WORLD ARCHITECTURE

The business magazine for the global architect

Issue number 68 | July/August 1998 | US $18.00 | UK £12.00

Spend, spend, spend – the business of retail

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West Coast USA
from Seattle to Silicon valley

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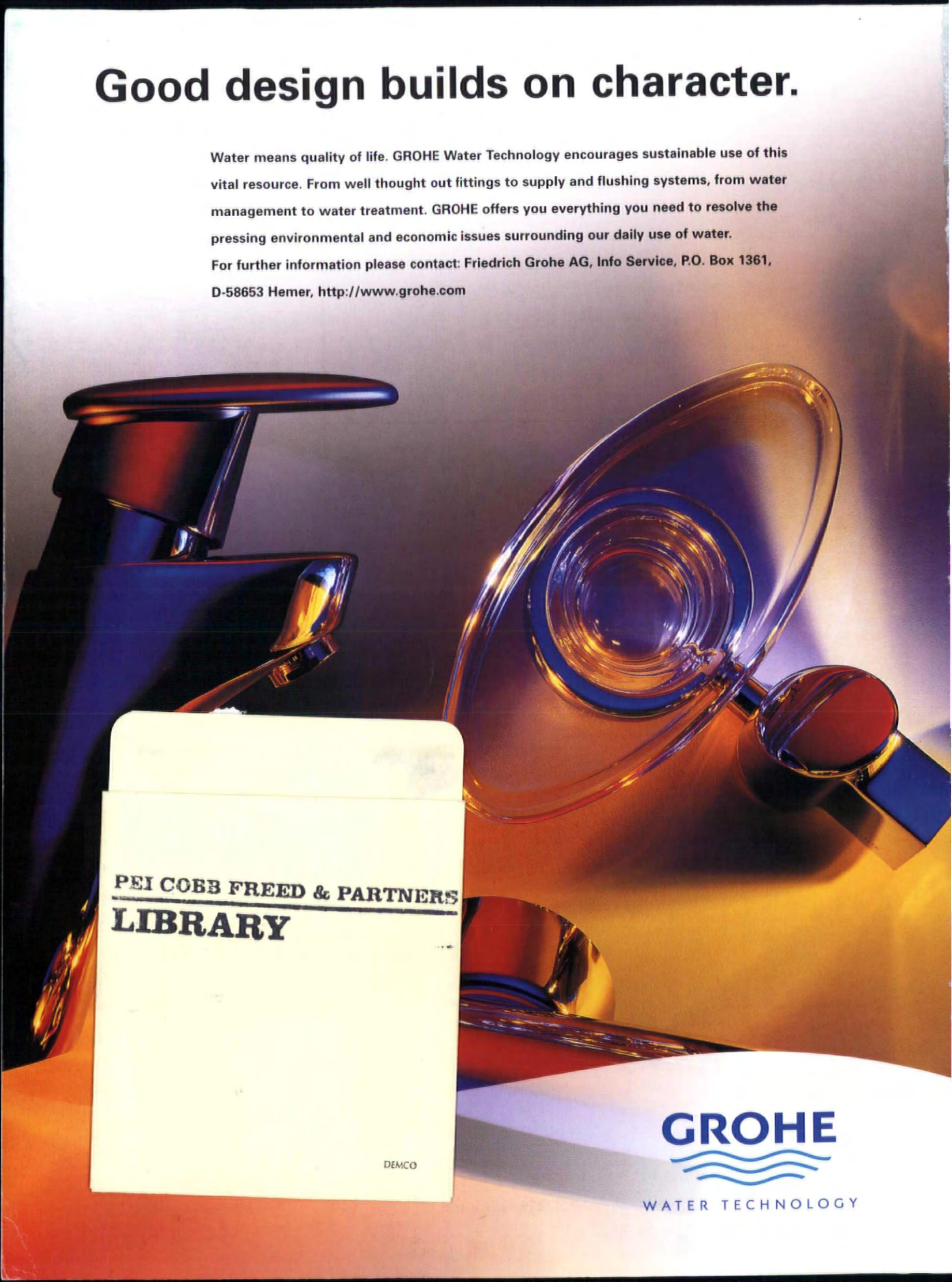

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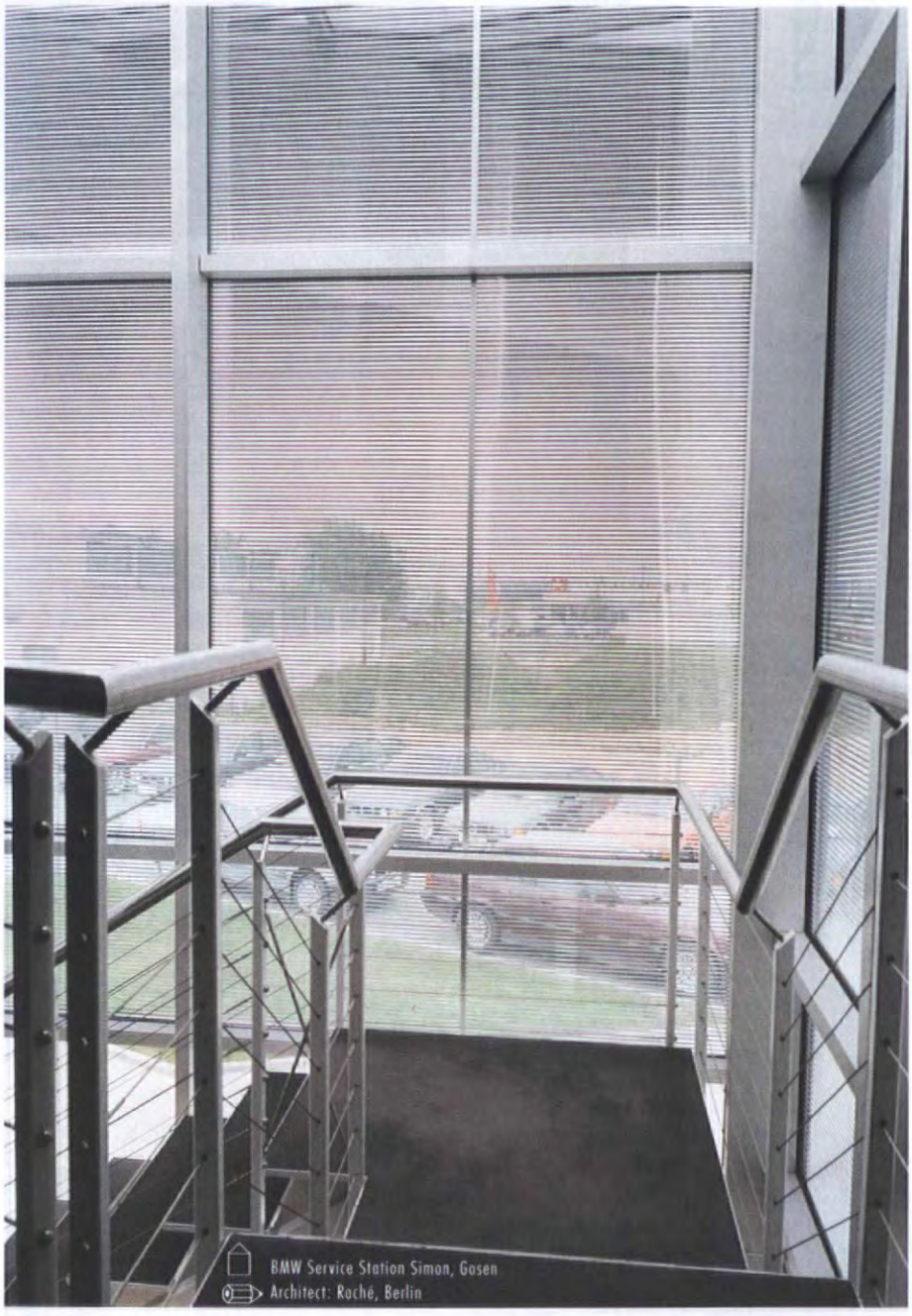

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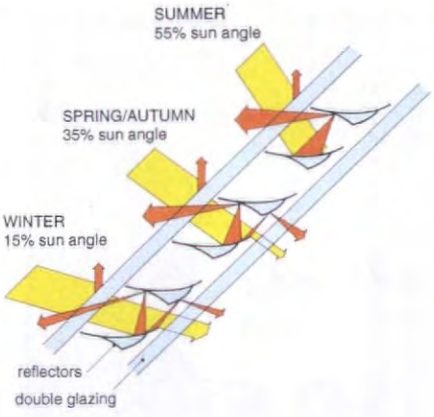

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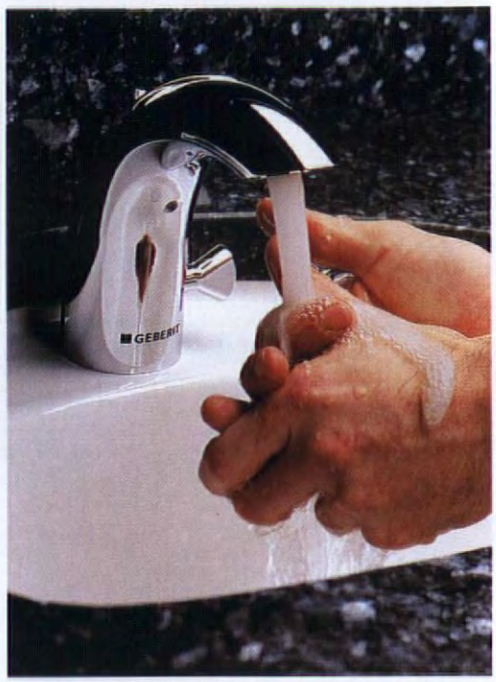

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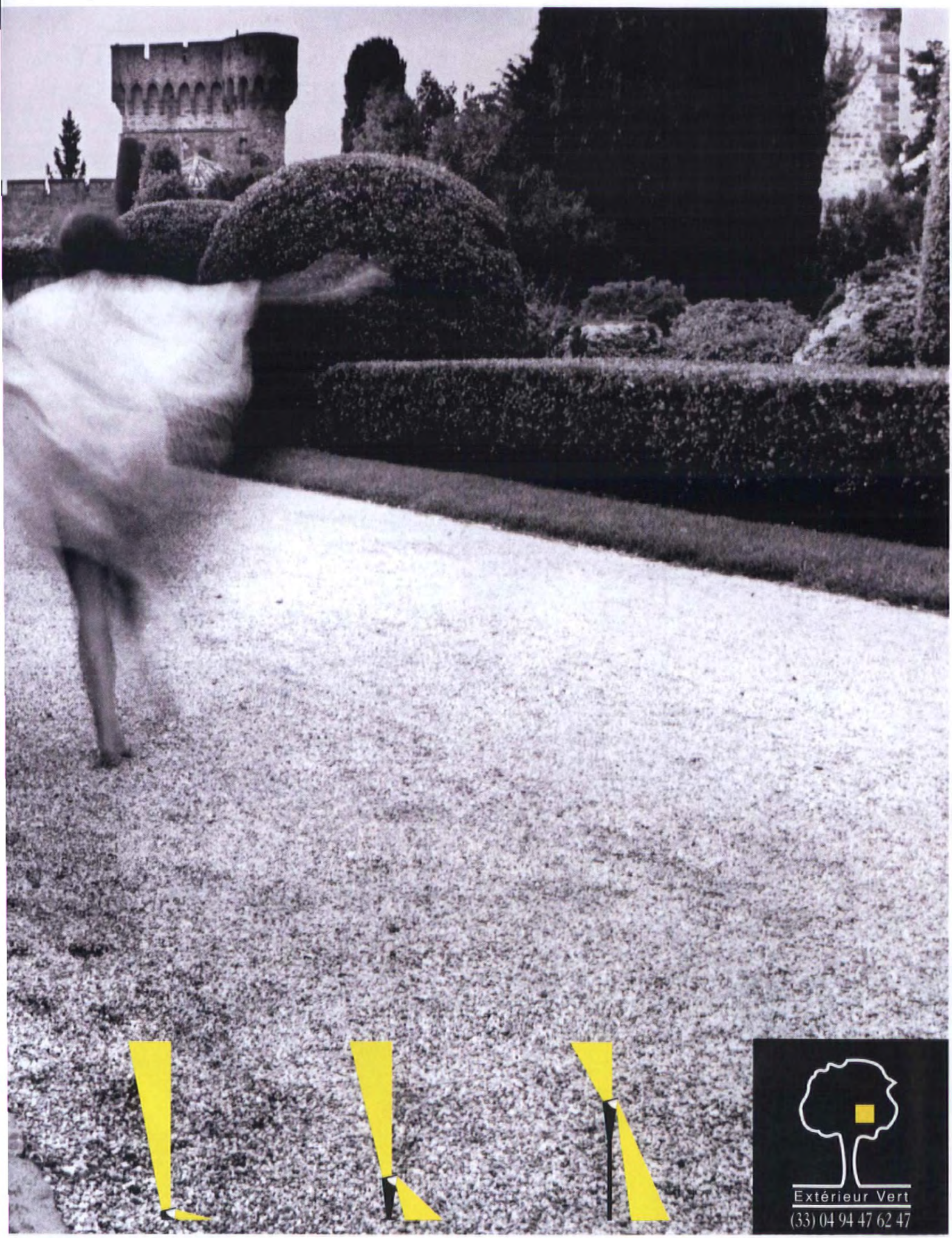
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1

ESCAPING THE ANONYMITY OF COMPETITION

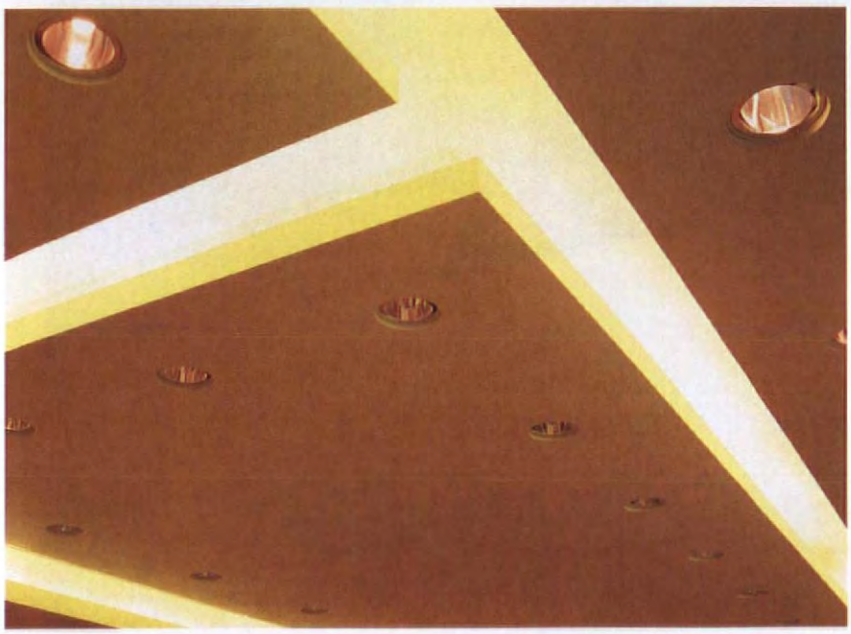
Shop and Retail Lighting

The success of certain exclusive fashion brands such as Prada influences to a considerable part of the retail shop's interior design. And the more the interiors get minimalistic, the more important a professional approach to lighting design becomes.

In the colourful diversity of pedestrian zones and shopping malls shops need a corporate identity in order to attract attention. A deliberate "Corporate Light" is able to supply the emotional component. The example of Prada shows how fashion pieces can be presented as unique works of art, creating a very special atmosphere. Regarding this minimalist trend it becomes obvious why a company like ERCO, experienced in museum lighting, can fulfil perfectly the needs of today's retail lighting design with its comprehensive product range.

The interior designer of the Prada stores, Arch. Roberto Baciocchi developed the lighting concept. Anywhere the worldwide expanding fashion brand opens new stores, customers will have a consistent impression: Walls and ceilings are painted with a light nuance of green. At the borders of the suspended ceiling elements indirect light pours out of coves. Horizontal illuminance is provided by downlights mounted in a special "minimalist" way: The outlet is a plain, sober hole in the ceiling without any cover ring visible.

For the shop windows, on the other hand, the lighting designers chose the "empirical" method: During long experiments they created an optimum mixture of light, using ERCO spotlights equipped with different kinds of light sources such as high intensity discharge lamps and tungsten halogen lamps.



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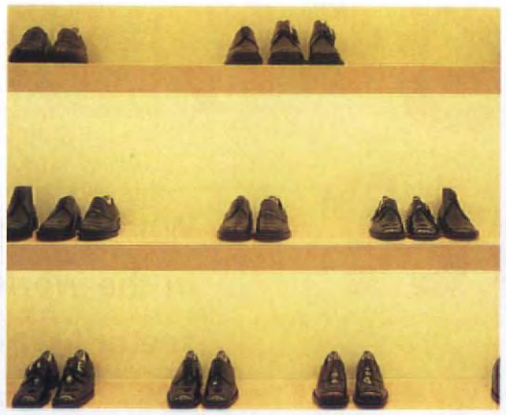


7

8

9

10

1 & 4.
Detail of Prada item

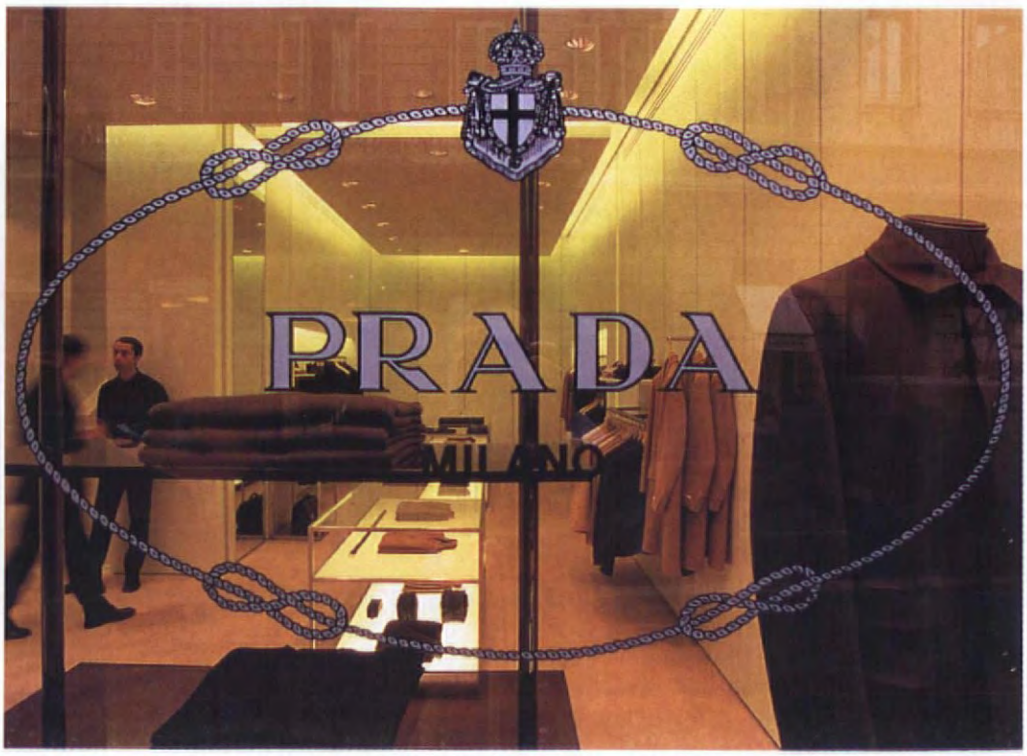
2. Detail of the ceiling showing coves and special recessed downlights without cover ring

3, 6, 8, 9 & 10.
View of shop

5. Shop Window with the traditional Prada logo

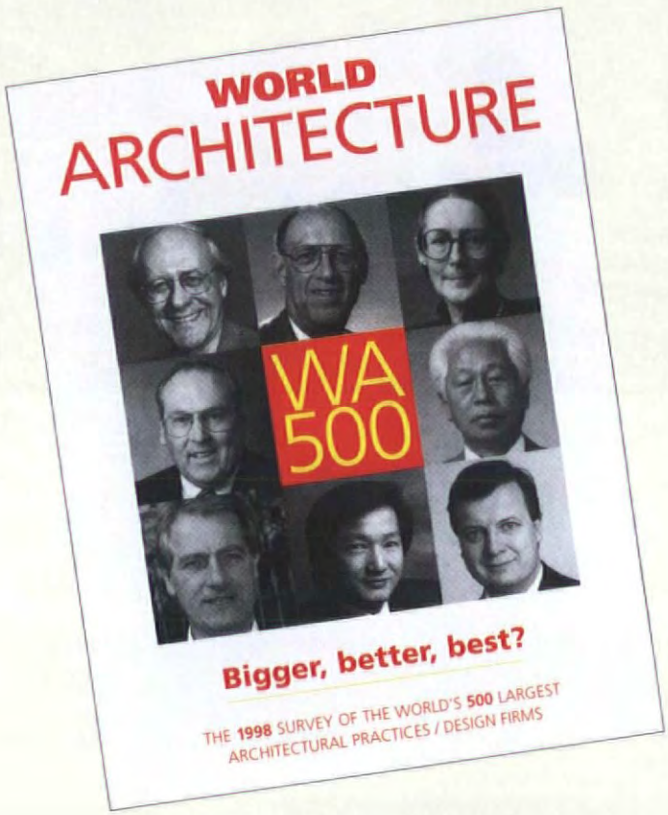
7. Prada Shoes presented in illuminated shelves

5



Bigger, better, best?

What is the largest architectural firm in the world? In your region? In your sector? Which firms grew fastest in 1997 and which were the most efficient? Which professionals did the Top 500 practices vote the best in the business?



You'll find the answers to these questions and many more in this year's **World Architecture Top 500 World Survey.** It's packed with information on the major projects, personalities and practices that are shaping the future.

The Top 500, the most comprehensive survey of its kind, is now in its **5th year** of publication. *Only excerpts will be featured in December's World Architecture, so to ensure you get the full picture, order your copy of the World Survey now.*

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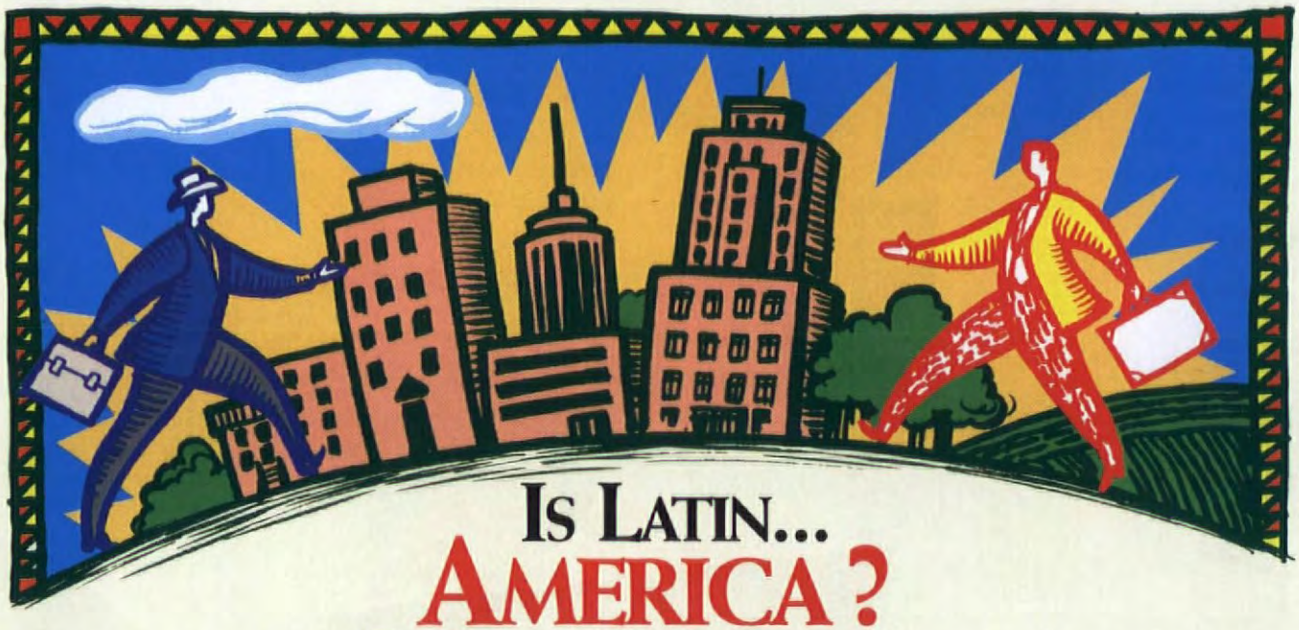

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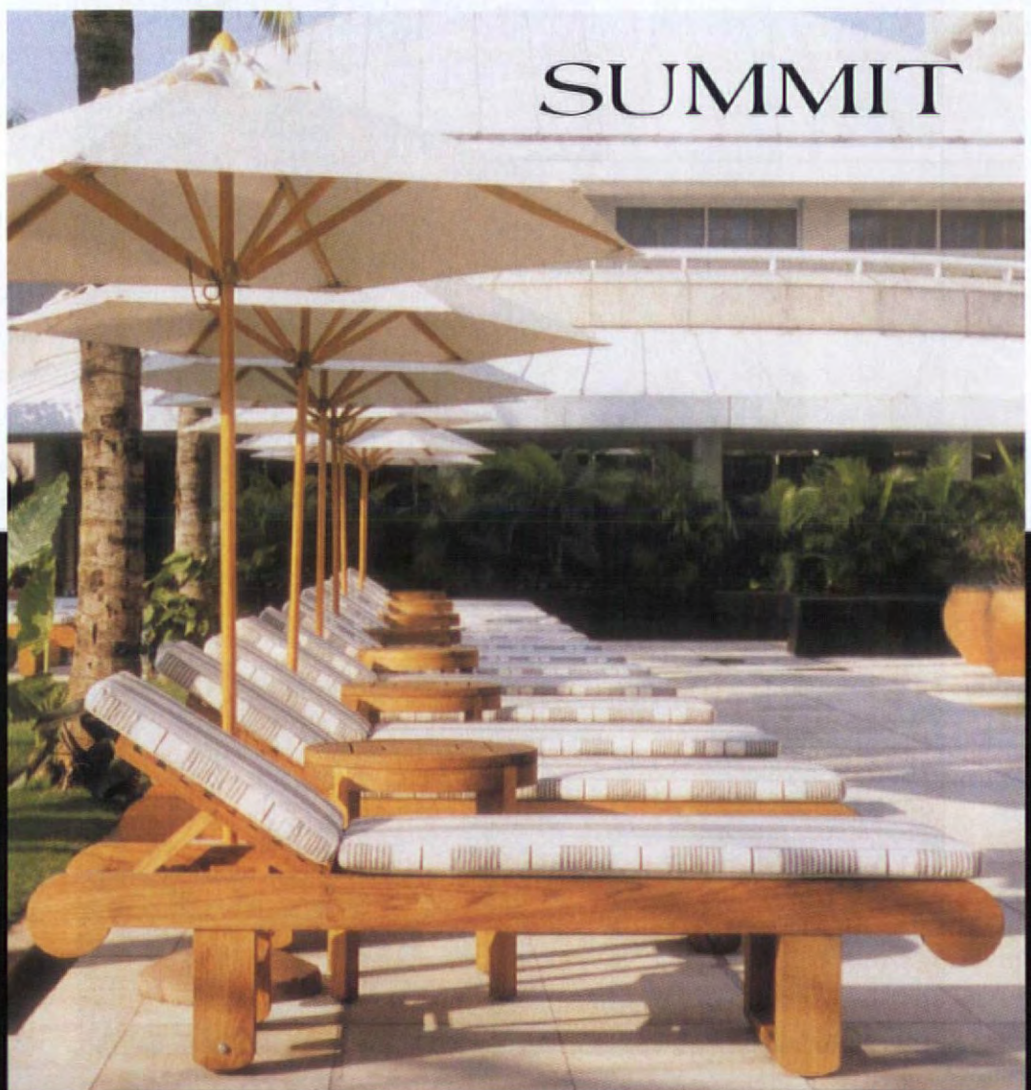

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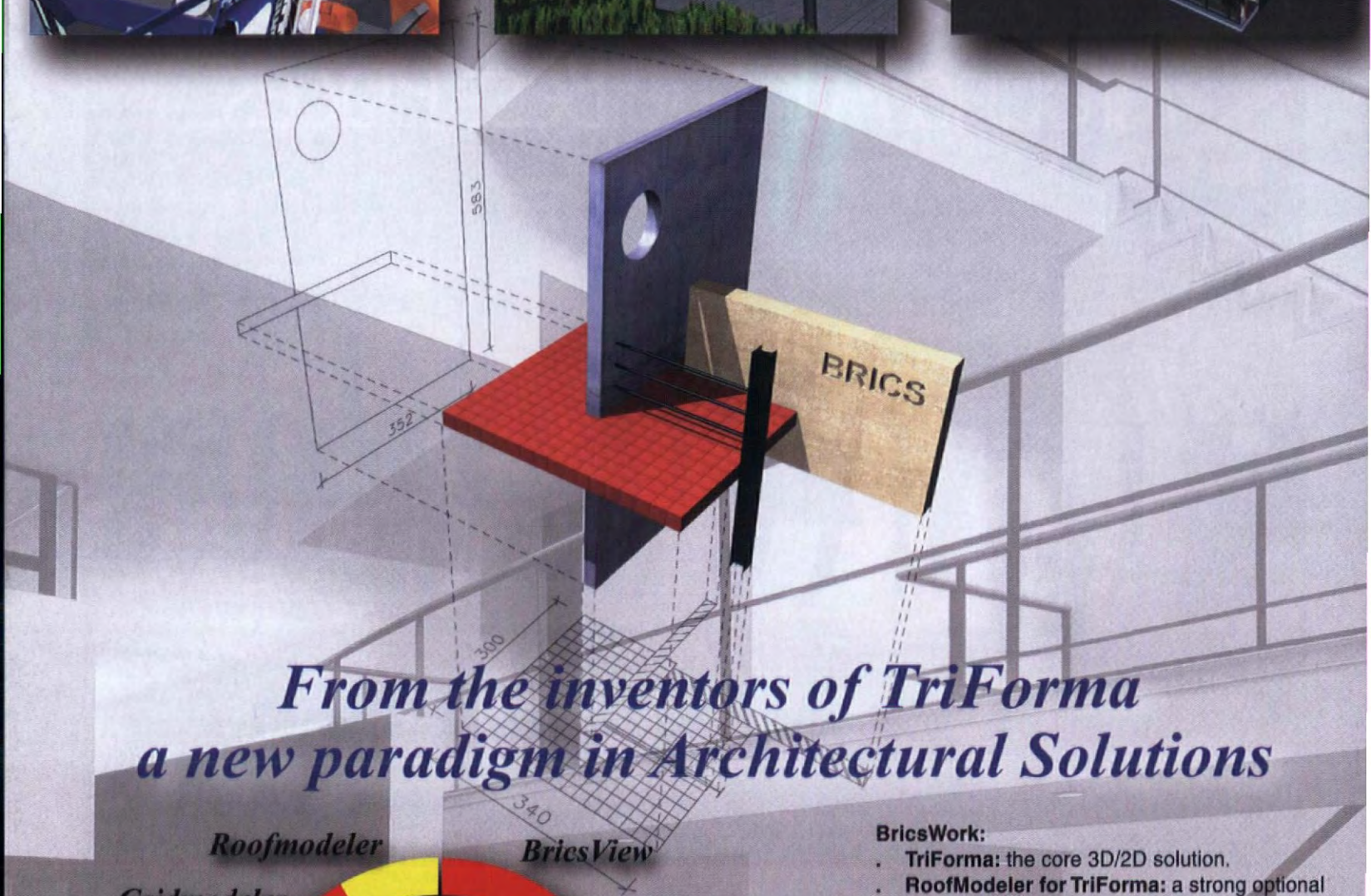

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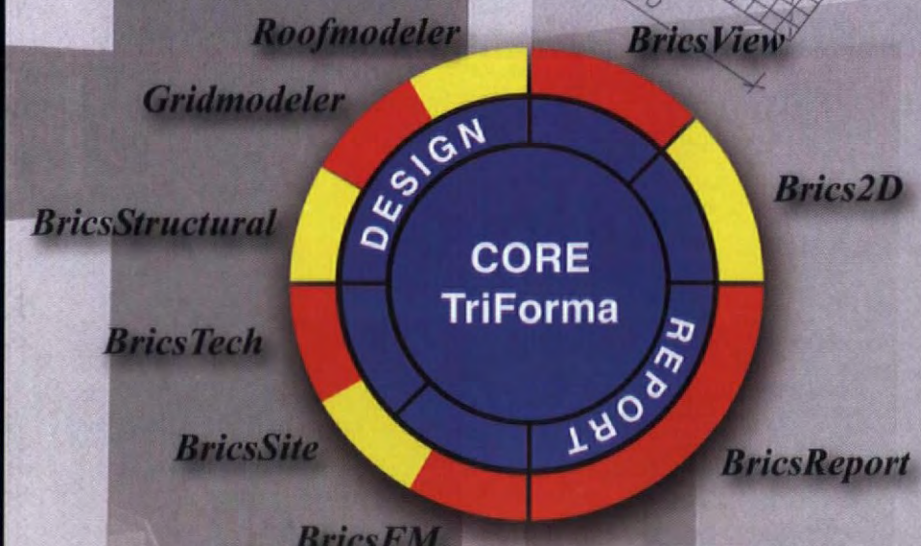

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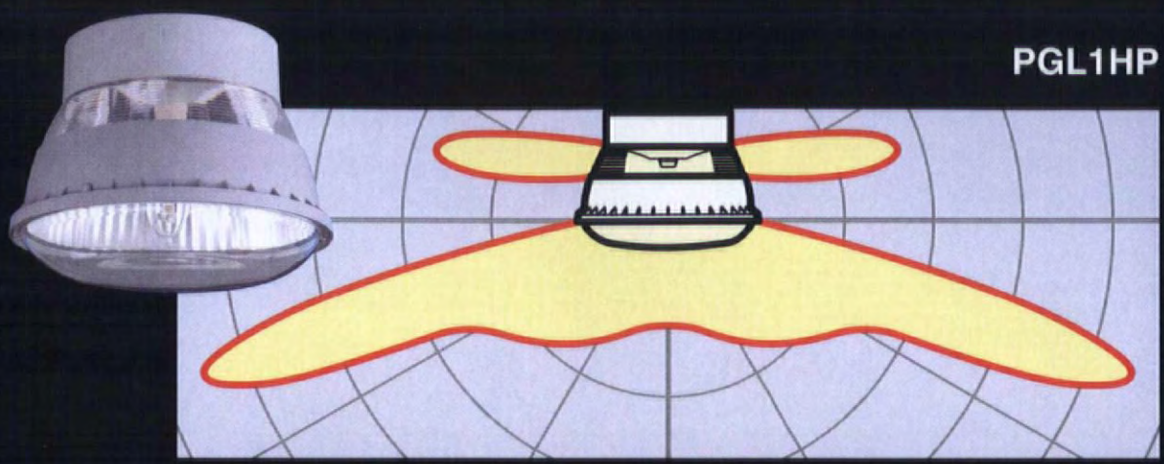

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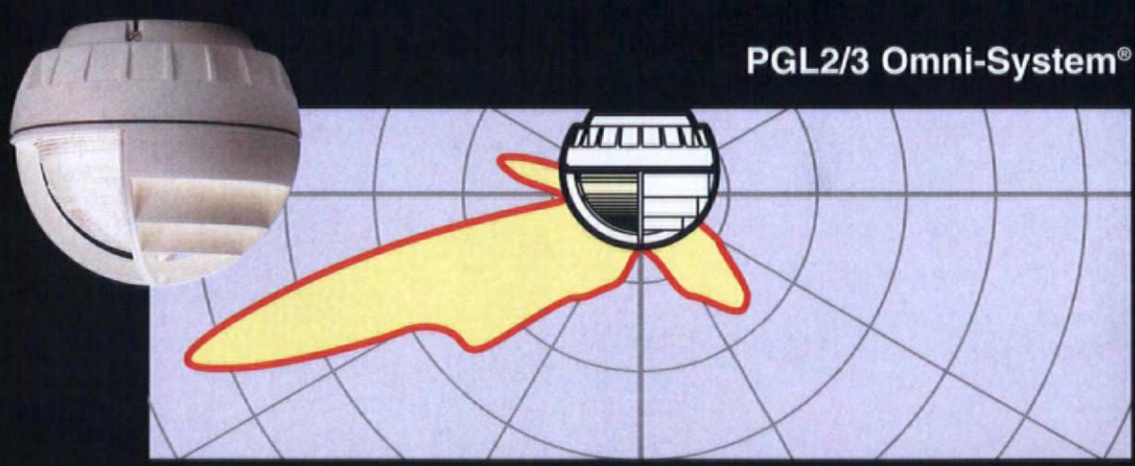

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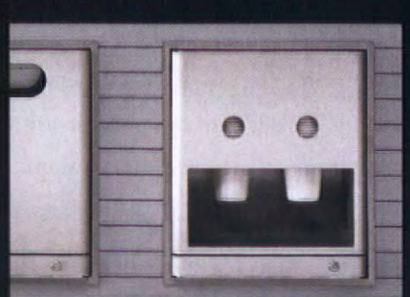

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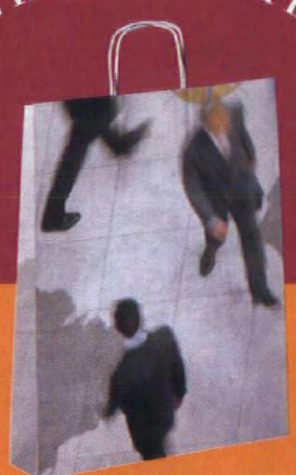

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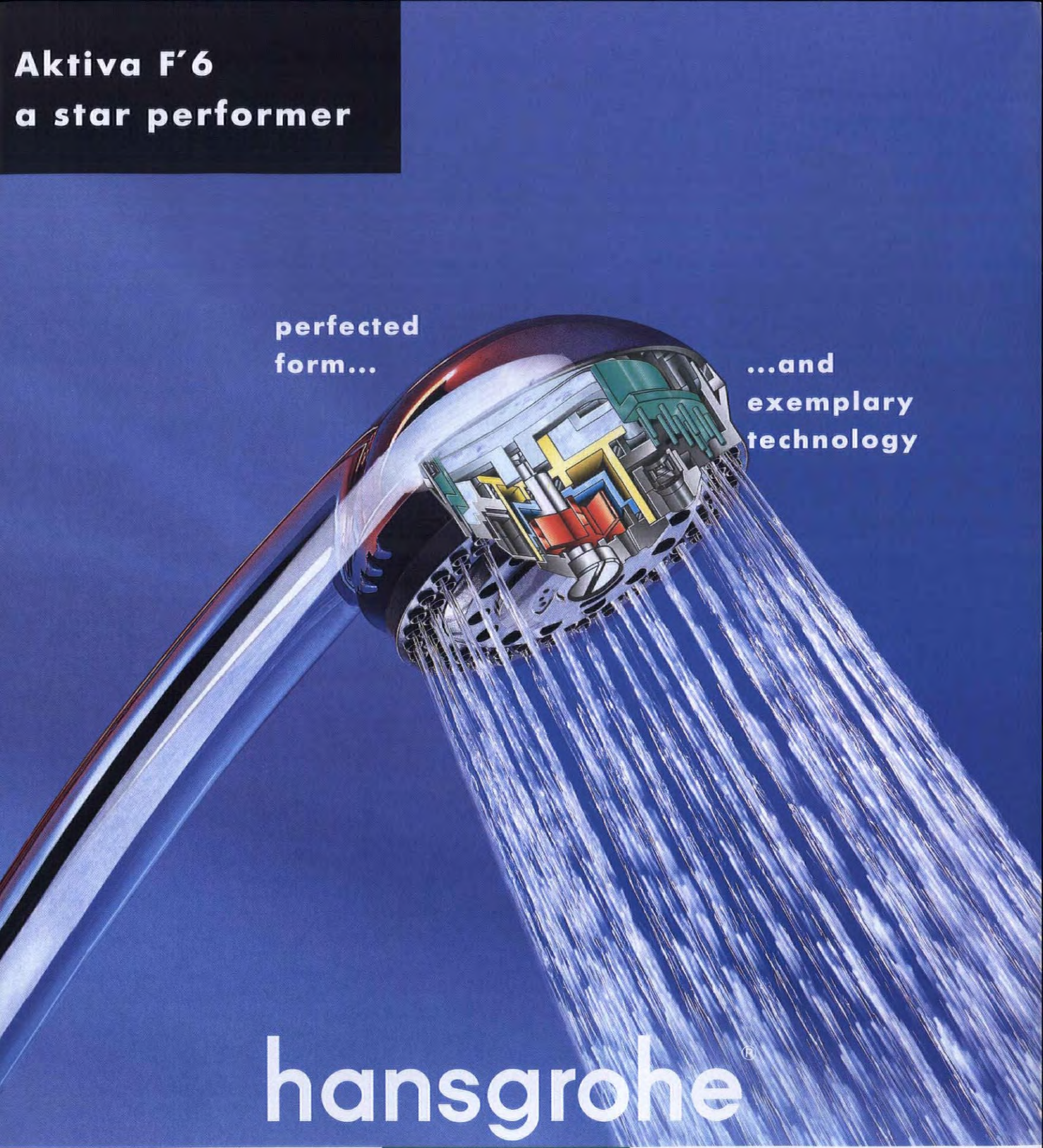

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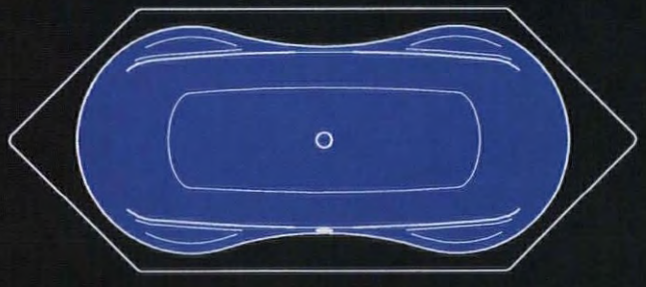

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What makes a city mayor?

It is now over three years since Oklahoma City was ripped apart by the bomb which claimed 168 lives. The mayor, Ron Norick, had for years been attempting to put his city on the map. The bomb granted him his dream in the most bitter way possible. The problem, concluded Norick before the blast, was not that people had a negative opinion of Oklahoma City, but rather that they had no opinion at all. Norick recently stepped down from office but not before he set the agenda for charging his city with a new vitality – beginning in 1993 with the Metropolitan Area Projects (MAPS) plan, still ongoing, which includes a new baseball stadium, "information age" library, expanded convention centre, sports arena and restored music hall. In 1995 a US$220 million infrastructure project was approved by voters, an encouraging sign that individual trophy projects would not stand alone. But while such projects will go far to raise the public profile of the city, its population is still handicapped by low wages and a poor education system. Is it possible for a mayor to solve it all?

Londoners hope so. Since the capital's Greater London Council was abolished in 1986 there has been a persistent popular belief that the capital is somehow deprived of funds and attention, which might be remedied if only it had a mayor. Barcelona has flourished under the leadership of Mayor Pasqual Maragall. In the USA mayors from New York's Rudy Giuliani to Richard Daley in Chicago (see News Analysis), have pioneered the regeneration of their cities. So, in May, London followed the rest of the world and voted for a Greater London Authority (GLA), led by a newly elected mayor, to be installed only after the millennium – another cause for discontent. The years before then will be filled with speculation as to who that person should be. The country's construction industry is confident that the GLA, with a budget of US$5.3 billion (£3.3 billion) for planning, transport, economic development and emergency services, will provide a model for reform across Britain and encourage a new civic confidence which will indirectly boost the industry. The UK's building trade press are calling for the big-name architects to throw their names into the hat. Let's hope they don't. How many architects are qualified to tackle such a complex range of issues? London does not need, nor does it have the room, to accommodate one architect's pet projects. As mayors from Bilbao to Bogota know only too well, there's more to being a mayor than creating trophy buildings.

Nicola Turner

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Letters

Can good be better?

From Dana Collins, Hellmuth, Obata + Kassabaum, St Louis, Missouri, USA

We are still basking in the glory of being named No1 in your 1998 World Survey. As a major design publication (and the only truly global one) your annual survey provides a valuable and unique resource to the industry. Thank you for tackling such a daunting task!

HOK has been an active user of the survey since its beginnings in 1994. In general, even though the 1997 survey was smaller (The Top 250), our marketers generally found it more substantive. There is more data on the individual firms and the overall market in the 1997 survey, and we prefer the general format. Have you ever considered variables/criteria that measure some level of quality, as well as quantity, to identify the No 1 firm? An obvious example is to compare annual net fees earned?

The World Survey has grown to incorporate a league table of 250 to 500 in just twelve months, in response to readers' suggestions and requests. The overall response, judging by the significantly increased numbers of copies sold, has indicated that the new format has been a popular success. We hope that you will find the upcoming 1999 survey as informative and valuable a resource as that in 1997. Regarding the use of alternative objective criteria (since judging a firm on "design merit" would have to be subjective and could not be formulated into a league table) ranking firms by fee income is not feasible since many firms are privately owned and not obliged to release turnover figures. This fact, coupled with huge variations in accounting procedures around the world, would result in a survey of questionable accuracy.

Local discomfort

From Nazar Ahmad, Planar, Abu Dhabi, UAE

I recently received the April 1998 issue with the United Arab Emirates feature. I am surprised that you have looked into this vital country from a rather narrow standpoint by concentrating mainly on two British and three North American firms. The UAE contains a multitude of architectural practices which have originated from various parts of the world and are now practising here. Amongst those are a large number of firms from Middle Eastern countries who have been actively involved in the development of this country and are still doing so.

Since its establishment in 1971 the UAE has been undergoing a vast development programme which has physically changed the shape of the country from a collection of small market towns and fighting harbours to major cities. Much of this work was carried out by architects from neighbouring Middle Eastern countries in particular from Iraq, Lebanon, Egypt and others from Syria, Jordan and the Sudan who settled mainly in Abu Dhabi and Dubai and started their own architectural and engineering practices. Most of these firms became well established and have been carrying out a large portion of the needed development, including tower blocks in Abu Dhabi, most of the housing, and many of the public buildings. This is, of course, not to deny the contribution of the other expatriate offices from Europe, the USA and Japan, some of which have been working here since the early 1970s.

Desperately seeking ...

Received via email from USA. Name withheld

I recently read an article in the May issue of AIA Architect that described the salaries of architects worldwide, and it referenced your survey from November last year. I am interested in where you gathered this information, because the salaries listed for US architects seems rather high, in my experience. If I knew where you got the information, maybe I'd apply for a job at those firms, in order to get better paid! Please let me know.

The information of which firms were surveyed for the Salary Survey is confidential, as agreed with the participants. We solicited responses directly from major architectural and design firms around the world, rather than from associations or recruitment consultants. A significant proportion of the responses were received from multi-disciplinary firms. All the figures quoted are an aggregate average of the responses received from each region.

Errata

In **WA63** in the Embassies report caption one p.87 should read "The Ethiopian Chancery building in Washington DC." RTKL is currently working on other security renovations in Laos, not Lagos. **WA64** p.38. The West End of Temple Bar, Dublin, has been designed by five different firms of architects of which one is a member of Group 91 (McGarry Nieanaigh). Others include Burke-Kennedy Doyle and Partners, Anthony Reddy Associates, deBlacam and Meagher, and O'Dowd O'Herlihy Horan.

In next month's WORLDARCHITECTURE

Country Focus – The Netherlands

WA speaks to Julyan Wickham, one of many design-conscious architects to have successfully entered the Dutch market. In contrast, he appraises the work of one of the giant US firms: Kohn Pedersen Fox's Provinciehuis in the Hague, the seat of the provincial government. Plus reviews of OMA's Educatorium in Utrecht – considered by some to be Rem Koolhaas' finest building to date; Verheijen Verkoren De Haan's Natural History Museum in Leiden, and the Kunstcluster cultural centre in Tilburg by Jo Coenen. Dutch critic Max van Rooy reviews Aldo van Eyck's new tax office in the Hague.

Sector Analysis – Cinemas

WA talks to Warner Brothers UK about technological developments and regional differences in cinema design. Case studies include the AMC Westminster in Colorado, US, the Cineplex Odeon in Toronto, Canada and La Cinémathéque Québécoise in Montreal. In Europe case studies include the Stratford Picture House, UK and the UFA-Palast, Dresden, Germany. Plus: how in the last five years the Asian enthusiasm for the multi-screen has revolutionised the market and allowed for a spectacular explosion of cinema-building.

Products – Building Elements

Dutch practice CEPEZED makes the process by which building elements are designed, manufactured and installed the basis of its architecture. Its work will be featured alongside a product showcase of cladding and curtain walling, glazing systems, facade engineering, roofing and tensile structures.

SURVEY– Landscape Architects

The landscape architect's relationship with architects has traditionally been a difficult one. *WA* examines this relationship today, and provides a league table of the leading firms.


Christian Richters

1


Hayes Davidson & Richard Davies

2


Peter Wislocki

3

1: Interior of Jo Coenen's cultural centre, Tilburg

2: BFI IMAX Cinema on London's South Bank

3: OMA's Educatorium, Utrecht

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Lunar hotel – more than just a pipe dream

NEAR SPACE

With the discovery of ice on the dark side of the moon, Hilton International and three Japanese companies have thrown their hats into the ring for lunar development projects.

British architect Peter Inston has designed the Lunar Hilton, a 325-metre high dome with a solar-powered eco-system including artificial sea and beach, working farms and other essentials for survival and recreation. Rooms feature earth views, and visitors take day excursions in a lunar jitney. According to Inston, "lunar tourism is about to take off. Perhaps we are anticipating a little, but a lot of people would like to take their vacations on the moon if the surroundings were appealing". The project is based on existing technology, and could be feasible in 25-50 years, according to hotel officials.

Clearly, turning the dream into a commercial reality is dependent on making the moon accessible to holiday-makers. US-firm Vela Technology Development Inc Zeghram Space Voyages is already developing "a high-end adventure tour, featuring a week long total astronaut experience".

Len Cormier of Third Millennium Aerospace knows that "space tourism is going to be an expensive proposition," but believes that his X Van system of reuseable launch vehicles will reduce the cost of entry into a "low Earth orbit" by a factor of 35.

In Japan, the Shimitzu Construction Corporation has designed an inflatable lunar complex with tennis courts and golf courses for low-gravity sports. Nishimatu Construction's Escargot City is a spiral-shaped grouping of ten inflated towers. And the Obayashi Company is planning a permanent city for 10,000 inhabitants. DC

World's elite compete for Chinese National Theatre

PRC

A glittering array of over 40 international and local firms are competing to design China's National Grand Theatre on Tiananmen Square, Beijing. Studio Valle (Rome), Terry Farrell & Partners (London), Arata Isozaki & Associates (Tokyo), Architecture Jean Nouvel (Paris), Hans Hollein (Vienna), Rocco Design (Hong Kong) and Moshe Safdie & Associates (Toronto) are amongst the competing practices.

The complex, located on an extremely sensitive site near the Forbidden City, is to house a 2,500-seat opera house, a 2,000-seat concert hall and a 1,500-seat theatre. A shortlist of three is to be announced at the end of July.

An all-Chinese competition was held last year but failed to produce a winner. AM

Lisbon Expo 98

The final Expo of the millennium opened in May. See September's issue of WA *for extended feature. (Pictured left: Lisbon Oceanarium by Peter Chermayeff.)*

Grollo and consumer confidence

AUSTRALIA

At the end of May Denton Corker Marshall (DCM) said that it was "90 percent confident of winning local planning permission" for what will be the tallest building in the world, the 560-metre Grollo Tower.

"We are waiting for the Minister for Planning's announcement" said project architect Bill Corker.

Located on the edge of Melbourne's Central Business District, the development will house apartments, office space, a hotel and parking for both the Tower and the nearby 50,000-seat multi-use stadium – the other major project in the city's waterfront regeneration.

DCM's confidence appears to be reflected in consumer confidence. Developer Bruno Grollo, has already taken 500 deposits for the Tower's 450 apartments. AM

EUROPE

Contracts

POLAND

- After competing unsuccessfully for Heinz's new office scheme in Paris, **Foster and Partners** has won a US$160 million commission to build the company's new Polish headquarters. The 40,000-square-metre complex was still in design at the time of going to press.

RUSSIA

- A German consortium has won the contract to build a new US$87 million passenger terminal at Moscow's Domodedovo Airport. The consortium, comprising **Hochtief**, **ABB** and consulting engineer **Lahmeyer International**, is charged with increasing the airport's passenger turnover from 2.5 million per year to five million per year. There was a seven percent increase in air traffic at Moscow's four airports in 1997 alone. The East Line Group, Russia's largest airfreight carriers and the future operator of the new facility, does not foresee any let up in the immediate future.

SPAIN

- Architect **Alfredo Batuecas** of Madrid has been selected from a group of ten finalists to design Justice Department offices for the regional government of Valencia. Designs by **Guillermo Vázquez Consuegra** and **Carlos Meri** received honourable mentions.

UK

- Ian Schrager Hotels' (ISH), the American purveyor of minimalist hotel refurbs for the rich and famous (see *WA*51 pages 108-109) has moved into the British market. Two commissions have been awarded for two London hotels. Melbourne, Australia-based firm **Denton Corker Marshall** is to design the transformation of the historic Sanderson building, central London; and London practice **Harper Mackay** is working on the development of the Lumière cinema on St Martin's Lane – also in central London. As has been the case with all ISH hotels, the architects are to develop proposals by Schrager's in-house designer, Frenchman **Philippe Starck**.

Terminal changes add US$130m to asking price

SPAIN

Design changes by the Spanish airport authority AENA will delay the completion of construction documents for the new terminal at Barajas airport, Madrid, by at least one year. The changes will increase the cost of the facility from US$200 million to over US$330 million, according to AENA and sources on the design team of Alfonso Lamela and Richard Rogers.

AENA wants to double the terminal's capacity, from 32 gates to 70, due to revised traffic projections. It may take another three months for the AENA to decide whether to locate the new gates in the main building or in a satellite terminal, which was originally projected for construction in 2010. AENA has also requested upgrades in construction materials, and moved the site of the terminal 330 metres out of the path of an existing runway approach.

AENA has denied that these changes were due to pressures from Iberia, responsible for 60 percent of the air traffic in Madrid, which seeks to obtain exclusive use of the terminal. The architects hope to finish documents in September, if no new changes occur. (See *WA*62 page 55 and *WA*66 page 22). DC

301-metre Scandinavian Tower on site

SWEDEN

Resembling a light house, Scandinavia's tallest building is on site and on course for completion in December 2000. Located near Malmö, at the crossroads of Denmark, Sweden and Norway, the 301-metre, US$82 million (NKr1 billion) tower will have views over the other major Scandinavian development due for completion in 2000, the Øresund suspension bridge.

Designed by Wingårdh Arkitektkontor AB and backed by Øyer Invest AS, the glass-clad tower is primarily a hotel (700 rooms), but will also house a nightclub, retail outlets, conference facilities and ten storeys of residential space. If Sweden relaxes its gambling laws, the tower might also accommodate a casino. Malmö is one of three Swedish towns under consideration for such a venture. AM

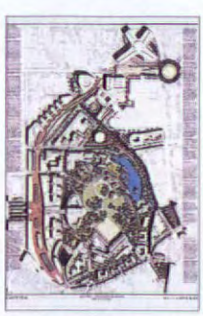
Anglo-Belgian team triumph in Brussels overhaul

BELGIUM

Aukett Associates of London, in association with Brussels practice Art & Build, has won the European Commission-organised competition to re-design Brussels' 65-hectare parliamentary quarter.

The US$100 million urban regeneration scheme is designed to accommodate the new European Parliament by creating a development framework for the surrounding residential, commercial and shopping districts. The focus is on the restoration of a pedestrian-oriented environment in an area that has been described as a bureaucratic ghetto.

An existing railway will be decked over and replaced by a linear park linking the Parliament with the Berlymont building and the Council of Ministers complex.



The project will take five years to complete, and will involve a six month period of public consultation. Phase one is due to commence in January. The winning scheme beat off competition from 124 other entrants, over the three-stage process. AM

US$165m – cheap at the price

PORTUGAL

A team headed by Spanish engineer José Antonio Fernández Ordoñez has won an international competition to build a bridge across the Duero River in Oporto, Portugal. The dramatic concrete structure has a broken polygonal arch spanning 280 metres. Fernández Ordoñez is author of a pedestrian bridge to be built beside the Guggenheim Museum, Bilbao and the Centennial Bridge in Seville. Major factors in the jury's decision were the low cost of the design, estimated at US$165 million, and the quick erection time (25 months). The design team included engineers Antonio Adao da Donseca and Francisco Millanes, and architects Lorenzo Fernández Ordoñez, Adalberto Díaz and Alexandro Burmester. DC

ASIA

Axe falls on failed land act

INDIA

In a landmark decision, the new Bhartiya Janta Party-lead government in India has decided to scrap the 21-year-old Urban Land Ceiling & Regulation Act (1976) and introduce fresh legislation. Union Minister for Urban Affairs, Mr Ram Jethmalani said that the decision to repeal the act is expected to increase supply of land in urban areas, boosting housing activities.

Reacting to the news Mr Atul Desai, president of the Indian Institute of Architecture said: "It was long-awaited. A vast area of undeveloped land will be available for development in various cities. In fact, this will go a long way towards streamlining the Indian real estate market."

In more than two decades of its existence the Act has failed miserably in its basic purpose of even distribution of land in the urban areas of India. However, it has gone a long way in artificially restricting the supply of land in cities across the country, which has adversely affected the development of these cities.

Out of 220,674 hectares of land declared vacant under the Act, the government (until December 1997) had managed to acquire only 19,020 hectares. AG

Tokyo district to get highrise face lift

JAPAN

Mitsubishi Estate Co has announced that it will build a 37-storey, US$500 million (65 billion yen) office and commercial tower on a choice corner across from Tokyo's central rail station.

The 157,000-square-metre building will house shops and restaurants on the first six floors with office space above. Mitsubishi's in-house designers are drawing up final proposals. Construction is to begin in spring of 1999 and be completed in 2002.

Once construction is complete Mitsubishi Estate Co plans to build a new headquarters for Mitsubishi Corp, the trading company at the heart of the Mitsubishi group. Next door to the tower, the headquarters building will be 20 storeys and has an estimated budget of US$192 million (25 billion yen).

Mitsubishi Estate said it plans to demolish and rebuild several other buildings in the area over the next decade, though plans are still being studied. The Marunouchi district was once Tokyo's classiest business address but has fallen into disrepair over recent years. Most of the area is owned by Mitsubishi group companies. DN

Ando hotel on site in Awaji

JAPAN

A US$138 million (18 billion yen) resort and conference centre on Awaji Island, near Kobe, Japan, is under construction. The ten-storey, 200-room hotel has been designed by Tadao Ando. The development is owned by Westin Hotels & Resorts.

The Westin Awaji Island Resort & Conference Center is at the heart of the 350-hectare Awaji Island International Park City development project. Awaji Island is now connected to Honshu, Japan's main island, by the recently opened Akashi Kaikyo Bridge, the world's longest suspension bridge (see *WA*67 page 21). The hotel is expected to be completed by March 2000. DN

1998 – not a vintage year in Hong Kong

PRC

The Hong Kong Institute of Architects (HKIA) declined to hand out the top prize in its annual awards for 1998, but gave Simon Kwan & Associates a Certificate of Merit (CoM) for its Jockey Club Environmental Building in Kowloon Tong. P&T Architects also won a CoM for its project, Chuang's City Tower in Wan Chai.

The top prize, the Silver Medal, is normally given to outstanding architectural works in Hong Kong. The President's Prize, for small projects with a contract sum of not more than HK$20 million also went unawarded.

However, architectural standards remained high said HKIA President Tao Ho, adding: "We are entering a period of considerable investment in non-commercial buildings. What we build over the next few years will determine the form of much of Hong Kong for generations to come." EP

Exterior view of P&T Architects' City Tower in Wan Chai – one of only two buildings awarded a Certificate of Merit by the Hong Kong Institute of Architects in 1998

In brief

INDIA

Sea change in housing market

India's new Bhartiya Janta Party (BJP)-lead government has announced a national housing policy to construct two million houses every year.

Addressing the Confederation of Indian Industry, prime minister Atal Bihari Vajpayee stated that the government was committed to formulate the policy which would remove all the impediments in the way of Indian mass housing. At present, housing is primarily the preserve of speculators and private builders. The construction industry has hailed the decision.

JAPAN

Government devote US$59 billion to public works

Faced with its most stubborn bout of economic stagnation ever, Japan's government adopted a US$128 billion (16.65 trillion yen) economic stimulus package that includes US$59 billion (7.7 trillion yen) for public works projects. Included in this definition of public works are dozens of new or refurbished buildings for national universities and research labs. Virtually all projects have been in planning but were waiting in line for authorisation.

Shinjuku heads south

East Japan Railway Co and Japan's Ministry of Construction have agreed to co-operate on a ten-year, US$923 million (120 billion yen) plan to redevelop the area around the south exit of Tokyo's Shinjuku station. The work will include renovation of the station exit itself, widening of the pedestrian and car overpass, and the construction of a four-storey building. Sprawling Shinjuku Station is one of Tokyo's major rail hubs.

NORTH AMERICA

Superstars vie for Penn overhaul

USA

After years of bickering, New York's Penn Station will finally move into the twin to its original home – which was destroyed in 1963. At the turn-of-the-century McKim, Mead and White built the city's General Post Office and Penn Station as complimentary neo-classical complexes. In line with New York's post-war economic boom Penn Station was demolished by the Pennsylvania Railroad which sought to capitalise on the site's air rights. The banal modern replacement included the new Madison Square Garden sports complex, a 25-storey office building and the current Penn Station. The demolition single-handedly launched the historic preservation movement in the USA.

As the current Penn Station (completed 1968) is overcrowded the Post Office conversion will provide additional accessibility as well as much needed space. But, moreover, according to Alexandros Washburn, president of the Pennsylvania Station Redevelopment Corporation. "It will become New York's front door," said Washburn. "It will provide a monumental gateway into New York City."

While the decision for the winner of the open competition will be announced soon, the word is that SOM, Richard Meier and historic preservation specialists Beyer Blinder Belle are among those competing for the US$315 million project. BB

Spectrum Colour Library

The existing Penn Station – part of a banal modern replacement to McKim, Mead and White's neo-classical original

Schrager trumps Trump

USA

Just as developer-célèbre Donald Trump was set to seize the 1929 700-room St Moritz Hotel on Manhattan's Central Park South to revamp it into condos reclad in a 1920s montage, hotelier Ian Schrager has seized the day and staved off the scion.

Schrager successfully bid US$185 million for the ailing landmark and plans to add it to his repertoire of chic hotels, that includes New York's Royalton and Paramount Hotels and Miami's recently recently renovated Delano (see *WA*51 pages 108-109).

Schrager intends to commission interior designer Philippe Starck, the doyen of minimalist revivalists, to revamp the interior as he has done in so many of Schrager's hotels (see Contracts Europe). The estimated cost is US$70-80 million. BB

Contracts

USA

- Local firm **The Weihe Design Group** (WDG) has been selected to carry out the design of Columbia Center, a 320-unit, 18-storey residential building in Pentagon City. Columbia Center is the first high-rise residential development in the Washington metropolitan area, by the Bethesda office LCOR Incorporated. Construction will begin later in the summer. The projected cost is US$25 million.

- Berlin-based **Daniel Libeskind** has been appointed architect for a major new centre for Jewish arts and culture in San Francisco. The US$30 million, 6,500-square-metre facility is to be completed by 2001. Libeskind has recently completed work on the Felix Nussbaum in Osnabrück, Germany. His Jewish Museum in Berlin was completed in June.

- **Heery International** and **Thompson Ventulett Stainback & Associates** (TVS&A) have received the commission to design the fourth phase of the Georgia World Congress Center (GWCC). TVS&A is the design architect, working with architect of record Heery. **Turner Associates** is the consulting architect. The expansion to the 1974 building (also designed by TVS&A) will add over 65,000 square metres, and a new west side entrance.

- Indiana-native **Michael Graves** has returned to his homeland to design the National Collegiate Athletic Association Headquarters and Hall of Champions in Indianapolis. In an uncharacteristically historicist design Graves' project (replete with Roman arena) comprises a 3,716-square-metre Hall of Champions exhibition hall, a 13,006-square-metre office and conference centre, and a library and cafe that will share space in a retrofitted nineteenth-century industrial building. The US$35-million project is to be completed in 2000.

People and practice

EUROPE/ASIA

David Hull has been appointed partner of Bath, UK-based multi-disciplinary **Buro Happold Consulting Engineers**. Robert Pegg, James Wong and James Niehorster have been promoted to directors of the Hong Kong office of **Bucknall Asia Pacific**. Nottingham, England architects **Derek Latham and Company** has recruited Tara Crooke to work on regeneration and new build schemes.

NORTH AMERICA

Neville Lewis has joined **Gensler** as a designer. He will work from the firm's Wall Street office, New York. Steve Engelhardt has been made project architect at **TBA^2 Architects** of Charlotte, North Carolina. Nestor Santa Cruz and Tsun-Kin Tam have joined the San Francisco office of **Skidmore Owings & Merrill**'s Interiors Group. Chicago-based architecture and interiors firm **Loebl Schlossman & Hackl/Hague Richards** has promoted James Pritchett, Robert Klute and Giles van der Bogert to Equity Principals. Minneapolis-firm, **Hammel Green and Abrahamson Inc** has appointed Stephen A Fiskum as its chief operating officer.

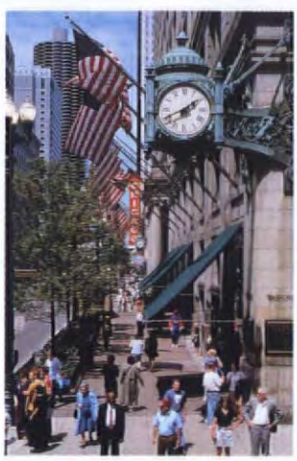
Frank Gehry is the winner of the inaugural US$60,000 Austrian Friedrich Kiesler-Prize for Architecture and the Arts. Named in honour of Austro-American architect/painter Friedrich Kiesler (1890-1965), the prize will be awarded every two years. Jury chairman Hans Hollein commended Gehry for his "constant manifestation of courage, his intuitive and apolitical way of creating and the obvious pleasure with which he develops his buildings".

ANALYSIS

Pat Catney

The return of the City Beautiful

A century ago the short-lived but pervasive City Beautiful movement promised to rebuild American cities. This idealistic yet pragmatic movement wanted to transform congested and unregulated centres into inspiring cities. Although the movement attempted too much within the USA's fragmented political system, it did introduce zoning and planning to many cities, and built many handsome public buildings and parks. Now the City Beautiful movement appears to be making a comeback, from San Francisco and Suisun City (above), to Fort Worth, Texas and Chicago (right). The most successful civic projects also generate an influx of private investment, thereby leveraging scarce public funds many times over and increasing jobs and tax revenues to benefit the entire city. In the first of a two part series on cities, Charles Lockwood illustrates the movement's comeback with examples from Chicago and Suisin City, California.



Courtesy of Skidmore, Owings & Merrill Photographer: Jim Steinkamp, Steinkamp/Ballogg Photography

Chicago

Chicago is one of the unquestioned leaders in the Return of the City Beautiful. Last year, the City of Chicago completed the US$23 million State Street Renovation Project, winning an American Institute of Architects 1998 National Award for Urban Design. Between the 1870s and 1970s, State Street was the heartbeat of downtown Chicago, lined by department stores, speciality shops, hotels, and theatres. Around 1970, competition from suburban shopping centres sent State Street into a tailspin. All but two department stores closed their doors forever. A poorly designed 1979 Transit/ Pedestrian Mall, which was meant to reverse State Street's slide, only accelerated its decline.

"So, the city ripped out the failed Mall, introduced traffic back into the roadway, installed historic streetlights and subway entrances, planted hundreds of mature trees, and installed granite curbside planters whose shrubs and flowers change with the seasons," says Philip J Enquist, a partner at Skidmore, Owings & Merrill, which designed and carried out the State Street Renovation Project.

"But this civic project didn't simply give State Street a more attractive, pedestrian-friendly look," adds Enquist. "It became the catalyst for a surge of privately funded development projects such as retail, entertainment, hotels, and housing."

Over a dozen leading US retailers are opening (or planning to open) shops or department stores on the street. Two hotels are moving into historic former office buildings. Real estate developers have converted several other buildings into apartments, condominiums, and live/work loft space. Finally, Disney has signed a long-term lease for the 3,000-seat Chicago Theater, a restored 1920s movie palace on State Street, so it can produce lavish musicals, and Livent has purchased and will restore the 3,200-seat Oriental Theater, half a block from the Chicago Theater.

The State Street Renovation Project is only one part of a downtown Chicago civic works boom, spearheaded by Mayor Richard M Daley. Other completed projects include the beautiful Roosevelt Road Bridge, the Congress Parkway Viaduct and Plaza at the entrance to Grant Park, and the renovation of the spectacular Buckingham Memorial Fountain. Now, the city is planning a US$150 million revamping of Grant Park overlooking Lake Michigan and a US$350 million renovation of Wacker Drive along the Chicago River. At Mayor Daley's behest, the City is also planting thousands of trees a year along city streets. Historically-inspired streetlights are replacing the over-scaled modern cobra fixtures on many downtown streets.

Suisun City, California

Small towns have jumped on the new City Beautiful movement bandwagon. In 1989, the San Francisco Chronicle ranked Suisun City, 44 miles east of San Francisco, as the worst place to live in the San Francisco Bay Area. Today, Suisun City (population: 26,000) is a testament to the power of City Beautiful principles. The town was featured on an American Institute of Architects-sponsored TV programme as one of three leading comeback communities in the USA. Architects and planners flock to Suisun City for inspiration.

How did ethnically diverse, working and middle class Suisun City turn itself around? "The City began by rebuilding its small historic downtown and creating new civic gathering places," says architect Boris Dramov, a principal at San Francisco-based ROMA Design Group which designed most of the Suisun City projects. "For example, it dredged the silt-filled Suisun Channel, built a waterfront promenade, and constructed a Town Plaza. All these projects encouraged a flurry of privately financed new downtown construction and renovation, including restaurants, shops, and work/live buildings."

Suisun City financed its turnaround by boldly putting the entire 3.6-square-mile town into redevelopment to capture tax increment financing from development all over the city, including new outlying areas. Then it sold municipal bonds, which will be repaid from the tax increments, to pay for upfront renovation costs like infrastructure improvements, land acquisition, and the division of parcels into various size lots so that all kinds of development could take place. "With vision, hard work, and a little luck," says Dramov, "Suisun City is becoming one of most liveable communities in the Bay Area and a model for other towns that want to turn themselves around."

In September WA suggests reasons for the return of America's "City Beautiful" and provides further examples of similar projects around the world.

ANALYSIS

How did they do that?
The team behind Chek Lap Kok

by Jack Robbins in Hong Kong

From Icarus to Charles Lindberg, flight has been seen as one of mankind's most audacious achievements. Airports are symbols of our ability to conquer technical challenges and to overcome immense distances at great speeds. Even those who have worked on Chek Lap Kok's terminal from its inception confess to still being surprised by its sheer size. While it must yet stand the final test of full operation, already the endeavour can be judged by the immensity of its ambition, and its achievements thus far. Through teamwork and technical rigour, this colossal project went from concept to finished building in just six years. Both the process and the structure itself have sought to overcome and embrace great distances with speed and technical skill.

On 6 July the world's largest airport terminal building will become operational. Chek Lap Kok, Hong Kong's new International Airport, represents one of the most ambitious design and construction projects ever undertaken, including not just the terminal building, but the entire airport, the very ground it is built on, and nine other major infrastructure projects related to the airport. The list of superlatives and world records achieved by the project is itself extensive. Sensational comparisons of the terminal building have been made to the size of New York's Yankee Stadium (the baggage hall alone) or to ten London Wembley arenas (the total floor area). At over half a million square metres it is the largest enclosed public space ever built. A turnover of 80 million passengers a year is expected after the completion of phase two, more than the combined capacity of London's Heathrow, and New York's JFK airports. Phase one, capable of handling 35 million passengers annually, encompasses 38 aircraft bays and 20 remote aircraft gates. Located 34 kilometres from Hong Kong's central business district, Chek Lap Kok fully replaces the existing Kai Tak airport. With a price tag of around US$20 billion, the airport will ensure the former colony remains the gateway to the People's Republic of China.

The intention to build the new airport was announced by Hong Kong's Governor Wilson in October 1989, a time coloured by the Tiananmen Square massacre and subsequent slump in Hong Kong markets. The architects, London's Foster and Partners, acclaimed for London's Stansted Airport (completed 1991), joined forces with Mott Connell Ltd (Mott MacDonald (UK) and Connell Wagner, Australia) – responsible for management and engineering design, and BAA Ltd – responsible for operational planning and systems design, to form the Mott Consortium. High profile sub consultants included Ove Arup & Partners engineers for the roof and architectural steelwork, WT Partnership as quantity surveyor, and O'Brien Kreitzberg for project scheduling. In 1992 the Mott Consortium was selected from seven finalists in a "two-envelope" competition, in which design qualifications were considered first, and separately from fees.

"Covering everything from the lightweight roof structure to the litter bins, the design was required to meet the airport's budget. If the tender bids came back too high, the team would have to redesign the building at their own expense."

Finished in June 1994, the entire design and documentation for tender packages took just over 24 months. To accomplish this the 220-person consortium team used mass-production techniques, occupying the entire floor one floor below their client, the Hong Kong

VITAL STATISTICS

- The new airport is only one of ten projects in the Airport Core Programme, which include an airport railway; Lantau Fixed Crossing; Western Harbour Crossing; North Lantau Expressway; Route 3; West Kowloon Expressway; West Kowloon Reclamation; Central Reclamation Phase 1; Tung Chung New Town Phase 1
- Total area = 516,000 square metres; total length = 1.27 kilometres
- Total area of the lightweight roof = 18 hectares
- Lightweight roof contains 32,000 components, and weighs 54 kgs/m2
- 370,000 cubic metres of concrete
- 67, 000 tonnes of reinforcement
- 4.5 kilometres of cladding
- 8 kilometres of movement joints
- Communications and electronic systems worth over US$140 million
- There are 20,000 voice/data outlets connected by 1,300 kilometres of cable
- 21,000 workers on site at the peak of construction
- The multi-disciplinary team included 230 sub-teams
- Terminal building built in 13 million man-days
- Airport will employ 45,000 people
- Automated People Mover system will be able to carry 5,270 passengers per hour each way, and will eventually total 17,500 per hour
- The contracts for steel, glass, stone and moving walkways were the biggest in the history of buildings contracts
- Over half the world's population lies within a five-hour flying distance
- The excavation of the Chek Lap Kok peaks was the fourth largest open mining operation in the world

Air Photos International

Airport Authority. According to Winston Shu, a director of Foster and Partners' Hong Kong office, "It was the only way to do it: everybody under one roof, as part of one team." They produced over 2,100 different structural drawings including 1,300 reinforcement detail drawings. Covering everything from the lightweight roof structure to the litter bins, the design was required to meet the airport's budget. If the tender bids came back too high, the team would have to redesign the building at their own expense.

Meanwhile, site preparation got under way, creating a large 3.5 by 6 kilometre, 1248-hectare platform from two small mountainous islands. The seabed mud was removed, employing over half the world's dredgers in the largest dredging fleet ever assembled. The 100-metre peaks were levelled to fill in 938 hectares of land at a rate of three hectares a day. Completed in 40 months, the operation moved an average of 10 tonnes per second of rock and soil.

The Hong Kong Airport Authority then had to provide infrastructure and services to support the construction workforce, 21,000 strong at its peak, with shifts going 24 hours a day. They built water, sewer, and power networks, and provided accommodation, transportation, fire, police, and medical services. Around 20 percent of the workforce was imported, and contractors had some difficulty finding the skilled workers for such jobs as heavy welding. But to demonstrate to local labour unions and the Hong Kong government that the project was employing as much local labour as possible, the Airport Authority helped create a job centre in the city.

The design strategy for the terminal building emphasises functionality and flexibility, using a modular system based on the 36 metre structural grid. Modules of the same function are repeated laterally, while the sequence of functions that process passengers is arranged longitudinally. For passengers arriving or departing, movement through the airport is all in a single direction, with minimal level changes. Foster and Partners highlight key design features as the "lightweight steel roof with skylights and an all-glass cladding system which creates large open spaces within the terminal as well as an innovative foundation system accommodating extreme variations in ground conditions – from bedrock to the remnants of old paddy fields". Made of parallel steel frame vaults with perforated aluminium panels and integrated skylights, the roof arches gently from 12 metres at the entrance to 22 metres over the check-in counters and down to four metres at the far gates. Containing the terminal within a single building is an extension and development of the concept pioneered by Foster at Stansted. Similar characteristics include the lightweight roof, extensive use of solar lighting, and integrated climate control, baggage handling, and transportation beneath the building. But the Chek Lap Kok roof bays are four times the size of those at Stansted, and required two of the world's largest mobile cranes to lift the pre-assembled sections into place.

In modern airport design retail is king, and Chek Lap Kok is no exception, with 30,000 square metres of retail space and 140 shops and restaurants. The East Hall houses the largest single retail space in any international airport, the Hong Kong Sky Mall, has been described by Foster and Partners as "the social equivalent of the town square".

SOUNDBITES

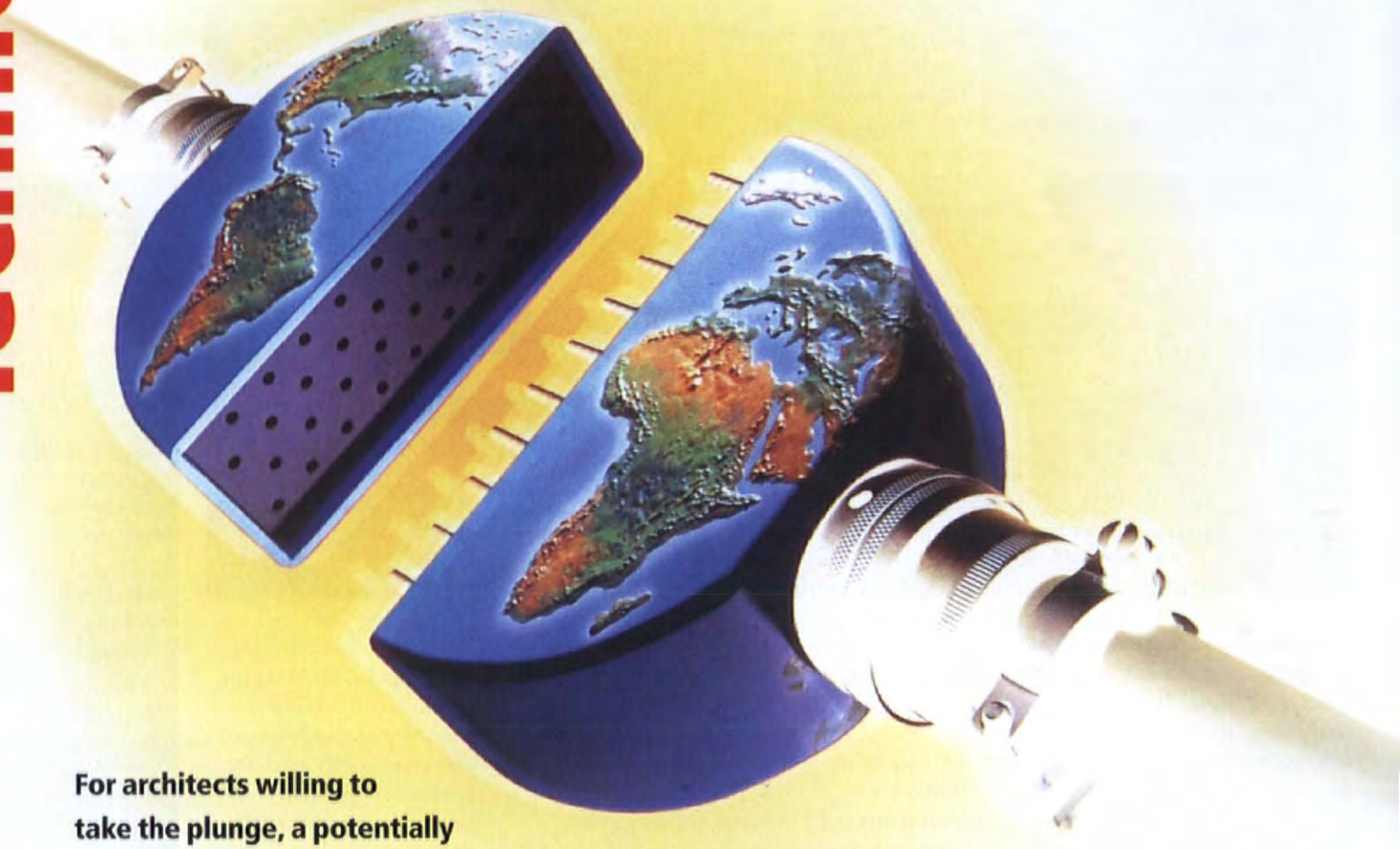
"Hong Kong is a unique city and deserves a very special symbol. [CLK] fulfils this role – it is in effect a gateway to the city – a high profile event of international significance."
Norman Foster

"Perhaps the most important lesson is the need for close and direct project management, the early identification of problems and the prompt initiation of remedial actions. It is only by paying attention to the detail ... that such large projects can hope to be kept on budget and on schedule. It is important to have a clearly-defined objective which is not subject to major change and revision."
Esther Wong, Airport Authority, Hong Kong

"The terminal building concept design established during the masterplan phase ... created the vision for future expansion that allows for more than doubling the airports capacity to ultimately serve over 80 million passengers annually."
Ernest Cirangle, of HOK, which lead the architectural team for the concept design.

Technical

Embracing the information life cycle



M T Cherevkoff/Image Bank

For architects willing to take the plunge, a potentially lucrative opportunity is emerging from the digital quagmire. In conversation with John Mitchell, architect and group IT manager with Woods Bagot Architects in Sydney, Bruce Duyshart argues that the financial imperative to document and deliver a project in the shortest possible time frame, overlooks the possible re-use of project information by stakeholders involved in other management phases of the built asset. So, why should we be interested in creating and managing information in the design and construction industry?

"For most architects, the information life cycle has only meant involvement in the design and documentation phase" says John Mitchell of Woods Bagot Architects (WBA). "Many still maintain this view, but with the increasing use of facility and asset management services, there is a growing understanding of the whole life cycle and how valuable project information needs to be exchanged between the stages of inception, client briefing, design, documentation, construction, occupation and facility management."

As the generators of up to 60 percent of project information, there is a significant opportunity for architects to play an important role in all of these stages. On average, only four percent of architects fees are involved in post-construction activities. There is huge market potential for those willing to make use of project information they are generating by way of additional services.

"If clients demand this approach at the beginning of a project, and participant's fees are based on explicit data contribution and ready access, then an accurate, useful and valuable amount of information can be collected automatically for everyone's long term advantage." Mitchell says that in most cases, the cost of structuring data appropriately is likely to be built into the initial fees of all project participants. "The additional value this provides for the owners and/or occupants is likely to win project bids and help secure an ongoing relationship with the client."

Governments are beginning to show the way. In Australia, the Government of New South Wales has just published *Making IT Happen*. "This strategy focuses on using IT to achieve better value and quality for government facilities," Mitchell says. "In future, they will award projects on the basis of a consultant or contractor's capacity to use technology to reduce duplication, reduce waste, increase coordination, and provide better asset knowledge and asset management capabilities."

Though the concept of the information life cycle is relatively easy to grasp,

the absence of defined information standards, integrated building databases and object-based building product data have made the promotion of the process very difficult.

Whilst many parts of the industry have already developed their own systems and achieved certain levels of efficiency and improvement, Mitchell points out that "for the effective exchange of life cycle data, the industry will need to develop neutral information protocols for both local and international construction markets".

Mitchell cites the example of the emergence of rail networks in the industrialisation of nineteenth century Britain as the best analogy of the problem of industry standards. "Until the government in Britain decided upon a standard gauge, every train company had their own different versions – limited to their specific location and incompatible with their neighbours. When the standard gauge was developed, all train companies could connect and an astounding increase in commerce occurred."

In the last 30 years, there have been a huge number of international committees to develop and consolidate industry standards (such as IGES, STEP and IFC) for the exchange of project data. To most end users, it would still appear that little has resulted from these efforts.

Mitchell offers that this is "probably a fair perception". He explains that "prior to the advent of the Internet and the globalisation of commerce, national initiatives and work practices could exist with little outside interference. All that has now changed. The impact of pervasive computing has revolutionised the way we work, and has provided opportunities for the delivery of building information that is no longer unique to a single region or country".

"Previous work by the International Standards Organisation (ISO) in the AEC industry, foundered for want of an international awareness of the benefits of its work. In today's computing environment committees can concentrate solely upon the development of a common language to increase capabilities for the sharing of data." Though a complex task, a number of more technically advanced industries have shown the way. The German automotive industry has achieved success by getting all car manufacturers to agree and jointly develop information standards (based on ISO 10303 STEP) to everyone's advantage. The AEC industry could follow suit.

Getting tooled-up

Traditionally, CAD has been regarded as a documentation tool. Today, however, there are new generations of these tools offering incentives for practices wishing to take a long-term view of the information they are creating. "These [new CAD] systems create an integrated model, where a building is composed of objects with properties (ie size, cost, colour, or quantities), relationships (ie located in Room 216, part of sliding door assembly 435), and has a 3D and/or 2D description. In the model, visualisation, scheduling, simulation and analysis are an integrated function. The end result is that designing can be undertaken, rather than pseudo-documenting."

Pervasive commercial CAD vendors such as AutoCAD, Bentley, Nemetchek, and ArchiCAD, are now developing Industry Foundation Class (IFC) functionality that permits the exchange of these design models. Mitchell is emphatic in saying "if we are to manage information over a complete life-cycle, we need tools that integrate, store and communicate information in these seamless environments".

Mitchell identifies the development of a CAD library of equipment, furniture and details as being one quite simple but effective method toward this aim. "Managing the issue of drawings and documents is another. If this process can be carried out electronically using a centralised management system, it will also vastly improve the capability to exchange information across different stages of a project."

At WBA, the Interior Design and Facility Management groups have already acknowledged the information life cycle vision. "We are a large practice with diverse project scopes," says Mitchell. "Our Interior Design Group commissions often involve the stages of strategic accommodation analysis, fit out proposals, facility purchase and sale options, and the delivery of fit out asset information that needs to be incorporated into a client's asset management system."

"In our private health work, there is also an increasing potential to work more closely with suppliers and contractors (such as joinery manufacturers) to systematise solutions and make improvements in production manufacturing."

"In future projects [will be awarded] on the basis of a firm's capacity to reduce duplication, reduce waste, increase coordination, and provide better asset knowledge." John Mitchell

In order to facilitate this process, Mitchell is putting a number of initiatives in place. "A major activity has been a detailed evaluation of new building design software for the group. WBA believes that the ArchiCAD system they have now chosen will take them into the next generation of integrated design systems.

Other areas of development are: an intranet to access and distribute corporate data, improved financial systems to improve project costing and analysis, and extensions to the company's public Web service.

Mitchell anticipates that it will take 12-18 months before significant improvements are gained. "The realisation of these benefits are predicated mainly on external factors, where there is also a process change required by clients, consultants and product manufacturers. Quicker results may be achieved internally because there is a lot of enthusiasm in the office for the course we are starting." In particular, Mitchell has observed this from their younger architects and designers who are now taking the digital environment more and more for granted. "As a result we also see that there is a need to merge the corporate experience of our senior staff with the creative and innovative technology capability of our recent graduates."

Characteristically, the property industry is information intensive, and data is distributed and used by a large number of project participants. As the industry becomes more and more aware of the potential benefits of information life-cycle issues, an increasing amount of pressure is likely to be placed upon the use of IT to offer new ways to communicate in this environment. But in order for this to be successful, it will require extensive restructuring in the way we work. "Given the number of tools available and the skills required to use them, it is still wishful thinking to hope that you will be able to pick up a quick solution off the shelf in five years time," Mitchell warns.

Ultimately, the delivery of a design and the provision of information that can be used in the daily management of that asset, may begin a whole new chapter in the value of services that an architect can offer a client. In order to achieve this there is still a considerable amount of work to be done. WA

Bruce Duyshart is an IT Project Manager with Lend Lease Property Group. He is author of The Digital Document *(see Free Book Offer and review* WA66*).*

FREE BOOK OFFER We have four copies of **The Digital Document** to give away on a first come, first served basis. Please send your name and address marked Free Book Offer, to World Architecture, 3-6 Kenrick Place, London W1H 3FF, UK.

OnScreen

Below: Apple's new range includes the iMac, a computer for the visually literate

Right: Bentley have long championed the ideal of the single building model. The release of TriForma 5.7 will further enhance that philosophy

This month: update on the OpenDWG Alliance's battle with Autodesk; Apple emerges from the wilderness, and Bentley release TriForma 5.7.

Format battles: who owns DWG?

by Conway Lloyd Morgan

"We are committed to promoting Autodesk's AutoCAD's DWG drawing file format as an open, industry-standard format for the exchange of CAD drawings." That's the message from the OpenDWG Alliance, a group of 15 software companies headed by Visio Corporation, PTC and Intergraph who have agreed to pool data about reverse engineering the DWG format (Autodesk's creation and property) to create a new, open standard. This is like Esso and Shell getting together to crack BP's formula for petrol so that everyone can make it themselves. What is behind it?

Compatibility is a key area in the further development of information technology. Anyone who remembers computing before the IBM PC standard came along learnt that the hard way. But at the same time programs need to develop, and only do so in a commercial world by earning revenue. Where one format has a leading role but is not an open format (as with DWG) the competition has to be compatible, either buying that compatibility from the owner, or by cracking the format code themselves. If the Alliance can reverse engineer the DWG format, or force Autodesk to make the format an open one (as IBM voluntarily did with the PC), they will save themselves a lot of money, and narrow the competitive gap between their products and Autodesk's. And these benefits will filter down to the end user.

Autodesk dismisses the Alliance's aims: third-party developers, they say, can license DWG Unplugged, and users have the option of the open DXF format, among others, for data exchange. Two other major software companies, Graphisoft and Bentley Systems, have declined the invitation to join. And claims and counterclaims have been flying through cyberspace. You can mix and match conspiracy theories and scenarios: market forces trying to make Autodesk more open, marketing hype by smaller CAD vendors, major copyright issues at stake, the fear of monopolies, the need for openness or the right to earn from research effort, even attempts by old rivals to get at each other's data. And CAD experts like Ray Grabowski point out that even if the Alliance succeeds in wholly reverse engineering the current DWG format, that does not begin to deal with the problem of translating an opened, DWG file into a different program with total accuracy. Nor does it stop Autodesk adding to the format with later releases, so making everyone else start over. And Autodesk's argument that file formats are not separate from programming, but need to develop as technology develops is the right one. The OpenDWG Alliance will probably end in tears, because the battle it is fighting is out of date. You can follow the skirmishing at http://www.opendwg.com and at http://www.autodesk.com.

Return of the Mac

After a number of years in the dark, Apple has come out fighting with two excellent financial quarters under their belt, and a return to healthy profit. Acting CEO Steve Jobs, has recently made a number of announcements outlining Apple's new direction.

Key to this strategy is the streamlining of the product range, making it easier for customers to select the machine most suited to their needs. The Apple range now consists of the G3 Power Macintosh, aimed at the professional user, the G3 PowerBook for professionals on the move and the new iMac aimed at the consumer and education markets. The range will be completed early next year with a new consumer product replacing the e-mate for low cost mobile computing. Each line is available in a number of standard versions or as a build-on-demand unit. This allows buyers to customise their machines to meet their exact requirements and have it delivered directly from the factory.

The new range is based on the G3 processor that performs at around twice the speed of the equivalent rated Intel Pentium offering. In terms of cost versus performance Apple has a considerable lead over branded Wintel boxes. Independent tests carried out by *Byte* magazine in the US show the G3 machines out-performing Wintel machines consistently by a factor of two in most activities. The new consumer Mac will sell for less than US$1,650 including VAT and the PowerBook range starts at US$2,700.

The iMac is a marvel of industrial design. The translucent case houses a 38-centimetre monitor, built-in 24x CD, 10/100Base-Tx Ethernet, 33.6Kbps modem and stereo speakers. The machine is built around a 233Mhz G3 processor making it faster than a 400Mhz PC. The iMac also sees the introduction of a 12Mbps Universal Serial Bus replacing the old ADB standard found in other Macs. This machine is one you have to see to believe, the case is a wonderful organic shape and the keyboard and mouse are both made from the same translucent plastic. The mouse even lights up when the machine is turned on.

Apple's return to profit, and the power of their new machines will go a long way to encouraging professional users to move to the Mac platform. Many architects' and designers first experience of designing with computers will have been on a Mac and its ease of use still puts Windows to shame. All that is needed now is the continuing support of software companies to turn the Mac from a second runner to the machine of choice. For more information or to buy a Mac from Apple's new on-line store look up www.apple.com.

Bentley Systems ship TriForma 5.7

Bentley Systems has just released TriForma 5.7, the third major release of their 3D design application for MicroStation. TriForma 5.7 introduces a Parasolids core replacing the ACIS model used in previous versions. Parasolid within MicroStation TriForma allows architects to include freeform architectural features such as reveals, moldings, niches, pilasters, splayed openings, complex chamfers, and waffle slabs into their single building models. These are all true solid objects not just surface representations.

Brad Workman, AIA, Bentley's vice president of building engineering products, commented, "MicroStation TriForma has distinguished itself over the past two years with broad use at many prestigious firms. This new version introduces another important innovation. With Parasolid inside MicroStation TriForma, architects are free to create spectacular designs while preserving the collaborative benefits of the single building model."

The new release of TriForma also provides new integration capabilities that make it easier for all lifecycle participants including architects, engineers, and owners to collaborate using the single building model. Commands can be organised by project phases: pre-schematic design, schematic design, design development, and construction documentation. Two-dimensional legacy data can now be incorporated into the integrated workflow. The interface has also undergone several changes making it much more logical and easier to use. For details go to: www.bentley.com.

Edited by Richard Spöhrer, writer and Creative Director of hyper-M, multimedia and visualisation consultants. He can be contacted via WA, *or Tel: +44 181 662 0075; e-mail: hyper-m@dial.pipex.com*

Polemic

Whose building is it anyway?

Perhaps the oddest thing about the attribution of buildings is that it generates so little controversy when it might be expected to generate so much. We casually refer to "Sir Christopher Wren's Saint Paul's Cathedral", "Lord Rogers of Riverside's Lloyds Building", or "Cesar Pelli's Petronas Towers" in the same way as we talk about "Ridley Scott's *Blade Runner*", or "Adrian Lyne's *Lolita*". But we ignore the fact that there is an important difference. Movies have a list of screen credits a mile long. Go to look at a great building and you will find either no credits at all, or the name of the person who laid the foundation stone tucked away in a corner somewhere – the construction industry's equivalent to "best boy" or "key grip".

Although they eagerly acquiesce in the use of the possessive pronoun for "their" buildings, all architects know that their achievement has not been a solo performance like painting a picture or writing a book. Invariably it has been a saga involving a large number of individuals, administrators, consultants, suppliers, financiers, review boards and so on. Even a small building involves a cast of thousands, amongst whom only the architect will claim to have done something original – while not a few of the others will boast that they stopped anything original from happening. In short architects are so beset by pretenders to their throne it seems amazing that they did not dissolve into the generalised corporate credit long ago.

How is it that architects still cling to the top of the pyramid of the construction? A good part of the reason must be because so many people still have an anachronistic conception of what they do. The reality of building today is of course that more and more of it is based on constructors employing architects – a process generically known as "Design and Build" – rather than on architects overseeing the work of constructors. And even when constructors are not in command, an increasing proportion of larger projects are run by Project Managers appointed by constructors: most of whom originally trained as building surveyors, engineers or construction cost experts. In all these cases architects are effectively reduced to the status of design subcontractors, whether they use that term or not.

Apart from these "downstream" threats to their historically unquestioned hegemony, there are insidious "upstream" pretenders to the architects' role as well. Everyone forgives a genuine patron who claims credit for a building that could clearly never have been built without his or her largesse – George Christie at the Glyndebourne Opera in England for example, or William Gates III in Seattle. But not every upstream pretender is a patron. Many are regulatory, advisory or administrative persons, a class whose number is growing rapidly all the time. In Europe in particular planners, often strongly conservationist in outlook, operate a restrictive policy that effectively excludes innovative design. In the same way many statutory bodies ceaselessly propound the dictum that a good building can only come from a good brief: a formula that boils down to, "Let us choose your architect for you, or you might have trouble getting through the bureaucracy".

The most direct attack on the architect's right to have his or her name attached to a building comes from fellow professional consultants: structural and service engineers, value engineers, specialist cladding consultants, property agents, IT experts and facilities managers, acousticians, safety inspectors, fundraisers, even *feng shui* men. Of all of them it is probably the structural engineer who is the most crucial as far as the people who pay for buildings are concerned.

Because of their vital technical expertise, and because they have to underwrite the risks associated with any new method of construction, engineers seem ideally placed to usurp the charismatic status of the architect. Indeed, they already have their own mythology in which they ride to the rescue of troubled projects all over the world. The celebrated Sydney Opera House design by Bjorn Utzon, for example, was impossible to build in its original form and required a massive engineering redesign before it could be completed. Conversely the Centre Pompidou in Paris, designed by the young Richard Rogers and Renzo Piano in 1971, required the resurrection of engineering methods unused since Victorian times. Only the project's structural engineer had the legal authority to authorise this work.

What is it that stops engineers, or any other consultant, claiming credit for the buildings they have worked on – and what makes them sit on their hands while the credit goes elsewhere? The most convincing answer to this question was offered a few years ago by an engineer named William Addis in a book called *The Art of the Structural Engineer*. Although Addis confined himself to engineers and did not address the claims of other consultants, his conclusions probably apply elsewhere as well. His conclusion was that, "There is a vital psychological difference between architects and engineers that goes right back to the career choices they made at school. Choose engineering as a career and you are taught to be quantitative and accurate, not qualitative and gestural. Brought up in a world of certainties, most consultant engineers have no conception of how to work in an environment where there are no clear answers. They don't like wheeling and dealing, but that is what architects do best".

Be this as it may, while architects themselves may have little to gain by stressing the part played by other members of the building team in the realisation of the buildings they claim as their own, it is not always their fault that this is not done. Preparing press documentation for the Royal opening of Stansted Air Terminal, staff at Sir Norman Foster and Partners tried to compile a list of the firm's employees who had worked on the project since it had come into the office ten years before. The list ran to 500 names. A drastic brainstorming session then reduced the 500 to 50 substantive contributors, but even this was too many for a list of credits in any magazine. In the end the media settled on one name – Sir Norman Foster.

Martin Pawley

"Architects are so beset by pretenders to their throne it seems amazing that they did not dissolve into the generalised corporate credit years ago."

Book Reviews

Stab in the dark

New Architects – a guide to Britain's best young architectural practices. Booth-Clibborn Editions, London. 160pp, fully colour illustrated. £25 (hardback)

Reviewed by Hugh Pearman

I have gone right off this book. At first I was happy with the principle that a guide to the best younger British architects was being produced – how could anyone object to that? – but I've lived with it for a while now and I can find less and less virtue in it. One can't help wondering what good such books do, apart from bolstering the egos of those included or driving to despair those who are excluded.

New Architects is Britain's answer to something the French have been doing for years, namely producing a flick-book of those architects who are still at the travelling-hopefully stage. It was the French who invented the notion of the architectural under-40 show and, for that matter, the French who had a state-sponsored competition system for employing them (this system is in some disrepair at present as public-sector building programmes have been slashed). The British version is subtitled "A guide to Britain's best young architectural practices", it is produced by the Architecture Foundation in London, and it has the blessing of Her Majesty's Government. But can it possibly achieve anything – like changing attitudes to the quality of the built environment, or even bringing these people more work?

The cynical response from some of those included (never mind those who were not) is much the same as mine: that *New Architects* is worthy but ineffectual: nice that it exists, but about as much use as the legendary chocolate teapot. Those with an axe to grind about the ruling British architectural establishment can find plenty of ammunition here, for everyone featured is a card-carrying modernist, even if some use traditional materials and others dare to use bright splashes of colour occasionally. Turn the pages and you will find a few unfamiliar names, even some inspiring work, but little that could be considered especially surprising. Here are the exceptions: Niall McLaughlin's tiny, low-budget "shack" in Northamptonshire (a mix of gazebo and photographer's hide) which with its overlapping crustacean-like scales shows an original mind at work. Sarah Wigglesworth's eco-junk house/office project also pushes the boundaries a little. And one still hopes for great things from Birds Portchmouth Russum, who are strong-meat ex-Stirling boys but who sadly have seen very little built since their mould-breaking Chichester, UK, car park of years ago.

It's not that everyone else here is bad, far from it. They are mostly good, and some are excellent – such as Stephen Hodder from Manchester, Jonathan Ellis-Miller from Cambridge, Studio Downie and Anthony Hudson from London, and Parr Shearer from Glasgow. It's just that the run of work in the book reinforces the inescapable fact that the style wars of the 1980s were won by the well-mannered "new moderns" – which is handy for them, but which leaves the minority tastes mostly unrepresented in this book. Is there not a single competent classicist or vernacularist or fantasist of the younger generation to leaven the mix? The tastes represented in the book also happen to be my tastes, but I am aware that something is missing. I would like to find something aesthetically objectionable, or ill-mannered, or just, well, unfettered. Restraint and understatement is admirable enough, but after a while one starts to stifle one's yawns.

Beyond all that, I wonder how this book is to be used. It's one thing to have a book of the best youngsters in architecture, but another thing to make that book part of a policy to encourage new commissions for those youngsters. I should say that one or two of the names here are getting long in the tooth – but are included either because they still haven't had a break, or because of some relevant young job architect in their practice. This only makes you think of all those young architects working away in the huge commercial outfits – who are not represented here at all. But the book is a first shot: future editions, if any, can start to address these issues.

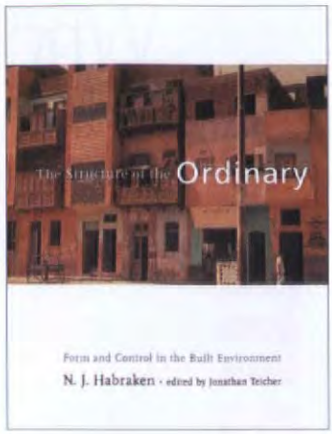
Hugh Pearman is a London-based architectural critic and writer.

A study in insights

The Structure of the Ordinary – form and control in the built environment. N J Habraken. Edited by Jonathan Teicher. MIT Press, Cambridge, Massachusetts. 360pp, 121 illustrations .US$50 (hardback)

Reviewed by Martin Pawley

John Habraken used to be a radical. Forty years ago he designed a special beer bottle for the Heineken brewery that could be used as a brick to build houses in what was then called the Third World. Then he wrote a book proposing that housing should be built in two parts: the structural frame should consist of heavy concrete or steel supports – with a lifetime of hundreds of years – and inside them should be a fitout of detachable units that could be renewed or replaced much more frequently. After that he became a professor of architecture at MIT, pursuing investigations into urban tissues, networks and grids and the economic logic behind vernacular ways of building. Now he is by some accounts a housing entrepreneur, putting his ideas into practice in his native Netherlands.



In essence Habraken's ideas have not changed, they have only broadened: they are as pleasingly devoid of illusions of individual genius as they ever were, and are all the more insightful for it. Thus it is that as people grow older their desire to change things turns into amazement that things stay together at all, and thus it is that the radical of the 1960s has, before the turn of the century, become a connoisseur of the tiny incremental impulses that made town and city what they were before the onslaught of bypass, e-mail and the internet.

As far as dwelling construction is concerned – a subject in which Habraken's knowledge is encyclopaedic, fed as it is by a lifetime of researches in Europe, North America, the Middle East, South America and the People's Republic of China – his insights are peerless. Far from playing with the appearance of the outside envelope, he sternly advises those desirous of improving housing to concentrate on the installation of the supply systems for electricity, information, plumbing and waste disposal. "Improvement does not require improved or more flexible partitioning systems or equipment," he notes dryly. "The most critical issue for improving the building process is the installation of supply systems. The resultant gains in speed, efficiency and flexibility of use would be considerable." No room here for prize-winning architecture, but much room for thought.

Perhaps the most thought-provoking passages in *The Structure of the Ordinary* are those which expose Habraken's unique macro-view of the whole built environment. Characteristically he produces without comment a table that starts with

"foundations" and ends with "utensils", taking in every domestic element between. From such cool detachment it is no great step to seeing a clear progression from the Great Wall of China to national road networks, regional road networks, local road networks, pedestrian networks, public and private areas in buildings, the organisation of individual rooms, the effect of letting out a room to a lodger, and so on down to the convenience or otherwise of taps and electricity outlets. Not that this book is in any way small minded, quite the reverse. It is breathtakingly objective, phenomenological and value-free. So much so that it sometimes seems to have come from another age or another planet: a place where people can still suspend their belief in the gloomy certainty of bulldozers, tower cranes and 88-storey mixed-use progress.

Martin Pawley is a Consultant Editor and regular contributor to World Architecture.

Right ladder, wrong step

Architect? A Candid Guide to the Profession (revised edition of 1985 original). Roger K. Lewis. MIT Press, Cambridge, Massachusetts. 288pp, b&w illustrations.
US$40.50/£25.5(hardback)
US$22.50/£13.95 (paperback)

Reviewed by Hunter Pittman
It is not uncommon for high school students who visit universities, or even entering freshmen, to have an incomplete or confused view of both architectural education and indeed the architectural profession as a whole. This book offers an insight into the broad outlines of the education as well as the daily practice of an architect and should be read by anyone considering a career in architecture.

While this book is undeniably one of the only worthwhile introductory guides to architecture, it does hold some disappointments for the knowledgeable reader, which should cause some concerns about what it might convey to the prospective architecture student.

In its attempt to be both complete and yet introductory, the book plays on the most stereotypical portraits of both professors of architecture and practising architects, reinforcing the portrayal with well drawn, witty cartoons of the various points emphasised. This type of portrayal would seem only to encourage the early development of some of the most simple-minded critical name-calling positions with which educators and the profession have used all too often, crippling the public perception of architecture.

The revised edition has softened this type of stereotyping, including the change of the title of the last chapter to "We Who Are Architects" from the 1985 edition's "Architects as Types." Rather than listing types such as, "the artiste", "the prima donna", "the hustler" and "the joiner" and discussing them under separate sub-headings, the revised edition simply discusses the same types in a continuous chapter.

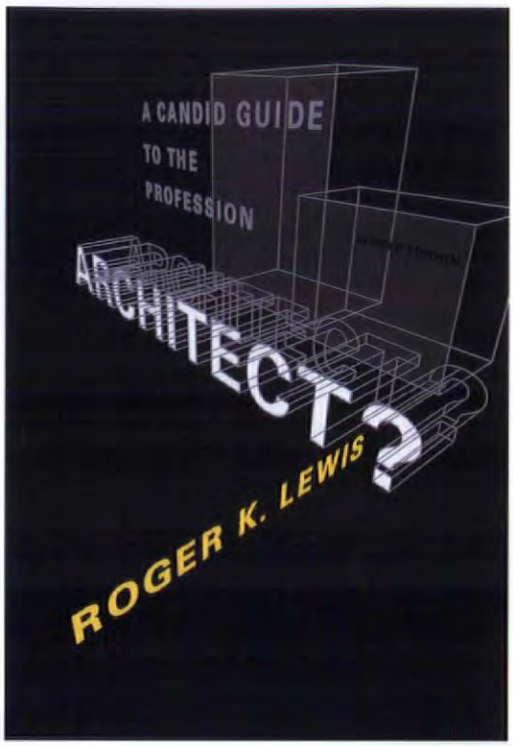
The chapter on architecture professors, however, continues to list the "types" of professors and to discuss each "type" separately. This form of discussion depends on depicting caricature rather than attempting to deal with the complexity of the personalities that make up an architecture faculty; we will recognise all of Lewis' portraits but we will also recognise how they remain cartoons. Prospective students and parents are not likely to have our recognition of this underlying failure of the book.

The discussion of why or why not to be an architect starts with "Money and Lifestyle", which is another troubling aspect of the particular choices of emphasis in the book. Lewis eventually states that the prospect of making a large income should not be the first concern of the prospective architecture student and that the decision to be an architect rests on other factors, including the joy of drawing, but oddly not the joy of building. The book and the future of the profession would have been better served by emphasising these other factors, ahead of the invariable question of money and lifestyle that are endemic in our consumption driven societies.

This edition discusses the role of CAD and other computer applications in the profession over the last 13 years, but has rightly refrained from over emphasising the impact of information technology in the core roles of the profession.

The book ultimately describes the complexity and range of the day to day practice of architecture in a real and convincing way, pointing out the many tedious and time consuming tasks that architects deal with every day. On this basis, and in spite of the above qualifications, I would still recommend this book to prospective students as the only comprehensive guide of its kind.

Hunter Pittman is an Assistant Professor at Virginia Polytechnic Institute and State University and a practising architect.



BOOKS RECEIVED

Digital Dreams – Architecture in Cyberspace
Neil Spiller. Ellipsis, London. 156pp, 120 colour illustrations. £19.95 (paperback)

Architecture + Design San Francisco
Mitchell Schwarzer. TUB Press, San Francisco. 80pp, b&w illustrations throughout. US$12.95 (paperback)

Public : Art : Space
With introductory essay by Mel Gooding. Merrell Holperton Publishers, London. 112pp, 120 colour illustrations. £19.95/US$35 (paperback)

How Designers Think
Bryan Lawson. Architectural Press, Oxford, UK. 272pp, 31 b&w illustrations, 76 line drawings. £18.99 (paperback)

Plumbing – Sounding Modern Architecture
Daniel S Friedman & Nadir Lahiji. Introduction by Ignasi de Solà-Morales. Princeton Architectural Press, New York. 236pp, 109 b&w illustrations. US$19.95/£14.95 (paperback)

Events

Lectures, congresses and conferences

Australia

International congress on lightweight structures in architecture, construction and engineering

Congress focusing on new technologies and the future directions of lightweight structures. Runs from 28 September to 2 October 1998 at the University of New South Wales, Sydney.
Tel: +61 2 9262 2277
Fax: +61 2 9262 2323
e-mail: Isa98@tourhosts.com.aul

Canada

16th Annual International Conference on Urban Waterfront Planning, Development and Culture

The theme of this year's conference is "Developing Distinctiveness – Countering Formulas, Fads and Flummery". Runs from 12-14 November 1998 at the Royal York Hotel, Toronto, Ontario, Canada. For information contact the Waterfront Center, 1622 Wisconsin Avenue, NW Washington DC 20007, USA.
Tel: +1 202 337 0356
Fax: +1 202 625 1654
e-mail: waterfront@mindspring.com

Cuba

Ibero-Americain Symposium

The Cuban Section of the UIA is organising a conference on, "Quality and Competitivity in Building", as well as study tours and an exhibition of building products and materials in Havana. Runs from 12-16 October 1998. For information contact, Union Nacional de Arquitectos y Ingenieros de la Construccion de Cuba.
Tel: +537 798357/703896
Fax: +537 333523

Japan

Engineering challenges for the twenty-first century

An International Association for Bridge and Structural Engineering (IABSE)-organised symposium on long-span and high-rise structures. The event coincides with the completion of the Akashi Kaikyo Bridge, part of the Honshu-Shikoku Bridge Project (see *WA*53 pages 100-101). Runs from 2-4 September 1998. Keynote speakers include Cesar Pelli, Shankar Nair, Niels Gimsing and Giorgio Diana. Contact Secretariat of IABSE Symposium, c/o Simul International, 13-9 Araki-cho, Shinjuku-ku, Tokyo, 160-0007.
Tel: +81 3 3226 2822
Fax: +81 2 3226 2824

Sweden

DOCOMOMO Conference 1998 – Vision and reality

The fifth international conference for documentation and conservation of buildings, sites and neighbourhoods of the modern movement (DOCOMOMO), will focus on the social aspects of architecture and urban planning in the modern movement. Conference runs from 16-18 September 1998 at the Swedish Museum of Architecture, Sheppsholmen, S 111 49, Stockholm. Contact Harina Botta.
Tel: +46 8 4630500
Fax: +46 8 4630560

Architecture and design competitions

Croatia

International Youth Salon Architectural Competition

Competition organised by the Croatian Association of Architects and the Croatian Association of Artists, open to architects, artists and students under the age of 35 worldwide. The theme, chosen by jury chairman Makoto Sei Watanabe, is the solution of urban problems worldwide. The deadline for entries is 4 August 1998, and the best work will be exhibited at the Youth Salon in Zagreb from 11 October 1998 to 9 November 1998.
Contact Trg bana Josipa Jelacica 3/1, 10000 Zagreb.
Tel: +385 1 48 16 151
Fax: + 385 1 48 16 197
e-mail: ihanicar@croata.hart..hr
Web: http://makoto-architect.com

UK

10th Colourcoat Building Awards

Awards aiming to recognise the best design practice in steel-clad buildings across eight categories. Any building completed in Europe between 1 August 1995 and 27 August 1998 is eligible. The judging panel is chaired by former Stirling Prize winner Stephen Hodder. The deadline for entry forms is 28 August 1998.
Contact British Steel Strip Products, PO Box 700, Aylesbury, Bucks, HP18 9YJ.
Tel: +44 800 292737

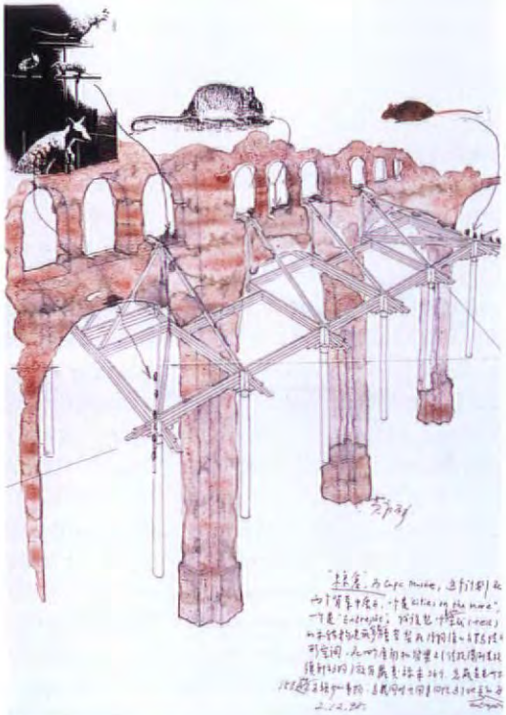
USA

Design competition for Pier 40 on New York City's Hudson River Waterfront

The competition – co-organised by Manhattan and the Van Alen Institute – calls for the development of the 37-hectare Pier 40 for public use. The registration deadline is 17 August 1998 and the deadline for entries is 17 September 1998.
Contact Community Board 2, Manhattan/3 Washington Square Village Suite 1-A, New York, NY 10012, or the Van Alen Institute, 30 West 22 Street, New York, NY 10010.
Tel: +1 212 924 7000
Fax: +1 212 366 5836
Web: http://www.vanalen.org

Cyborg City: Mechanical Islands for New York

International ideas competition opening up the debate about the development of artificial islands in New York's river and sea bays. Competition open to practitioners who completed their terminal university degree during the past ten years; students of architecture, urban design, landscape and interior design. Awards of US$3,000 (plus grants) are offered. Registration by 15 November 1998. Deadline for entries 25 February 1999. Contact



Exhibition, France: Cities on the Move (2)

An insight into the architecture and art of Asian cities through the work of 33 architects and 58 artists. Co-organised by the capcMusée 'art contemporain de Bordeaux and arc en rêve centre d'architecture. Runs until 30 August 1998. For information contact, François Guillemeteaud (capcMusée). Tel: +33 5 56 00 81 70; or, Nadine Gibault (arc en rêve). Tel: +33 5 56 78 36

Above: The work of Huang Yong-Ping, one of 33 architects and 58 artists comprising "Cities of the Move"

Livio Dimitriu at Ten West Fifteenth Street, Suite 1126. New York City, New York 10011-6826.
Tel: +1 212 727 2157
Fax: +1 212 727 2159
e-mail: Ldusainst@aol.com
Fax: +1 514 939 7020
fonda-architecture@yahoo-com

Exhibitions

Austria

The Havana (Cuba) Project

Following on from the "Architecture Again" conference (1994/95), a team of internationally renowned architects examine Havana as a city that embodies the problems facing all major cities at the end of the twentieth century. Coop Himmelb(l)au, Morphosis/Thom Mayne, Eric Owen Moss, Carmé Pinós, Lebbeus Woods and CPPN propose solutions to sprawling slums, conservation and restoration. Runs from 26 August to 31 October 1998 at MAK, A-1010 Wien, Stubenring 5.
Tel: +43 1 711 36 233
Fax: +43 1 711 36 227

Finland

Alvar Alto: Urban Visions

Architecture exhibition with a wide-ranging urban theme which includes masterplans, central town areas, public administration and cultural buildings and campus areas. From 10 June 1998 to 13 September 1998. at the Museum of Finnish Architecture, Kasarmie Katu 24, 00130 Helsinki.
Tel: +358 9 661918
Fax: +358 9 662573

France

Fifth Mies Van der Rohe Prize

The Institut francais d'architecture presents a review of the fifth Van der Mies Prize for European Architecture, bringing together 35 preselected works and an in-depth study of the winner, Dominque Perrault's National Library in Paris. At the Institut francais d'architecture, Paris, from 15 May 1998 to 22 August 1998.
Tel: +33 1 46339096
Fax: +33 1 46330211

UK

The Work of Charles and Ray Eames

The first UK exhibition of the work of husband and wife design team. Runs from 19 September 1998 to 3 January 1999 at the Design Museum, Shad Thames, London, SE21 2YD.
Tel: +44 171 403 6933
Fax: +44 171 378 6540

Architecture for Austria

An overview of a century of Austrian architecture including the work of Hans Holbein and Coop Himme(l)blau. The event is part of the Festival of European Culture in London, and runs between 1 July 1998 and 5 September 1998 at the Architecture Centre, 66 Portland Place, London, W1.
Tel: +44 171 307 3770

USA

Breaking Through – The Creative Engineer

Exhibition exploring how creativity is expressed through the work of modern engineers – the people who give shape to the material world, built environment and systems of information. Eight case studies demonstrate the breadth and depth of the field; from roller-coasters to space shuttles. The exhibition runs until 8 November 1998 at the National Building Museum, 401F Street NW, Washington DC 20001.
Tel: +1 202 272 2448
Fax: +1 202 272 2564
Web:http://www.nbm.org

Trade shows

Azerbaijan

Baku Build 98

Third Azerbaijan international building and construction exhibition. Runs from 30 September to 3 October 1998 at the Baku Sports and Exhibition Complex, Baku. For information contact Ben Leighton at the IT&E Group, Byron House, 112a Shirland Road, London W9 2EQ, UK.
Tel: +44 171 286 9720
Fax: +44 171 286 0177

Chile

Edifica 98

The leading building and construction show in Chile, runs from 29 September 1998 to 3 October 1998. Contact Stuart Whitehill, Building Exhibitions Management, Exhibition House, Hockley Heath, Solihull, West Midlands B94 6NW, UK.
Tel: +44 1564 784999
Fax: +44 1564 784499
e-mail: events@coxex.co.uk

Russia

Batimat St Petersburg 98

The second St Petersburg International Building and Construction Trade Show will be held at the Lenexpo Exhibition Centre, St Petersburg, Russia, and will run from 26 October 1998 to 29 October 1998. For information contact the IT&E Group (see Baku Build, Azerbaijan).
Tel: +44 171 286 9720
Fax: +44 171 286 0177

USA

The Property Market of the Americas Exhibition and Conferences

Trade show and exhibition dealing with real estate markets in Latin America and the activity of USA and other international investment in the region. Organised by MIPIM (Marche International des Professionels de l'Immoblier) Americas. From 22 November 1998 to 24 November 1998 at the Miami Beach Convention Centre, Miami Beach, Florida. Contact Didier Choukroun at DCL Investments Corp, Miami.
Tel: +1 305 371 9287
Fax +1 305 371 0329
e-mail: mipimamericas@pipeline.com

Vietnam

Vietbex 98

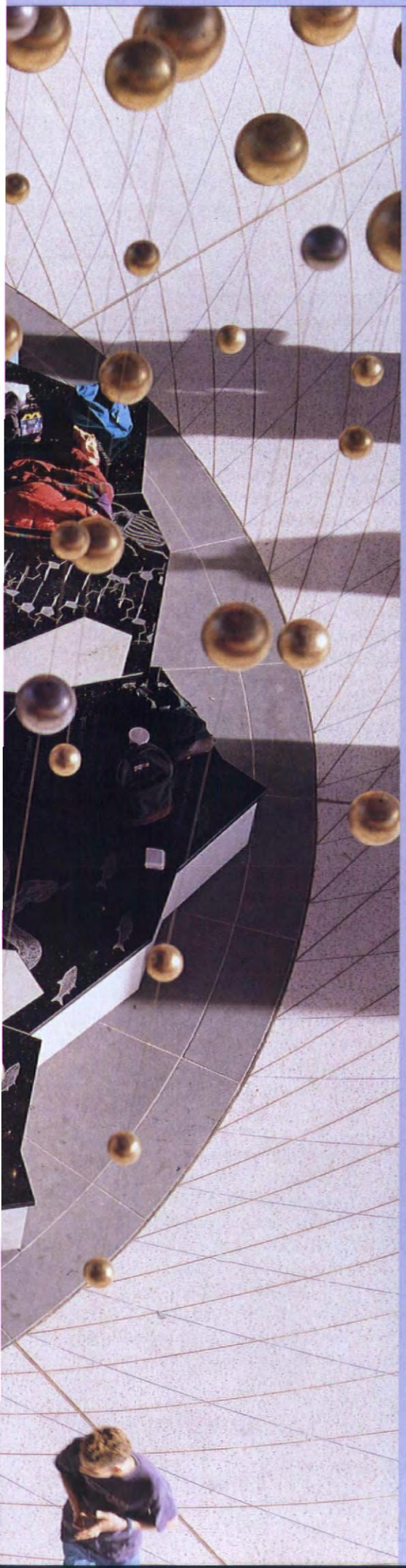
Combining: Interiors Vietnam 98, interior decorations, furnishings, fittings, materials and trade exposition; and, Surfaces Vietnam 98, surfaces materials and supplies exposition. The two events run concurrently from 28-31 October 1998 at the Ho Chi Minh City International Exhibition & Convention Center, Ho Chi Minh City, Vietnam. For information contact Julie Lim, Project Manager for Reed Tradex Company in Thailand.
Tel: +66 2 503 2199 x 403
Fax: +66 2 503 41001

Exhibition, Germany: "Bridge Building" and "Hydraulic Engineering"

Two permanent exhibitions at the Deutches Museum, Munich, have re-opened to the public. The 12,000-square-metre exhibition area has been completely redesigned over the past two years. "Bridge Building" takes the visitor through the history of "the purest form of supporting framework", incorporating 23 models. "Hydraulic Engineering" focuses on waterpower and waterway construction and features models, water-bearing demonstrations and experiments, and a six-metre high water sculpture. Contact The Deutches Museum, D-80306 Munchen, Germany. Tel: +49 (0) 89 2179 250. Fax: +49 (0) 89 2179 234 Web: http://WWW.LRZ-MEUNCHEN.DT/DT-MUSEUM/index/html

Above: One of 23 models at the Deutches Museum's "Bridge Building" exhibition

West Coast USA



Regional Focus

"It is not always easy to get clients to understand that mortar and concrete is not software" says Charles Dilworth of STUDIOS Architecture, California. With its emphasis on high technology and healthy living, the West Coast USA provides an insight into a more scientific approach to architecture. James Krohe focuses on developments in Washington, Oregon and California where foreign architects have begun to take advantage of the opportunities, as Mexican Ricardo Legorreta reveals in an exclusive interview with Miquel Adria.

The Aerial is a hanging sculpture of 1,578 gold and palladium leaf spheres. It is suspended in the lobby above the DNA Bench – a sculpture representing a cross section of a DNA strand. California Science Centre, Los Angeles by Zimmer Gunsul Frasca Architects. Photograph: Timothy Hursley

Richard Barnes

America's "Left coast" – the western states of California, Oregon, and Washington that border the Pacific Ocean – is earthquake country. In the 1980s the region's economy rose tall on foundations of speculative real estate, bad bank loans, and defence contracts from a profligate Congress. Around 1990 much of this rickety structure came crashing down, triggering the region's worst recession in 50 years.

The West Coast was left with more buildings – and more architects – than it needed. As Bert Gregory, principal at Seattle's Mithun Partners, recalls, "For us, the early 1990s were a little tough."

Since then the West Coast has rebuilt its economy on more solid ground. California has again been outperforming the rest of the USA, having largely weaned itself from its dependence on federal largesse and diversified into clothing and textiles, biotech and multimedia. Both high taxes and red tape have been cut, and businesses that fled in the early 1990s – many of them to Oregon and other Western states – are now staying.

As California goes, so goes the West Coast. Were California a separate country, its trillion-dollar economy would rank it among the ten leading countries in total value of goods and services produced. Los Angeles remains a mighty engine, invigorated of late by immigrants from two continents and Asian trade. But Silicon Valley, at the southern end of San Francisco Bay, is producing another generation of American industrial barons like those who made overnight fortunes in the 1800s in oil and metals and shipping. The first boom in the San Francisco Bay area was triggered by gold, this time it's silicon, in the form of computer chips.

However, all three states in the region are setting records for economic performance. In Washington, for example, Asian trade and a thriving aircraft giant Boeing has transformed an economy whose output used to be measured in board feet. Add to that the ability of software colossus Microsoft Corp to suck billions from the rest of the nation into suburban Seattle – since 1985 the company's headquarters has mushroomed from a four-building complex for 400 people to a campus of almost three million square feet housing more than 10,000 employees – and one can understand why Gregory says that "especially here in the Northwest the improvement has been quite dramatic. There's lot of demand, and not much space."

That is an understatement. In Seattle, vacancy rates for apartments are close to zero in more fashionable parts of the metropolis, and in San Francisco housing vacancies run about two percent in spite of punishingly high rents. Vacancy rates in top office parks in Silicon Valley are, in effect, zero. Vacancy rate for downtown San Francisco office buildings, still at 11 percent as recently as the early 1990s, today is two percent. Even in secondary markets like Vancouver, one of the suburbs of Portland, Oregon's biggest city, leasing pros report that the supply of office space is so short that instead of developers looking for tenants, tenants are looking for developers (for build-to-suit projects) or are developing their own buildings.

What does this mean for architects? "Great times," says Gregory. Building going on everywhere – infrastructure improvements (especially airport expansions and port facilities), new libraries and museums, and specially low-rise office space (especially for burgeoning hi-tech firms) in the suburbs. Here are a few examples.

Office space

Most of the dozen or so tall buildings that are now going up in San Francisco were designed in the 1980s, marking an emphatic end to that city's moratorium on new skyscraper construction. In downtown Portland, three towers are going up, including Fox Tower, a US$90 million retail, office, and cinemas complex being designed by local firm Thompson Vaivoda & Associates, to be completed by 2000.

The real glut was in the suburbs. The 1980s left Silicon Valley with an excess of more than 1.8 million square metres by one estimate, a result of speculative overbuilding. But biotech and ›

This page: Napa Valley Museum, Yountville, California by Fernau& Hartman Architects

Facing page: California Science Center by Zimmer Gunsul Frasca

Timothy Hursley

REGIONAL FACTFILE – WEST COAST USA

The land:
The West Coast of the United States of America (USA) is comprised of three States bordering the Pacific Ocean within the USA – California, Oregon and Washington. They have a land area of 858,813 square kilometres. This is about 9% of the total US area.

The western USA has four primary geographic regions:

The Pacific Coastal Mountains run parallel to the coast. The mountains generally hug the shoreline providing sandy beaches in coves. There may be a narrow coastal plain. The San Andreas fault line is in this region.

The Cascade Range in Washington, Oregon and northern California and the Sierra Nevada Range in California also run north-south. These ranges are tall with peaks over 4,000 metres. Mt. Whitney (4,418 m) in the Sierra Nevada is the highest point in the contiguous USA. The Sierra Nevada range is mostly granite and the Cascade Range is volcanic.

Between these north-south mountain ranges there are valleys. The largest is the Central Valley of California. There is an east-west range in northern California and southern Oregon, the Klamath Mountains, which separates the Central Valley from the Willamette River and Puget Sound valleys.

The Great Basin is a generally arid region east of the Sierra Nevada and Cascades. The lowest point in the USA (Death Valley, California, 86 metres below sea level) is in this region.

Climate:
The Pacific Ocean moderates the climate along the coastal strip so temperatures are milder than would be expected. The northern coast has a marine climate and the southern coast has a mediterranean climate. Further inland in the north the climate zones progress from highlands to steppe and in the south to desert. Precipitation is heavier in the north than in the south.

	Average Temps Min./Max. (0C)		Average Annual Rainfall (in mm)
	January	July	
Los Angeles	9 / 19	18 / 29	300
Portland	1 / 7	14 / 27	925
San Francisco	6 / 13	12 / 22	500
Seattle	2 / 7	13 / 24	950

Population:
The West Coast population is about 41 million, which are 15% of the total US population. Most of this population lives along the coast. The population is more urban (89%) than the average US population (76%). California has three cities (Los Angeles, San Diego and San Francisco) in the top 15 US cities, ranked by population.

The West Coast population density is 49 people per square kilometre which is significantly higher than the US population density is 28 people per square kilometre. There is a general population shift from the more densely populated northeast and north central US to the West Coast and the south.

Language:
Predominate language spoken is English although there is no official language. A minority of the population speak Spanish.

Time difference:
The West Coast of the US is in the Western Standard Time (WST) zone, which is 8 hours behind Greenwich Mean Time (GMT).

Currency:
US dollar ($) divided into 100 cents.

Dialling code:
The United States country code is 1, and the dialling out access code for an international call from the US is 011.

Business hours:

Government:	9:00-5:00, Monday - Friday
Banks:	9:00-2:00 or 4:00, Monday - Friday (varies)
	9:00-12:00 Sat. (occasionally)
Business:	8:30-5:30, Monday - Friday (varies)

National holidays:

New Years Day	January 1
Independence Day	July 4
Christmas Day	December 25

The following holidays are observed on different dates each year:

Martin Luther King Day	3rd Monday in January
President's Day	3rd Monday in February
Memorial Day	Last Monday in May
Labor Day	First Monday in September
Columbus Day	2nd Monday in October
Thanksgiving Day	4th Thursday in November

Airport information:
Major cities have an international airport. Local air travel is readily accessible with a vast number of domestic flights.

Bill Gates – the West Coast's giant client

The enormous, still-unfinished house that Microsoft Chairman Bill Gates moved into last October, located on Lake Washington outside Seattle, plays a prominent part in his 1995 book on the future impact of the computer on daily life, *The Road Ahead*. With its rustic "Pacific Northwest" vocabulary and experimental hi-tech accessories, it reveals much about the role of architecture in the vision of the computer industry's most powerful leader.

The multi-building compound was designed in joint venture by James Cutler of Seattle and Bohlin Cywinski Jackson of Wilkes- Barre, Pennsylvania, with interiors by Thierry W Despont and landscaping by the Berger Partnership. It sprawls over a 1.8 hectare wooded site which drops 45 metres to the lake.

The heart of the complex is a four-bedroom residence. Other facilities include a guest house, security centre, underground garages, greenhouses, a boat house, docks, and a mini-golf course. The site plan includes a wetlands nature preserve with an artificial stream. The estimated cost of the project to date is US$60 million.

Experimental computer technology is omnipresent but invisible. Visitors wear special pins which allow computers to track them through the complex, illuminating their trajectory, accompanying them with music of their choice, the news or a movie, forwarding phone calls to the nearest handset. Each is enveloped in a personal "moving zone of light," the virtual space of the computer made manifest in three-dimensions.

Gates instructed his architects to hide the technology that supports these systems. Instead, the architecture seeks to blend with nature and place. The massive recycled Douglas fir beams with their elaborate metal connections, the large stone fireplaces and stainless steel sheet metal roofs recall the utilitarian constructions of early settlers and the architectural styles they later inspired. We are reminded of turn-of-the-century wilderness lodges of the Rocky Mountains, the "cottages" of the Green Brothers of Pasadena, and Frank Lloyd Wright's Usonian houses, as well as the suburban houses that followed them, with their picture windows and low intersecting gables.

But the overall composition lacks the coherence of these predecessors. Like Microsoft's software, the complex has its "scenes" or "Windows," but the connections between them are opaque, washed over by the "moving zone of light." The result is a surreal, overpacked landscape, like a computer overloaded with programming. Computer programs and video games tend to be totally absorbing of our attention, self-perpetuating, tremendously addictive and disjunctive in relation to real time, real space and one another. The fantasy house of Bill Gates is in many ways an architectural expression of this psychic disjuncture. It is a haunted house for the computer age.

by David Cohn

› computer companies quickly absorbed that surplus. To catch up, some US$3 billion has been spent annually in the past couple of years on building construction in Silicon Valley, and another 400,000 square metres of office space has been planned for the next few quarters, with another approximately 700,000 square metres of new research and development space scheduled to break ground in the same period.

Retail

Retail projects are popping up everywhere. and not just in malls. Buying things has become an essential part of virtually every social experience in the USA. Shops are designed into new ballparks, airport terminals, even theme restaurants like Planet Hollywood or Hard Rock Cafe. Even museums and libraries increasingly resemble malls, not merely because increasing numbers of square metres are devoted to gift shops, but because the offerings are presented as goods on display.

Leisure

"Our parents greatest fear was that they might not get enough to eat," says David Lang, director of retail projects for San Francisco's Kaplan McLaughlin Diaz (KMD) recalling his generation's Depression-era forebears. "Our children's greatest fear is that they will be bored." Keeping people "unbored" on the West Coast has generated a market for dozens of specialised entertainment facilities from basketball and baseball stadiums to aquariums and interactive museums. It says something about the West Coast economy that not only can an architectural firm find commissions to design aquariums, it can find enough of them to make it a speciality, as has done Esherick Homsey Dodge and Davis of San Francisco.

Museums in particular satisfy a peculiarly American demand. They are hugely popular icons of local identity for people who are unattached to place, as painless pedagogy, as uplift. The 929-square-metre Napa Valley Museum by the Berkeley, California, firm of Fernau & Hartman Architects offers a place not only where visitors may learn about the history of the wine-making Napa Valley but where that history may, through collection and preservation, be invented. And, mindful of its cultural mission, it teaches visitors how to choose the right wine.

In Silicon Valley, Ricardo Legorreta's recently opened US$91 million Tech Museum of Innovation in San Jose is an example of the "world-class facility" desired by every up and coming burg. Its blue dome and mango-coloured exterior walls may not look like the cathedrals of an earlier age, but like those buildings it celebrates and explains the faith, which in the case of Silicon Valley is (to quote the Tech Museum) "to inspire the young to become innovators in the technologies of the future".

Zimmer Gunsul Frasca Partnership's recently completed California Science Center provides 22,760 square metres of space to engage and entertain more than two million visitors annually. It is one of the first educational institutions in the country to house an innovative family-based science centre with interactive exhibits, an IMAX 3D theatre, a neighbourhood science-focused elementary school and a professional development centre.

Public buildings

Capital spending by federal, state, and local governments is anaemic, sapped by anti-tax sentiment and, some say, skewed

Above:
Sacramento Convention Center. Expansion by LMN Architects

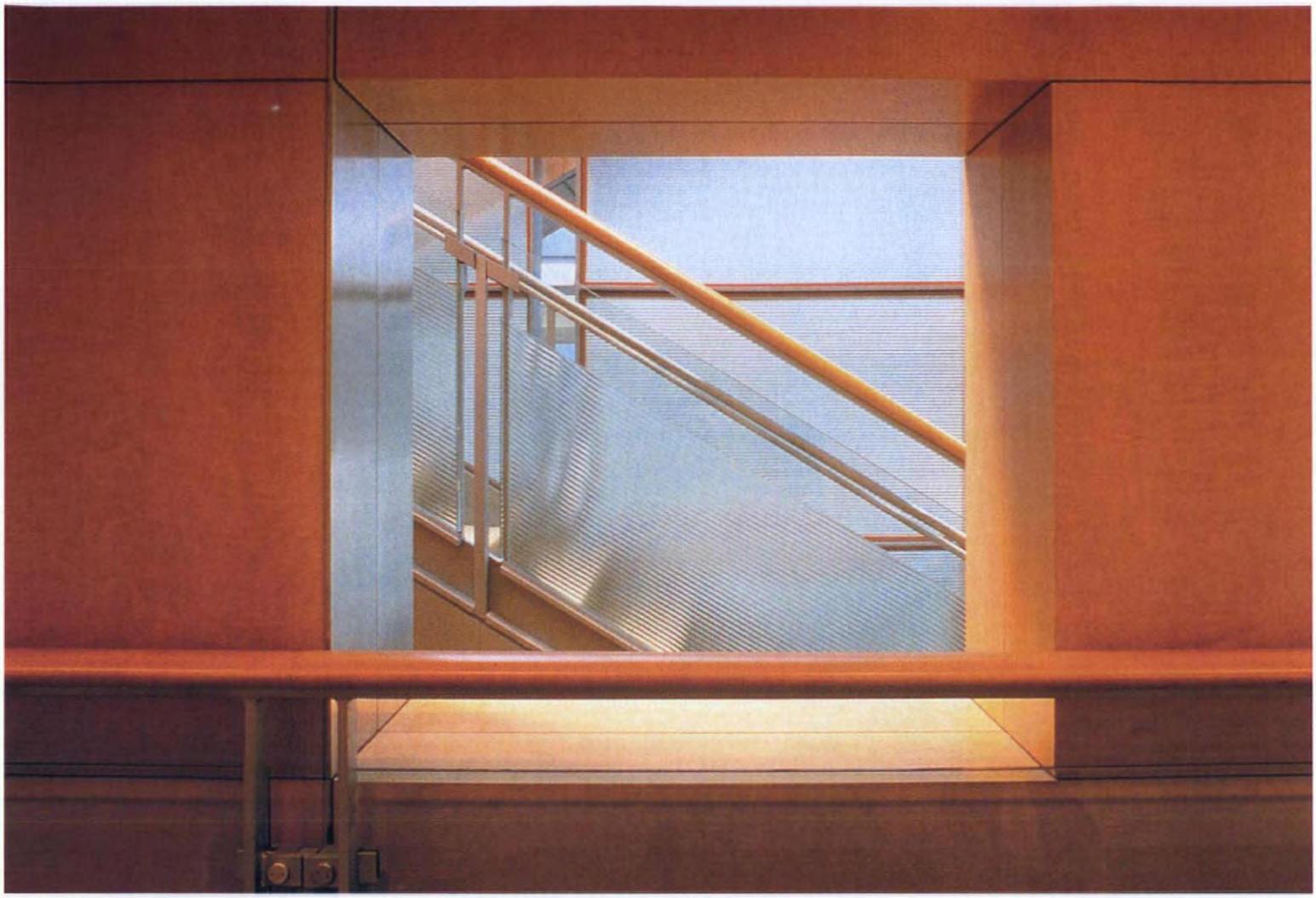
social priorities; California was embarrassed by a new study released by the Justice Policy Institute which found that in 1995 it was one of two US states that actually spent more on their prison systems than on their universities. Capital projects are seldom paid for out of general tax revenues, which are husbanded by an increasingly miserly public. Instead they are paid for out of special-purpose bond issues, tax-increment financing, or the user fees such as the US$3 per ticket "facilities fee" that is paying for much of the public share of airport expansions. As a result, the most creative part of many public projects is the financing deal.

"Our parents greatest fear was that they might not get enough to eat. Our children's greatest fear is that they will be bored."

But if the public economy has been crippled, the private economy has proven vigorous enough to pick up part of the load. Air travel up and down the West Coast has boomed with airline deregulation, and the region's airports are hurrying to keep up with record passenger loads. San Francisco International Airport is in the midst of a US$2.5 billion expansion. Portland's PDX is finishing up more than US$200 million in improvements to terminal access and concourses, and talk has already started about a new US$3 billion terminal. Flourishing trade with the Pacific nations has encouraged four ports on Puget Sound outside Seattle to develop various waterway, bridge, and freight terminal projects that, if all completed, will require US$360 million in building over the next few years.

Rather than taxes, corporations are spending their money on quasi-public entertainent facilities, often buying rights to name them, turning facilities such as university laboratories and sports stadiums into permanent billboards. Pacific Bell Park in China Basin on the San Francisco waterfront, a baseball park designed by HOK Sport that will open in 2000, is a typical example.

Public agencies that used to act as bankers now act as developers, packaging deals, providing seed money, tending to the bottom line. Port authorities in particular are capitalising on the vogue for waterfront recreation by presiding over the commercial development of dockside properties, in some cases doing the deals themselves or entering into complex ›



Above: US Court of Appeal, San Francisco, California by Skidmore Owings & Merrill

public-private partnerships. The Port of Seattle's inventory includes retail establishments, a convention centre, a sports facility, and now the US$87 million mixed-use Bell Street Pier. Opened in 1997, the project by Hewitt Isley Architects on Seattle's central waterfront integrates a working marina with piersheds for trawler maintenance and fish processing with public space including museums and restaurant and a boardwalk and a privately financed hotel and office space, parking, and residences.

At Los Angeles' LAX, a US$14 million renovation/ expansion of a 6,967-square-metre retail, food & beverage concession area at Tom Bradley International Terminal was completed in 1997. The aim of its design, explains architects KMD, was avowedly to generate cash flow on which such facilities increasingly depend. The firm's hope of developing an environment that entices people to shop were successful; the Bradley project paid for itself in less than one year.

Practice

Building on the West Coast poses some distinctive challenges, some geologic, others regulatory. Among them:

• Building codes

Building standards up and down the West Coast are set by local governments (based usually on three major model codes). The system allows maximum local control of building – and maximum opportunity for confusion and delays. To end the latter at least, the top building officials from 29 governmental jurisdictions in Silicon Valley have adopted a standard interpretation of codes that affect the award of permits for buildings, plumbing, electrical, and mechanical systems. Up in Seattle, the city has tried to improve the efficiency of the permit and plan approval processes by appointing one contact person per project from its Department of Construction and Land Use to answer questions from applicants and the public at each stage of a permit review.

• Seismic

More stringent seismic regulations were one result of the major earthquakes that struck northern California in 1989 and 1994. The main building of the new International Terminal at San Francisco International Airport has been designed to withstand a 1,000-year earthquake. Joint venture architects Skidmore Owings & Merrill, Del Campo & Maru, and Michael Willis & Associates placed friction pendulum base isolators at the foot of each supporting column, making the terminal the largest base-isolated structure in the world. In downtown Portland, Oregon's premier city, the US$106.6 million Mark Hatfield US Courthouse by BOORA Architects and Kohn Pedersen Fox required extra bracing and strengthening that added an estimated three to four percent to the project's cost. The cost of seismic upgrades is a disincentive to rehab period structures in particular.

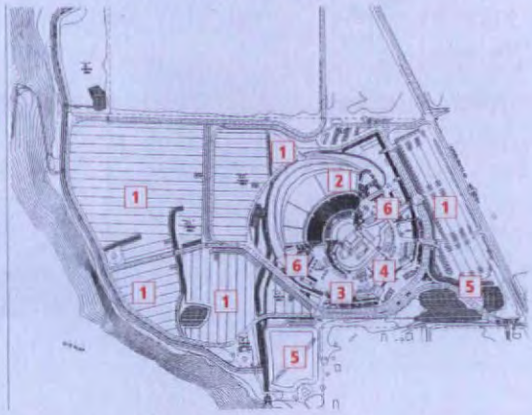
Loop-hole in land use law

Environmental debate surrounds Heller Manus Architects US$30 million, 23,000-seat amphitheatre under construction in Washington State. It is being built by the Muckleshoot Indian Tribe on their reservation where the extremely environmentally sensitive local land use laws do not apply. Non-Muckleshoots living on the reservation say that the stadium will bring noise and traffic congestion and the ensuing argument has brought the wider issue of the Indian reservations' sovereign nation status to the fore in the American and international press.

The designers were certainly able to side-step the usual environmental hurdles. Project architect Stephen Buchholz says "we began schematic design with the understanding from the Muckleshoot Tribe that any environmental review will be waived because of the sovereign national status. This was a completely new concept for us since all of our other amphitheatre projects were constantly embroiled in controversy from neighbourhood groups regarding traffic and noise."

The 36 hectare site has been sensitively designed to reflect Muckleshoot history and culture. Forty-five centimetre diameter timber rounds are being used throughout to give a "cedar log look" and the one storey wooden out-buildings reflect the traditional long-house design. The centrepiece structure, the canoe lodge is actually a true pole structure and will be utilised by the tribe as a gathering place in the off-season. Traditional Indian art has been commissioned for the site notably a silhouetted sculpture of a canoe with fifty salmon, each two foot long which will be positioned above the entrance gates.

Buchholz gave great importance to the sight lines in the seating bowl which Heller Manus claim will be the best in the country, unobstructed in any place by the 94,000 square foot long-span pavilion roof which will cover the 10,000 fixed seats.



Key
1. Parking
2. Amphitheatre
3. Lawn
4. Entry
5. Pond
6. Plaza

The Muckleshoots hope that the amphitheatre will generate US$10 million of economic activity in the area in the first year which has a history of poverty. Each show will require 650 employees and hiring preference will be given to the indians.

But despite the development of a traffic management plan and assurances from the tribe that noise will not impinge on the local communities, many remain unconvinced about the environmental viability of the project and point to the sovereign status as the reason it has not had to pass through the usual channels.

John Halliday of the Muckleshoot tribe's media relations department is unapologetic: " we are a sovereign nation and we make our own laws," he says. "The reservation is in the jurisdiction of the tribal council. The non-Muckleshoots have no mandate – they are seen as immigrants."

However, architects report that on most new projects meeting the earthquake codes is mostly a matter of tweaking the engineering. In fact, Robert J Frasca, design partner at Portland's Zimmer Gunsul Frasca, reports that clients come to him and want stricter-than-code protections in their new buildings, as earthquake readiness appeals to potential tenants. "They're willing to pay a premium to have both belts and braces on their buildings."

"Earthquake readiness appeals to tenants. "They are willing to pay a premium to have both belts and braces on their buildings."

Mithun's Gregory says that their architects face bigger challenges than earthquake faults in the form of steep slopes and water. "Easily developable land is long since gone," he explains, "and most projects are faced with fairly intricate environmental issues."

• Land use laws

The trickiest terrain that builders must deal with is regulatory and political. Getting a big project approved requires increasingly lengthy reviews, both by planning and building department bureaucrats and the public. Environmental impacts and access to views are among the issues that are grounds for review and possible rejection. In addition, local agencies increasingly go beyond their traditional concerns with safety codes and zoning and assert a public interest in design. The site on which STUDIOS Architecture did the SGI project was designed in tandem with an adjacent two-hectare public park that is a connector on a regional trail system. Architects met with planners from the city of Mount View weekly for two years, wrangling (mainly) over issues of public access to this private site.

• Anti-growth sentiment

One of the consequences of the recent economic boom is gathering unease at the pace of growth. Large projects everywhere face the kind of resistance put up by an ad hoc coalition called "Get a Grip on Growth", which opposed a US$200 million residential project at the southern gateway of Napa Valley in the heart of California wine country because it would fill that area with "golfers and retirees" – types who are about as welcome in what a former Napa City Council member called "the Appalachia of Napa Valley" as street walkers in Riyadh.

Anti-growth activists now have more pointed weapons than angry letters to editors with which to fight off unwanted ›


K. Schwarz

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Alker/Zivorkovic Photography

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5

1: Santa Clara Valley Centre in Santa Clara, California by Anshen +Allen Architects

2: Child Care Center at the Los Angeles International Airport by Marmol & Radziner

3: Irvine Humanities Instructional Building, University of California by AC Martin Partners

4: Child Care Center at the Los Angeles International Airport by Marmol & Radziner

5: Animal Disease Biotechnology Facility, Washington State University by Northwest Architectural Company

› projects. Developers must negotiate a thicket of environmental and land use laws meant to protect natural resources, from the federal Endangered Species Act to local mandates such as Palo Alto's requirement that its citizens reduce water consumption by using drought- resistant plantings. Ostensibly to fight air pollution, Portland officially desires "transit-oriented planning" at higher densities (offering a speeded-up approval process as an incentive to cooperating developers).

Anti-growth ordinances are intended variously to protect farms, views, water supplies – and public budgets. Washington's Growth Management Act requires that infrastructure such as roads be built, or at least be funded, before new housing projects can proceed. The law has stalled residential development in some parts of suburban Clark County. Across the Columbia River, Oregon has some of the strictest land use regulations in the nation. Portland (consistent with state policy) forbids development in its rural hinterland beyond an official Urban Growth Boundary. The UGB enjoys popular support, not because Portlanders love cities – they don't – but because they love their countryside and wish to keep the city out of it.

• Fast-track design

In Silicon Valley, new product cycles are a matter of months rather than years, and the saying goes that if you take lunch, you will be lunch. Commercial clients there are pressing their architects to speed up the process of designing and erecting office space, research labs, and assembly facilities. Sun Microsystems, the computer workstation leader, asked KMD for five two- and three-storey buildings totalling 58,991-square-metres within 18 months; the first of them opened one year after KMD's 40-person fast track design and technical team began, rather briskly, to work.

"Every project we've been involved with in Silicon Valley has been fast- tracked in one way or another," reports Charles Dilworth, principal at STUDIOS Architecture, the international firm that maintains an office in San Francisco as well as in New York, London, Paris, and Washington, DC. Dilworth adds that it not always easy to get clients to understand that, as he puts it, "mortar and concrete is not software." However, it is not only hi-tech firms that want faster project turn-around. KMD's 12-storey, US$34.5 million University of California Office of the President, a 38,460-square-metre block in downtown Oakland, was done in 16 months.

Demand for foreign architects

Roughly 1,488 kilometres long and averaging 362 kilometres wide, the West Coast is quite large, and within that realm several regions are as large as most US states and just as distinct socially, politically, and climatologically. A "foreign" architect

Interior of MTV Network Headquarters, Santa Monica by Felderman + Keatinge Associates

was one whose office was in New York or Chicago, even across the state line. Says Gregory: "It takes a bit of living in the Northwest to understand how light works on a given materials pallette" – hinting that outside firms don't always get it quite right. Larger firms find it useful to maintain an office in each of the major cities. (KMD has one in Seattle, Portland, San Francisco, and Los Angeles.)

The region's provincialism, like the geographic isolation that reinforced it, is breaking down. Non-US practitioners long familiar with exacting design reviews and cramped urban sites may enjoy some advantages in the current building climate on the West Coast. "As land becomes more scarce, developers, architects, and buyers have to deal with different design ideas," explains Robert Packard, managing partner at ZGF. "You've got architects in Vancouver, Canada, for example, who've had the opportunity to build more high density housing than any place on the West Coast other than San Francisco."

Of course, clients demanding high-calibre work for showcase projects or highly specialised structures have always looked beyond the region. Also, the noise of jackhammers and dump trucks is so great that it has attracted attention of building teams from far afield. As noted, STUDIOS Architecture is busy on the West Coast. As is Mexico's Ricardo Legorreta (see interview in this report). One of the distinctive landmarks on Portland's smart West Hill is the 204-unit high-density hillside housing project called The Quintet that Japanese architect Hoichi Kurisu designed for his countryman, developer Chuichi Arai. Denis Laming, the French futurist architect, was hired to do the US$30 million Boeing IMAX Theater and Ackerley Family Exhibit Gallery at the Pacific Science Center in Seattle – his first American commission. Herzog & de Meuron travelled from Switzerland to do the Dominus Winery in Yountville in the Napa Valley. (See building review in this issue.)

The future?

How long will the good times last on the West Coast? There is no shortage of Jeremiahs who warn that the hi-tech sector is overbuilt and over-valued. The region's trade links to Asia, a source of much of its current wealth, are vulnerable to troubles in that part of the world; Nike, for example, which couldn't build new space fast enough in 1996, was announcing the largest layoff in the company's history by early 1998, amounting to about seven percent of its work force.

Few think the West Coast boom can be sustained, or even ought to be, but few also believe the region's economy will again go bust. A more diverse array of firms do more trade with more parts of the world than in the past, and the banking crisis of the 1980s led to a prudent tightening of lending requirements. There is likely to be a need for new building on the West Coast for some time to come. WA

CONSTRUCTION FACTFILE compiled by Hanscomb

Industry overview: The 1992 Census of Construction prepared by the Bureau of Census provides a basis for comparison of the West Coast construction industry to the entire country. The West Coast had:

- Over 30,000 construction establishments, about 5% of the US total.
- Over 686,000 employees, about 15% of the US total.
- Almost US$85 billion of construction put in place, about 16% of the US total.

There are two States in the top ten for value of construction put in place (California - 1, and Washington - 10). They account for almost 15% of the total US construction put in place value.

Construction outlook: The West Coast tends to lag behind the rest of the nation in recovering from the recession. The most recent recession was by far the longest and deepest to hit California in the last fifty years. The area was also hard hit by the closure of military bases, which added to other economic woes. However, in the past few years the region began catching up with the recovery experienced earlier by the East Coast. The expanding economy has had its effect on the many sectors of the construction industry. The office market is perhaps the most widespread growth opportunity. A few years ago it was a buyers' market for anyone wanting to rent office space, but it is now at the stage where vacancy rates are very low. Consequently, new office buildings are being planned, and plans that have sat on the shelf for years are being revived.

The rising population, due mostly to immigration, is also affecting the volume of construction. A slight increase in residential construction is expected, but nothing dramatic. There is an increase in school development from the rising immigration and the number of baby-boomers' children. There is not as much university work, but about ten years from now this could be a growth area. Another area of potential growth from ageing baby-boomers, which is quiet for the moment, is congregate housing for the elderly. Population growth has had a positive impact on the transportation industry. Several light rail schemes are under construction, or in the planning stage, and most airports seem to have expansion plans.

Construction of new hospital buildings is down, largely due to changes in technology. However, legislation changing seismic safety regulations has resulted in seismic upgrade work of medical facilities.

Silicon Valley, the most robust of the industrial areas in the region, has been booming. Companies in the hi-tech, micro-electronics industries have fuelled a big demand for new and expanded facilities. There is recent evidence that the recession in Asia is beginning to bite into the Silicon Valley boom, which may cause a reduction in what is currently an overheated design and construction market.

The entertainment / hospitality industry is a growth area for construction. There are several new theme parks planned or under construction. New hotels are common around these areas and other tourist destinations. Las Vegas (technically not West Coast, but very close) is a very active entertainment / hospitality market. New hotels and casinos, often replacing older ones with bigger and better, seem to be constantly under construction. Las Vegas is one of the nation's fastest growing areas with a booming construction industry in most market sectors.

Government work remains one market sector with very little work for the region. With the closure of many military bases there is little military construction. Other Federal construction, such as courthouses and office buildings, has been limited. State and county funding for new construction has been restricted as a result of low tax revenues.

Rates of inflation: The region expects the building industry rate of inflation for 1998 to be between 4 and 5%.

Economic data

Consumer Price Index: 1990=100

1992	107
1993	111
1994	113
1995	117
1996	120
1997	123

Exchange Rates: US$ = 1.00

	U.K.	Germany	Japan
	£	DM	¥
1992	0.661	1.61	125
1993	0.675	1.73	112
1994	0.640	1.55	100
1995	0.645	1.43	103
1996	0.595	1.55	115
1997	0.599	1.77	129
1998 (April)	0.600	1.84	133

Construction procurement: There is very little regulation of processes used in the US building industry and, as a result, there is a great deal of flexibility and many choices facing building owners. At the risk of over-simplification, there are three "families" of ways that a project can be put together:

- Traditional – where an owner hires a firm of architects and/or Engineers to design the project. Designs are taken to a complete level of detail including specifications. Bids (tenders) are then sought from a selected range of general contractors (or in the public, sector openly advertised), who submit a lump sum price to carry out the work indicated in the drawings and specifications. A contract is signed and the work put in hand.
- Construction management – as many owners cannot wait for designs to be fully complete before a contractor is selected and work begins on site, there is a wide variety of methods for advancing the start of construction while at the same time introducing competition and assuming a reasonably firm price, before design is complete. These invariably involve an owner in retaining a construction manager who may be a construction company or a professional CM firm, during the design phase. There will then be a wide range of contractual alternatives for getting the work started.
- Design-build / Turn-key – this is a very common approach that is used for relatively simple industrial facilities which involves negotiating or bidding from a statement of owner requirements which may be accompanied by very rough schematic designs, with a single company to take responsibility for both design and construction. Again there are

many variations to this approach.

Other features of the industry that are important to understand are:

The US is a very large country and, while the industry has become more mobile and nationally oriented than in the past, architects, engineers, and contractors still tend to operate regionally.

Bills of Quantities are not used in the USA for building construction although Schedules of Quantities are used as the preferred method of bidding for civil engineering work.

Design professions: There are some 15,000 architectural design firms in the USA and 35,000 consulting engineers. Over half of these are small practices with less than five employees. However, there are some very large companies, which probably take in over half of the nearly US$10 billion spent on design work annually. Larger practices usually are multi-disciplinary architects/engineers (usually structural, mechanical, and electrical), engineer/architects (usually civil, structural, mechanical, and electrical), and a wide variety of engineering design combinations. Some architects include interior design services, but there is a strong independent profession in this area.

In parallel with the design professions are a wide range of general management consultants for construction management, project management, cost consulting, scheduling control, etcetera. There is a legal requirement for construction documents to be sealed by registered architects. Registration is granted by State, not nationally. There are some reciprocity agreements between States, which makes multi-state licensure easier. Foreign architectural firms seeking work in the US will probably find it necessary to team with a local firm.

Contractors: The American construction industry is dominated by the general contractor, some of whom are on a huge scale. There are, however, over one million contracting entities in the country from the very large general contractors to one-man subcontracting entities. Unlike many parts of Europe, the general contracting approach is preferred by owners, rather than deal individually with separate trade contractors. Owners are prepared to pay the premium in order to eliminate coordination problems and centralize liabilities.

General contractors sub-contract much of the work on a project. There will be regional variations in the amount of work sub-contracted. Work in the following trades may be performed by the general contractor:

- Concrete (poured in place)
- Masonry
- Excavation

Currently, overhead and profit markup for general contractors may be expected to be in the range of 10-15% of direct costs. Insurance and bonds may be 1-2% (of bid price) per year.

Governing codes and standards:
Building codes are adopted by local governments, so there is no single national building code. There are three major model codes that are the basis of many local codes. The model code organizations have formed the International Code Council to develop a single model building code for the US by the year 2000.

Non-government organisations develop material standards that are adopted by local authorities. The American Society of Testing and Materials (ASTM) is a major provider of material standards. Underwriters laboratories also provide testing certifications for many materials.

Miscellaneous design considerations:
Building design must consider high winds along most of the West Coast. With the San Andreas fault line running along the West Coast, seismic considerations are a major design consideration for a large part of the region. The West Coast displays a wide variety of climates, from hot and dry San Diego to the mild and wet Seattle, and many variations on these themes throughout the area. The climate extremes create very different heating and cooling requirements for the area.

Construction cost guides

Pricing manuals: RS Means is a leading publisher of construction cost data in the USA. They publish numerous construction cost guides annually and a quarterly index.

Approximate construction costs: The following square metre unit rates are provided for rough comparison purposes.

	San Francisco, CA	Los Angeles, CA	Sacramento, CA	Seattle, WA
University Laboratories	2,960	2,635	2,635	2,475
Library	2,150	1,885	1,885	1,830
Medical Office Building	1,830	1,615	1,615	1,560
Prison	2,315	2,045	2,045	1,560
Below Grade Parking Garage	645	540	540	540

Useful addresses:

American Institute of Architects
1735 New York Ave., NW
Washington, D.C. 20006
Phone: +(202) 626-7300
Fax: +(202) 626-7518

National Society of Professional Engineers
1420 King Street
Alexandria, VA 22314
Phone: +(703) 684-2800

American Association of Cost Engineers
209 Prairie Avenue, Suite 100
P.O. Box 1557
Morgantown, West Virginia 26507-1557
Phone: +(304) 296-8444
Fax: +(304) 291-5728

Associated General Contractors of America
1957 E Street, NW
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Fax: +(202) 347-4004

West Coast USA – Leading architectural practices | design firms

West Coast firms working in region	Number of Architects	Business Parks/Offices	Criminal Justice	Cultural	Defence	Education	Government Buildings	Healthcare	Industrial	Hotels/Leisure	Retail /Shopping Centres	Residential	Sports Stadia	Transportation
Gensler	710	■		■			■				■			■
Callison Architects Inc	252	■						■		■	■			
Zimmer Gunsul Frasca	235	■	■	■		■	■	■						■
Wimberly Allison Tong & Goo	181									■				
Anshen + Allen	175					■		■		■	■			
DMJM	172		■		■		■							■
MCG Architects	155	■									■	■		
Langdon Wilson Architecture	105	■		■		■	■	■	■	■	■	■	■	
RMW Architects	100	■		■				■						
LMN Architects	99	■		■		■			■		■		■	
Ehrlich-Rominger	97	■	■		■	■	■	■	■					
AC Martin Partners	96	■	■			■	■		■				■	
KMD	91	■	■	■		■	■	■		■	■	■		■
Flad & Associates	88	■				■	■	■	■					
Perkowitz Ruth Inc.	75								■		■			
AM Partners	69	■				■	■	■		■	■	■		
HMC Group	66					■	■	■						
Nadel Architects Inc.	46	■		■			■	■	■	■	■			■
Morris Architects	42	■	■	■		■		■		■	■	■		
Mithun Partners Inc	42	■	■				■	■		■	■	■		
Lee Burkhart Liu Inc.	40					■	■	■						
BOORA Architects	40	■		■		■	■	■			■			
Thompson Vaivoda & Associates	35	■		■		■				■		■		
Northwest Architectural Company	32	■	■	■	■	■	■	■	■	■	■	■		
Altoon & Porter	32	■		■		■					■			
Ankrom Moisan Associated Architects	32	■		■			■	■	■	■	■			
Architects Hawaii Ltd.	27	■	■	■		■	■	■	■	■	■	■		■
Olson/Sundberg Architects	27			■		■						■		
Rochlin Baran Balbona	26					■		■						■
Jones & Jones Architects	24			■		■								
Fletcher Farr Ayotte	22	■		■		■	■		■	■		■		
Thomas Hacker & Associates	22			■		■	■							
LRS Architects	21	■	■			■	■	■	■		■		■	
Sienna Architecture Co.	20	■	■				■				■	■		
Bumgardner	14	■		■					■	■	■	■		
Soderstrom Architects	13	■				■					■	■		
Miller Cook Architects	13	■			■							■		
GBD Architects Incorporated	12	■					■	■			■			
Arbuckle Costic Architects	8	■	■	■	■	■	■	■	■			■	■	
Ogden/Schmitz + Associates	3	■		■		■	■	■			■			
Abell Architectural Group	3	■				■	■		■					
Non-West Coast firms working in region														
HOK	700	■	■	■		■		■	■	■	■	■	■	■
NBBJ	557	■	■	■		■		■		■	■	■	■	■
RTKL	425	■	■			■	■	■		■	■	■		■
SOM LLP	400	■	■	■		■	■			■	■	■	■	■
Leo A Daly	226	■	■	■		■	■	■	■	■	■	■	■	■
SmithGroup	220	■		■		■	■	■	■				■	■
HLW	200		■			■		■	■	■	■			
Cannon	184	■				■	■	■					■	
Greenberg Farrow Architecture	180	■								■	■	■		
Einhorn Yaffee Prescott	170	■	■		■	■	■							
HLM Design	144	■	■			■		■		■				
Vitetta Group	120		■			■		■					■	
Hardy Holzman Pfeiffer Associates	119		■	■		■					■	■		
BSW International	91									■	■			
Architecture Studio (Studio Architecture in US)	91	■				■			■		■			
Harley Ellington Design	66	■				■	■	■	■					
STV/Silver & Ziskind	43		■			■	■	■						■
SSOE Inc.	40	■	■	■	■	■		■	■	■	■			■
Wallace Roberts Todd	28	■		■		■	■	■	■	■	■	■	■	■


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Practice profile

Northwest Architectural Company (NAC) is a firm of over 60 professionals lead by eleven principal architects with a great diversity of experience, supported by a talented and dedicated staff. We are committed to design excellence, technical competence, meeting time constraints, and budget adherence.

With its origins in 1960, NAC has a long track record of exceptional client service through ongoing consulting relationships. We are particularly adept at teamwork, and aspire to be the firm of choice in collaborative design and consulting endeavours throughout the world.

We continually seek perfection. Quality in every aspect of our practice is the perpetual pursuit. Constant introspection and self appraisal in even the smallest aspect of what we do brings continual refinement and improvement, resulting in advancement of our firm and our profession. This commitment has resulted in over 50 professional and user organisation awards for design excellence.

We make design and environmental decisions with our clients with long-term results as a major criteria. Transition planning for the team assures the project's longevity. The life cycle view maximises project value for our clients. The sustainable view maximises value for our communities and society.

Areas of specialisation

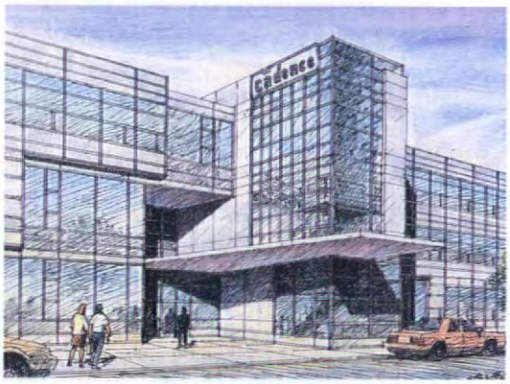
The practice has a diverse portfolio of experience and capabilities with particular strengths in: public architecture, educational facilities, healthcare, offices, hospitality, recreation, and housing for special populations.

Captions:

1. Foothills Middle School, Wenatchee, Washington
2. The Coeur d'Alene Resort Hotel, Coeur d'Alene, Idaho
3. Federal Building/U.S. Post Offce Renovation, Spokane, Washington
4. Shadle Branch Library, Spokane, Washington
5. Lewis Alumni Centre, Washington State University, Pullman, Washington
6. Whitworth College Library, Spokane, Washington
7. Mt Spokane Mead High School, Mead, Washington
8. Rockwood Medical Clinic, Spokane, Washington
9. Highline Community Hospital – Computer Rendering, Seattle, Washington

RMW Architecture + Design


1



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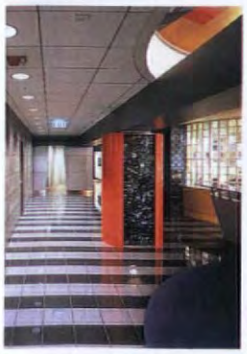
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Size of firm

125 Employees

Photographs

1. Altera Corporation Headquarters
3. Cadence Design Systems Scotland
2. Oakland City Center Masterplan
4. Interior Port of Oakland Headquarters
5. Interior Sybase Software Engineering

Profile

RMW is committed to the discovery and use of relevant business information about each client that inspires design solutions that respond to their unique culture and criteria. It is the goal of every principal, designer and project manager to assume the role of a resourceful collaborator. . .one who listens, learns and leads that client to an innovative and practical solution for success.

Established in 1970, we offer services from three offices in northern California and the heart of Silicon Valley.

Peers recognise us for our design abilities and clients know us well for our high quality, attentive service. They report:

We hired them because: 'The combination of experience and people made them the best choice to design our new headquarters...they provide good architecture and design with the clients' needs foremost in their minds."

They differ from their competitors because: "RMW listens well to their clients. They are creative, responsive and flexible...They present a depth of qualified thought throughout the project team."

Capabilities/Areas of special expertise

Architecture, Interior Design, Masterplanning and Research.

RMW has built a reputation on recognising the direct impact space has on corporate results and helping develop strategies that make business sense. With a diverse clientele, RMW is in the forefront of the evolution in workspace design dubbed "alternative officing". Through direct client input, RMW has developed client specific and measurable solutions that:

- Enhance employee interaction and productivity.
- Support the use and exploration of new technologies.
- Create flexibility that adapts to changing work processes.

RMW's expertise is distributed equally between architecture and interior design, providing our clients with a unique combination of complementary skills. Our architectural solutions are profoundly affected by our understanding of how people use space, while our knowledge of building technology issues and systems enables us to harness their value in creating interior solutions .

Clients

Hi-tech	*Software*	*Consulting*	*Legal*
Altera	Autodesk	KPMG Peat Marwick	Fenwick & West
BayNetworks	Cadence Design	William Mercer	Venture Law
Hewlett Packard	Peoplesoft	Silicon Valley Bank	Group
KLA-Tencor	Sybase		
Siemens ROLM	Synergex		
Sun	Versant		

Recent projects / future assignments

Ascend Communications Corporate Campus
Analog Devices Campus
Dolby Laboratories

WORLD**ARCHITECTURE**

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No.37 June '95	US & Canada	RDC Architects (Singapore)	n|a	Building Elements
No.38 July | Aug '95	Scandinavia	TSP Architects + Planners (Singapore)	n|a	Furniture
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No.62 Dec '97 | Jan '98	'96/'97 review	Derek Lovejoy Partnership (UK)	1998 World Survey of the 500 largest architectural/design firms	Desking systems, office seating, partitioning & wall storage
No.63 February '98	Russia	John McAslan & Partners (UK)	Embassies	Building Services
No.64 March '98	Ireland	Gilroy McMahon Architects (Ireland)	Headquarters	Floors, ceilings, internal walls, partitions
No.65 April '98	United Arab Emirates	Rhode Kellermann Wawrowsky + Partner (Germany)	Showrooms	Seating
No.66 May '98	Argentina	KPFF Consulting Engineers (USA)	Top 100 Structural Engineers Survey	Lighting
No.67 June '98	People's Republic of China	B+H International (Canada)	Cultural Centres	Architectural Hardware

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WORLD**ARCHITECTURE**

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Architect's Choice – West Coast USA Building Products and Services

Product/Service	Firm	Contact Telephone Number
Architectural metalwork	ACME Architectural	+1-212-334-3190
	Julius Blum & Co.	+1-201-438-4600
Architectural glazing	Libby Owens Ford	+1-419-247-4506
	W.W. Glass Systems Inc.	+1-914-425-4000
	Viracon	+1-507-451-9555
CAD/Software AEC	Autodesk Inc.	+1-415-507-6468
	Arris	+1-318-449-9900
	Bentley Systems	+1-610-458-1060
	Intergraph Solutions	+1-205-730-8801
Coatings/Finishes	Dryvit	+1-401-822-4100
	(Kynar 500) Elf Atochem	+1-215-419-7010
	STO Corp.	+1-404-346-3666
Commercial Carpets	Interface Inc.	+1-770-437-6804
	Lees Commercial	+1-910-379-4510
	Milliken	+1-706-880-5827
Commercial Ceilings	Armstrong World Industries	+1-717-397-0611
	Chicago Metallic	+1-708-563-4600
Commercial Windows	Hopes	+1-716-665-5124
	Kawneer	+1-770-449-5555
Door Hardware	Forms & Surfaces	+1-805-684-8626
	Schlage	+1-719-264-5300
Exterior Curtain Wall/ Cladding	Alply Inc.	+1-601-743-2623
	Pohl Inc.	+1-801-323-9993
	US Aluminium	+1-972-937-9651
Flooring	Amtico	+1-888-268-4269
	Armstrong (Resilient)	+1-717-397-0611
	Stone Selection	+1-510-782-3000
Furniture	Kimball	+1-812-482-1600
	Steelcase	+1-616-698-4599
HVAC	Carrier	+1-860-674-3130
	Honeywell	+1-612-951-1000
	Landis Staefa	+1-847-215-1000
Interior Finishes	C/S Group	+1-717-546-5941
	U.S.G.	+1-312-606-3754
Lifts/Escalators	Cemcolift/LGIS America Inc.	+1-215-766-0900
	Dover	+1-601-342-4300
	Montgomery Kone	+1-309-764-6771
	Otis	+1-860-676-5400
	Schindler	+1-973-397-6500
Lighting	Fabulux	+1-718-625-7661
	Kim	+1-626-968-5666
	Louis Baldinger	+1-718-204-5700
	SPI	+1-414-242-1420
Sanitary Fittings	American Standard	+1-903-581-3200
	Kohler Comp.	+1-411-457-4441
Interior Residential Doors	Pella	+1-515-628-1000
	Weyerhauser	+1-206-924-2345
Residential Windows	Andersen Group	+1-612-439-5150
	Marvin	+1-888-537-8268
	Weathershield	+1-715-748-2100
Roofing Systems	Birdair	+1-716-633-9500
	Carlisle Syntec	+1-918-227-4533
	JPS Elastometrics/Stevens Roofing Systems	+1-413-533-8100
Other	LTS Ceramics	+1-561-465-5445
	Atas International Metalwork & Ceilings	+1-619-262-9911
Architectural Signage	Vomar Products	+1-818-786-8085

Olympic Stadium, Rome

Folkestone Terminal

New Denver International Airport

Georgia Dome

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Company Profile
Birdair Inc is an innovative construction company specialising in tensioned membrane roof systems. The company offers a complete turnkey approach: from design and engineering to installation and customer service. Birdair assists architects and engineers in this unique architectural approach.

Recent Projects Shown
Olympic Stadium, Rome, Italy
Folkestone Chunnel Amenities, Folkestone, UK
New Denver International Airport, Denver, Colorado, USA
Georgia Dome, Atlanta, Georgia, USA

Product Range
The dramatic architectural design and unique aesthetics combined with low maintenance and durable long life performance creates an innovative and fully functional roof system. The membrane system offers: code compliance, translucency, energy efficiency, durability and flexible design capabilities.

Areas of Specialisation
With applications in most geographic settings, membrane structures are a natural element of stadiums and long span structures, amphitheatres, retail shopping centres, transportation facilities and most diverse commercial applications.

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STONE SELECTION

Company profile

Stone Selection Inc. is the North American subsidiary of Marbres du Boulonnais, a company which has been operating in the stone sector since 1896. Since its establishment on the west coast of the US, Stone Selection Inc has reaffirmed itself as the French limestone and marble leader. Our unique position in North America as a direct link to the French quarries and stone processing plants as well as a stocking warehouse (holding over 200,000sf of stone) enables us to ensure quality control and cost effectiveness throughout the entire chain of supply.

Areas of specialisation

Stone Selection Inc. offers a full line service to architects and designers from the specification of stone until the completion of the project. With the full backing and technical expertise of its parent company, Marbres du Boulonnais, Stone Selection Inc. has realised some of the most prestigious projects in the public domain such as the San Francisco Courthouse and San Francisco Main Public Library as well as a long list of commercial projects like the GAP and Banana Republic Stores in Canada and the US, the Pennsylvania Plaza in Washington DC, the Swiss Grand Hotel in Atlanta, Georgia. Met Life Insurance Headquarters in Ottawa, Canada and, of course, various software company headquarters based in Silicon Valley. Nevertheless, we are equipped to handle any residential project.

Product range

Our extensive product list can be found on our website: http//:www.stoneselection.com. which includes some of the most sought-after limestones such as Beauharnais, Beaumaniere, St. Marc, St. Martin, St. Veran, Corton, Poiseul, Beaulieu, Comblanchien, Combebrune, Buxy, Chassagne. To meet the new standards concerning the coefficientcy of friction our company has developed new finishes as well as flamed, bush hammered, tooled, sandblasted, honed, split faced. With over 20 quarries and our four stone processing plants, we are prepared 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 carved pieces such as columns, balusters, fountains, fireplaces or monuments.

1:
Architects: Hannum Architects
Project: CCMC San Mateo, Ca.
Stone: Beauharnais honed cladding; Beaumanière bush hammered flooring
Installation: Clervi Marble

2:
Architects: Fee Munson Ebert (Christian Maars)
Project: Regency II San Rafael, Ca.
Stone: St. Marc honed and sandblasted
Installation: Granite and Marble Works

3:
Architects: RMW Architects + Design, San Francisco
Project: Altera
Stone: St. Martin Flamed Avallon with Antiqued Patina
Installation: Superior Tile

4:
Architects: RMW Architects + Design, San Jose
Project Designer: David Rush
Project: AVANT!
Stone: St. Martin honed and Locome honed flooring
Installation: Aztec Tile

Photography: Bernard André

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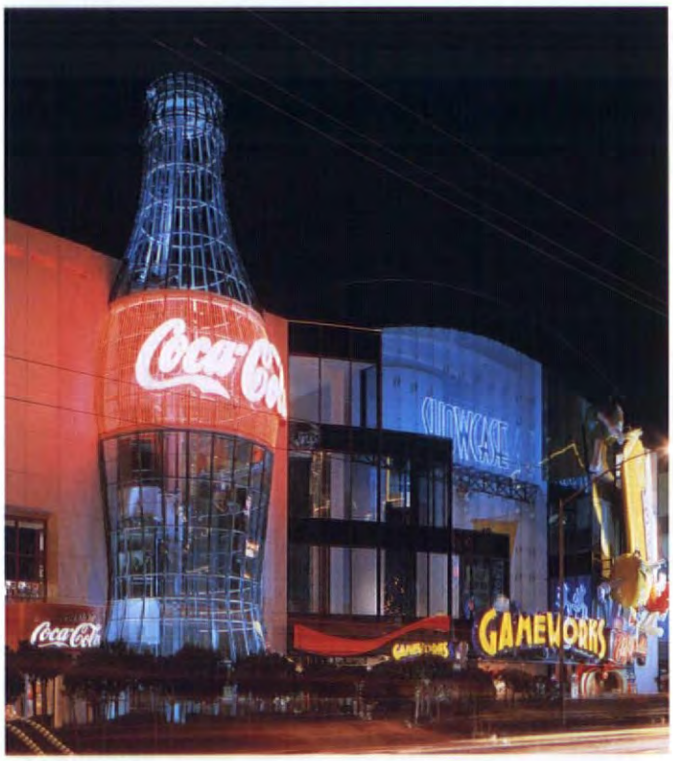


Company profile
W & W Glass Systems, Inc is a family owned Architectural Metal and Glass and Glazing subcontractor. The company specialises in the supply and installation of the Pilkington PLANAR structural glass system for both structure and glass offering a complete turnkey approach from design and engineering to installation and customer service. W & W works very closely with architects and engineers in the initial design to insure the optimal use of the system.

Recent projects shown
- Muni Metro Canopies, San Francisco, CA
- The World of Coca Cola, Las Vegas, NV
- Ontario Convention Center, Ontario CA

Product range
The Pilkington PLANAR System is sold with a full 12-year warranty and requires little or no maintenance. PLANAR is very versatile and can be used in many applications from cladding an entire structure to the creation of soaring vertical facades, cable tension structures, roofs and canopies. The system can be mounted onto glass fins, trusses or steel tubing supplied by W & W or by others. PLANAR is fully tested and complies with all seismic and code requirements.

Face to face

Balanced madness

Mexican architect Ricardo Legorreta has followed the maestro Luis Barragan's precedent of using strong colours, geometric shapes and water to create a peculiarly rich visual and textural architectural type which has become an exportable global brand. Miquel Adria, Editor of Arquine, Mexico's foremost architecture magazine, talks to him about his work across the border in the United States of America – primarily on the West Coast.

"I am going to speak of my personal experience, which began from a position of anger." Legorreta's Latin passion is at the root of his colourful style. His anger stems from a contempt of ignorance "because of how little or poorly Mexico is known in the United States. From Mexico, there is a certain inferiority complex which makes us think we cannot compete with the Americans, but I am convinced we have much to contribute.

"You have to be passionately brave. The problem is that in Mexico we have never been educated to export, either objects or talent. The Free Trade Agreement has helped like a vaccination. It has been a swift kick generating a stimulus. Even before NAFTA, there were many American offices getting into the Mexican market, but no Mexican ones in the United States."

Legorreta's first job in North America was in 1985. "The famous actor Ricardo Montalbán asked me to make his house and for it to be an example of high-quality Mexican architecture. It generated quite a positive reaction when people suddenly saw there were walls, colours, human relations, which generated sensations unbeknownst to them. Even the fact that we took them coloured models surprised them enormously. Here [in Mexico], models are coloured according to taste, independent of the colour decided upon later on. But the Americans interpreted this as the final colour we were thinking of.

"The most significant difference between working in Mexico and in the United States is that Americans have a way of working which is more segmented, more square. Our work is more disoriented, more emotional. We improvise and they are extremely rigid and organised. Once beyond the first phase, modifications are unacceptable. In contrast, for us, if we can improve the final result, we do. In Ricardo Montalbán's house, for example, when we had already finished, we decided to move a window 50 centimetres. And he, as Mexican, understood this perfectly. But the contractor felt quite disappointed, as if saying, 'this person does not know his stuff, makes mistakes, corrects things, does not respect his own plans'.

"After the Montalbán house, we began receiving big projects, libraries, museums, but so far they have been in the states of California, Texas and New Mexico which, because of their climate and, to a certain extent, because of their culture, are similar to us. The challenge will be with a major project for a Latin neighbourhood in Chicago, the third-largest city according to the number of Mexican inhabitants, after Mexico City and Los Angeles. Here there is another big challenge, because obviously the painted surfaces we frequently use would not work on that school in Chicago because of the weather.

"Even before NAFTA, there were many American offices getting into the Mexican market but no Mexican ones in the United States."

"Now, we are going to begin remodelling the Zandra Rhodes Museum in London. Zandra is a woman fascinated with colour. That is why she invited me to design it. The invitation is to inject colour into the project, but what is unknown is how we are going to do it, without surfaces or brick walls, and without ceasing to be ourselves.

"It is not necessary", according to Legorreta, for Mexican

architects to join up with Americans to work in the United States. "We could do it alone, but I think it is important not only to bring in someone who knows the regulations, but to create a team where both 'mentalities' are joined together. Incorporating an American into the work process helps structure and discipline the project process.

"However, when I worked in collaboration with SOM [Skidmore Owings & Merrill], on the Almadea project in Mexico City in 1994, they accepted my sketches, but tried to fit them into their modulation or their square pattern but this proved to be absolutely unnecessary. It was neither essential nor cheaper. North American firms are not used to our variety of spatial and formal solutions, so we have to draw quite detailed architectural plans. Perhaps the difference lies not in the cost, but in the discipline needed to deal with the projects."

So why does Legorreta work in North America. What is it that attracts him? Is working in the United States good business? "First, it is a challenge, competing with the supposed champions. Moreover, we should not forget there is a certain discrimination toward us and that it is worth showing that 'we can'." But is it lucrative? "Yes. I have almost never felt discriminated against in fees. They are higher than in Mexico. And we work here [in Mexico] for lower wages, even though we are one of the best paid companies."

Legorreta is clear that in the USA, when they want a project from a "Mexican" architect, they are really asking for a national style. Would he describe this as a new folklorism for their chicano cities? "Yes indeed. Now, we are going to build a house in Japan and the client has insisted that there is no need to study Japanese culture and architecture, and that he wants a Legorreta project.

"They call me, not to make a white building for them, but because they like my use of colour and light. In the Chiron laboratory in San Francisco, there are huge brick panels, skylights of sophisticated technology, together with surfaced vaults, where you can just feel the evolution. I do not know if it is good, but I feel that at our practice we are already taking the next step."

Surely the ultimate aim is to export not only "style" but Mexican expertise and architectural services? "Well it's difficult", admits Legorreta. "The only firms to have done so so far, have been huge Mexican engineering firms. The USA is a country of institutions. In contrast, Mexico is a country of individuals. It would be difficult to compete with huge institutions and huge companies, but we can export Mexico's ingenuity, creativity, mobility and a capacity for improvisation. It would be difficult for there to be a Mexican SOM for example. We have to be punctual and efficient, but above all creative: organised artists or balanced madmen. The Americans have grasped this and have come over here to sell organisational know-how. They come with a team selling the whole package, keys in hand. We Mexicans go as individuals. To do that, you have to be brave. There are no formulas. WA

New buildings in West Coast USA

An instant landmark in Silicon Valley

Silicon Graphics Inc's new Research & Development campus in Mountain View, California, combines cutting edge architecture by STUDIOS Architecture and stylised landscaping by the SWA Group to reflect the firm's high-tech products and culture. Michelle Martin reports that unlike many isolated Silicon Valley corporate campuses, this facility is highly visible to passers-by.

The client

Silicon Graphics Inc (SGI) selected a 10.7 hectare site in Mountain View, California for its R&D campus. "Our objective," says David Kalb, AIA, Corporate Manager of Architecture and Planning for SGI, "was to create the most effective workplace possible. Our biggest challenge was creating a sense of community on the campus and in relation to the corporation as a whole".

The campus has four buildings – each with its own offices, lounges, and coffee bars – for SGI's engineering and support staff. "An effective work space," says Kalb, "is more about the work than it is about the office. Collaboration is very important. Coffee lounges can be very conducive to collaboration. Creating and balancing a variety of supportive work settings was critical."

The large curved mass of Building 40 houses the Ozone Cafe (a cafeteria and auditorium that holds 500 diners or 700 people in auditorium seating), a kitchen, the Presentation Centre (a black box theatre seating 150 people), a Fitness Centre, a restaurant (a separate ground floor eating space), and an engineering library on top of the restaurant. The main facility entrance is in the prow of the building, directly beneath the Presentation Centre.

Building 41 is the main shipping, receiving, and loading dock for the campus, while Building 42 is entirely office space. The S-shaped building 43 is called the Schoolhouse because of its accommodation for training, conferencing, and classroom space and a screening room capable of seating 40 people.

The courtyard between Building 40 and Building 43 serves as a town square to foster a sense of community. It is part of what SGI calls "the fifth building": a series of relaxed and intimate outdoor courtyards, plazas, and recreational areas for solitary work or one-on-one meetings.

The architect

STUDIOS Architecture created a geometrical architectural design for the buildings. The south side of the overall facility responds in materials and form to the street frontage. The ›

Steve Whitaker ›

Site Area
10.7 hectares
(8.7 developed hectares)
Enclosed Area
46,450 square metres
Building 40
Two storeys
13,935 square metres
Building 41
Three storeys
9,290 square metres
Building 42
Three storeys
9,290 square metres
Building 43
Two storeys
13,935 square metres
Parking
600 outdoor parking spaces and a parking podium for 1,000 cars

View of pedestrian entry to Building 41 at night. The buildings are constructed above a 46,450-square-metre concrete podium in order to accommodate parking

Richard Barnes Photography

1

North elevation

South elevation

› north side is a sculptural mass set in juxtaposition to a distant mountain. Both the eastern and western ends of the campus serve as gateways and reflect the openness of the architecture. The campus was constructed on a very fast track: just three years from masterplan to completion in 1997.

One of the greatest challenges for the architects was the provision for parking. The City of Mountain View had granted a 0.53 floor area ratio which called for four-storey buildings and all surface parking. Silicon Graphics is against commissioning medium or high-rise solutions for new-builds, and surface parking was therefore limited due to the land surface area required to accommodate the low-rise buildings. Underground parking was ruled out because of problems with contaminated groundwater.

"We could have just plopped a parking garage down on the campus, but we wanted to do something special," says Charles Dilworth of STUDIOS. "So, we built a concrete podium, tucked the parking inside, and placed all of the


2


Richard Barnes Photography
3


Michael O'Callahan Photography
4

1: View of the schoolhouse (Building 43) from the north-east

2: Flyover walkways, shown here from parking under Building 43, encourage external circulation

3: Interior of presentation centre (Building 40)

4: Team area in the main entry of Building 40

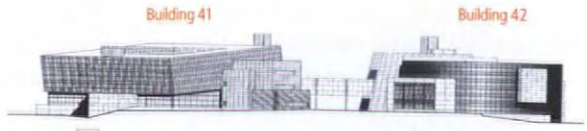
5: Building 41 seen from the north

6: View of the outdoor dining area in Building 40


Richard Barnes Photography
5


Michael O'Callahan Photography
6

East elevation



West elevation

Key to elevations **1.** Main entry **2.** Parking level **3.** Loading dock **4.** Pedestrian access **5.** Parking **6.** Podium parking **7.** Circulation towers **8.** Loading/receiving

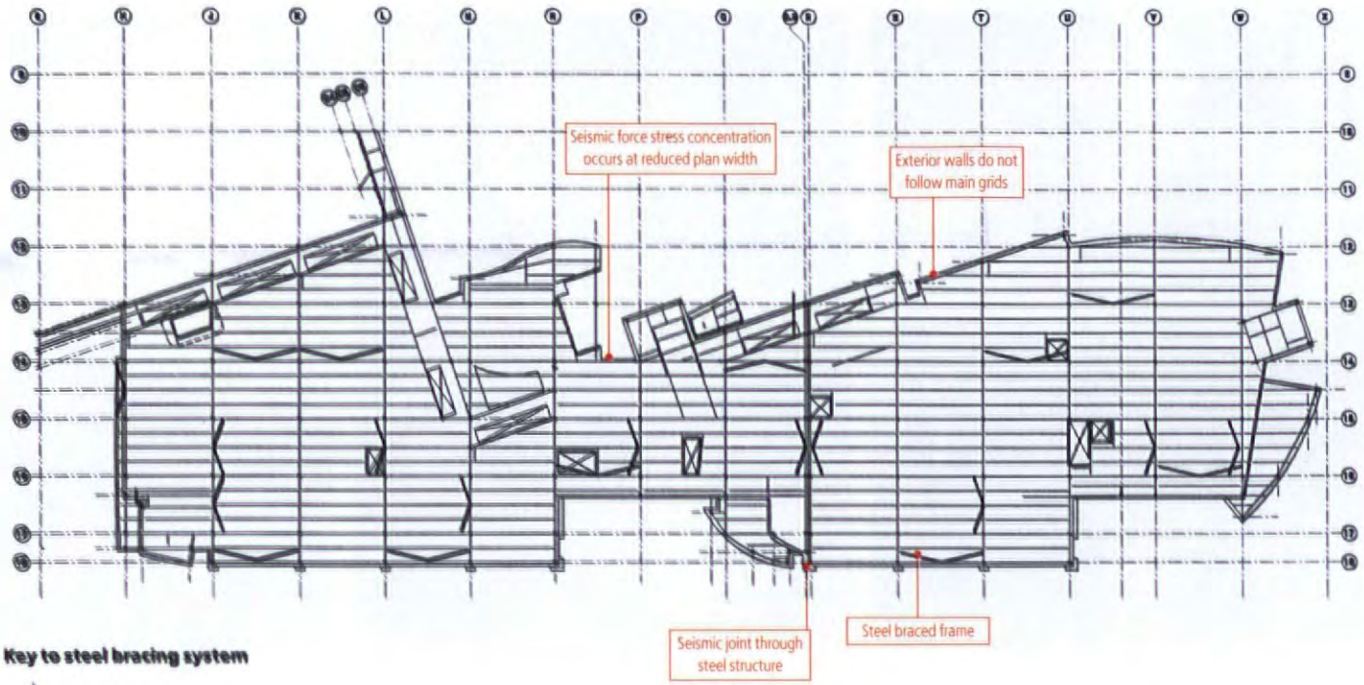
buildings and landscaping on top."

The landscape architect

The SWA Group partnered STUDIOS Architecture on the masterplan and provided full landscape architecture services. The masterplan set aside 54 percent of the site, including a 2.02 hectare public park, for open space.

"We had to create a meaningful public park in a non-residential area that would also create a linkage and gateway to the office development to the south of the campus," says Dan Tuttle, a principal at The SWA Group. "And we had to create a private corporate campus that also provided public access to the regional park and a planned trail along the Permanente Creek corridor."

The SWA Group's landscape design integrates the park and the SGI campus by blurring the line between the two uses. The 2.6 metre grade change between park and campus is masked through a series of landscaped terraces, broad steps, a water ›

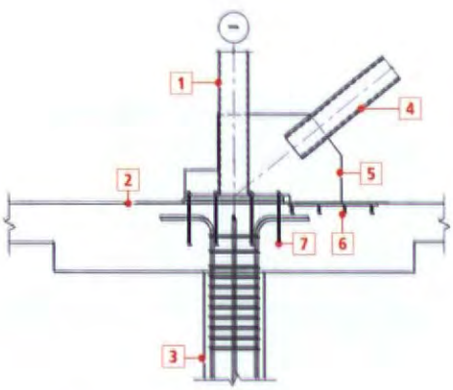


Key to steel bracing system

Steel column

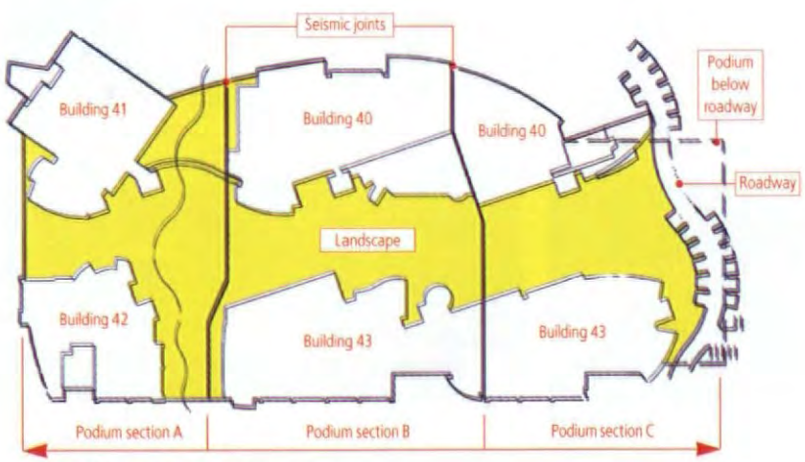
Steel framing member (W or OWSJ)

Steel braced frame (column to column)



Key to section through structure

1. Steel column
2. Concrete podium
3. Concrete column
4. Steel brace
5. Steel gusset plate
6. Cast in place studs transfer shear from steel to concrete
7. Anchor bolts transfer uplift from steel to concrete



Plan of the site showing seismic joints

element that is part waterfall and part paved river, and several other paths that lead people in and out of the campus. The public is left feeling that the park is much larger than five acres, while SGI employees feel that they have a park for their front door.

Because of the geometrically designed architecture of the four campus buildings, it was impossible for the SWA Group to impose one large landscape order across the site. "So, we used the variety and volume of the buildings to create a series of spaces that are quite distinct from each other," says Dan Tuttle.

The structural engineers

GFDS Engineers faced a myriad challenges with this project. The first was the sheer size of the 46,450-square-metre concrete podium which had to support the four steel buildings, the heavy landscape loading, and the cars and service trucks that would drive over the podium. Engineers used joints to divide the podium into three buildings, creating in effect three centre points and thus greatly reducing structural stress and the amount of concrete shrinkage. Concrete columns over long spans and concrete walls provided support.

The varied geometrical architecture also made the seismic force resisting system a particular challenge. "A basic concept in seismic resistant design," says Kelly Cobeen, one of the GFDS Project Engineers, "is that the structure should move as a unit in response to earthquake ground motion, instead of portions of the building responding independently. We used the joints dividing the podium into three structures as seismic joints. Rather than having one huge mass moving in response to an earthquake, the joints enable each of the three divided sections of the podium to move independently".

"Rather than a standard exterior bracing system, GFDS

Richard Barnes Photography

Main entrance to Building 40. Like many Silicon Valley "offices", corporate culture is a low key affair aimed at getting the maximum from employees in an informal university-like context and often in green field sites

pulled the seismic bracing to the interior of each building and placed it between the columns on the main grid system.

Appraisal

In the diffuse Mountain View landscape of largely hidden low-rise buildings and wide arterials, SGI's new R&D campus is an instant landmark. The idiosyncratic architectural design is very much of the place and the moment and a very appropriate product from this hi-tech firm. Because of the building's unique forms, bright colours, and playful massing, the facility can be read more as a sculptural work than a more traditional work of architecture.

Unlike the typically isolated high-tech campuses in Silicon Valley and elsewhere, this is a very public campus, from its landscaped gateways, to its public access path system and the 2.02 hectare public park. The landscaping is inventive, but needs several years to mature so that its real impact is felt. There are also elements of whimsy, like the yellow brick road (a main pathway of 93,000 fire bricks), within a campus that reflects the quite serious work of SGI's engineers and staff. WA

Client
Silicon Graphics Inc (SGI), Mountain View, California
Architect
STUDIOS Architecture, San Francisco, California
Structural engineer
GFDS Inc, San Francisco, California
Civil engineer
Sandis, Humber, Jones, Mountain View, California
Landscape architect
The SWA Group, Sausalito, California
General contractor
Devcon Construction, Milpitas, California
Financing
Virtual Funding Limited Partnership, Delaware

Architects
Hellmuth Obata + Kassabaum
Reviewed by
Clair Enlow of the Seattle Daily Journal of Commerce

Intellectual transfer spaces

Microsoft Augusta Campus, Redmond, Washington

Above: L-shaped plan allows for maximum flexibility to accommodate expanding and contracting workforce

Below: Each building is joined at the base with a glass-enclosed bridge connector

Fast growth and quick changes call for an architecture of logic and flexibility. The programme for the nearly complete Augusta campus, as with other Microsoft facilities, is built around a standardised office unit, or module. The "mod" is a 2.7 by 3.6 metre enclosed space in which a single worker labours with electronic codes. The company advertisements showing the open door to an individual office are used to entice talent into the firm and is seen as a key attraction.

The campus opens to view like a Pacific Northwest poster. It is designed to attract and retain workers, many of whom only recently left college campuses. The ground features have been developed as a rich pedestrian environment within the wide, loose embrace of massive suburban office buildings.

The project might be judged as the best possible stacking of 2,000 mods and the perfection of the campus model within a suburban office park. It is a performance that combines extreme efficiencies on one hand and visual sensation, relaxation and reassurance on the other. The basic office units add up to 55,740 square metres of office space in three campus-spanning buildings that leave plenty of ground in between.

Each pre-cast concrete and brick building is actually two L-shaped office buildings joined at the base with a glass-enclosed bridge connector. Not only does the plan minimise the circulation-to-office space ratio, but the arms of the L can expand and contract rapidly in fast track design and construction. It has replaced the "H" and "X" plans of older Microsoft campus buildings, and has been repeated in other Microsoft projects.

Following a general trend in high-tech and bio-tech office buildings, circulation has become social, a place for the kind of informal "intellectual transfer" that Microsoft has learned to nurture. Circulation space is wide, transparent, carefully detailed and enriched with resting places and focal points. Stairways with furnished landings are located on glazed corner walls. Art, views to the outdoors, and places to perch are essential to the plan.

Outside, careful articulation of the mod bays saves each elevation from the cold glare of the curtain wall. Looking at the windows on an afternoon stroll through the Augusta campus, it is almost possible to believe that you can see into the secure, 24-hour working world of Microsoft.

The landscape is calculated to relax and restore the hi-tech worker, who typically spends his day in solitude and intense concentration. Social spaces that might disrupt the plan of the office buildings themselves become jewel-like when placed in the expansive plaza between them. Here, single-storey sections of a cafe and conference facility are flanked by terraces and seated within a series of carefully planned landscapes. Articulated small-scale architecture, lush landscaping and outdoor art works are combined to provide Microsoft

All photographs Doug Scott

Above left:
Careful articulation of the mod bays prevents the cold glare of a curtain wall

Top right:
Campus-style offices are designed to maximise productivity

Above right:
The landscape is calculated to relax and restore the hi-tech worker

employees with a place on which to rest their gaze and spend their breaks.

The Augusta campus really began five years ago when the software giant retained Hellmuth Obata + Kassabaum (HOK) to help it jump ahead of the next wave of growth. HOK helped Microsoft managers to see that what appears to be unpredictable growth in the high-tech tradition can actually be predicted – and assigned a manageable number of real estate scenarios. After guiding the development of software that assures existing facilities are used to their highest potential, elements of the HOK/Microsoft facilities plan became four "grand slam" projects with code names borrowed from golf courses around the globe: Augusta, St Andrews, Pebble Beach, Troon. For Augusta, the largest of the four, Microsoft acquired 7.5 hectares of land just across a major artery bordering the entire campus. The new frontier opened up possibilities for redefining the hi-tech campus concept. Microsoft is rapidly reaching the limit of physical growth at its multi-centred suburban base.

The new campus straddles two distinct zoning districts in Redmond, a far-flung Seattle suburb engaged in an effort to define edges, find a centre, and increase pedestrian comfort. Following height limits, two of the office buildings step down from four to three storeys at the wide end of the site while the third converges with the three-storey cafeteria facility at the other end.

At Augusta the cars are hidden. The green spaces, plazas and office buildings sit upon a four-level parking system that holds several thousand cars. The roadways around the campus come alive with the ebb and flow of the work day at Microsoft. Drivers negotiate their own approach and departure to the office among the separate entrances and exits provided for each level of parking in the suburban campus. WA

Microsoft was unable to provide World Architecture with plans of the Augusta Campus.

Client
Microsoft
Architects
HOK Seattle and San Francisco
Structural engineer
ABKJ
Contractor
Howard S Wright Construction Co

Architects
Kohn Pedersen Fox and BOORA Architects
Reviewed by
Randy Gragg

Balance of Justice

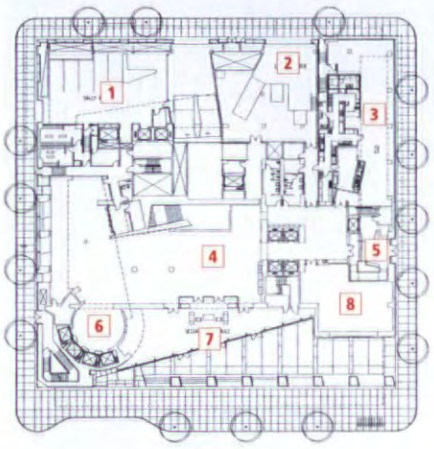
Mark O Hatfield Federal Courthouse, Portland, Oregon

Like massive bar graphs made of steel, stone and glass, the 68 new courthouses rising across the USA signal the growing reliance on federal law in America. Begun during the Reagan/Bush administrations' massive expansion of the judiciary and designed to last 100 years, these courthouses are the most aggressive architectural assertion of the government since the dams and post offices of the 1930s New Deal.

The Mark O Hatfield Federal Courthouse in Portland, Oregon is a particularly elegant symbol of this historic shift. With 15 courtrooms and space to expand to 21, the building is 104.5 metres high with more than 52,488 square metres, all crammed onto Portland's standard 60 by 60 metre downtown block. Master skyscraper designer Bill Pedersen of Kohn Pedersen Fox, in conjunction with Portland's BOORA Architects, worked hard to break up the building's girth and conform to Portland's famously picky zoning laws. The result is a building that strongly expresses its purpose while working hard to not stand out.

Sheathed in limestone and mildly darkened glass, the building is shaped from two volumes: the tower containing the courtrooms; and a "sidecar" containing a cafe, law library and offices. The sidecar – the top of which is a landscaped, public roof deck – matches the cornice height of the neighbouring buildings, joining them to create an outdoor room of a central two-block park.

With two courtrooms per level, the repeating floor plans serve as a concise diagram of American justice. Defendants, judges, juries and the public never cross paths, transported to cells, chambers, waiting rooms and lobbies – and finally to the "theatre" of the courtroom – through discreet circulation systems.



Key to ground floor plan
1. Sally port
2. Loading dock
3. Snack bar
4. Lobby
5. Employee entrance
6. Elevator lobby
7. Security vestibule
8. Tenant

This programme can be clearly read on the tower's exterior. A glass curtain wall enclosing the public lobbies turns to views of the thickly forested hills at the city's edge. Ribbon windows illuminate secured hallways. A series of what might be called "reversed embrasures" shoot natural light into the courtrooms. The judges' chambers at the buildings rear are boxed in glass, affording views of the river and an inspiring snow-capped volcano.

The tower is topped by a ceremonial courtroom, its arching roof tapering to a series of dramatic trusses cantilevered over a roof deck. At ground level, the building ignores the city's normally stringent street-front window and door requirements with thick, bomb-proof walls and precious little fenestration.

The American courthouse has almost always been classically

1: Atrium space outside the court rooms

2: Interior or "theatre" of the courtroom

3: Main entrance

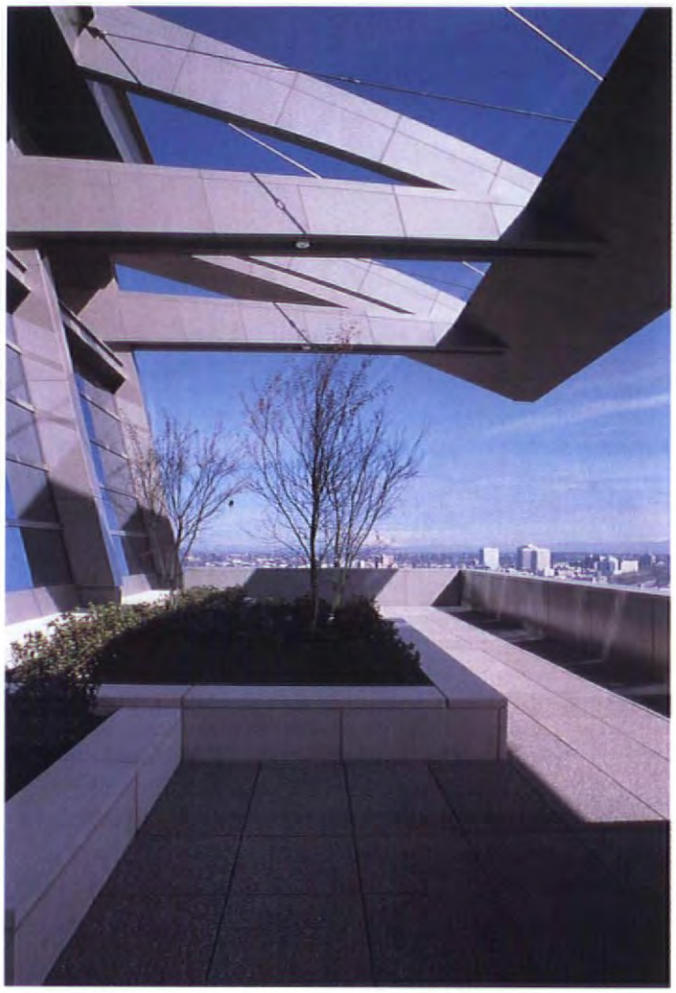
4: Showing how the building fits with its urban context

5: Glass facade looking over the park


1


2

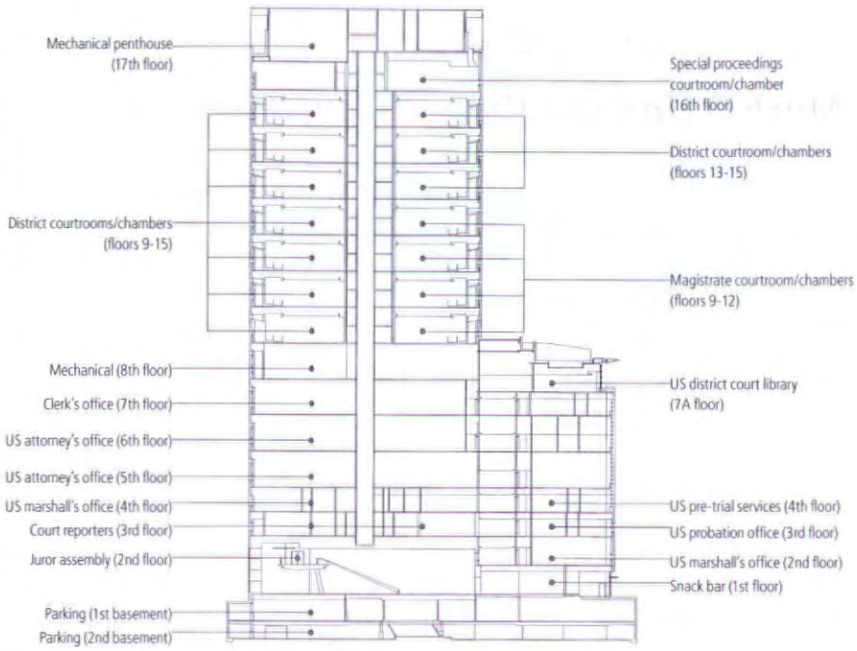
Timothy Hursley



Timothy Hursley

Roof gardens with cantilevered adjustable shades

Building section



symmetrical, symbolising the "balance of justice". By contrast, Pedersen poetically suggests this eccentric sculpture represents a "balance of forces." Indeed, in the effort to find form between a complicated programme and a sensitive context, Pedersen has proven to be a better arbitrator than his client might have ideally wished. Details such as outwardly jutting, "finned" horizontal mullions, for instance, give the building a mechanistic feel, befitting the antiseptic clarity with which it articulates American ideals of judicial objectivity and efficiency. The reveals and ribbon windows sliced into the rusticated stone base freely acknowledge this bit of *beaux arts* certainty to be a veneer. The otherwise graciously arcaded entrance is supported by columns resembling spikes.

Rising in an urban context Louis Kahn once described as "Lilliputian," the Mark O Hatfield Federal Courthouse stands like a 400 kilogramme Big Brother in Portland's living room, handsomely dressed but still flexing a little too much for comfort. WA

Randy Gragg is the art and architecture critic for The Oregonian *daily newspaper in Portland and a contributing editor to* Metropolis *magazine.*

Client
US General Services Administration
Contractor
Hoffman Construction Co
Construction management
CRSS Constructors Inc

3 Rick Keating

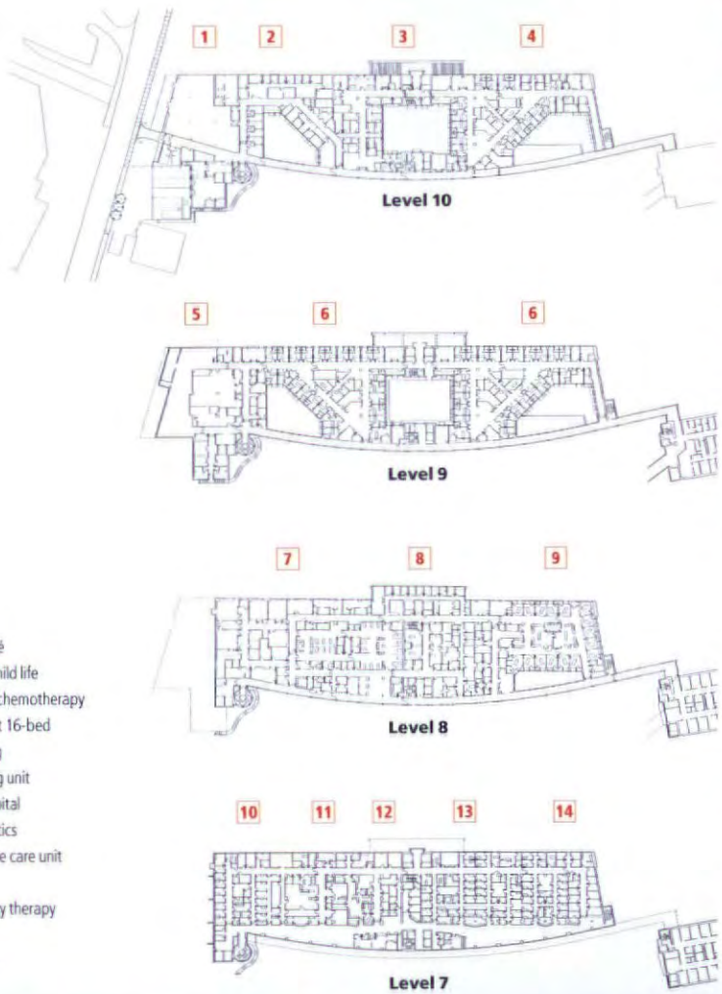
4 Timothy Hursley

5 Rick Keating

Architects
Zimmer Gunsul Frasca Partnership with Anshen + Allen
Reviewed by
Katherine MacInnes

Building for health

Doernbecher Children's Hospital, Portland, Oregon



Key to levels

1. Doernbecher café
2. Administration child life
3. Hemo/oncology chemotherapy
4. Compromise host 16-bed
5. Sterile processing
6. 24-bed med-surg unit
7. Surgery/day hospital
8. Medical diagnostics
9. Pediatric intensive care unit
10. CDRC
11. Speech/audiology therapy
12. Radiology
13. Specialty clinics
14. Psychiatry

Zimmer Gunsul Frasca Partnership's state of the art medical facility, completed in May, contains the infrastructure to adapt to future advancements in medical technology. The site is unique, spanning the width of the canyon below, thereby connecting the north and south section of the Oregon Health Sciences University campus and the new Doernbecher Children's Hospital. Bill Hutchinson, Project Manager, explains that this allowed them "to use existing services rather than duplicating them in the new building". He also describes considerations for designing for children, including the creation of "very soft finishes – wood and soft colours – and distractions ... there is a great deal of art in the building and we have tried to incorporate the art into the architecture". The architects consulted physicians, parents, patients and other specialists before designing full-scale mock-up patient bedrooms and examination rooms.

The building has a structural steel frame with long spans and steel plate girders supporting a light weight metal panel skin, and is organised around three courtyards. The central section of the building includes vertical circulation and the main entry and public lobby. Departments are organised along a curved circulation spine, which serves as an orienting device with sweeping views of Portland and the Cascade Mountains beyond. Accessible courtyards and design elements, such as fritted-glass patterns designed to reflect nature themes, offer physically and psychologically relieving environments connected to the outdoors. WA

Associate architect
Anshen + Allen
Electrical telecommunications
James D Graham & Associates
Mechanical engineers
Manfull-Curtis Inc
Landscape
Walker & Macy
Healthcare consultant/space program
M Boston Associates, Inc
Structural engineer
KPFF Consulting Engineers

1: The 24,154 sq m building expands upon a previously dispersed health unit, and bridges the canyon below

2: Large windows maximise the use of natural light in the interiors, and courtyards allow children to go outside the building in fine weather

Architect/Engineer
Skidmore, Owings & Merrill, LLP
Reviewed by
Michelle Martin

Agricultural larder

The San Francisco Food Bank's warehouse and distribution centre, San Francisco, California


1


2


3

Over 90,000 San Franciscans do not get enough food to eat. Nearly 25 percent of them are children. The non-profit making San Francisco Food Bank distributes surplus food to approximately 350 member agencies that help low-income and homeless people in San Francisco and the Bay Area. But in 1994, the Food Bank had to turn down 1.1 million kilogrammes of donated food including badly needed milk, produce, and meat because its old warehouse lacked special food handling areas and sufficient storage, cooler, and freezer space.

The San Francisco Food Bank's new warehouse and distribution centre, completed in September 1996, changes all of that. Set on a donated circular 1.9 hectare site on the east slope of Potrero Hill, the new 5,200-square-metre building is a model of community involvement. The San Francisco based architect and engineer, the landscape architect, contractor, and others have either donated or provided at cost their services, materials, and labour.

"With just a US$5 million budget," says Gene Schnair, a partner at Skidmore, Owings & Merrill, LLP (SOM) which provided architectural and engineering services, "we needed to look at every possible way of reducing the cost of the new facility". To stretch the construction budget, the design team used glulam roof members, structural steel columns, corrugated metal siding, concrete block walls, and painted aluminium windows and entries.

Still, it is hard to detect budget concerns in the building's elegant and simple design. "The Food Bank represents resourcefulness in our community," says Gayle Tsern, an SOM architect, "and we felt this was an important theme to convey in the design of this new warehouse". SOM also wanted the building's design to tie the Food Bank's mission to the agrarian spirit.

The primary warehouse facility lies beneath a sweeping, lightweight, curvilinear wood roof canopy supported on concrete-filled steel columns. Food handling, truck loading, and Food Bank service functions are separated from each other and associated with specific facades to highlight the different building functions. The administrative areas, for example, have flat-roofed elements that project through and straddle the exterior walls.

The 3,065-square-metre warehouse, 475-square-metre processing area, and the 427-square-metre wholesale shopping area occupy the ground floor. A truck loading dock on the south facade and a separate parking area adjoin the main level. The mezzanine houses the Food Bank's administrative offices, a conference room, and a demonstration kitchen and seating area used to train member agency employees and volunteers in meal preparation. A mezzanine gallery walkway overlooks the warehouse floor.

"The landscaping reinforces the building's agrarian imagery," says Philip Snyder, SOM's Project Architect, "with, for example, flowering ornamental pear trees and olive trees in a break area for visitors and employees. Rosemary, thyme, and ornamental grass were used as ground cover."

With its high-profile work throughout the USA and Asia, why did SOM and other team members donate their time and skill to this project? "We saw this as an opportunity to play a significant role in creating a unique and much needed resource for the community," says SOM's Gene Schnair. WA

Client
San Francisco Food Bank
Civil engineer
KCA Engineers
Contractor
Dinwiddie Construction
Landscape architect
Office of Cheryl Barton
Geotechnical and environmental consultants
Treadwell & Rollo

1: The landscaping was designed to reinforce the building's agrarian imagery

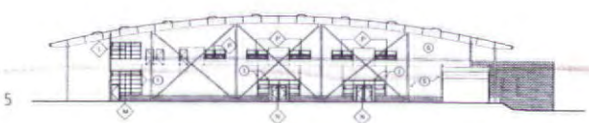
2: Balcony leading onto the 3.6 metre mezzanine which houses the administrative offices

3: Double height glass entrance area

4: Elevation

5: Section showing storage spaces and access


4


5

Architects
Herzog & de Meuron
Reviewed by
Katherine MacInnes

Little Switzerland

Dominus Winery, Napa Valley, California

All photography: Richard Barnes

1

2

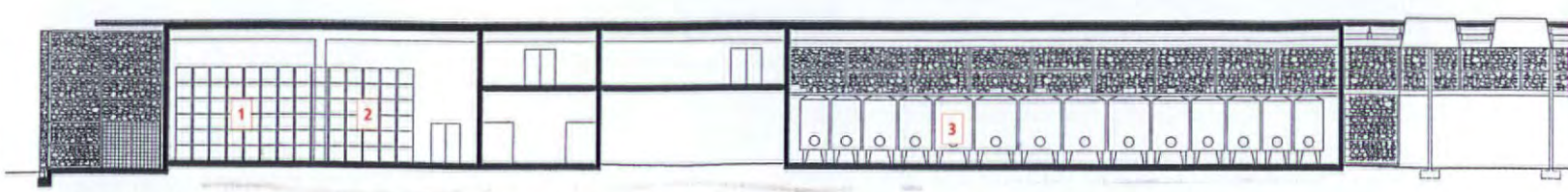
The 3,000-square-metre Dominus winery is Herzog & de Meuron's first building in the United States. The Swiss practice completed the building in time for the 1997 autumn grape harvest. The winery is located in the fertile Napa Valley, home to some of the most famous vineyards on the continent. The Dominus winery produces wine for the Bordeaux-based Christian Moueix. Visitors to the building have observed that the building is "so integrated with the landscape that many locals have yet to notice it". This blending is mostly attributable to the building's low profile, its proximity to the vineyards and the Swiss penchant for stone walls made from uneven blocks of local stone, in this case black-grey-green basalt stone encased in metal mesh.

Comparisons have been made between Herzog & de Meuron's approach and that of the Land Artists, particularly James Turrel. The most striking similarity can be seen in the main facade where the longitudinal plan is cut with an access route leading through and into the landscape behind, providing an almost two dimensional frame. At the same time the parallel lines of the fencing supporting the vines provide a perfect geometrical context for the strict cuboid form of the winery.

Any passions are reserved for the interior where the right angles are broken up with natural light filtering through the spaces between the stones in the wall. In contrast to the polished monolithic quality of the exterior, the interior is animated by shafts of light which vary the atmosphere according to the intensity and direction of the sunlight.

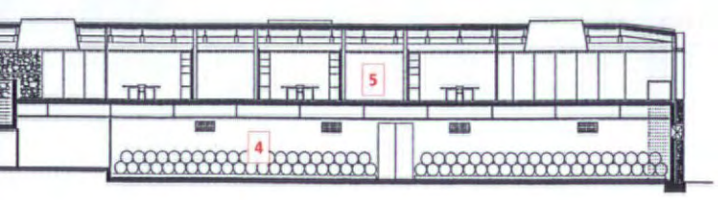
The interior is broken into three concrete boxes with gaps for service and entry. The wine-making process is housed in the dark spaces at the centre of the building. On the cooler northern side of the building, above the oak vats there is a suite of terraces and internal rooms for staff and visitors, glazed from floor to ceiling. WA

Client
Christian Moueix + Cherise Chen-Moueix
Construction management
Valley Architects, St Helena
General contractor
Wright Contracting Inc, Santa Rosa
Structural engineers
Zucco Fagent Associates, Santa Rosa
Electrical planning
Hansen & Slaughter Inc, San Rafael



Key to longitudinal section 1. Machinery storage 2. Crate cellar 3. Fermentation tanks 4. Barrel cellar 5. Offices

1



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1: The walls have been constructed using the gabion system where steel mesh boxes of stone are piled up like bricks

2: View through the main building framing the vineyard beyond

3: Glass entrance lobby

4: Sunlight casting irregular shafts of light into the interior

Ong & Ong Architects: a practice of continual development

Combining cross-generational continuity with a progressive business strategy at a time of economic uncertainty would be a challenge to any firm. As Singaporean practice Ong & Ong Architects emerges from a period of restructuring and self-reflection, Peter Wislocki finds out how steady and sustainable growth is achieved the East Asian way.

Great World City (1997), Singapore – a city within a city


THE GREAT WORLD
NOW OPEN
THE GREAT WORLD
THE GREAT WORLD
THE GREAT WORLD
NOW OPEN

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The secret of sustained success, in architecture as in any other enterprise, is the determination to move ahead, adapting to changing circumstances and, better still, taking an active part in the shaping of the business and physical environment. Ong & Ong's growth has been steady over many years and, with a stream of repeat commissions from some of Singapore's most established developers the outlook, though inevitably subject to wider economic uncertainties, looks bright. Yet the practice is not resting on its laurels. The energy and conviction with which Ong Tze Boon describes the on-going transformation of the firm he joined four years ago is impressive and convincing.

Having celebrated its silver jubilee last year, Ong & Ong is more than 80-strong, with 27 architects, supported by 33 CAD operators, under the direction of Mrs Ong Siew May, Eric Huay, and Ong Tze Boon. The firm's reputation has been built on numerous successful commercial commissions, nearly all in Singapore, including high-rise condominiums, office towers and mixed use developments.

The practice was recently reconstituted as a limited company, and is in the process of re-engineering itself (literally, in terms of its premises; metaphorically, in its use of information technology and, by degrees, its organisational culture) without losing sight of the principles which have guided it to its present position. As a graduate of UC Berkeley and Rice University in Texas, Ong Tze Boon is keen to apply the best of his seven years of American experience, respecting the Asian business environment within which his firm must continue to operate.

"We're encouraging our architects to be more 'hands-on'", says Ong Tze Boon, explaining how he strives to avoid a situation in which architects can become pigeon-holed as either designers (often young and inexperienced) or job runners (technically competent, but less design-conscious). This discontinuity in the design process has occasionally resulted in good concepts being undermined by inconsistent philosophies – a problem which his firm has started to address by forming and keeping together integrated design teams to take projects from inception to completion.

The difficulties which internationally active signature designers have encountered in Asia is "primarily due to financial concerns," Ong Tze Boon believes. Developers in this region, as in any other, are understandably cautious about investing heavily in what, in terms of market expectations, might be unorthodox and experimental work. But Ong's outlook is progressive, and he is optimistic that a variety of factors, not least the Internet, as well as more conventional cross-cultural exchanges will enable the very best of design approaches to be applied in any location.

In Singapore, he adds, "we're ready to explode [economically] – but the government is constraining this for very valid reasons".

Ong illustrates the incremental and iterative nature of the design process with the Goldbell Towers project. To exploit the site's landmark potential, the architect proposed a simple, fully glazed, curved facade. The departure from a regular 1.2-metre planning grid which this bold gesture represented was beyond the expectations of the speculative property market (in Singapore, as elsewhere), and the design which has now been

1: Hume Park I and II

2: Avila Gardens

3: Highgate Terrace

4: City Square mixed-use development

5: Ginza Plaza

approved for construction has a more conventional, orthogonal plan. Despite the revision to his original concept, Ong believes that the final design, with its dramatically projecting prow replacing the curve as the single most striking element, will make a distinctive building with which he can be well satisfied. In any case, every formal concept awaits an appropriate application which, in the case of curved facades, arrived with the Scotts Tower, a condominium project of rare architectural ambition, with its double-height living spaces and superimposed elliptical plan geometries.

Technology with a human touch

As might be expected of the youngest and most cosmopolitan of Ong & Ong's directors, Ong Tze Boon is also deeply committed to full application of information technology at every level of his practice. "Everyone uses Autocad today," he acknowledges, "but we have gone much further by introducing an inter-relational database system, customised to our specific needs." Every document produced by the office, whether a drawing, schedule, specification or certificate, can be assembled using project data stored on the firm's mainframe, downloaded in an instant to any workstation. This eliminates errors – "an ISO 9000 philosophy, but fully automated" – and, being paperless "is a whole lot faster and more flexibly interactive, like a computerised library catalogue".

This "lean" philosophy is changing every aspect of the firm's activities – a gradual process, involving all of the design team, continually acquiring new technical skills, and re-appraising underlying attitudes to working methods. The importance of the entire staff team is acknowledged by all three directors. In the words of Eric Huay, "the design thought still comes from the architects, not the computers".

After 25 years of relative stability, it seems that Ong & Ong's ability to retain and motivate its staff is undiminished. "Our ›

KEY PERSONNEL/DIRECTORS

◂ *Chairperson/CEO*
Mrs Ong Siew May, B Arch (University of Adelaide) MSIA APAM ARIBA FRAIA

▲ *Vice Chairman*
Mr Huay Kwok Meng Eric, B Arch (Hons) (University of Adelaide) MSIA

◂ *Executive Director*
Mr Ong Tze Boon, B Arch (Hons) (University of California, Berkeley), M Arch (Rice University) MSIA

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1: Pinewood Condominium

2: Holiday Inn Centre, Guangzhou, PRC. One of Ong & Ong's rare forays outside Singapore

3: Arthur Mansions

4: Greenridge Housing Estate

5: Teresa Ville

4

attrition rate is very low," Ong Tze Boon asserts. Part of this is due to the security of employment which the practice has been able to offer. Being one of the smaller firms capable of large-scale projects has given Ong & Ong the flexibility to carry out projects of global enormity (such as the City Square mixed use development –see previous page – , incorporating 740 apartments, serviced by facilities including an Olympic-size swimming pool, which is at an advanced stage of design), as well as single family residences. The installation of 300 computer points in Ong & Ong's offices far exceeds current requirements and illustrates the firm's confidence in its own future.

Whilst the three directors remain very much in charge of both design and business administration, the intention is always to delegate where possible. "We have tried different ways of getting jobs started," Eric Huay recalls, "including internal design competitions". Stimulating though such exercises are, Huay believes that more consistent results can be achieved by his preferred, collaborative approach, in which the key issues of any new commission are initially debated by the directors and a small group of their senior assistants, then developed by the project team.

"There isn't a singular style," Ong Tze Boon accepts. "But we see ourselves as modern architects, not in the sense of the Bauhaus or other *avant gardes*, but in a more pragmatic, progressive sensibility." This philosophy manifests itself in design in various ways. "The firm's older projects were more conservative – following a sure win formula. You do have to remember that whilst we all love full-height windows, until recently they were regarded as unsafe in Asia." Ong stresses that a high level of service, and an understanding of clients' requirements underpin his continual quest to improve design standards. On the contrary, Ong & Ong's expertise in their market sectors has consistently helped developers to sell their products even in times of recession, like the present.

Feng shui and practical planning

This, Ong Tze Boon believes, is due to a combination of totally professional thoroughness, epitomised by Mrs Ong's legendary

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attention to technical details, and an understanding of the local culture. "You always need to consider everything – above all your clients." Ong & Ong's work is not driven by grand notions of representing Singaporean culture in building forms, but by "sensitivity on a human scale". The firm's residential buildings, in particular, are finely tuned to indigenous patterns of domestic life, with due regard for such everyday but crucial issues as how the kitchen floor is cleaned ("by throwing a bucket of water over it" – requiring a 75 millimetre upstand at all thresholds) to the juxtaposition of cookers and sinks ("because *feng shui* dictates that fire should not directly face water," and "because it's common sense not to have to swing a saucepan from one side of a room to another").

Ong & Ong's *oeuvre* might be described as the product of formulae – but not unchanging ones. Part of working closely with commercial clients involves adapting the "golden formula" in response to constantly evolving markets. Eric Huay also stresses the selectivity which his firm has applied to commercial commissions. "To get a job can be easy, but to get satisfaction for the client, and for ourselves, is much more difficult."

Huay is anxious to dispel the notion that he would be compliant and unthinking in realising his commercial clients wishes.

A combination of theoretical and practical concerns accurately reflects the diverse academic backgrounds of each generation of the firm's directors. Ong Siew May's technically rigorous training at the University of Adelaide has never allowed her to lose sight of the importance of detail in design, whilst her son's more liberal and theoretically oriented education at two of America's more distinguished schools, and the teaching programme he has devised for his own second year students in Singapore, underpin a more "cutting edge" approach to architecture.

The continuity between the generations of principals is personified by Eric Huay, who has served with the practice for over 20 years, becoming a partner in 1984. Huay joined the firm directly from the University of Singapore, and has been intimately involved in its subsequent development. With such an extended experience of working with Mrs Ong and other senior colleagues, Huay stresses the empathy which has built up within the design team. "Mrs Ong doesn't need to explain her thinking any more, I just understand her concerns." The approach which he shares with the firm's founder is pragmatic, he suggests, "which works, because most of our local clients are also pragmatic." It follows that "there is no fixed style", but there is certainly expertise. "Clients here are pretty knowledgeable. They mostly have internal design panels, including their own architects." But Huay is equally anxious to dispel the notion that he would be compliant and unthinking in realising his commercial clients wishes. "We try to be contemporary," he asserts, gesturing towards bookshelves lined with monographs representing the most distinguished of recent international practice.

Design renaissance

A period of restructuring and self-reflection is, Ong Tze Boon believes, not necessarily a springboard for unfettered commercial ambition. An ever-expanding workload is not the prime concern. Ong's loyalty to his firm's heritage is unquestionable; but his passion is clearly for design. "Clients are getting more progressive," he notes enthusiastically. "It's a question of timing, of course." In Singapore, he adds, "we're ready to [economically] explode but the government is constraining this for very valid reasons." Steady and sustainable growth, it seems, is the policy shared by his country and his practice – a sound foundation on which to pursue higher, creative ideals. "This is so exciting," Ong grins broadly, reaching for another sketch of his latest project. "I'm sure you'll be excited by this too..." WA

Great World City

1

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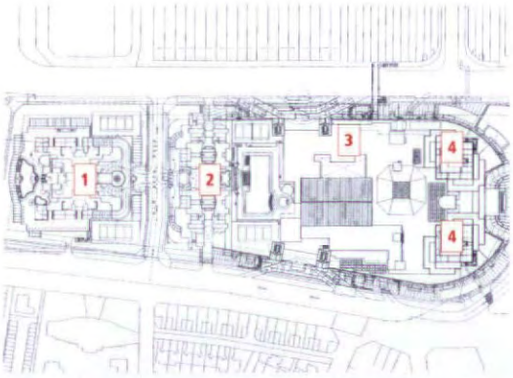
Arriving in Singapore, as one drives along the expressway from Changi Airport into the city, the thought readily comes to mind that Le Corbusier should have worked here, and not in conservative and heritage-laden Paris. Whereas the Ville Radieuse model of urban planning – high rise towers interspersed with expanses of greenery – was inflicted on many a European city by socially proactive but ultimately misguided public sector planners and has since been generally discarded. In Singapore such developments not only remains prevalent, they are driven by economic realities – the density of population on a confined island, supported by popular demand for such accommodation. Le Corbusier's other controversial invention, the Unité d'Habitation, also prevails in South-East Asia, where it has been cross-bred with Japanese Metabolism, producing cities in which one can shelter from the heat and humidity, performing every function without once leaving an air-conditioned environment.

Ong & Ong's recently completed Great World City is one of the most perfect and substantial examples of this geographically specific urban phenomenon. "A microcosm of the world around us," to use the architects' description, the development "is a city reduced to five tower blocks and a podium of internal streets". The project's name does not refer, however, to the mind-blowing scale of the enterprise – 176,402 square metres of accommodation – but to the similarly titled fairground which previously occupied the 5.5-hectare site, and which has also inspired the art deco styling of Ong & Ong's design.

The Great World amusement park had been one of three such complexes in Singapore, with attractions including three cinemas, one of which was designed in a daring, neo-constructivist manner, and a wealth of places to eat and drink. With the development of more modern, fully air conditioned shopping malls-cum-multiplex cinemas, the park's commercial popularity declined, and the site fell into disuse for some years.

Being a miniature city, the development which followed integrates residential, commercial and retail elements, which coalesce around a fully enclosed, artificially tempered public realm. Investment and planning criteria alike required the explicit zoning of each function, and the division of the site into two, through the creation of Kim Seng Walk, a new street designed to relieve traffic congestion along River Valley Road.

The Tiara Condominium, the first phase of Great World City to be completed, contains a total of 264 two and three-bedroom apartments, accessed from three separate service cores within a single, highly articulated 35-storey tower. Each of the three cores is expressed in the building's external mass as a spire, "the three spires rising to form the Chinese character for the word mountain ," the architects explain, "creating a mystical ›



Key to site plan

1. Tiara condominium
2. Service apartment
3. Retail podium
4. Office tower

1: Entrance to Great World City – a city in miniature

2: The site was previously occupied by a 5.5-hectare amusement park, whose art deco styling inspired Great World City

3: View of twin office towers' articulated facades

4: The retail complex acts as the urban glue, linking together the residential and commercial areas

5: The complex contains over 37,000 square metres of retail space

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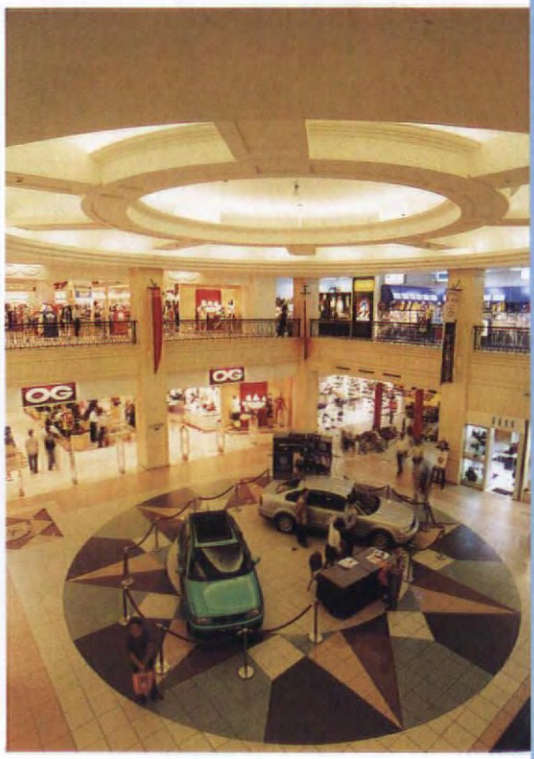
4



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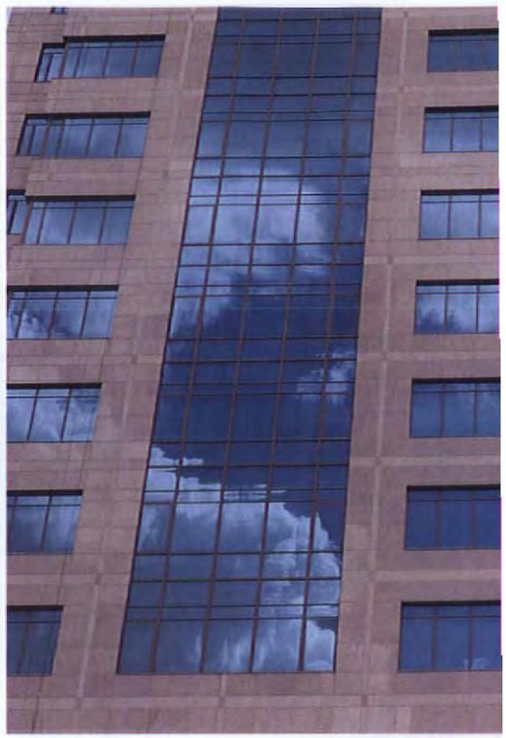
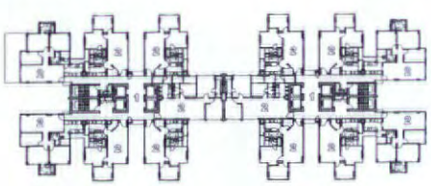
Entrance to office towers

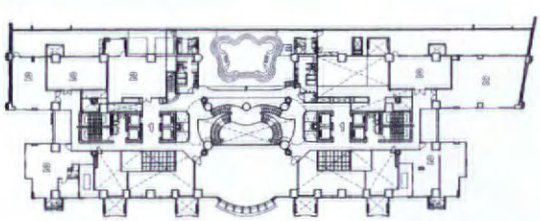


Detail of office curtain wall

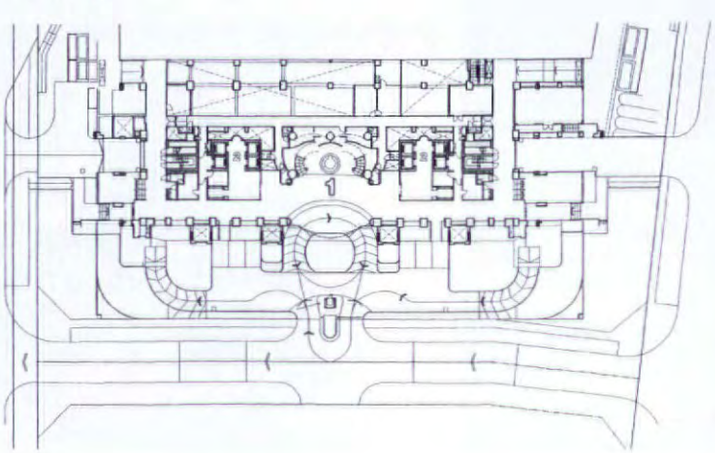
5th to 8th storey



2nd storey



1st storey



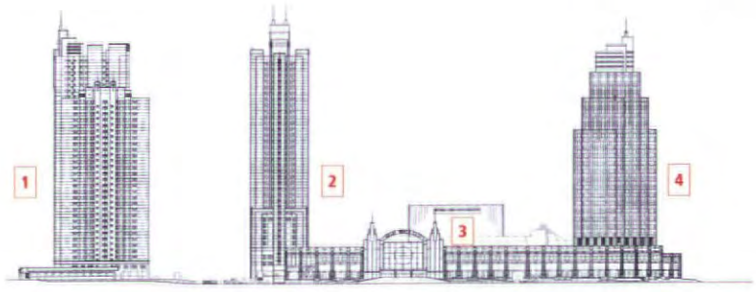
›balance of water and wind". As is often the case, the principles of Feng Shui – in this instance requiring that a solid (mountain-like) element should be placed opposite the open (air and water bearing) side of the building – accurately reflects the architectural objective of balancing a sense of exhilarating transparency and comforting enclosure.

Feng shui considerations apart, the condominium addresses the axis leading towards Orchard Road, Singapore's most established commercial and retail thoroughfare, lending kudos to the entire development. The apartments are of eight types, ranging from 82 square metres to 145 square metres. Residents share recreational facilities, including a swimming pool and tennis courts, located on the roof of the podium, raised up above the surrounding streets at the tower's foot.

Entirely separate from the condominium, the Great World City serviced apartments mediate between the more traditionally managed residential accommodation, and the

Retail/office elevation

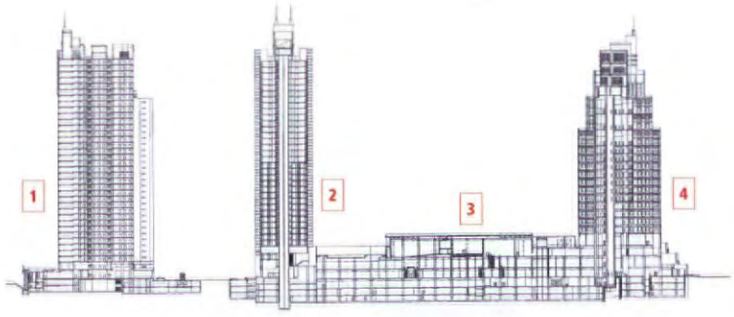
The office towers are in the foreground. Tiara Condominium is at the rear



Elevation

Key to elevation and section

1. Tiara condominium
2. Service apartment
3. Retail podium
4. Office tower



Section

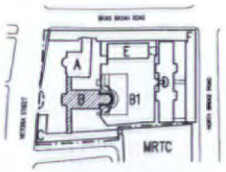
commercial and retail zones. The 304 units, which range from two to four rooms, and are accommodated in a 34-storey tower, have access to their own facilities, including a 42-metre swimming pool.

At the furthest end of the complex, twin office towers contain a total of 29,906 square metres of nett lettable area. Similar in overall height to the residential buildings, the office structures have only 18 storeys due to their more generous internal volumes and greater servicing provision. Ong & Ong's design is based on an 8.4-metre structural grid, giving wide, column-free spaces, with flexibility further enhanced by knock-out panels designed into each floor slab, allowing multi-floor tenants to create additional stairways. Following market expectations, the architects have specified marble cladding throughout, and designed an entrance hall of monumental proportions and material richness.

What makes the development into a self-contained urban entity is, of course, the shopping mall. As the architects argue, "atriums are the public spaces of the future", this one "elevating shopping into a socially meaningful event". Ong & Ong's scheme includes not only over 37,200 square metres of retail space, but a five-screen cinema complex, which has a separate external entrance, designed in "retro", neo-art deco style, recalling the original Great World City. Other facilities include a foodcourt with 16 restaurants, a family education centre and three banks, all served by three levels of basement parking.

It appears that as shopping and leisure become the cornerstones of public urban life, the redevelopment of an amusement park into a more complete urban artefact parallels the process by which Manhattan's skyscrapers evolved from Coney Island's leisure facilities, as famously chronicled by Rem Koolhaas in *Delirious New York*.

Client
Midpoint Properties Pte Ltd
Completed
1997
Gross floor area
176,402 square metres



CHIJMES retail and cultural centre

Whilst Singapore's multi-ethnic population boasts a collective cultural heritage spanning thousands of years, the island state's physical fabric has developed only relatively recently, the oldest surviving buildings dating back to colonial times. Ong & Ong's transformation of the former Convent of the Holy Infant Jesus (CHIJ) into a thriving retail and cultural centre is therefore an unusual project, presenting challenges for architects, engineers and craftsmen more used to working on contemporary high rise structures.

The story of CHIJMES begins in 1852, when Father Beurel purchased the site, establishing a convent in an existing building. Father Beurel's foundation grew quickly, with the acquisition of adjoining buildings, and the construction of new accommodation. A neo-gothic chapel was completed by the turn of the century, but was soon found to be structurally unsound, and was reconstructed by Father Charles Benedict Nain, with stained glass windows by the Belgian artist Jules Dobbelaere. Other buildings within the convent precinct were added incrementally over the following decades. In 1983 the religious community had declined in numbers, forcing the remaining nuns to relocate, and making the CHIJ complex redundant.

The opportunity which this presented was considerable, as the CHIJ site was not only of historical significance, but was located virtually at the heart of Singapore's commercial and cultural districts, a stone's throw from Orchard Road, Raffles and other landmarks. Ong & Ong's mission thus combined the conflicting requirements for conserving – and where necessary restoring – the historic building fabric, which had deteriorated severely over the dozen or so years of disuse, and developing a site of strategic commercial importance to its full potential.

The architectural strategy responds to this dichotomy, with a notional datum created by the ground plane, separating entirely new subterranean construction from the refurbishment and measured adaptation of existing buildings above ground level. Like I M Pei's celebrated Louvre intervention in Paris with its glass pyramid, the strategy attempts to enhance the iconic quality of the existing buildings, simultaneously knitting them together with elements accommodating a totally new social and commercial programme.

Taking advice from European restoration experts where necessary, Ong & Ong surveyed the CHIJ buildings, and systematically categorised every element on a scale defining its condition and the degree of intervention required, ranging from total replacement, through partial replacement, repair, or where possible, straightforward cleaning and painting. Whilst much of the fabric was relatively sound, wholesale restoration was required in several areas, most problematically including the chapel spire, the entire structure of which was lifted off the building, to be worked on at ground level, and carefully

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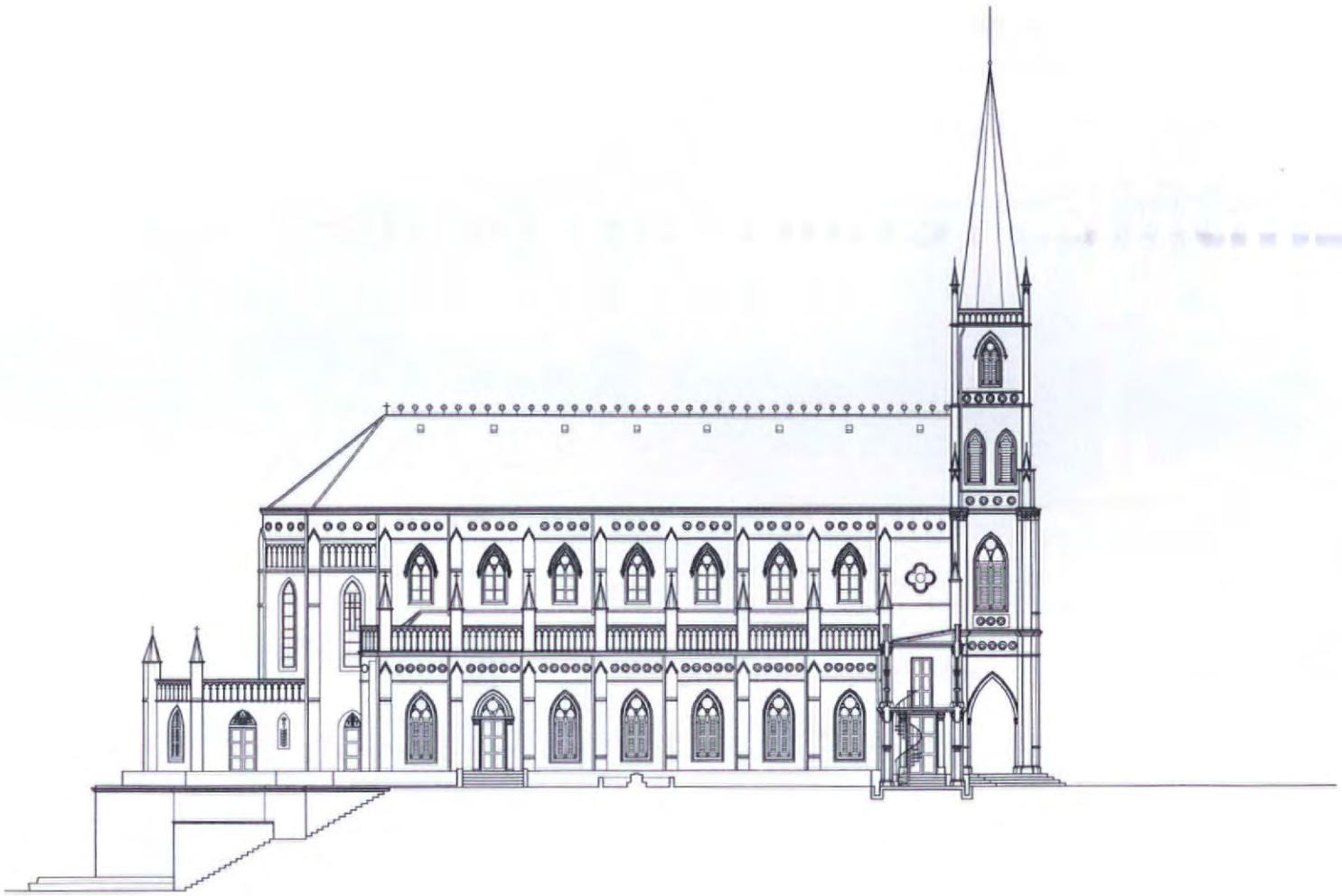


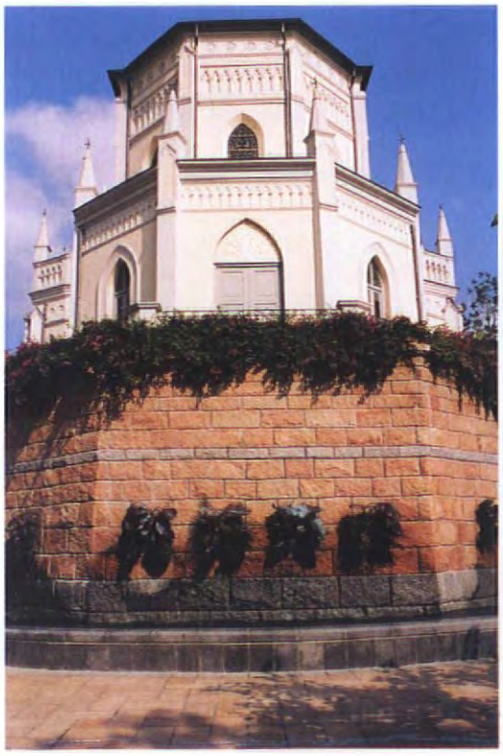
1: Aerial view of CHIJMES, the former Convent of the Holy Infant Jesus (CHIJ)

2: North-east elevation

3: View from sunken courtyard

4: The chapel spire was one of the areas that required wholesale restoration. The structure was lifted off the building

5: View of vaulted chapel ceiling



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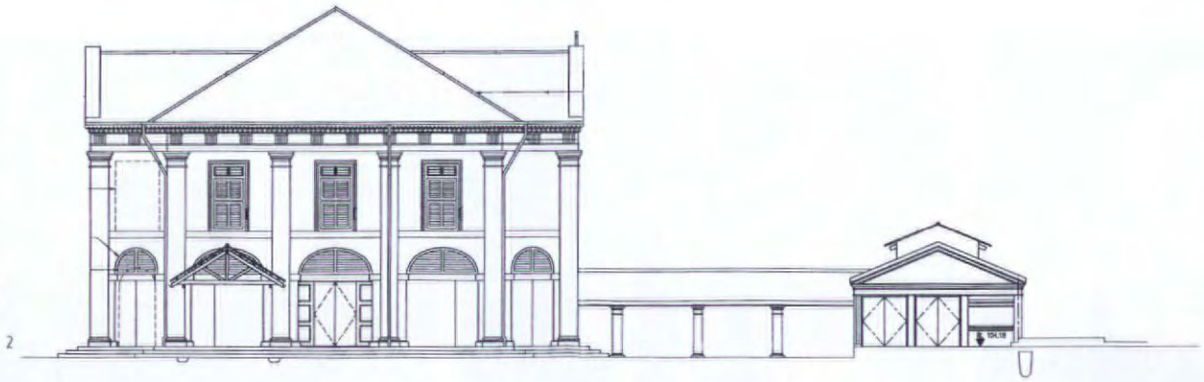

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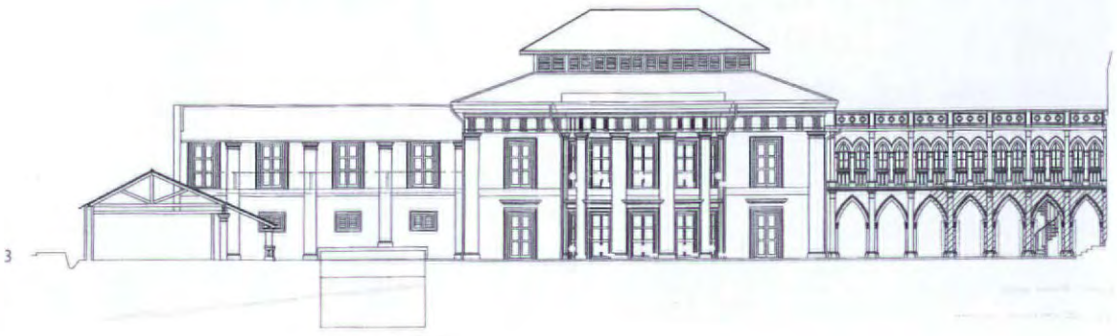

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1: The landscaping is also in stark contrast to the tropical climate. Simple lawns and careful planning are reminiscent of gardens in more temperate climes

2: South-west elevation

3: South-east elevation

4: Section illustrating elevator access to sunken courtyard

5: Like contemporary shopping malls, CHIJMES is essentially introspective, its cloister acting as a barrier to the outside world

›remounted once substantially restored and reclad in terne-coated steel. The stained glass, too, was taken off the building, and shipped to Lyon, France for renovation.

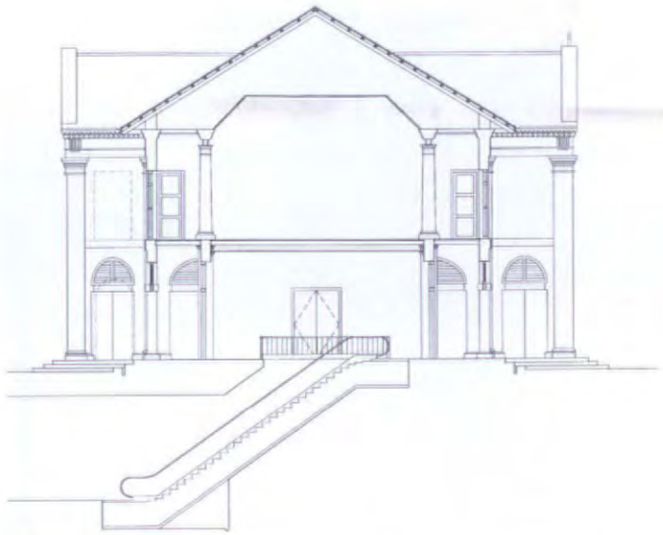
Other technical challenges resulted from the immediate proximity of the Mass Rapid Transit (MRT) railway tunnels, which placed restrictions on the diaphragm wall basement construction, the deflection of which was kept to a minimum by close strutting, whilst any structural movement in the tunnels was constantly monitored. The excavations on the site were further complicated by the unforeseen presence of numerous boulders. The historic buildings were extensively underpinned, using micropiles and steel beams.

The character of the existing colonial buildings has been mirrored in Ong & Ong's interventions, new buildings being historicist in detail, though contemporary in content. The arcade running around two sides of the complex was widened, the extended roofs being covered in matching clay tiles, with only the use of single, as opposed to paired columns, identifying the contemporary additions. Ong & Ong's historical research revealed that two of the wings of the old orphanage block were, in fact, later additions – a discovery which made it easier to justify their demolition, making room for an extended courtyard, above underground restaurants and parking.

Ong & Ong's boldest and, to conservation purists, most controversial intervention has been the demolition of a substantial 1950s structure, and its replacement with an entirely new building, containing one of the larger restaurants on the site. Ong & Ong's design is a perfect pastiche, indistinguishable from its refurbished neighbours in any respect, with the exception of its slightly more elevated "jacked" roof, allowing more free area for air conditioning intakes. This, along with the arcades lining the sunken courtyard, faithfully evokes European colonial precedents. The landscaping, too, avoids the lush tropical planting found elsewhere in equatorial Asia, restricting itself to simple lawns, as generally found in more temperate climates.

Like the contemporary shopping malls in its proximity, CHIJMES is essentially introspective, its cloister acting as a barrier to the outside world, with the chapel, now used as a venue for events ranging from concerts and exhibitions to receptions and fashion shows, very much the focus of attention. Ong & Ong's intervention has, however, rendered the complex far more permeable, by creating new points of access at three of the site's corners, inviting pedestrians in from the busy road intersections. The intimate scale of these entrances, and the retention of the cloister roof as a screening and enveloping element, has helped preserve the calm ambience of the monastic institution. Describing this quality of the CHIJMES development, the architects cite the words of Saul Bellow: "I feel that art has something to do with the achievement of stillness in the midst of chaos. A stillness which characterises prayer, too, and the eye of the storm. I think art has something to do with the arrest of attention in the midst of distraction".

Client
CHIJMES Investment Pte Ltd
Completed
1996
Gross floor area
11,755 square metres



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United Square

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Programme
Formerly known as Goldhill Square, the development consists of an office tower, rising from a three-storey podium containing a shopping mall. A total of 93,283 square metres of accommodation is distributed over 28 storeys, served by a seven-level car park.

Challenge
Only very limited openings are permitted in any building overlooking the Istana, the residence of the President of Singapore, which lies within a kilometre of the site. For security reasons, any windows from which a sniper could potentially fire towards the Istana must be fitted with bullet proof glass, in a frame permitting only a minimal, oblique opening.

Solution
The distinctive triangular plan form of the tower, developed in association with design consultants PAT Pacific Architects, was determined by planning and sight-line requirements, locating the service core on the side of the building facing the Istana, and wrapping the office accommodation around two sides of a triangle. The result accommodates flexibly divisible space, on a regular planning grid, with an excellent outlook over the city. Only a triangular plan could eliminate oblique lines of fire towards the presidential residence. Ong & Ong's building incorporated the largest expanse of curtain walling in Singapore at the time of its completion, cleaned and maintained using a state of the art air cushion gondola. The entrance to the offices is separated from the shopping mall by expanses of structural glazing, enhancing the spatial complexity and layering of thresholds within the building.

Building type
Mixed use development
Client
Goldhill Developments Pte Ltd
Gross floor area
93,283 square metres
Completed
1982

1: The 28-storey office tower was developed in association with PAT Pacific Architects

2: Only very limited openings are permitted due to the proximity of the presidential residence

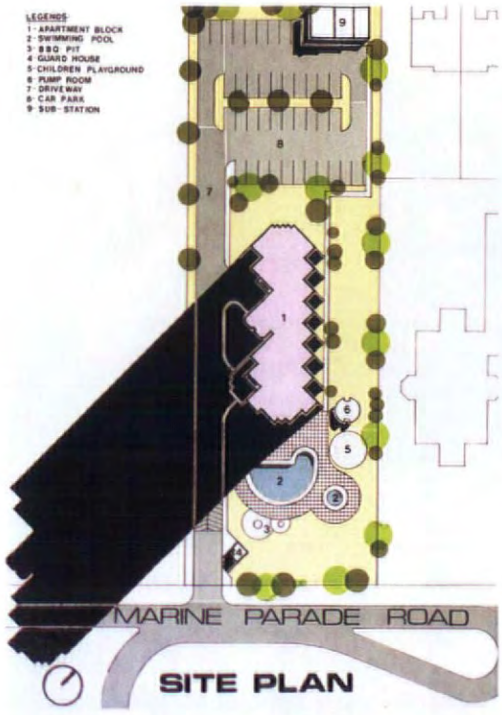
3: The triangular plan was determined by planning and sight-line requirements

4: At completion, United Square incorporated the largest amount of curtain walling in Singapore

2

3

4



Marine Point

Programme
The development accommodates 32 luxury residential units on 17 storeys, within a site measuring 4,833 square metres.

Challenge
Whilst the site was narrow, constraining the building's massing and imposing an orientation perpendicular to the coastline, the expectations of property owners in this market sector required that all apartments should enjoy panoramic views towards the sea.

Solution
Ong & Ong's herringbone plan gives every living room and bedroom a sea view, enhanced by the extensive use of curtain walling. Glazed, external wall-climbing lifts orientate residents and visitors, and offer an exhilarating approach to every apartment. The projecting wall planes articulate the separation of each internal room, and provide a screen from the intense afternoon sun on the western side of the building. Ong & Ong's design incorporates balconies with progressively greater cantilevers at the base of the building, and splayed vertical elements, giving the building a highly distinctive "rocket-like" appearance.

Building type
High rise residential condominium
Client
M/s Maxin Realty Pte Ltd
Gross floor area
8,000 square metres
Completed
1985

1: Glazed, external wall-climbing lifts orientate residents and visitors

2: The herringbone plan gives every living room and bedroom a sea view – a requirement of the brief

1

2

Amber Park

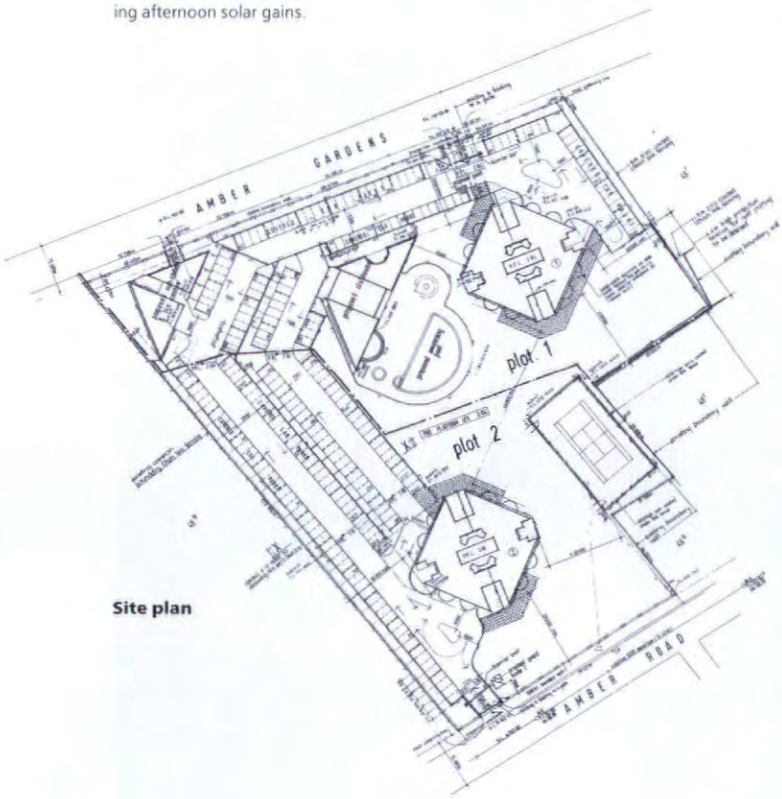
Programme
The development accommodates 200 residential units in two buildings totalling 37,800 square metres in floor area. Communal facilities include a swimming pool, landscaped gardens and a residents' clubhouse.

Challenge
Until the late 1990s all apartments in Singapore were required to have naturally ventilated kitchens, toilets and communal lobbies, favouring highly fragmented and often spatially compromised dwelling layouts. Ong & Ong resolved to respond to this statutory requirement by applying the formal discipline of the concurrent United Square office project to this residential commission.

Solution
Each of the 24 typical floorplates accommodates four, essentially identical apartments, wedged into a triangular plan, with the longest side open to the exterior. The planning of each unit follows the usual Singaporean convention of directly entering the major living space, through which access is gained to the more private bedrooms. Unlike more conventional, orthogonal plans, however, Ong & Ong's design combines efficiency with a consistent orientation to all rooms within each apartment. Living rooms are provided with cantilevered, semicircular balconies ("flying saucers") and the towers' orientation avoids direct west-facing aspects, minimising afternoon solar gains.

Building type
High rise residential condominium
Client
City Developments Pte
Gross floor area
37,800 square metres
Completed
1986

1



Site plan

2

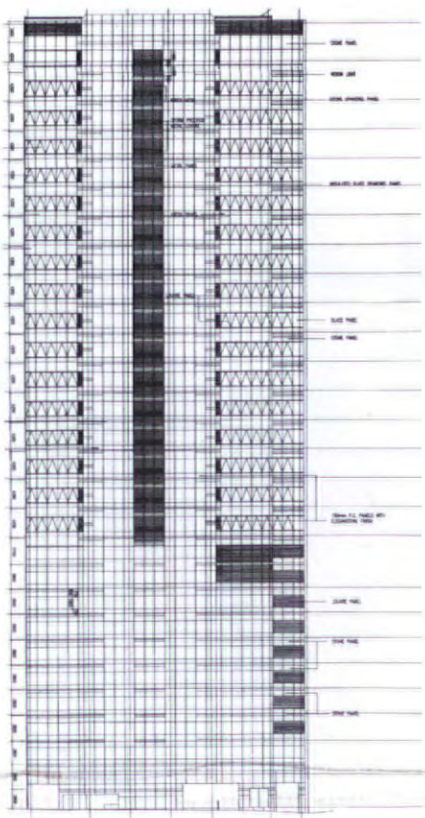
1: Every living room is provided with a cantilevered, semicircular balcony – or "flying saucer"

2: Each of the 24 floorplates accommodates four essentially identical apartments

John Hancock Tower

1

2



3

Programme
The development accommodates 21,238 square metres of gross floor area, distributed over 25 storeys, on a site measuring 1,528 square metres.

Challenge
In order to maximise the use of the relatively small waterside site, located in Singapore's financial district, the brief required that the seven levels of car parking should be situated entirely above ground level, minimising costly excavation without sacrificing valuable commercial space at ground level.

Solution
Ong & Ong's design, developed in association with design consultants LPT Architects Pte Ltd, weaves two vehicular access ramps through the lower levels of the building, leaving sufficient space for two banking sector tenants, as well as the main tower entrance lobby. To further improve the spatial efficiency of the building, a variable air volume air conditioning system was installed, in preference to the more usual four-pipe fancoil specification, reducing the space required for ducting. Ong & Ong acknowledge that the gridded elevations were inspired by the rationalist architecture of Helmut Jahn.

Building type
Commercial office tower
Client
Sansin Investment Pte Ltd
Gross floor area
21,238 square metres
Completed
1992

1: The gridded elevations were inspired by the rationalist architecture of Helmut Jahn

2: The design weaves two vehicular access ramps through the lower levels of the building, leaving sufficient space for two banking sector tenants

3: Elevation. The brief required the seven levels of car parking to be situated above ground

Orchard Scotts

Programme
The development consists of three buildings sharing communal facilities, including swimming and other leisure pools, a sauna, steam room and four tennis courts. The two 20-storey blocks accommodate serviced apartments, whilst the 18-storey building contains apartments for sale. A total of 387 dwelling units are being provided, in buildings totalling 68,396 square metres gross floor area, on a site measuring 24,427 square metres.

Challenge
It was intended that the buildings should be emphatically contemporary in design, yet distinctive and characterful. The site planning strategy was required to incorporate a large volume of accommodation in relation to the area of land available, with further constraints imposed by the proximity of the presidential residence, the Istana – see United Square.

Solution
The design, developed in conjunction with Miami-based Arquitectonica consists of three geometrically distinct object buildings, with highly reflective cladding detailed to contrast the relative horizontality of the longer elevations with the verticality of the shorter sides of each block. The orthogonal buildings rise directly from "splash-shaped" swimming pools, creating a play of reflections between the water and the mirrored curtain walling. Apartments for sale have been concentrated in positions affording the best views, whilst some of the serviced apartments have obscure-glazed windows, with only restricted opening provision, on facades facing the Istana. The design is being adjusted in response to changing market conditions, even though, at the time of going to press, the structural frame has been completed up to tenth floor.

Building type
High rise residential condominium
Client
Far East Organisation
Gross floor area
68,396 square metres
Scheduled completion
1999


1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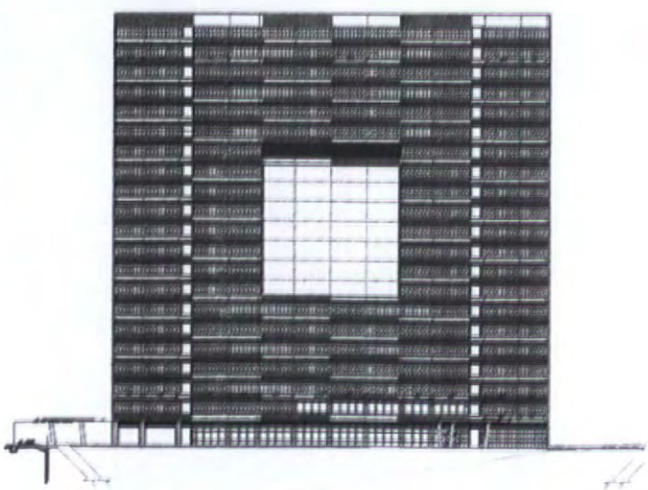
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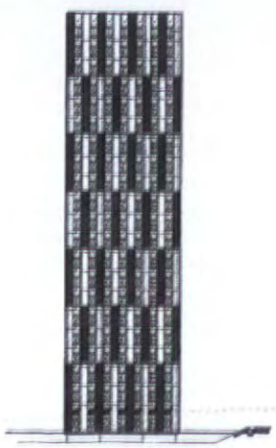
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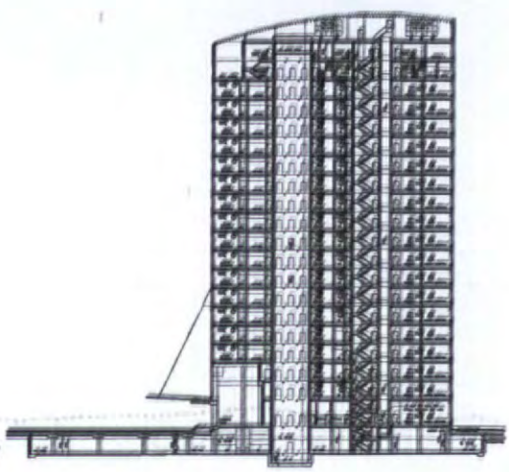
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6

1: Orchard Scotts comprises three distinct residential towers

2: The development provides 68,396 square metres gross floor area

3: North elevation of tower "one" – serviced apartments

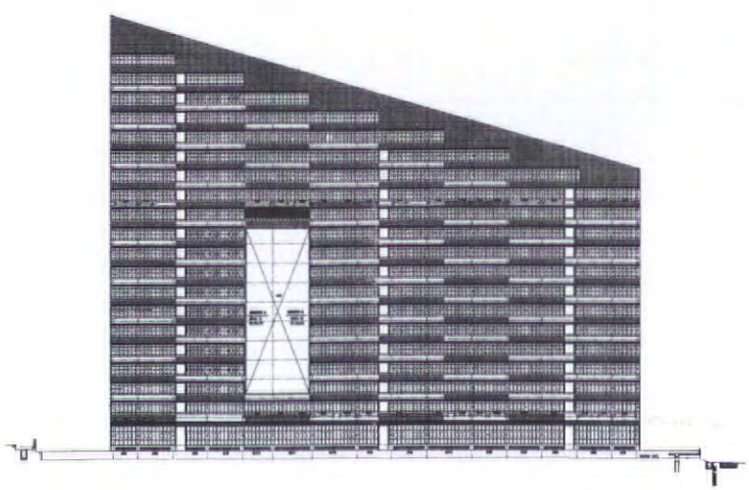
4: West elevation of tower "one"

5: Section through 20-storey tower "two" – serviced apartments

6: Apartments for sale (in foreground) are afforded the best views

7: East elevation of tower "three" – apartments for sale

8: Section through tower "three"



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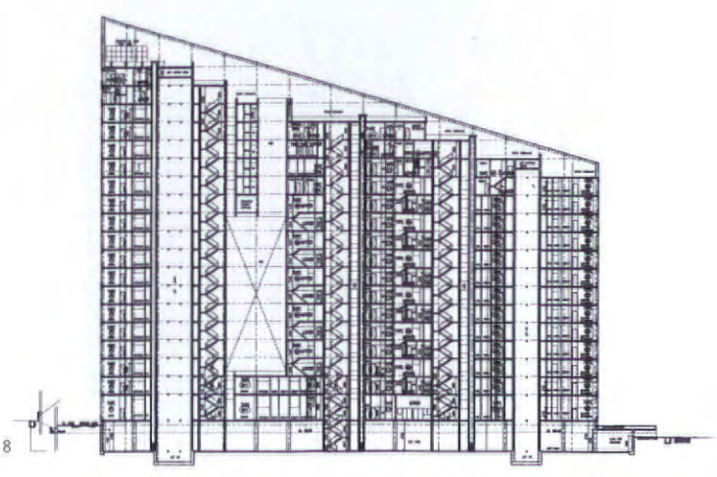

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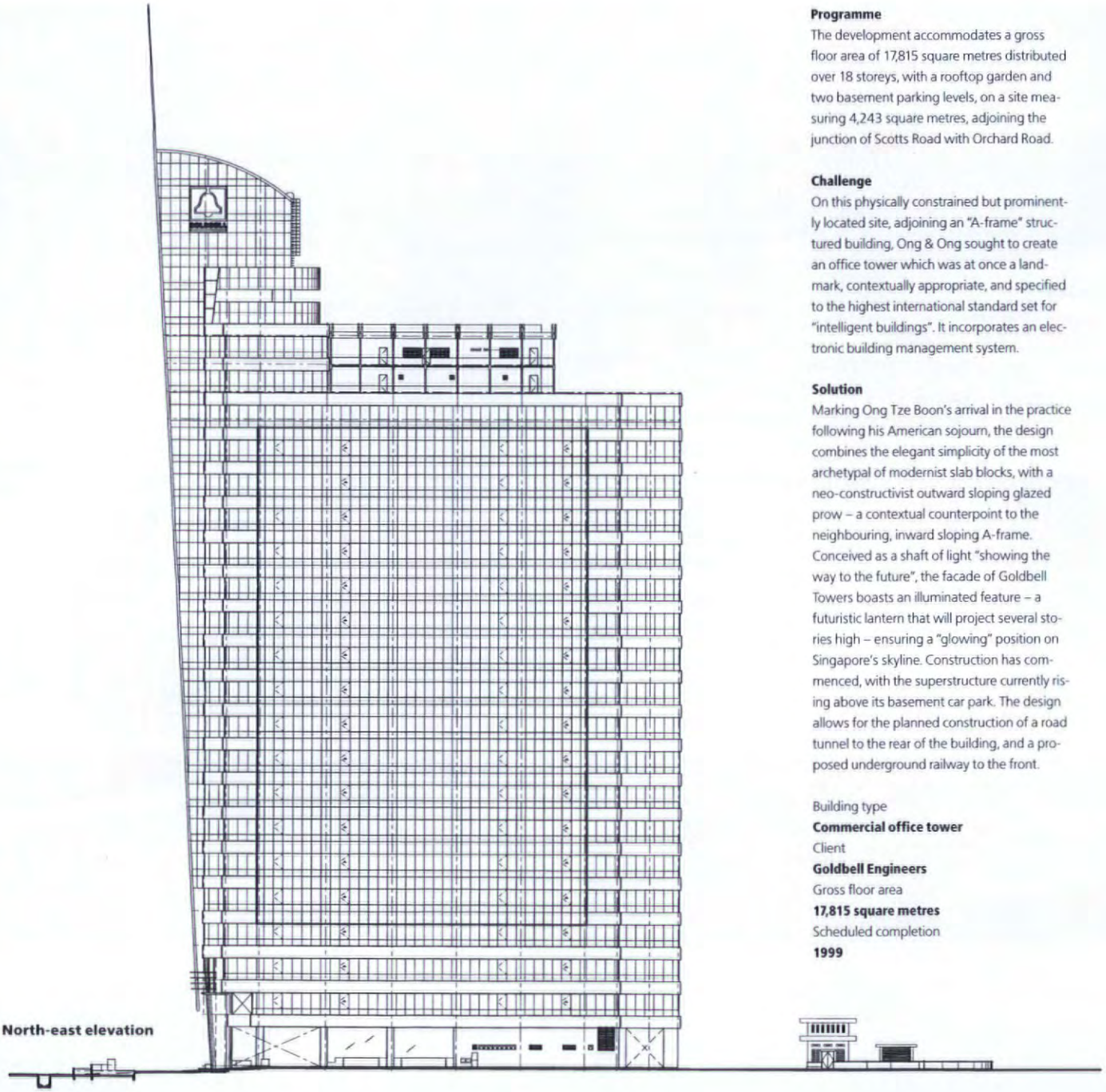
Goldbell Towers



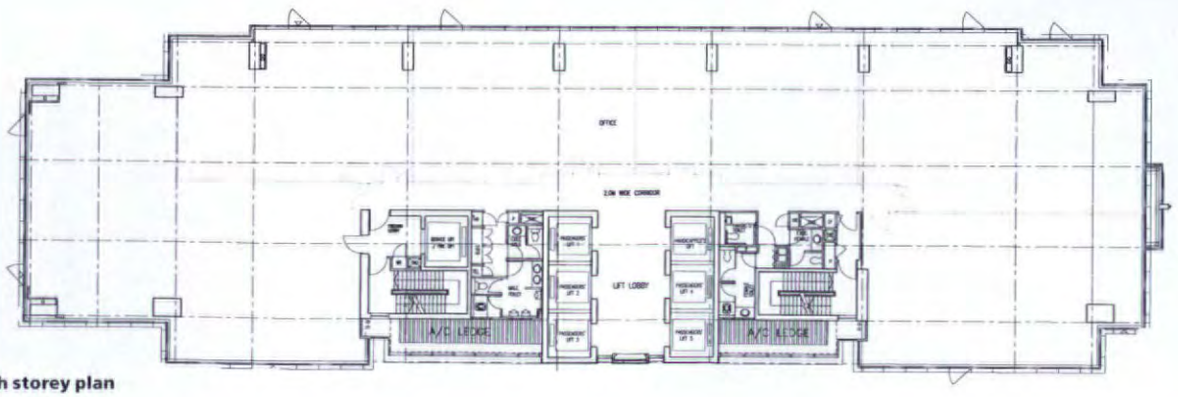
North-east elevation

Programme
The development accommodates a gross floor area of 17,815 square metres distributed over 18 storeys, with a rooftop garden and two basement parking levels, on a site measuring 4,243 square metres, adjoining the junction of Scotts Road with Orchard Road.

Challenge
On this physically constrained but prominently located site, adjoining an "A-frame" structured building, Ong & Ong sought to create an office tower which was at once a landmark, contextually appropriate, and specified to the highest international standard set for "intelligent buildings". It incorporates an electronic building management system.

Solution
Marking Ong Tze Boon's arrival in the practice following his American sojourn, the design combines the elegant simplicity of the most archetypal of modernist slab blocks, with a neo-constructivist outward sloping glazed prow – a contextual counterpoint to the neighbouring, inward sloping A-frame. Conceived as a shaft of light "showing the way to the future", the facade of Goldbell Towers boasts an illuminated feature – a futuristic lantern that will project several stories high – ensuring a "glowing" position on Singapore's skyline. Construction has commenced, with the superstructure currently rising above its basement car park. The design allows for the planned construction of a road tunnel to the rear of the building, and a proposed underground railway to the front.

Building type
Commercial office tower
Client
Goldbell Engineers
Gross floor area
17,815 square metres
Scheduled completion
1999



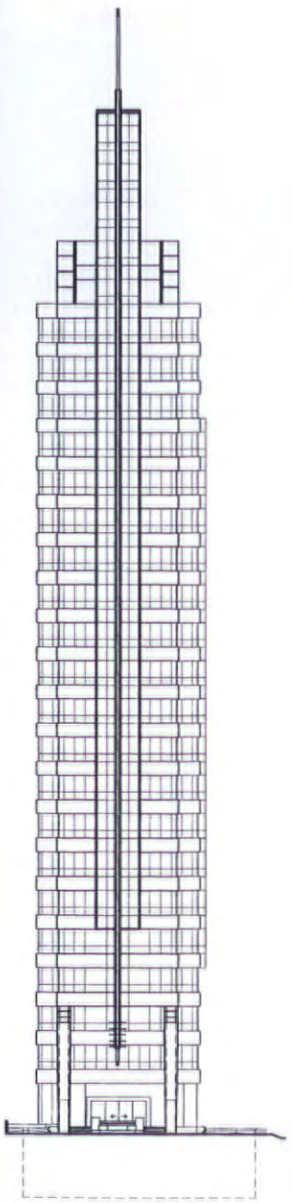
5th to 8th storey plan

1: The tower combines the elegant simplicity of modernist slab blocks with a neo-constructivist, outward-sloping glass prow

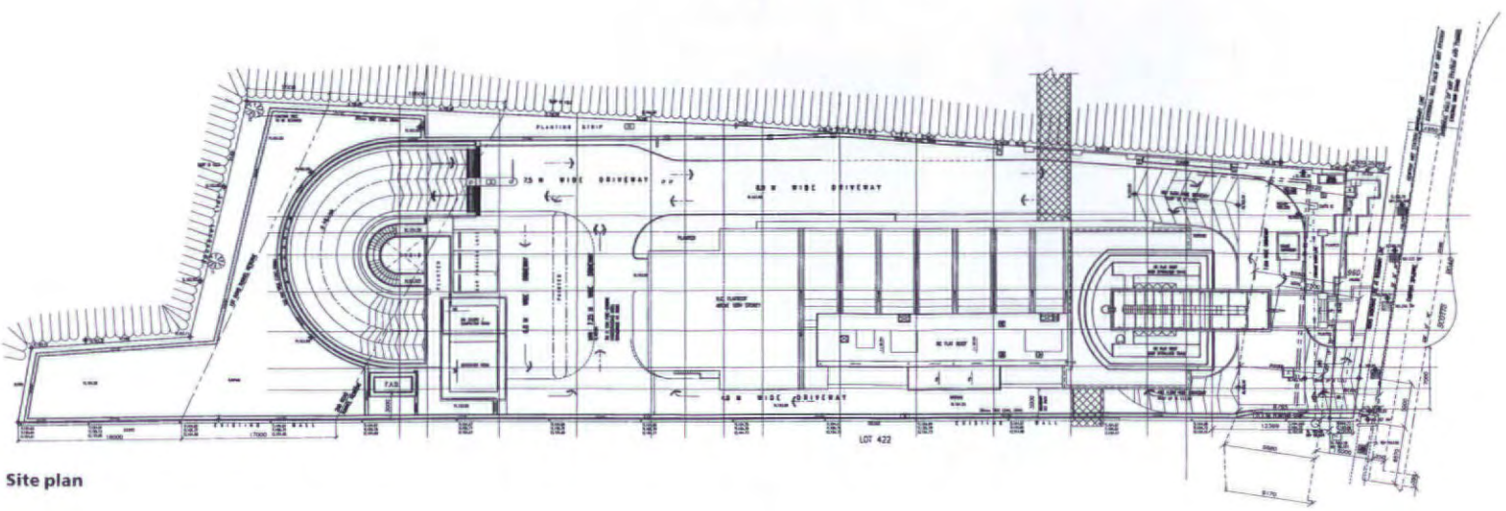
2: Goldbell Towers illuminated feature – a futuristic lantern – will ensure the building's presence on the Singapore skyline

1

2



South-east elevation



Site plan

Scotts Tower

Programme
The development accommodates 41 luxury apartments, distributed over 23 storeys, on a site of 3,040 square metres, located at the intersection of Cairnhill Road and Scotts Road.

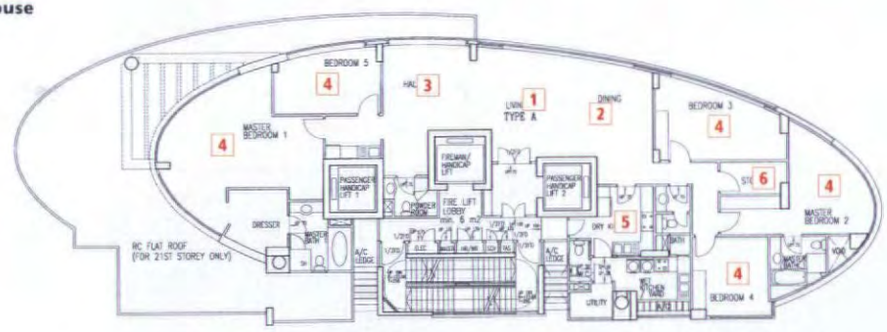
Challenge
The site is located in the proximity of Orchard Road and offers the potential for apartments with an exceptional outlook, and the opportunity to make a positive contribution to Singapore's skyline, suggesting a sculptural building mass seldom realised without compromising commercial and functional design criteria.

Solution
Ong & Ong's design incorporates vertically interlocking pairs of three bedroom and four bedroom apartments, giving the latter unique double-height living spaces. The added value of this feature was sufficient to compensate for the potential disadvantage of distributing both types of unit throughout the building's height, unifying the facade composition, but contradicting the commercial convention of putting the largest apartments exclusively in the most favoured locations. Unlike the orthogonal Goldbell Towers office development located nearby, Scotts Tower is defined by a number of interlocking elliptical geometries, lending distinction to its external mass and enhancing the perception of panoramic views from within. The technical difficulties inherent in creating such an irregular plan form were resolved by segmenting the glazing pattern on the longer sides of the building, and reverting to a more solid enclosure on the more sharply curving prows.

Building type
High rise residential development
Client
Far East Organisation
Gross floor area
8,512 square metres
Scheduled completion
2000

Front elevation

Penthouse



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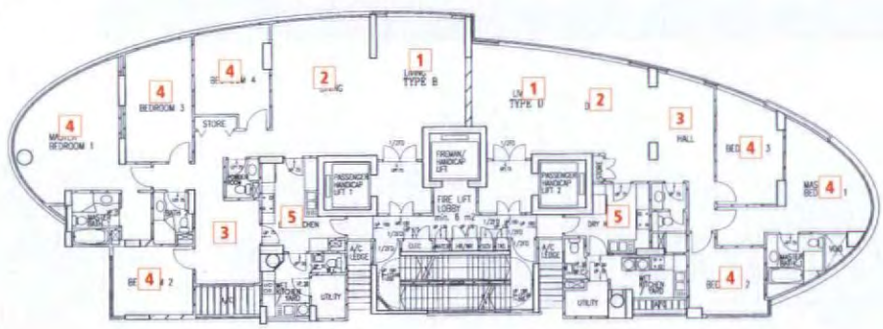

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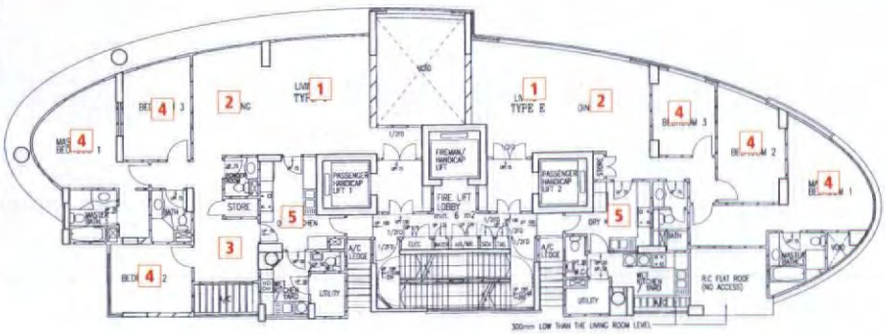
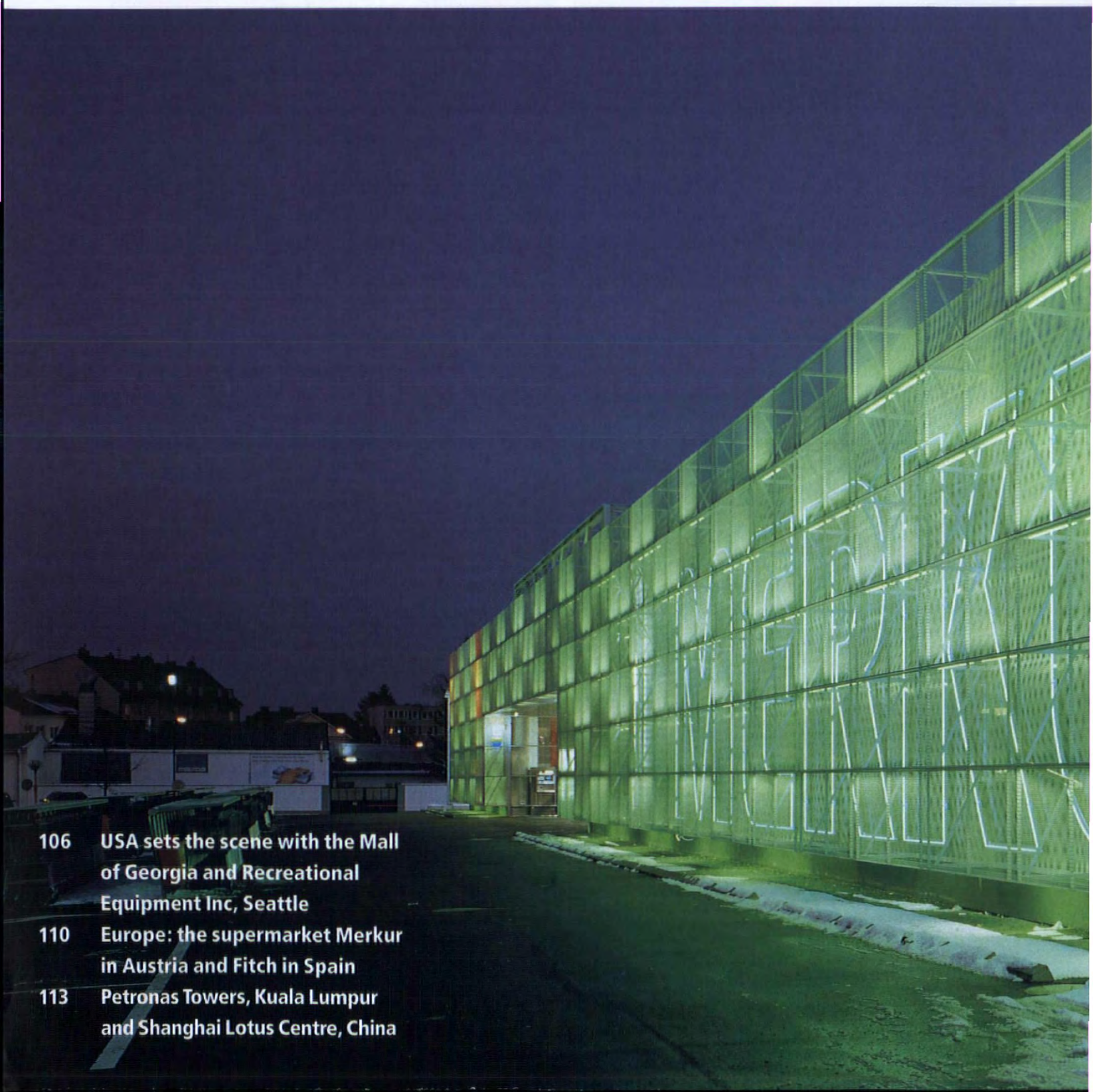


Key to floor plans
1. Living
2. Dining
3. Family
4. Bedrooms
5. Kitchen
6. Store

Opposite page, clockwise from top left:
Four views of Scotts Tower. The development houses 41 luxury apartments distributed over 23 storeys

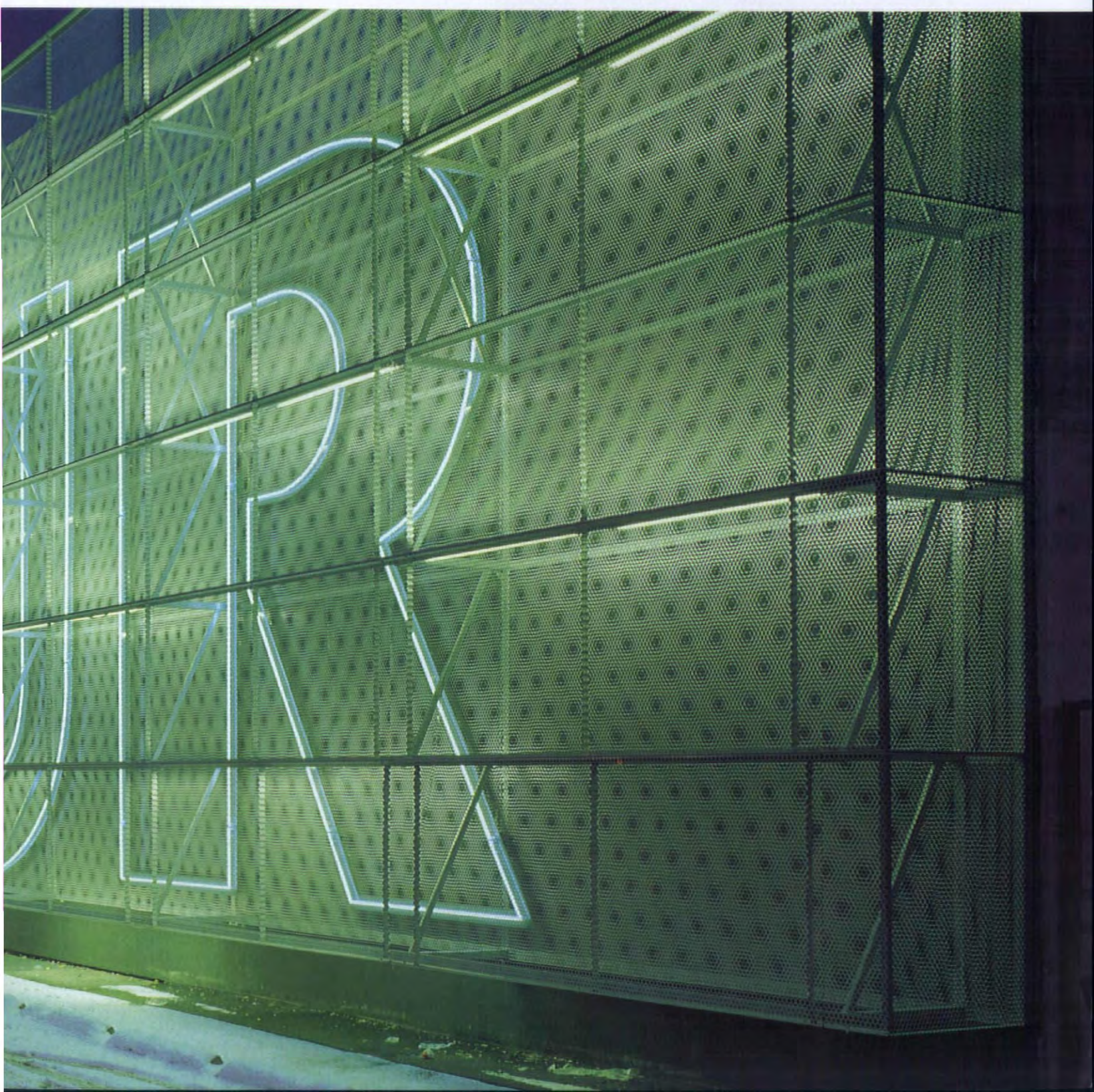
Sector Analysis – Retail architecture

The business of consumption



Supermarket Merkur, Wiener Neustadt, Austria designed by Gorgona Böhm Associates. Photograph: Margherita Spiluttini

Through exciting exteriors and attractive interiors and merchandise, retailers draw shoppers in to spend, spend, spend. However, the type of experience that consumers are seeking from shopping centres and department stores, and how retailers fulfil those needs, is currently undergoing a number of changes. And in retail, what the consumer wants, the consumer gets. Renée Bilston, editor of Retail Systems, reports.



Firstly, shopping is now more experience than transaction. Consumers are no longer content to park, enter the store and simply buy the merchandise. They are looking behind the shop window to seek out an experiential visit to the retail centre. As individuals' lives become increasingly time pressured and technology focused, the shopping visit has become an integral part of leisure time. What shoppers are really after, according to the experts, is to be sensory-stimulated in a sociable, multi-purpose environment. This means that not only is there competition between retailers within a particular centre but there is significant competition between individual centres to attract shoppers who are prepared to travel for the right experience.

Technology is also having an impact on the face of retailing. Innovations like touchscreen kiosks and in-store TV are gaining widespread acceptance as tools for points of information and retailers are being forced to integrate these into the shopping environment to maintain a competitive edge. New technologies are also giving birth to entirely new and competing distribution channels. Home shopping, mail-order catalogues and the Internet offer convenient armchair purchasing and present a threat to retailers who don't look past the traditional notion of shopping. Alternative channels may cause an oversupply of physical retail space but mass market response to these channels has been varied and some experts contend that this will ultimately create a scramble for the best sites. The key for merchants is to integrate technology into their marketing sooner rather than later.

"Technology is here to stay so use it, incorporate it. It's another way for consumers to have

"Those retailing types"

provided by Hanscomb

Retail centres

Retail centres come in many forms: strip centres, enclosed malls, factory outlets, power centres (big boxes), etcetera, each with their own unique characteristics. Traditionally, the enclosed mall has been a more notable retail centre type. The USA has long been a leader in the development of enclosed malls. The population shift in the USA from the cities to the suburbs began in the 1950s. Since retailers need to be where the people are this led to the development of suburban strip centres and malls. From this grew the larger regional malls, which became popular in the 1960s.

Retail malls began to serve as centres of community life, just as downtown was once the community centre. They are the place to interact with other people, to see and be seen. In an age where technology allows us to be increasingly isolated, the mall exists for the communal experience and entertainment. People like to be with other people, and they want to be entertained. Successful mall concepts understand these basic sociological elements.

However, the mall is not just a suburban concept. Urban malls can be successful where there is a critical mass of urban residential population. However, implanting urban retail centres as a "draw" to revitalise urban areas without urban residential has not fared well. The exceptions are when there is something to attract tourists (eg museums). There has to be a reason for local customers to leave the suburbs to visit an urban retail centre.

Community

The Town Centre or Main Street concept is a recent trend trying to recreate the community centre. The Main Street may be created by a developer buying several blocks of an urban area and reworking them as retail centres, integrating civic and office. Developers are also creating the urban Main Street on greenfield sites. It provides the community with a public centre that is intimate, comfortable and nostalgic. It affords smaller retailers, the primary type of tenant, a better identity than the mall.

Main Street retailing is not without its own set of challenges. Assembling a new urban tract for retail presents its own unique set of problems. Individual units are more expensive to build than the traditional mall. Main Street concepts are more difficult to design than

Facing page: Virgin Megastore, California, USA, 1996. Architect: Mark Dziewulski. Virgin has also employed SPF:A for the development of concept stores

Above left: Shopping 24, Porto Alegre, Rio Grande del Sul, Brazil. By RTKL's Dallas office

Above right: Shopping Santa Ursula, Riberirao Preto, Brazil. Also by the Dallas office of RTKL

fun and keep them coming back," says Mark Pucci, chairman of international architectural firm, the New York-based Walker Group. Architect and interior designer, Eva Jiricna echoes this: "The younger generation is so used to technology that now they seek it out in centres and stores. They look for electronic kiosks to make their lives easier and to entertain them."

Herein lies a growing challenge for architects and designers; to incorporate not just technology but other elements of brand and image. Jeff Gunning of RTKL, specialists in retail, comments: "We are no longer just architects, we must see ourselves as orchestrators of an integrated marketing process." John Dodds, UK managing director of international retail developers Hammerson, confirms this. "Retail is always undergoing a general evolution but branding will be one of the biggest issues over the next few years, particularly as retailers upsize and cross national borders." In a competitive environment, the key to differentiation is strong branding. Increasingly design allows retailers to exert their own images and to contribute to the vibrancy and vitality of the centre as a whole.

The globalisation of retailing is another trend that has significant implications for architects and designers. As is typical within the industry, British retailer Marks & Spencer, which has embarked on an ambitious global expansion plan, retains local architects for international projects. Rob Pierce, company architect at Marks & Spencer, explains:

"While we adopt one basic store design, we adapt it to the particular country because the brand name has a different market positioning in every country and each location will serve a different function according to the customer base. It's important that we work with an architect that understands the differences of local catchment areas, our market positioning and local planning guidelines."

Jiricna has firm opinions on cross-border store designs. "I do not agree with making each store the same. Architects and designers should respect the cultural differences of where the store is and who it is for. As an architect or designer you should be able to read these differences. Design is about solving a problem and fulfilling a function."

If architects are now purveyors of a total retail concept, what other magic must the architect's wand conjure up for retailers and developers? Hammerson conducts extensive research to understand what its potential customers are ›

malls since they are more tenant driven. However, despite the challenges the concept's popularity is growing.

An important trend in mall design has been tailoring the mall to the local community and environment. It is critical that the mall relates to the community it serves. This requires architects to do a lot of research about the community, which was not typical in the past. Developers are realising that the mall must attract the community. An amalgamation of shops does not guarantee crowds of shoppers, the choices and competition among other types of retail are enormous.

Tom Porter of Thompson, Ventulett, Stainback & Associates explains that some malls they are designing in Chile go beyond the efforts US developers make in providing a community space. Plaza Tobalaba in Santiago actually develops a small linear park along the front of the mall with an amphitheatre and play areas. Another mall creates a plaza overlooking the Pacific Ocean as a community gathering space.

An increasing trend in the USA, common in other parts of the world, is integrating office, hotel and housing to provide a mixed use development.

Entertainment

Shopping at malls is as much about the experience and entertainment as it is about purchasing goods. It is the entertainment aspect that helps bring people back. Mall developers are still trying to understand the entertainment aspect.

Mall themes, a recent trend in mall design, is one way to entertain the mall visitor. Design can integrate cultural and environmental interests using a theme. It should be a carefully used tool, because novelty is not lasting. This is a lesson to be observed from themed restaurants, which tend to fade quickly.

Technology, at a price, can be used to accomplish a mall theme. The mall actually becomes the show. The Forum Shops in Las Vegas feature a Roman Hall with an interactive Atlantis fountain attraction. Another mall simulates a thunderstorm.

Mall tenants are a source of mall entertainment. For example, cinemas were once relegated to an out-parcel on the mall site. Now they are integral in the mall. Restaurants and book or music retailers are considered part of the entertainment component. Even within the retail store there is a growing element of entertainment.

Tips from the inventors of the shopping mall

The basics

Malls continue to be an evolving form of retail, but there are some principles that a successful American project incorporates. *Provided by Hanscomb.*

- The placement of major department anchor stores is critical. Unanchored retail is generally not successful. A small mall requires at least two anchor stores at either end. Larger malls require more anchors strung along the mall.
- How the circulation system works is critical. Two storey malls are preferred to three level because rental income from the top floor tenants is limited. Urban multi-storey malls have difficulty generating traffic volume above the third level, except for maybe the top level. Location of vertical circulation is important.
- On a two level mall, customers should have direct access to both levels either from a parking deck or from grade parking. Parking for both levels should be balanced.
- Parking should provide for four to five cars per 375 to 465 square metres of gross leasable area.
- Width of the mall common area should not exceed 16 or 17 metres. When the common area is too wide the mall loses its synergy.
- Depth of leasable area 30 to 35 metres.
- The greatest influence on the mall design is the agreement made with the major department stores. This may include plans for future expansion.
- Since food courts keep people in the mall, they should be located on the upper floor.
- Cinemas should be located on upper floor of the mall.

It should not be assumed that what works in the USA will work elsewhere in the world. Some ideas do not travel well. In some countries, a bazaar type arrangement, where shops are wide, rather than deep, is preferred. Some US retailers have tried to export their retailing concepts as well as their products. Often this has not worked, and has resulted in the retailer withdrawing from the market.

Rocky Ridge Town Centre, California, USA, 1997. Designed by Mark Dziewulski

John Gallagher

Redmond Town Centre , Washington, US, 1997. By LMN Architects

› seeking from their shopping experience, and to determine current consumer habits. Equally, the company expects architects to understand consumers in the retail market. Dodds explains: "The architects we use must understand the dynamics of shopping and the retail environment." This may seem apparent but "architects

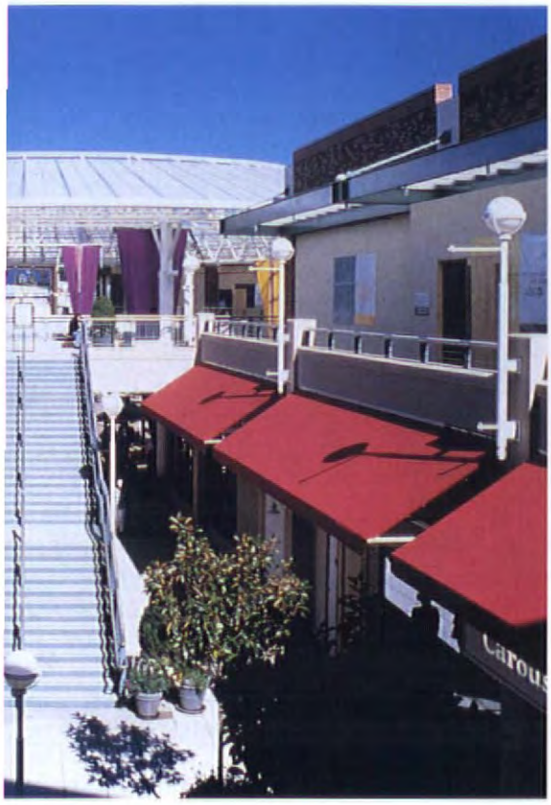
Mall of Georgia

by Chuck Twardy

Adherents to the notion that what goes around comes around will find proof in the Mall of Georgia.

Slated to open in 1999 in Gwinnett County, about 48 kilometres north of Atlanta, the 157,930-square-metre project lacks nothing of the cyclopean scale Americans have come to expect from their regional shopping malls, including a restaurant and entertainment centre with a 20-screen cineplex at its core.

But as regional malls reinvent themselves to keep pace with "category-killer" competition, they have begun to offer fresh incentives, something beyond the massive tanker aground in a sea of asphalt. The Mall of Georgia promises to take shoppers back to the sort of ambience the enclosed mall is often accused of killing – that of the urban village.



Eddie Bauer store, Michigan Avenue, Chicago, USA designed by the Cincinnati-based office, FRCH

must recognise the opportunities of the development area and innovate, using those opportunities to make the retail centre a unique shopping experience and ensure that consumers keep coming back." He cites the example of one of the company's developments, the Oracle shopping centre in Reading, UK. It has been built on the banks of the River Kennet and integrates the waterfront as part of its leisure facilities. The design concept for the shopping centre has been created by London-based Haskoll & Co to maximise the potential of the nine hectare river-side site. The waterside leisure zone is a series of public squares and performance spaces that stretch the length of the development. A number of cafes, bars and restaurants run parallel to the main shopping mall. Footbridges spanning the river provide direct access to a 10-screen multiplex and dining pavilion. Another important feature is that the mass and height of the scheme have been designed not to break the ›

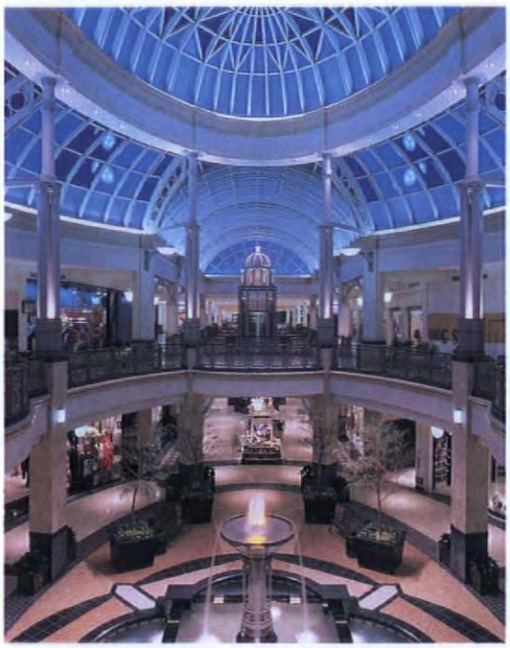
Tom Porter, senior principal with Thompson, Ventulett, Stainback & Associates, the Atlanta-based firm that designed the mall, traces the concept to Atlanta developer Ben Carter, who has teamed up with fellow developer Scott Hudgens and Corporate Property Investors for the project.

"He really wanted to develop a shopping centre in a complex that was more than a regional mall," says Porter. Carter, he says, wanted to "have it work as a village".

The mall is something of a hybrid of the two entities. A crescent of 130,060 square metres of retail embraces 23,225 square metres of shops arrayed on streets, with a "village green" at the core. But even the enclosed mall portion comprises varied volumes, and the interior design evokes "a walk through Georgia," says Porter. "A series of experiences" will carry the visitor from the Coastal Plain and Colonial Savannah through the urbanity of Atlanta and into a "lodge" decor suggesting the North Georgia mountains. The barrel-vaulted central entrance will pay hommage to the old Union Station rail terminal in Atlanta.

The enclosed mall takes its air of a "covered street" from the outdoor village, which is considered the "front" of the mall, according to Porter. Its village green will include an amphitheatre to be used for a variety of community performances and activities. The village's on-street parking will be complemented by two parking areas that will be left mostly as grass for environmental sensitivity.

Porter says Carter's village vision, ongoing for several years, in many ways predates the neo-traditional planning movement that has since become popular. The only thing missing from this version, of course, is homes. But the mall is part of an even-larger, 202-hectare development known as Mill Creek, which includes multi-family residences, an office-hotel complex and a 32-hectare nature preserve. Trails from this park connect with the mall. Grumpy spouses, presumably, can take a hike.



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1: King of Prussia Mall, Philadelphia designed by Thompson, Ventulett, Stainback & Associates (TVS&A)

2: Detail of stained glass roofing of King of Prussia Mall atrium ceiling

3: Plaza Vespucio, Santiago, Chile by TVS&A with MESA Design of Dallas for the landscaping. Associate architects were Christian de Groote for phase one and Villanueva and Varas for phase two

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› Reading skyline, articulated through a series of buildings where the three dimensional interplay of form is used on the elevations to vary the impression of height and to create interest within the various building blocks. Marks & Spencer's Pierce agrees with Dodd's comments on understanding the retail process and goes further. "We look for credentials, a proven track record and total professionalism and commitment. We also seek out innovation and fresh ideas and while it is expected that the architects and designers will listen and understand what we are trying to achieve, they must remain confident enough to challenge those initial ideas."

So, having outlined the forces of change within the retail industry, what impact is this having on retail centre design throughout the world?

America – still the land of the greatest shopping malls on earth

America, land of the mammoth shopping mall, has served as design inspiration for retail development in all other regions of the world. The shopping mall in North America has always served as a focal point for social gathering. However, city centres have suffered as problems of town overcrowding, safety and infrastructure

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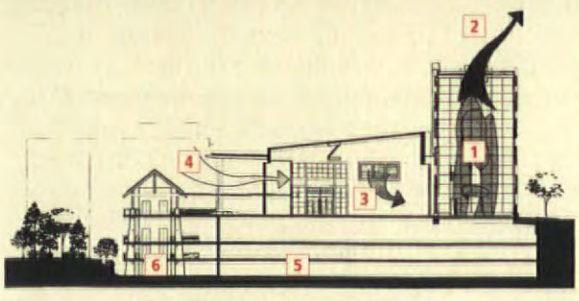


Key to stack effect in unconditioned space

1. Climbing rock
2. Hot air exhaust
3. Recycled air from fully conditioned space
4. Cool air intake
5. Parking
6. Entry stair tower

Recreational Equipment Inc Seattle Flagship Store

The client, REI, is a member-owned co-op founded in 1938 by two Pacific Northwest climbers in order to import quality ice axes. It now has 46 stores and annual sales of US$500 million. For their latest store in Seattle, REI commissioned Mithun and Partners 9,184-square-metre, US$30 million retail project.

REI conducted a survey of 33,000 members in western Washington to guide decisions that went into the design. Terri Perlman, REI's merchandising project manager, said "Members didn't want us to build a monument to ourselves and they didn't want us building it with their dividends. Instead they wanted a design which reflected the beauty and austerity of nature, a customer-first orientation and an environmental commitment that included using as many recycled materials as economically possible.

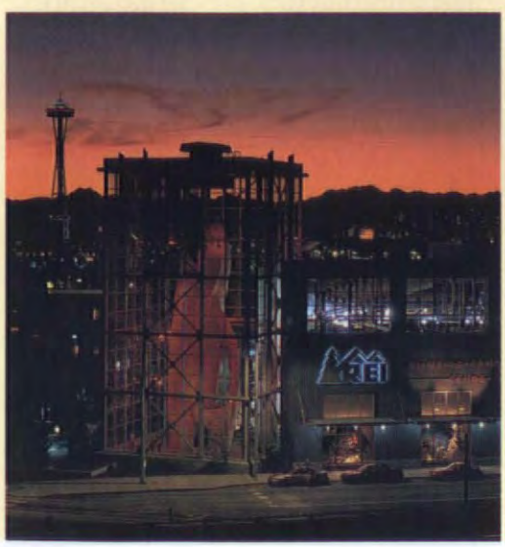
This project demonstrates a sea change in retail philosophy. "REI is designed around the idea that prospective selections should be tried before purchase." Interactive areas include a climbing wall, a bike test trail, a

problems have been solved with large-budget stores and self-contained multi-retailer malls on the outskirts of towns. These regional centres have typically been uniform in design and Brett Kratzer, vice president at Cincinnati-based FRCH, comments that "function has taken precedence while aesthetics have been secondary". In contrast to this tradition, town planners and developers are now seeking to achieve different objectives. The first is to regenerate urban centres by drawing people back into city centres with new retail developments and improved transport and other town infrastructure. The second is to reinvent existing malls to incorporate the look and feel of the high street and to integrate more successfully a mall's external environment. The impetus for this significant change in planning ideology has been caused by two large demographic trends, says John Cole, principal of Massachussets-based firm, Arrowstreet. "We are seeing a perceived compression of time which is broadening the offering by retail centres to include leisure, entertainment and retail," remarks Cole. In addition the population is ageing. "It's not growing any more and with developers tracking the population they realise the place ›

boot test trail and a stove test station. Their focus on customer satisfaction can be seen in their brief for Mithun Partners to design a 250-person auditorium, cafe, art gallery, repair shops, child's play area and rental shop.

The building programme focused on the idea of energy efficiency and recycling – about 75 percent of the demolition debris was either re-used in the new building, recycled or sold for salvage. The building also takes advantage of natural daylighting and solar heating controlled by a smart computer which uses motion detectors in order to minimise energy waste. Most of the building materials are left raw without stain or covering, wood panels and fixtures use post-industrial wood waste and the steel has a 65 percent recycled content.

The most stunning feature of the store is derived from REI and Mithun's decision to divide the 9,290-square-metre retail space into four forms: the parking garage and meeting room, the climbing tower, the stair and elevator shaft and the main retail space. The tower is a four-square-metre space standing 26 metres tall that is non-combustible due to its steel construction and concrete fire wall separating it from the main store area. Day and night, the glass tower and its 20 metre climbing rock are visible to motorists on the interstate as well as to local traffic.



1: Exterior view of REI's Flagship store

2: View of the tower lit from within like a beacon

3: Spare interior layout showing untreated finishes

4: Climbing wall in its tower

Supermarket Merkur (Wiener Neustadt, Austria)

The Viennese architects Gorgona Böhm Associates were faced with a difficult project: converting a food market with all the charm of an industrial shed into a space to provide an experiential shopping experience.

The brief required them to provide space for individual traders and a restaurant, replacing the facades and adding a parking bay. The middle section of the roof was partly removed and a new exterior steel construction with suspended glass panels illuminates a small piazza whose centre is formed by a restaurant around which the food market and the individual businesses form a U-shape.

The 80-metre entrance facade becomes an intelligent image of innovative architectural solutions. A two-layer perforated metal structure in front of the black building shell produces a striking interference effect through the use of neon. The small black holes became moving strips that accompany the observers as they go past, or lead them into a perspective of endless profundity as they approach.

At night the fabric of light disguises the substance of the building, dissolving it into a variety of levels of perception. But as one goes into the large entrance hall, the wide space of the interior stands out in contrast to the hi-tech facade illumination. The solution of the parking bay on one side of the building is also clear and empirical. The light slits are arranged vertically, establishing a dynamic movement and enhancing the black box of the store with their unusual natural light.

Above left: The 80-metre entrance facade
Above right: The restaurant and food block form a central axis which relates to the glazed roof

that's under served is the city centre," he continues. So to draw the suburban market in and capture the urban market that has no choice about where they shop, developers and architects are "creating bigger mousetraps", like Providence Place, Providence, Rhode Island, due for completion this year. Designed by Arrowstreet and developed by Commonwealth Development, it is 11 storeys incorporating a downtown environment and providing leisure facilities in addition to the shops. This integration of the urban environment is being achieved through the use of more natural building materials, greater use of natural light and open air constructions. This trend has extended to South America and is witnessed in the RTKL-designed Shopping Santa Ursula project in Ribeirao Preto in Brazil. The project is situated on a full city block in the city centre and the challenge was to blur the boundaries between the mall and the city streets to create an integral urban design. It is envisaged that the shopping and entertainment destination will become a landmark of the city serving not just local residents but those of surrounding towns. The aim is to use design to enhance the existing urban fabric.

The current goal for the designers of centres is to create a total environment – a compelling experience; a destination that entertains, facilitates social interaction and encourages consumers to stay longer. RTKL's Gunning outlines: "Entertainment attractions are now mandatory for retail centres in the Americas. As well as shopping, people want to see a film, and eat a great meal and they don't want it to be the same when they go back. Design and content must be unique enough to attract people again and again." As the competition to attract consumers is so fierce between centres, creating the ultimate entertainment experience is the greatest challenge for developers, retailers and architects.

Apart from entertainment and the urban regeneration of existing centres, where will this region be leading the industry to next? Brett Kratzer of FRCH thinks that the entertainment/lifestyle cycle will continue for the foreseeable future. "Shopping malls are where people hang out. Nothing beats going to a destination to be entertained and enchanted and the future won't change that," he says. According to Gunning, this ideology will be extended to themed environments, already

Facing page: The Mall at Cribbs Causeway, UK by Building Design Partnership

Las Rosas in Madrid is designed by Fitch and HOK/Studio E for Heron International. The project, which is on site and due for completion in 1999, is designed to allow Madrilenos to indulge in their national penchant for "strolling to be seen"

CentrO Oberhausen by RKW was covered in the April issue of WA 65 pages 88 and 89. Like many malls, RKW's design was intended to form the heart of a new city centre at the hub of Germany's Ruhr industrial Centre

seen with the development of concept stores like the Virgin Megastore in Orlando, Florida. Designed by young Los Angeles-based architects, SPF:a, the site has recreated London's Royal Albert Hall with the intention of highlighting Britain's musical contributions. The principals of SPF:a formed the company in 1995 and their design has a reputation for being strongly technology-influenced. The Virgin store boasts rock concert lighting, a moveable stage for an entrance and catwalks to appeal to the John Lennon in all of Virgin's customers. "The largest untapped source is the fantasy environment. The themed environment will be further extended and retailers will demand more inventiveness to appeal to the dreams and desires of their customers. There is no going back," prophesises Gunning.

Eye on Europe

Moving the focus across the Atlantic to Europe, the market for retail development, while initially influenced by the USA, has forged its own identity sensitive to the unique cultural and environmental issues. Traditionally there has been a strong cultural element within European design and there has been a dichotomy between shopping centres, high streets and, more recently, out-of-town retail centres. "Consumers have looked for personality in their shopping centres," says Peter Coleman, director of the European design firm The Building Design Partnership. "They want to identify the centre of Paris as different to that of Bilbao, but each reflecting the cultural signature of those cities." The firm is currently working on a project in Bilbao that has been designed after careful consideration of the town's prevailing character and uses the same materials found elsewhere in the town.

Exteriors have been a focus for design and in many continental countries architects have to meet strict planning guidelines while the interiors have lacked a strong visual appeal. However, this could be attributable to a lack of strength within retailing as an industry, although this is clearly changing. Ludwig Redl of Austrian partnership, Gorgona Boehm Associates, remarks: "Retail in Europe is now beginning to find its own identity and consumers are learning to expect more from the shopping visit. In our experience we know that shoppers are travelling 60-70 miles for a multi-purpose centre. This will be the direction that retail development travels." It is only in the UK that the government is shaping planning guidelines to stall large scale development of out-of-town centres in order to encourage the regeneration of urban town centres. Marks & Spencer's Rob Pierce forecasts that "there are many good out-of-town centres which we believe will survive while the others will be challenged and while the same could be said for town centres, the government is determined to restrict out-of-town centres."

The European shopping centre is still predominantly fully enclosed but uses a large amount of natural light and natural finishes. The use of contemporary design and a more intelligent use of new and different materials is shaping the European retail industry and represents a removal from the high streets housed within historical buildings. "People are better travelled now and as the world globalises, visual references change for the consumer," offers Coleman, as an explanation for this acceptance of contemporary design. A number of European countries such as the Germanic countries of Switzerland, Austria and Germany have always been environmentally-aware, but this consciousness is now permeating through to the whole of the Continent and Britain. "An acute awareness of environmental issues, energy expenditure and cost is forcing architects to examine the nature of the materials they are using," says Coleman. This can be exemplified through the new medium being used by Gorgona Boehm Associates on the exterior of the Merkur Bilkur Centre in Wiener Neustadt, Austria. The material, Skin, costs the same as other industrial materials and uses the interference effect of light to create different lighting effects for night and day. Redl comments: "We work with a lot with light, new materials and surfaces as well as exploring new ways of combining materials." Pucci reminds us: "You don't need to be ruled by budget. Innovation and imagination don't have to break the bank and the goal should be to make the structure memorable."

The integration of entertainment is just starting to be introduced to European centres and the research that Hammerson has conducted indicates that consumers in this region consider the ideal shopping trip to be like a holiday – leisurely, relaxed but also interesting and exciting. The USA's Walker Group, which is now working on a similar entertainment-led project in Spain, completed a five-storey flagship for Breuninger department store in Stuttgart, Germany that fuses entertainment with innovation in retail design. The natural beauty of the surrounding area was transplanted inside to serve as scenery along a nature trail which links the main areas in the sports department. Leading patrons past a miniature waterfall and mountain range, it creates a sensory experience within the interactive

Ground floor plan including provision for fashion and high-end retail

Second floor plan incorporating the food court

Third floor plan including cinemas and local food

SURIA KLCC Shopping Centre, Petronas Towers, Kuala Lumpur, Malaysia

KLCC Retail/Entertainment Complex is part of the 40-hectare Kuala Lumpur City Centre development – better known as home to the world's tallest buildings, the Petronas Towers. Designed by Cesar Pelli & Associates and the Walker Group as part of the 929,000-square-metre Phase one development, the retail complex includes a total of 162,575 gross square metres of retail food and entertainment facilities located on six levels.

Lawrence S Ng, project manager at Cesar Pelli, claims that it will "set new standards for Malaysia's retail industry in terms of the quality of design, planning construction and management".

The complex is the product of three different design firms: the local associate architects in Malaysia were the architectural division of KLCC Berhad. Cesar Pelli & Associates was responsible for the initial conceptual planning of the crescent-shaped shopping mall, the architectural design of the public atrium skylight and the enclosing glass wall. Walker Group was responsible for the layout and interior design for the shopping centre.

Tuan Haji Abdul Raahim Naim, Chief Operating Officer at the KL City Centre Berhad points out that while the design of SURIA is similar to other American retail centres – it is governed by certain fundamental planning principles, such as the clarity of circulation anchored by major department stores – careful attention has been given to making the design relevant to its specific tropical locale. Ng claims that "unlike North Americans, Malaysians dislike the discomfort of heat and direct sunlight so in lieu of a glass roof the centre atrium at SURIA, is enclosed by a petal -shaped glass and metal atrium roof with its stepping exterior profile sensitively designed to balance the desirability of natural light and the need to offer shade from the strong sunlight and shelter from the intense heat". Demands by local architects have also had a strong influence on the planning and layout of the shopping centre. There are a vast number of small retail tenants who demand stores with shallow lease depths and narrow storefronts.

Similarly, the design of the exterior sought to capture the spirit and character of the local culture so that the treatment of exterior arcades and canopies are modern interpretations of the "five-foot way" commonly found in traditional shop houses in Kuala Lumpur. This includes exterior balconies facing the lagoon and a park creating space for outdoor cafes. The ceiling fans on the balconies not only provide physical comfort but also greatly enhance the sense of place.

Lawrence Ng describes the complex as "a people place" where shopping, dining, entertainment, leisure and cultural pursuits are located within close proximity of each other. In addition to two major department stores and over 250 specialty shops, a 5,574-square-metre cineplex and a hi-tech entertainment centre there is Petrosains, which will be the world's most innovative petroleum discovery centre. Facilities also include the Dewan Filharmonik Petronas, a world class 860-seat philharmonic hall, and Galeri Seni Petronas, an international art gallery. Immediately adjacent to SURIA is the 20-hectare KLCC Park designed by the late Brazilian landscape architect, Roberto Burle Marx.

Atrium of the mall at the base of the Petronas Towers, KL, Malaysia

Liang Peddle Thorp Architects & Planners: Shanghai Lotus Centre

Wal*Mart, the largest megastore retailer in the United States has already expanded into Mexico and South America and has recently moved into the Asian market. Wal*Mart trawled the region interviewing 20 architectural firms who might act as the "in-country consultants" and eventually chose Hong Kong practice Liang Peddle Thorp Architects and Planners (LPT) in association with Mott Connell in 1995. LPT has extensive retail experience throughout the region and researches "value-added concepts" for each scheme, to ensure maximum return and efficiency for its clients.

LPT is the lead consultant responsible for the production of stores in Pudong, Shenyang, Shenzen (all in the PRC) and Jakarta, Indonesia. An information management system relating to design and construction information, developed by Wal*Mart's consultants, Gensler Architects, was used. This is based on a process philosophy and assumptions of a proto-typical product, always acknowledging that within each country significant cultural and practical differences will affect the design. In China, for example, Wal*Mart's trademark blue has connotations of funerals, and was consequently changed to a Communist red.

The Chinese stores were built for the Wal*Mart (USA) /Lotus (Thailand) joint venture – which later dissolved to create either Wal*Mart or Lotus stores. Due to prohibitively high land costs in city centre locations stores in Asia are often anchor tenants within high-rise developments. This however, was not the case with the Lotus Supercentre in the Pudong district of Shanghai. LPT inherited a Wal*Mart shed prototype, to which they added the ubiquitous Chinese pitched roof. The US$16 million Supercentre consists of two and a half levels of retail, for which LPT was also the interior design architect, plus underground parking. Bicycle ramps and parking allocation for the bikes had to be considered, as well as collection points for trucks collecting the larger loads. Local codes stipulated that the underground area be made available for future use as a bomb shelter.

›interior of the sports department.

Time will become a huge issue for European consumers over the next five years, predicts Paul Hanegraaf, managing director of the UK branch of RTKL. "We are seeing the lines between entertainment, retailing and hospitality blurring in Europe. Shoppers will seek out a place to visit that provides all those elements." Branding is also yet to reach the same importance in Europe as it has in America but as retailers increasingly equate strong store branding with success, they will invest more in creating a brand through all channels of marketing, including a prominent store design element. A classic example of this is Swatch, which demands the use of new interactive media within design as the company believes the only way to maintain loyalty is to create an experiential shopping destination. "There is a change on the horizon in Europe," says Redl, "design is now more intelligent,

Cost considerations

Gary Mardon of Hanscomb lists the following criteria for providing out-of-town retail malls.

Open or enclosed
Obviously, closed malls require expenditure for roofs, walls, finishes and environmental conditions.

Finished shell space
For enclosed malls the ratio of finished to shell space will affect total costs.
Analysis of constructed shopping centres indicate the following space data:

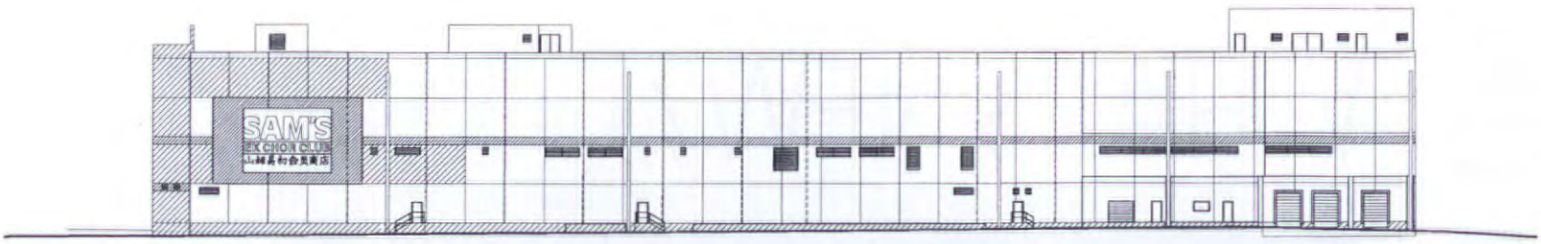
Gross lettable area	70-77%
Mall area	18-24%
Service corridors/ mechanical	5-6%

Scale of spaces provided
The relationship of the small scale retail spaces to the larger scale supermarkets and department stores affect costs. Generally, major department stores are constructed separately by the retailer.

Parking
The quantity, type and location of parking depends upon zoning, site size and number of mall levels.

Building configuration
On a two storey enclosed mall in Massachusetts, Hanscomb engineered a 25 percent cost saving by changing the layout. At the same time the gross area was increased.

Extent of skylights
These can account for US$45-55 per square metre of gross area.



Sam's Club, Shenzen, PRC, 1996. By Liang Peddle Thorp Architects or Hong Kong

more subtle. Quality is improving and we are seeing a new generation of architects that are not bound by the traditions of the past and are producing centres with innovative use of design and materials".

The Asian experience

Not surprisingly the design, dynamics and market forces of retailing in Asia are different from elsewhere. While the USA has provided inspiration for peripherals, planning and conceptuals have always been uniquely Asian owing to the vastly different market conditions. Retailing in Asia experienced a surge in growth about six to seven years ago but with the advent of "over-retailing" as Keith Griffiths of Hong Kong based Liang Peddle Thorp Architects and Planners calls it, competition between merchants has intensified, causing retailers to think more about how to capture market share, which has led to a corresponding increase in sophistication.

The primary difference found in Asian shopping centres is that developments are mixed-commercial multi-level developments. Projects typically have further levels of offices and/or accommodation on top of four to five levels of shops, in addition to the retail centres housing health clubs, cinemas and even museums. For example, the FRCH-designed Bangkok Dome Plaza in Thailand is 213,670 square metres that includes offices, a hotel, cinema, aquarium and a 15,000-seat stadium. Contemporary design and innovation is high on the Asian agenda and, as Kratzer says, "in the West its function first, whereas in the East, it's design first". Diversity in interiors is left principally up to merchants as general areas are so high-traffic that the focus is on store fronts rather than the communal areas.

All projects and design concepts are, of course, currently being overshadowed by the recent economic crisis but not as dramatically as some might think. According to Griffiths, all projects are on hold in Thailand, Malaysia and Indonesia although in Singapore only projects in the planning stage are on hold. In China only fringe projects have suffered. Hong Kong, however, has generally escaped the damage. "I think we'll see the markets picking up again in 12 to 18 months in Thailand and Singapore, and within two years in Malaysia. But until there is a significant change in circumstance in Indonesia, the market will remain depressed," outlines Griffiths. The upshot of the situation is that the lower end market of out-of-town hypermarkets is experiencing growth. People are now prepared to travel for budget merchandise and foreign names like America's budget-priced Wal*Mart and France's Carrefour are finding success in the current economic climate. Their establishment also denotes a general pattern in international retailing names entering the Asian markets. Another paradox of the downturn, remarks FRCH's Brett Kratzer, is that "firms like ours had tended to overlook the amount of work available in the USA because of the boom in Asia but the downturn has made us look back to our own markets".

So, as retail evolves, the role for the architect is an important one – that of designer, brand consultant, and facilitator of exciting experiences. While this list might read like the resume of a superhero, it can be achieved, through understanding of shoppers and retailers, and a little imagination. WA

Impact fees charged by local authorities

Some developers will have to pay significant contributions towards roads, utility connections and other infrastructure costs. Hanscomb provides the details.

Other variables include the extent of services provided to the shell space and the quality of common areas – special equipment like sculpture and fountains, and attractions ranging from rides and entertainment facilities need to be costed carefully.

The mall, which is approximately 25 percent of the total gross area, can account for 50 percent of the project costs (which includes foundations, structure, roof, skylights, finishes and services) in the USA.

The best way to assemble a budget is to prepare a standard mall type of a given size and break the costs down to the various elements. The average US costs shown in the table represent an enclosed two-storey mall with four or five anchor stores and about 50 other retail stores. For approximate costs at other locations, these costs can be factored using the Hanscomb Index published each December in *World Architecture*.

Element	Cost US$/m2
Substructure	43.00
Superstructure	130.00
External enclosure	43.00
Roofing/skylights	75.00
Interior construction	81.00
Conveying systems	32.00
Mechanical	91.00
Electrical	43.00
Total	**538.00**

The factory outlet, also a regional retailing concept, is a popular retailing trend of the 1990s in the USA and elsewhere, averaging about a 15 percent growth rate over the past ten years in the USA although it might be slowing. They are cheaper and simpler to build than the regional mall. Average construction costs in the USA can be as low as US$150 to US$175 per square metre plus US$100 to US$120 per square metre for tenant improvements.

BATHROOMS & SANITARY FITTINGS

WHAT'S NEW?

1

There was a time when a bathroom was designed as a purely functional room. But as the years and decades have gone by corporate clients and the home buying public have demanded, or at least come to expect, more from designers of "the smallest room". Developments go from strength to strength, and around the world there is now a rich seam of bath and sanitaryware products from which to choose.

One of the more recent introductions from **Jacuzzi**, for instance, is the **Twin Tower** – an innovative tub/shower combination. The enclosure is designed at the foot of the tub in an effort to bring additional space to shower users. Two glass panels make up the enclosure – one fixed and the other serving as a door – for corner applications, while a third fixed panel is added for centre wall installations.

While warm-air dryers are commonplace in washrooms around the world, body dryers are not so prevalent, particularly in domestic applications. British company **Eco Bodydryers** is aiming to break the old habit of using towels with an effective, hygienic unit which can fit into the corner of a room, attached to the bath or in the corner of a shower cubicle. Surrounding air is drawn into the control unit where it is heated and then blown down the vertical column and out through tear drop shaped holes.

Creativity and innovation in the design of the **Hot Springs** radiator from **Bisque** has resulted in it being

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chosen as one of Britain's Millennium products. It is a continuous coil of steel tube inspired by the "simplicity and power" of the spiral. Available in three different sizes and a range of colours and finishes, it offers effective output and thermal efficiency.

Stylish radiators are also available from **Acova** and **Myson**. From Acova, the Traditional range brings the feel of a bygone era to the bathroom. Six designs are available – all ball jointed for authenticity and quality. One of the pick of the crop from Myson is the Aloha curved multi-rail towel warmer, available in a range of designs and finishes. They are made in tubular steel for use on closed or indirect central heating systems.

Widely used across the hotel and leisure sectors is **Corian**, the solid surface material from **DuPont**. It can be formed into virtually any shape while bringing durability and hygiene to the installation. Suitable applications include public washrooms, and with a range of over 60 colours from which to choose, the company offers the flexibility for creative designs.

Inspired by the waving hair of the goddess in Botticelli's Birth of Venus, the **Medici** is a complete bathroom range from **Duravit**. Characterised by the ceramic wave, which appears as a frieze on the sanitary ceramics, as a rosette on the accessories, and even on the ceramic countertop of the furniture, the collection offers 15 sanitaryware elements.

Described by manufacturer **Hoesch Metall+Kunststoffwerk** as a family of 12 members, the **Armada** range includes hexagonal bathtubs, an octagonal bath tub and matching shower trays to cope with most room lay-outs. The basic form of the seven hexagonal Armada bathtubs is the same. Dimensions, however, vary from 1,600 by 750 millimetres to 2,100 by 1,000 millimetres, and there are also different depths.

Fitted vanity units are a speciality of Italian company **Mobelhaus**. Designs include **Harmony**, a two-person design measuring 2.12 metres long. Features include double washbasins and a stylish, imposing mirror. The black marble finish on the top surface, and used as inlays in the doors, bring a stylish look to this quality design, which is just one of a host of options from the company.

Bringing together a wide range of products from a variety of manufacturers, **Original Bathrooms** can cater for most tastes. One of the more innovative designs it has on offer is the **Gabbiano** – an unusually styled basin which resembles a capped-off curved trough rather than a conventional bowl.

Drawer fronts in indigo blue or cherry maple wood effect feature on the new **Damixa Softline** bathroom furniture from the **Berglen Group**. The wall-hung units are supplied fully assembled, and decorative items can be displayed on the shelves down one side of the mirror. Produced in white or cream foil-wrapped mdf, with gently rounded edges and corners, this range features a chrome finish bow handle.

News, and product showcase overleaf, compiled by Phil Stronach.

1: The Medici range by Duravit

2: Corian from Dupont, widely used in the hotel and leisure sector, can be formed into virtually any shape

3: The Twin Tower tub/shower combination from Jacuzzi

4: Installations from the Armada range by Hoesch

5: Damixa Softline bathroom furniture from Berglen

6: Armada range by Hoesch

PRODUCT SHOWCASE

Armitage Shanks in Hong Kong

1

Armitage Shanks takes pride in the fact that it has been involved with almost every major hospital contract in Hong Kong in the last 15 years. From its nine UK manufacturing sites, the company produces an extensive range of products to suit a variety of applications including hotels, schools and domestic housing, and one of the biggest collections specifically designed for hospitals and special care needs available in today's market.

This more specialised range of hospital fittings has found a large and important market in Hong Kong. Until last year, being a British colony, Hong Kong tended to follow British specifications, for which the company was ideally suited, limiting the competition to those that could cater for the specification demands. Among the projects on which the company has been involved was the Pamela Youde Hospital (named after the wife of former Governor Sir Edward).

One of the products selected for the many hospital schemes with which the company has been involved is the Portman basin. This unit is widely specified in a range of commercial applications, including factories, office blocks, motorway service areas and hospital and healthcare sites. One of its features is a strong fixing bracket which helps reduce the risk of damage.

The company has also supplied Markwik mixer taps, and the Contour urinals and lavatories for hospital installations. The lavatories feature clean lines, and no exposed trap – ensuring a high level of hygiene is maintained.

World Architecture asked regional exports sales director John Merrick if this has now changed, or is likely to change, with Hong Kong now being under Chinese rule. He believes that there will not be any significant changes at the moment. "We've been told that, for the time being at least, the specifications remain as they were. There have been no proposals to change the specifications in most applications, including hospitals."

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Currently, the company is very active in supplying sanitaryware for schools because the child population in Hong Kong is increasing as children flock in from mainland China. This has prompted the need for the construction of more schools, with much of the sanitaryware coming from Armitage Shanks' standard range, although low height lavatories from the Junia range are one of the specialised products the company has on offer for the younger children, and featured in the schools project.

Hotel work has included the Regal Plaza where the top-of-the-range Concept suite lavatories were installed into some 400 rooms – selected purely from a design point of view. In fact, the hotel chain was so happy with the installation, the same goods have been specified for the new 1,000 room Regal Airport Hotel now being built adjacent to the Chek Lap Kok airport.

1: The top-of-the-range Concept suite

2: Contour fittings used in Armitage Shanks' hospital contracts

3: The Junia low-height lavatory

3

Davidon Homes and Jacuzzi products

Based in the San Francisco bay area of the USA, Davidon Homes is a well respected building company which makes use of Jacuzzi products on a regular basis. As John Albino, vice president sales and marketing states: "At Davidon Homes, it is a priority to build quality homes that offer the amenities consumers are demanding. Homeowners worldwide are looking for ways to make their homes more comfortable and enjoyable. One area of the home which has dramatically evolved over the years from a utilitarian area into a source of relaxation is the bathroom."

Whirlpool has steadily increased in popularity throughout its lifetime, and Mr Albini is witnessing greater demand from prospective home owners for this type of product. As he states: "We've found that whirlpool baths are very well received, and actually required, by today's homeowner. And as the builder, it is vital to use a reputable, brand name manufacturer, like Jacuzzi."

A wide range of products has been specified by Davidon homes throughout the years. They include the Signa 6 two-person bath which features a rounded rectangular shape which fits into any design setting. It is made from reinforced glass fibre and moulded to maximise the bathers' comfort. Another product which has proved popular is the Luxura which combines a soothing hydromassage through four directionally adjustable PowerPro jets and two foot jets. In addition, bathers have control over the whirlpool action by adjusting the air to water mixture.

Using reliable manufacturers throughout the house reflects positively on the builder, Mr Albini notes, while offering added resale value to the homeowner.

1

2

1: Jacuzzi's Signa 6 two-person bath

2: The Luxura bath, used by Davidon Homes

1

The Bathroom Studio - tower in Co Durham

In one of the more interesting projects The Bathroom Studio has been involved with, a fortified tower in County Durham, England, has been converted into living accommodation with "all mod cons" – and this includes bathrooms which feature some of the latest designs in baths, sanitaryware and ancillary equipment.

The tower features upper, middle and lower bathrooms, together with a "bachelor" bathroom which is ensuite to two rooms and two cloakrooms, with the owner, Mr McDonnell, being heavily involved in the finished design. On the main tower bathroom and the cloakrooms, the company styled them with Sanitan equipment to enhance the traditional "feel" of the property. More private areas called for function and style.

As Michael Fields, showroom manager and designer at the Middlesbrough branch puts it: "Although a diverse range of manufacturers were called upon, the finished product is a classic design with modern influences." Manufacturers represented in the finished scheme include Villeroy and Boch, Bisque for the radiators, Nordic Saunas and Teuco, with cabinet work being carried out by the centre's own staff.

Heating is provided by Bisque Cobratherm radiators – in a chrome finish for the bachelor bathroom, and a blue finish for the lower tower bathroom. The sauna was model 3A from Nordic Saunas, which has been enhanced by the installation of timber cornices and skirting board to give it a traditional appearance. Alongside this is the Teuco 114 Wave shower unit which comes complete with full length mirror, built-in seat, accessory shelves and a bath. One of the latest product developments from Teuco – a hydrosonic bath – was considered for this bathroom.

2

1: The Bisque Cobratherm radiator

2: The Teuco 114 Wave shower unit

Jacob Delafon - Jin Mao building, Shanghai

When completed, Skidmore Owings & Merrill's Jin Mao Building in Shanghai will be amongst the tallest buildings in the world, with the top 45 floors taken by the Grand Hyatt hotel. For this scheme, Jacob Delafon supplied 100 Trocadero one-piece lavatories for the suites. Trocadero offers the specifier an award-winning collection of baths, sanitaryware and fittings in a variety of natural materials to create a co-ordinated collection.

Working closely with designers from the ADSA agency, the company has created a collection that is modern and durable, with more than a hint of French spirit and style. It allows the consumer or designer the flexibility to create an individual style or atmosphere. As the company states: each function, each piece and its position in the bathroom has been studied to create a coherent line, with three main objectives. These are: the integration of each element, a modular structure giving the freedom to arrange the various components of the line and the functional character of each product and each item.

1: Jacob Delafon's Trocadero one-piece lavatory, to be used in the Jin Mao building, Shanghai

2

BM Stainless

BM Stainless' new flush-fit floor drains are a product that the company hope will make the wider adoption of European style "wet bathrooms" in the UK possible. Wet bathrooms, where the entire floor area is waterproof and drained, are a common feature in most European homes. However, until recently their use in the UK has mainly been confined to commercial applications such as hotels, showers for the disabled, offshore sites and student accommodation.

With a track record of activity in the commercial sector BM Stainless, a leading European manufacturer of stainless steel drainage systems, is now turning its attentions to the domestic market. The company expects the trend towards private wet bathrooms in the UK to accelerate as their practicality and suitability to today's busy lifestyles becomes more widely appreciated. They are easy to clean, and require only a simple shower curtain as opposed to a space-consuming full size cubicle. In the event of a blockage in a traditional dry bathroom the shower tray often has to be removed, but the BM drain lifts straight out of the floor if necessary. Peter Hastwell, Managing Director of BM Stainless says, "Their novelty value, the pleasant aesthetic appearance of stainless steel and their ease of maintenance makes them appealing to home owners who want something that is easy to look after and a little out of the ordinary."

Economies of scale in the manufacturing process have enabled BM to compete with traditionally cheaper cast iron and PVCu drains and the company offers a range of drainage products to cover different wet bathroom construction techniques and floor treatments, putting them in the position to play a major part in the "Europeanising" of British bathrooms.

2: BM Stainless flush-fit floor drain

Hansgrohe – Cunard liner Queen Elizabeth II

"Large oaks from little acorns grow" – so goes the well used proverb. That was certainly the case for John Brunton, contract sales manager in the UK wing of Hansgrohe, when a postal enquiry led to the company being involved with two major refits of the Cunard liner Queen Elizabeth II. Taps from the Mondaro and Carlton ranges were selected along with Croma shower equipment and accessories for installation in most of the ship's bathroom facilities. An important point with the accessories was that they are designed to complement the shower gear and taps, bringing a consistency of style to the installation.

Representatives from the design companies and engineers from the shipping line provided an audience for a presentation given by Mr Brunton, and they were particularly interested in both the low maintenance and water saving characteristics of the range.

Keen to promote the fact that its mixer valves and taps have marine approval, the company needed to ensure that its goods could take the pressure. Even at three bar pressure, Hansgrohe basin mixers will use just seven litres to eight litres of water per minute (other manufacturers' mixers could easily use double that amount). Another consideration that had to be taken into account was that the liner has pressurised water systems which have a tendency to surge. Consequently, bathroom fittings have to be capable of coping with these pressure surges, and the Hansgrohe range is tested up to 16 bar.

Low maintenance is often a prime consideration on any installation, and even more so on a liner which is often hundreds of miles out to sea. Shower heads are self cleaning, an important feature as the water is not fully softened, so calcium build-up is something that has to be considered. To ensure the health and safety of users, an anti-siphoning device, known as an anti-vacuum wall outlet, is fitted to prevent any back-siphonage of contaminated water into the system.

Mixer taps and valves have a stainless steel ball technology which is unaffected by calcium or any other contaminants. In the unlikely event of a repair needing to be made, it is simply a case of removing a cartridge and replacing with a new one.

1: The Carlton basin mixer from Hansgrohe

2: The Cunard liner QEII

3: One of the bathrooms of the QEII showing Mondaro taps

4: The Croma hand shower

5: Mondaro basin mixer

Taron ▸

Taron, the latest Grohe range, is a strong statement of progressive, dynamic attitudes coupled with an appreciation of culture and elegance. It is a very bold avant garde design for very individual bathrooms.

For further information, please contact:
FRIEDRICH GROHE AG
PO Box 1361, 58653 Hemer, Germany

New Stella's TC Mixing System ▸

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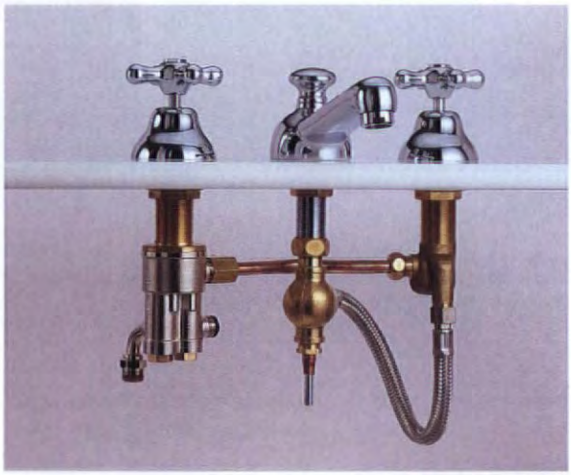

◂ Teuco 265

Teuco have introduced a new and more compact version of their successful 266 glass-panelled bathtub. The 265 features an underwater light which creates illuminated reflections in the water, ten-jet massage, whirlpool, and an electronic control panel which gives the user written messages!

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▲ Spazia

Both compact in size and affordable in price, the Spazia allows users to experience a surprisingly large amount of bathing space thanks to its concave/convex design. The Spazia treats bathers to five fully adjustable whirlpool jets and the hydromassage is further enhanced by an anatomic backrest and cushioned headrest.

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HANSACOBRA ▸

The untouchables
Innovative technology for more hygiene

The cobra snake lends its name and shape to an innovative new range of electronic fittings from HANSA Metallwerke AG. HANSACOBRA, the fittings for basin and urinal installation including exposed and concealed urinal fittings were developed with the public, commercial and medical sectors in mind. They provide the perfect solution to the strict hygiene regulations that govern the food-processing industries and medical and sanitary installations.

For more information about the HANSACOBRA range, please contact HANSA's Export Dept. on +49 711 1614-0

▲ Megaform-Extra-6

The unusual form of the Megaform and Megaform-Extra-6 are an eye-catcher in any bathroom. Not only that bathing in these baths is also twice as much fun. Firstly, because on your own you've got plenty of room to stretch out and, secondly, because even two can sit comfortably opposite each other. Identical reclining back slopes at either end and integrated armrests ensure perfect seating comfort. The design of the Megaform-Extra-6 is especially well suited to make ideal use of the available space because you can install the top of the bath in the corner or diagonally to the wall.
Size: 214 x 90 cm; Length of diagonal: 152.7 cm.

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Discover new dimensions to showering ►
Hansgrohe offer the broadest range of power showers, each style with its own co-ordinating mixer- and accessory line. Electronic thermostats maintain constant temperature and water pressure.

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▲ Khaja
Series of bathroom furnishing accessories, including mirrors, stands and rod-mounted accessories, made of brass in the following finishes: chrome, matt chrome, polished brass. The Khala line design is extremely distinctive but at the same time easily fits in with the most widely differing styles of bathroom. Colombo Design guarantees top quality materials and original metal galvanisation processes.

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▼ Vitra Form glass counter top with bowl – pictured with Vola HV1 single mixer. the purity of glass combined with the classic simplicity of Vola – the perfect solution. Available through Vola UK Ltd.

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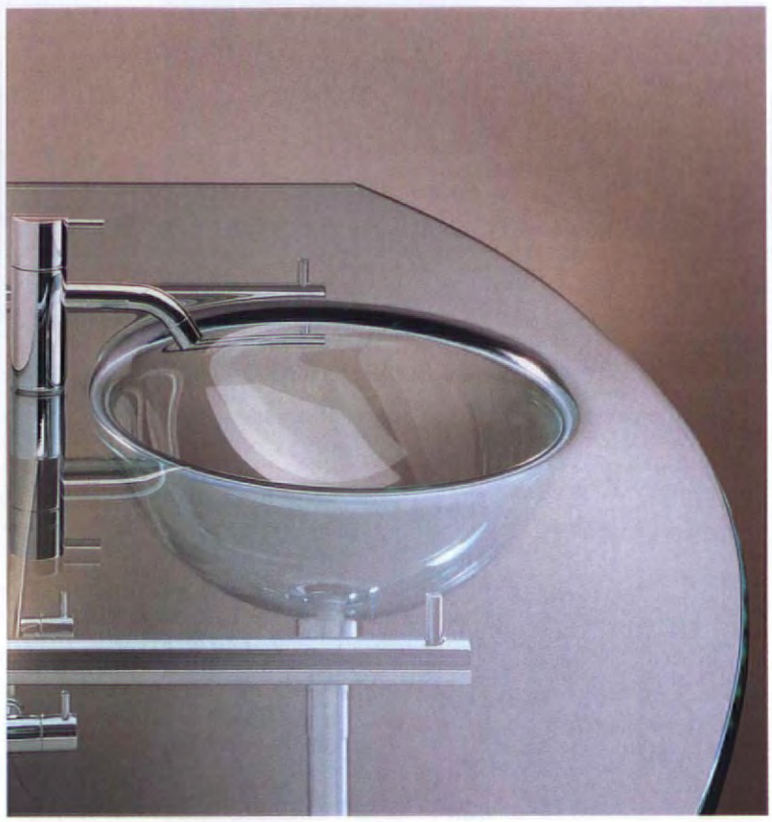

◄ ◄ ▲ d line sanitary panel programme
d line international as has developed a new modular sanitary panel concept intended for wall recessing. Their new stainless steel range is supplied in modules, each performing a particular function, meaning individual sanitary panels can be constructed with the exact module combination required. They have clearly been conceived with a wide variety of applications in mind, and d line hope that the product will be used in primary toilet cubicles, washroom areas and kitchenettes in commercial, institutional or residential environments.

d line™ international as
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Dr Johannes Haupt – Director of Marketing and Sales
Mr Mathias Sperling – Export Director

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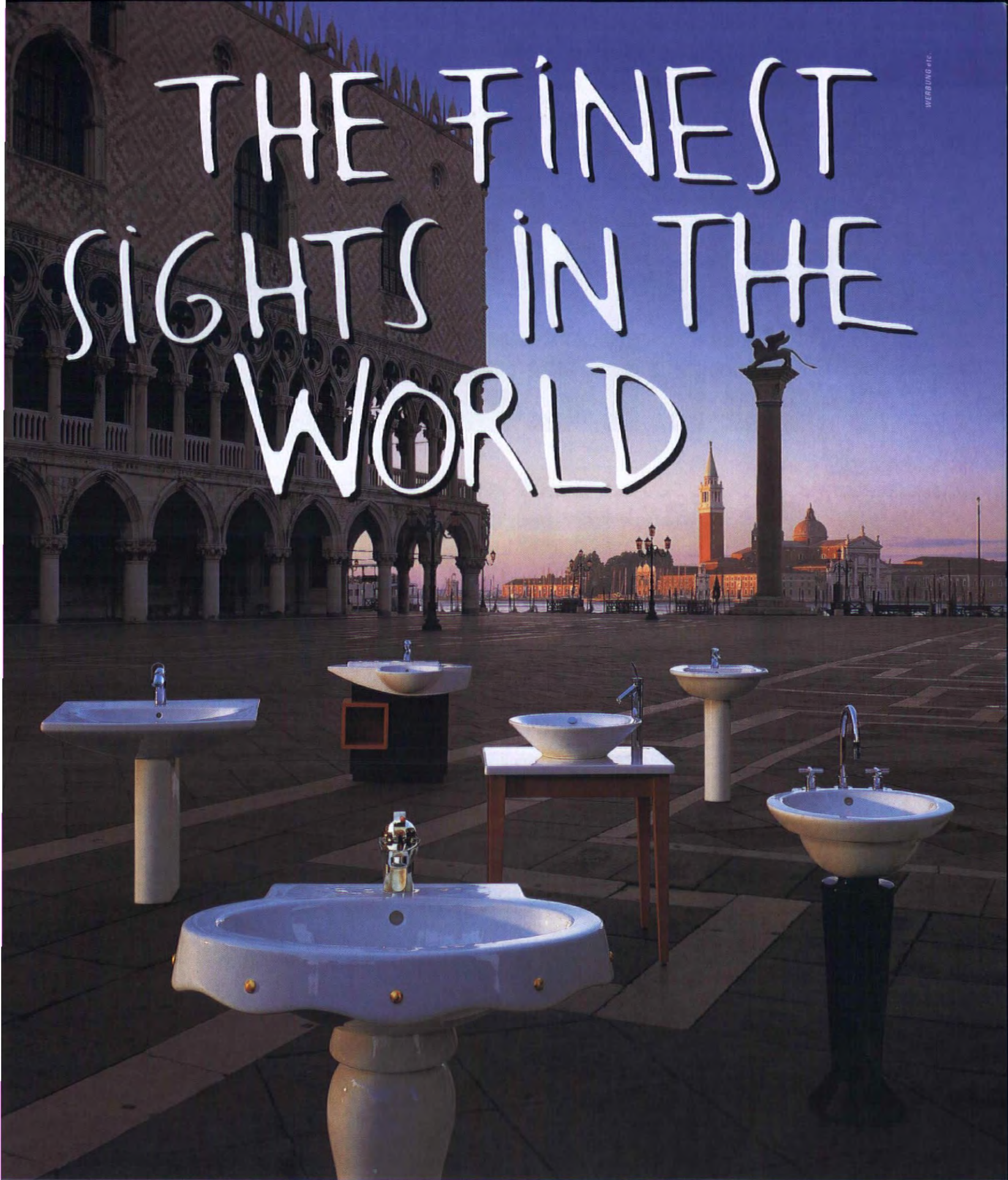
Company profile

History
HANSA Metallwerke AG, based in Stuttgart, Germany, near the Black Forest is a family-owned company. Established in 1911, by Karl Goehring, the company spent its early days manufacturing specialist components for the aviation, automotive and motor industries (still a flourishing segment of the company). In 1951 HANSA became involved in the sanitary industry and 1962 the first single-lever mixer was introduced by HANSA onto the market. This successful and innovative venture paved the way to the company becoming one of the largest manufacturers of sanitary fittings in Germany with more than 2,100 employees within the HANSA group. The company has eight subsidiaries (see list opposite) and is represented through distributors and agencies in over 50 countries worldwide.

Philosophy
The company philosophy of "total commitment to uncompromising precision" continues to be the guiding ideology behind all HANSA products. The combination of innovative technology and outstanding design quality has led to HANSA being voted the number one trade partner in Germany every time the sanitary trade has been polled since 1980. A testimonial to the commitment to quality in all areas that stand for the name HANSA.

HANSA today
HANSA offers a complete range of sanitary fittings for the bathroom and the kitchen including single-lever mixers, thermostat mixers, a rim-mounted bath system and a complete shower collection for the shower cabin or bath. A further new addition to the HANSA programme which was developed especially for the public and industry sectors is the comprehensive electronic series HANSACOBRA. Including electronic fittings for the basin and exposed and concealed fittings for urinal installation, this series offers water and energy savings of 70% as standard as well as the greater level of hygiene achieved by sensory operated fittings. Innovative technology for more hygiene and convenience.



It's worth taking a look at the Duravit programme, from the leading manufacturer of high-quality bathroom ranges. Sanitary ceramics, bathroom furniture and accessories. From classic to avant-garde, from elaborate to ascetic. By top designers like Philippe Starck. For more information, please contact Duravit, Post Box 240, D-78128 Hornberg, Germany, Phone +49-7833-70380

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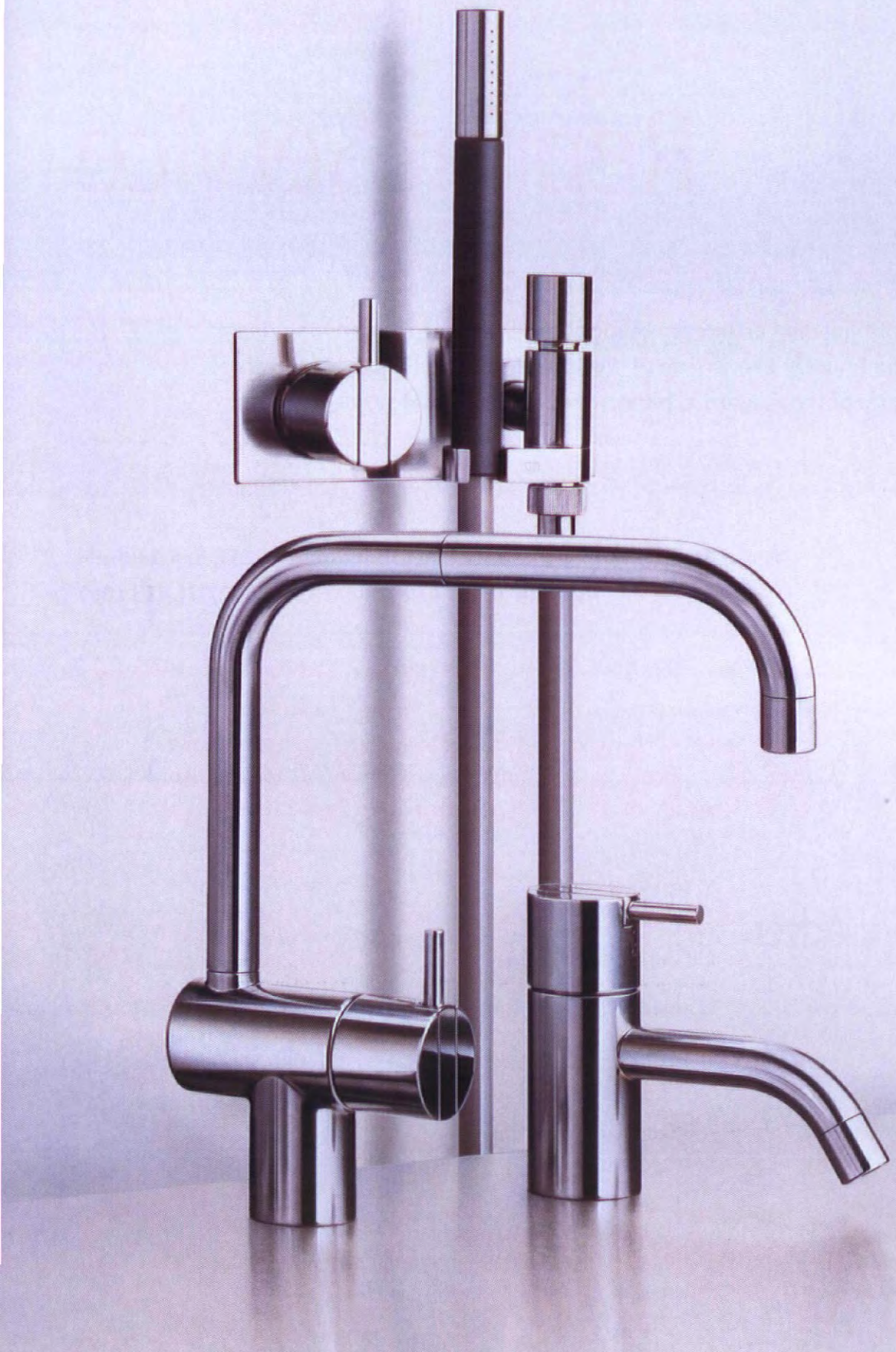

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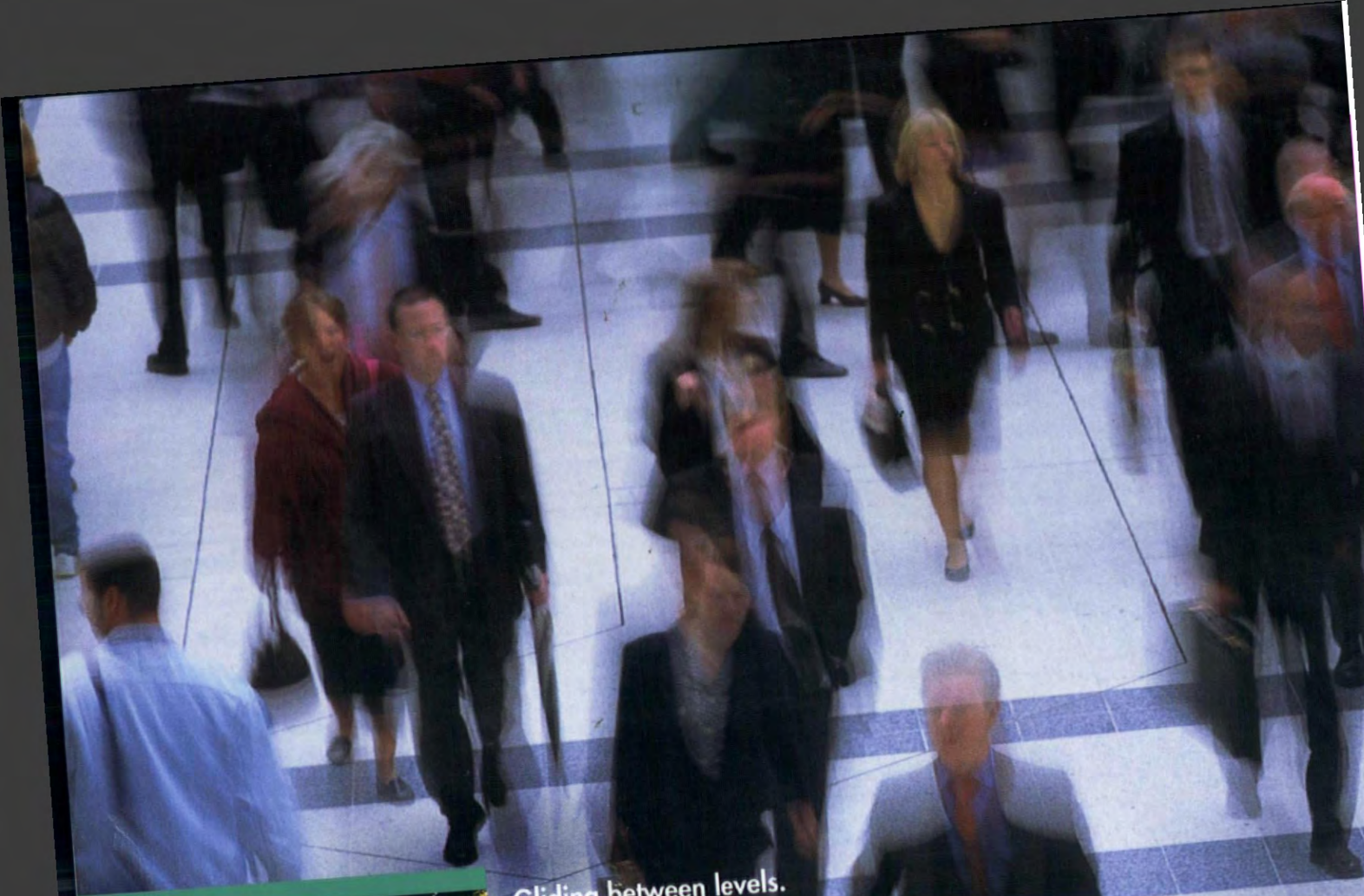

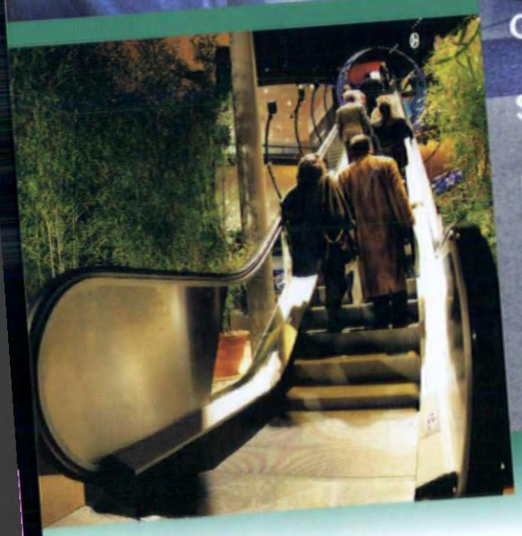

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