natural stone department: Mr G Heijns, Manager Natural Stone Dept  
Tel: +31 252 43 10 05

## Company Profile

Zwaan BV was established in Lisse, Netherlands in 1959. It exports ceramic tiles and natural stone from several countries. Because of its many years of experience and great knowledge of both the products and the requirements of architects, Zwaan BV has gained a leading position in the Dutch market. It has a market share in the Netherlands of approximately five percent, and an annual turnover of one million square metres.

Zwaan BV has a large, roofed warehouse of approximately 12,000 square metres, as well as a showroom – designed by and for the use of architects – of 1,200 square metres.

## Product Range

*Ceramic wall and floor tiles exclusively distributed for the Netherlands:*

Cerim, Italy – La Fabbbrica, Italy – Graniti Fiandre, Italy – H & R Johnson, UK – Keros, Spain – Longchamp, France – Monovip, Italy – Simons, France – TopCer, Portugal – Vogue, Italy.

*Natural stone products:*

Marble – Marble conglomerate – Granite – Freestone, all from several countries.

*Others, exclusively distributed for the Netherlands:*

Bisazza, glass mosaic, Italy – Laticrete, adhesives and mortars, USA – Sannini, unglazed cotto, Italy – Vetrorredo, glass blocks, Italy – Weck, glass blocks, Germany.

## Recent Projects/References

Ohra assurance, head office in Arnhem Netherlands

Graniti Fiandre, H & R Johnson

Zwitserleven assurance, Amstelveen, Netherlands

Graniti Fiandre, H & R Johnson,  
Vogue, Natural Stone

Nationale Nederlanden assurance, the Hague, Netherlands

Quarella marble conglomerate

Interpolis office, Tilburg, Netherlands

Graniti Fiandre

Long term agreement with Royal Ahold for supplying all the required wall and floor tiles, and adhesives for the Albert Heijn supermarkets (Graniti Fiandre, H&R Johnson, Laticrete).

Long term agreement for supplying the required tiles for Edah supermarkets, De Boer supermarkets and the Dutch Railway Stations, NS.





Grand Louvre, Paris.  
Materials: Chassagne Beige – Saint Maximin



Ebisu Garden Place, Tokyo.  
Materials: Chauvigny-Tervoux; Lens-Noir Cihigue



Shopping mall, Australia  
Material: Comblanchien LM



Metropolitan Museum of Art, New York  
Material: Vilhonneur Bench 7; Massangis Roche Claire; Chassagne Rose

## ROCAMAT SNI

### Contacts

Fax: +33 1 48 09 96 04

USA: Mr Jean Winckel

Tel: +33 1 49 33 26 30

Middle East, Far East, Africa: Mr Hugues Duflo

Tel: +33 1 49 33 26 33

Germany, Eastern Europe, Scandinavia: Ms Sigrine Laknejal

Tel: +33 1 49 33 26 47

UK, Ireland: Mr Herve Casanova

Tel: +33 1 49 33 26 31

Italy: Mr Jean-Christophe Cornu

Tel: +33 49 33 26 90

Japan, Australia and rest-of-world: Mr Patrice Houdeau

Tel: +33 1 49 33 26 46

### Company Profile

Rocomat is the largest supplier of natural stone in France and the world's leading limestone producer.

The company has developed to become the largest European organisation specializing in limestone with a workforce of 850 people and a consolidated turnover of FF400 million.

We currently extract a range of 70 materials from our 35 quarries, and manufacture the products in our 14 factories.

Rocomat has also maintained strong stonemason traditions; the company are able to produce all decoration, restoration and sculpture works.

Throughout the world, outstanding architectural achievements reflect the consistently high quality and wide choice of readily available natural stone from Rocomat.

### Product Range

*For domestic use:*

- kitchen worktops
- internal flooring
- staircases
- wall tiles
- bathrooms
- fireplaces

*For commercial and public buildings:*

- cladding
- copings
- plinths
- columns
- interior and exterior flooring/paving and staircases
- swimming-pool surrounds
- fountains

### Recent projects featuring Rocomat products

- the Musee d'Orsay
- the Tour Eiffel Piers
- the Grand Louvre in Paris
- palaces in the Middle East and Japan
- the Metropolitan Museum of Art in New-York