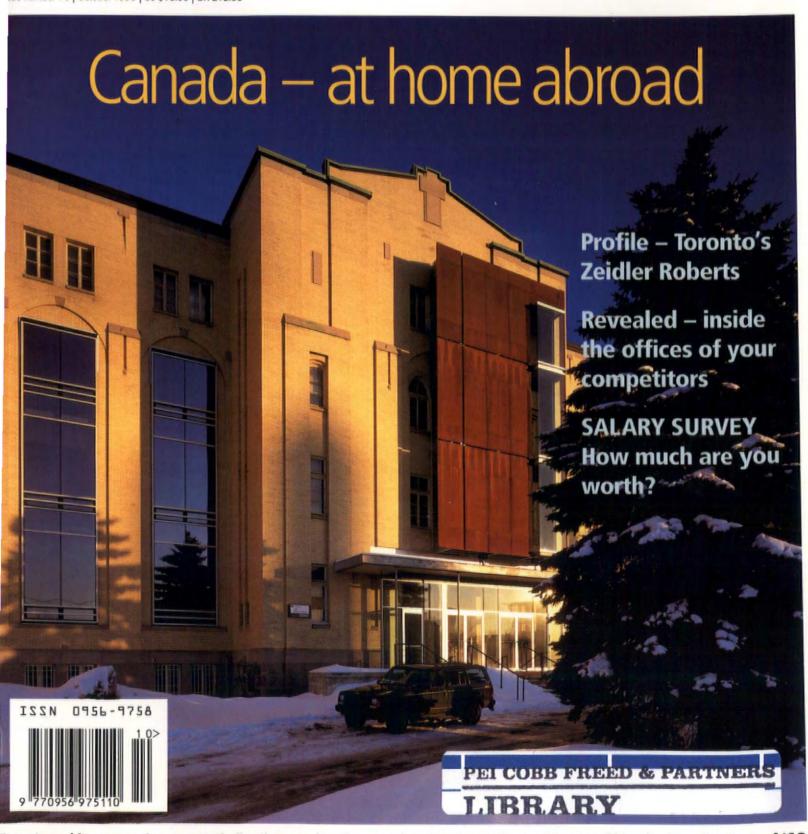
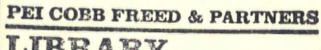
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Issue Number 70 | October 1998



Cover

Architecture school in Montreal, Canada by Saucier & Perrote's/Ménkes Shooner Dagenais

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Business

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- 54 Symposium In Toronto Canada's top architects launch WA's first symposium on the affairs of international business.
- Project reviews WA visits Bing Thom's concert hall in Vancouver, which is wired for sound; Patkau's progressive and controversial design for Strawberry Vale school, Vancouver Island; Saucier & Perrote and Ménkes Shooner Dagenais 's slick, sophisticated solution for the architecture school in Montreal and the Cirque de Soleil's zany but functional headquarters on a landfill site outside the city, by Dan Hanganu.

72

Profile - Zeidler Roberts Partnership

72 Canada's friendly giant

When a firm is successful on home ground the possibilities of international expansion can become a side issue. It's only 12 years since Zeidler Roberts, founded in 1951 and headed by German immigrant Eberhard Zeidler, first entered the global market. It is now one of Canada's best-known architectural exporters. Albert Warson reports from Toronto.

80

Sector Analysis - Architect's own offices

WA goes on a tour of architects' offices to assess the limits to which designers will go when they have to live in the space they've created, and when there's no one else to foot the bill. Offices under scrutiny include Renzo Piano's transparent hillside workshop in Vesima, Italy; Shim-Sutcliffe's garage conversion in Toronto, Canada; Richard Meier's minimalist warehouse and Ricardo Legorreta's homage to concrete in Mexico.

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Salary survey

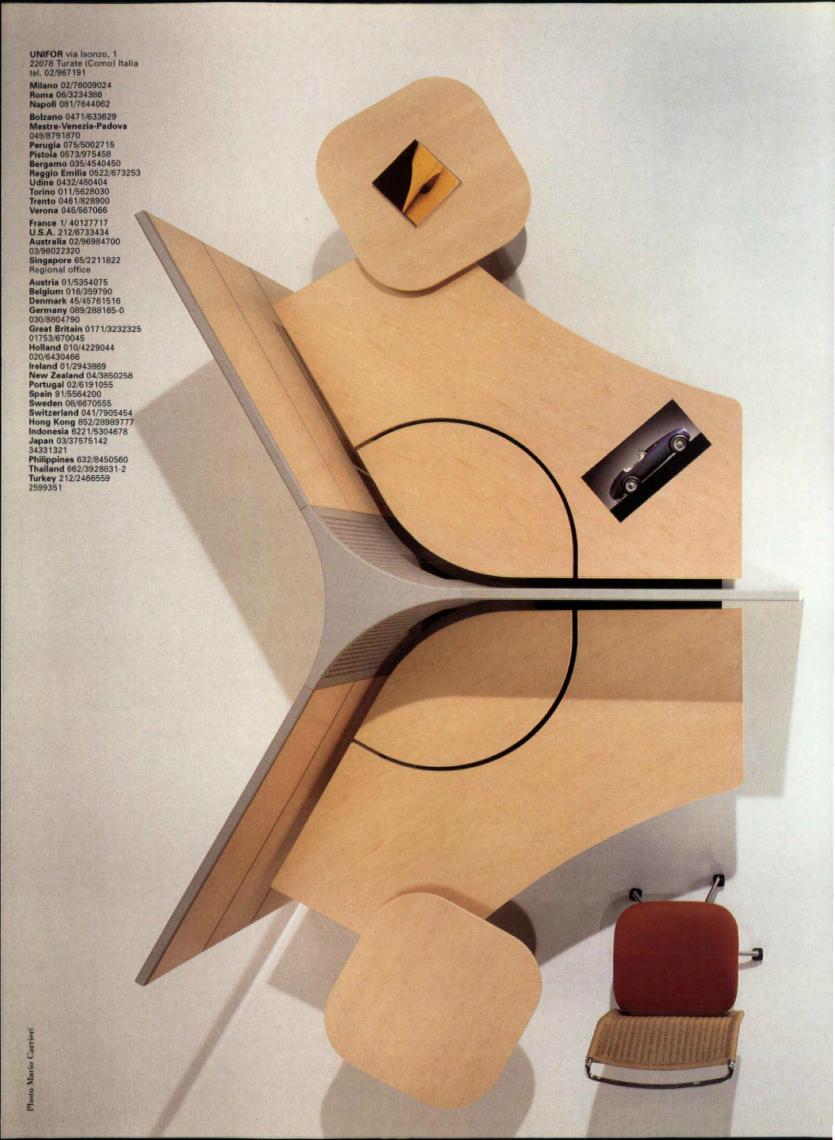
94 Last year architects were attracted to the "American Dream". This year Australia is offering the most attractive salaries and alluring benefits. European architects are justifiably jealous.

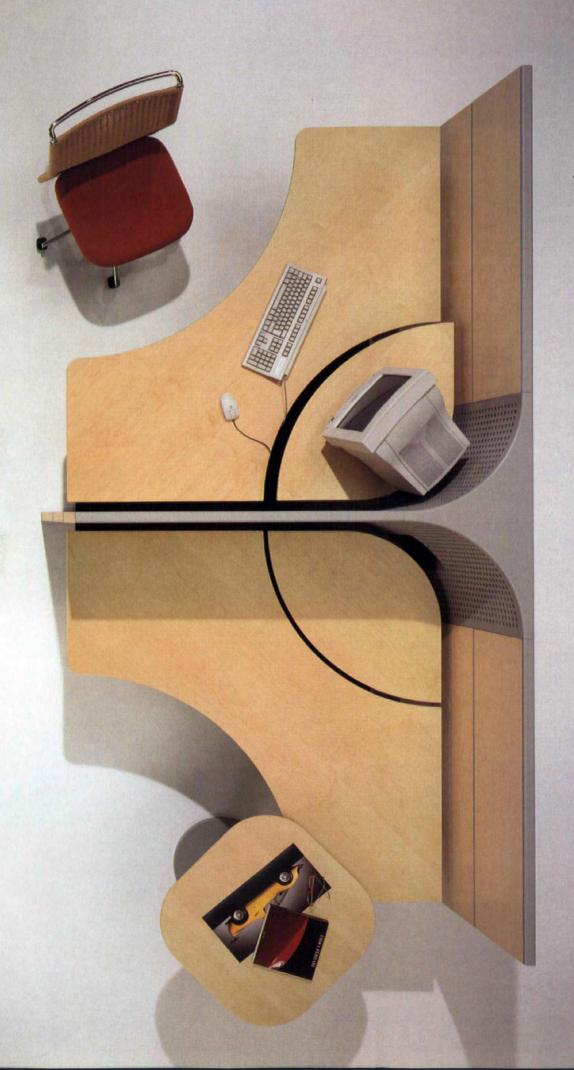
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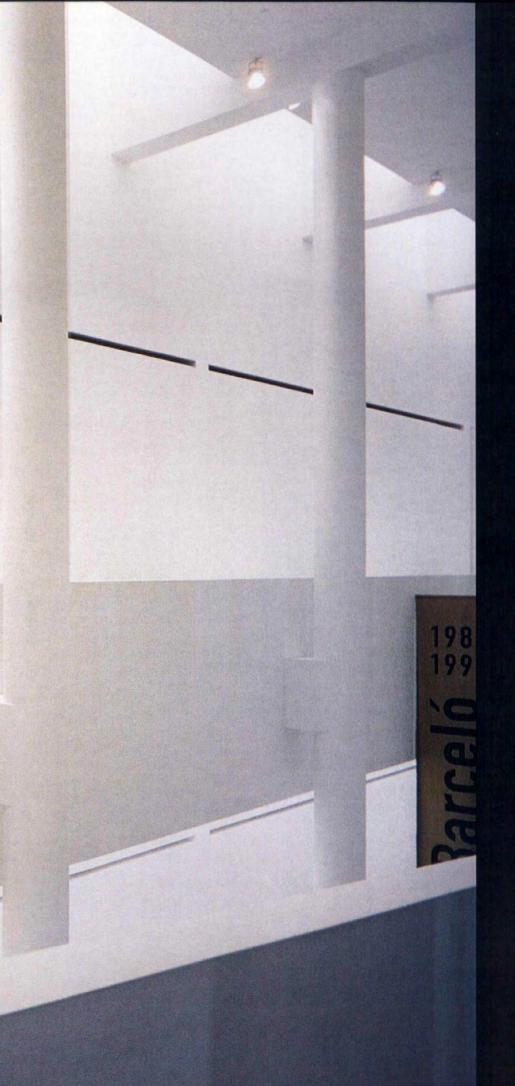
Products

110 Office furniture

Nicola Kearton reviews the latest new products from Neocon, and previews Orgatec. New office technology and additions to the many theories on the benefits of multifunctional office space and teamwork are influencing designs from all the major manufacturers, including Kusch + Co, Wilkhahn, Vitra and Herman Miller.







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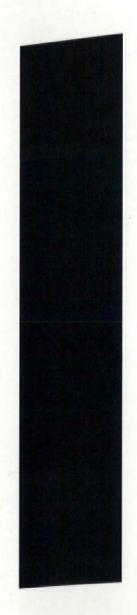
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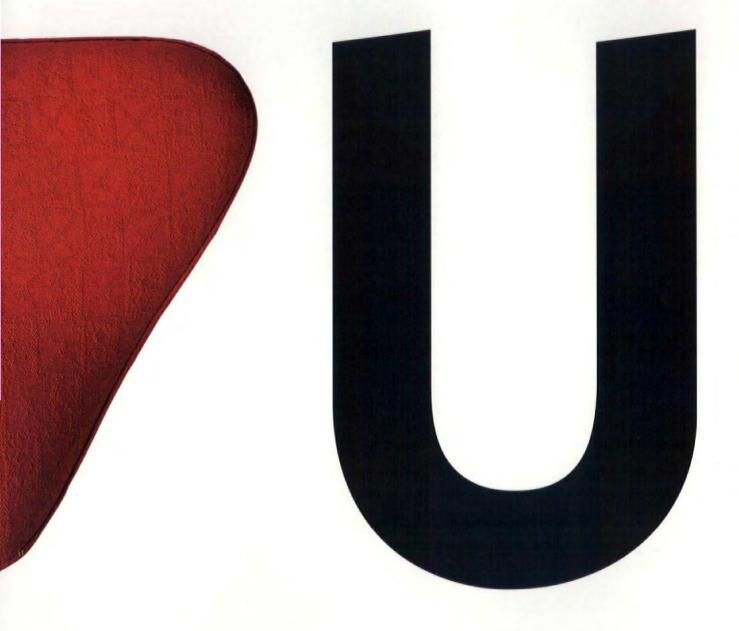
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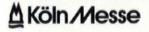
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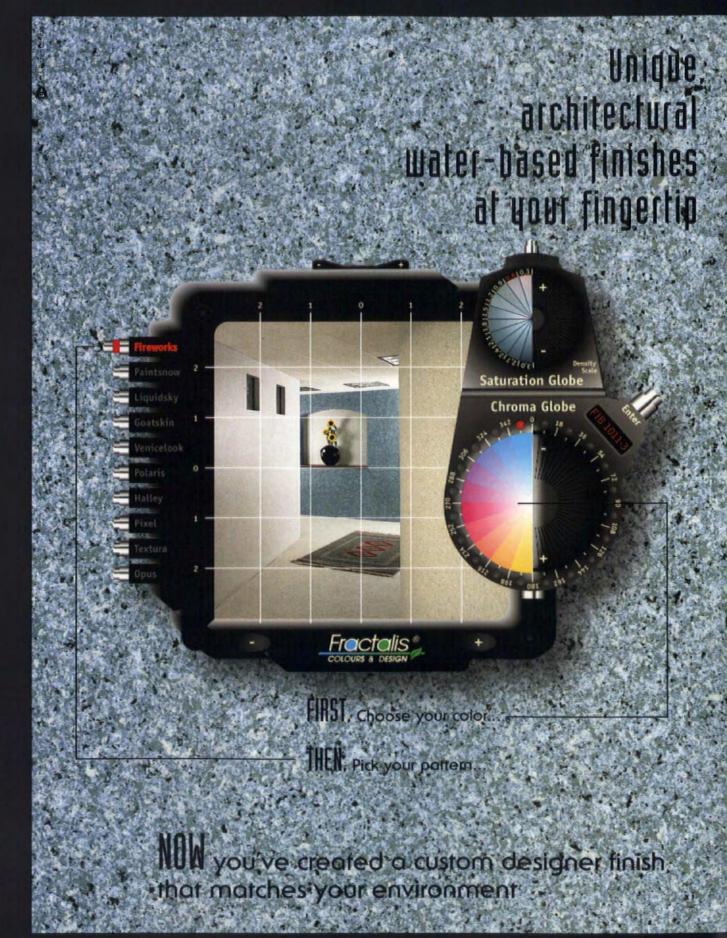
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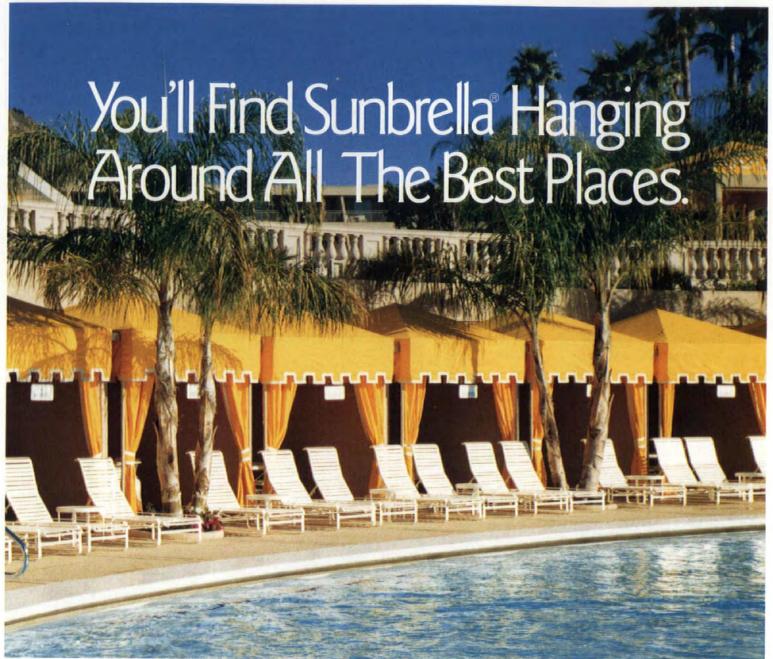




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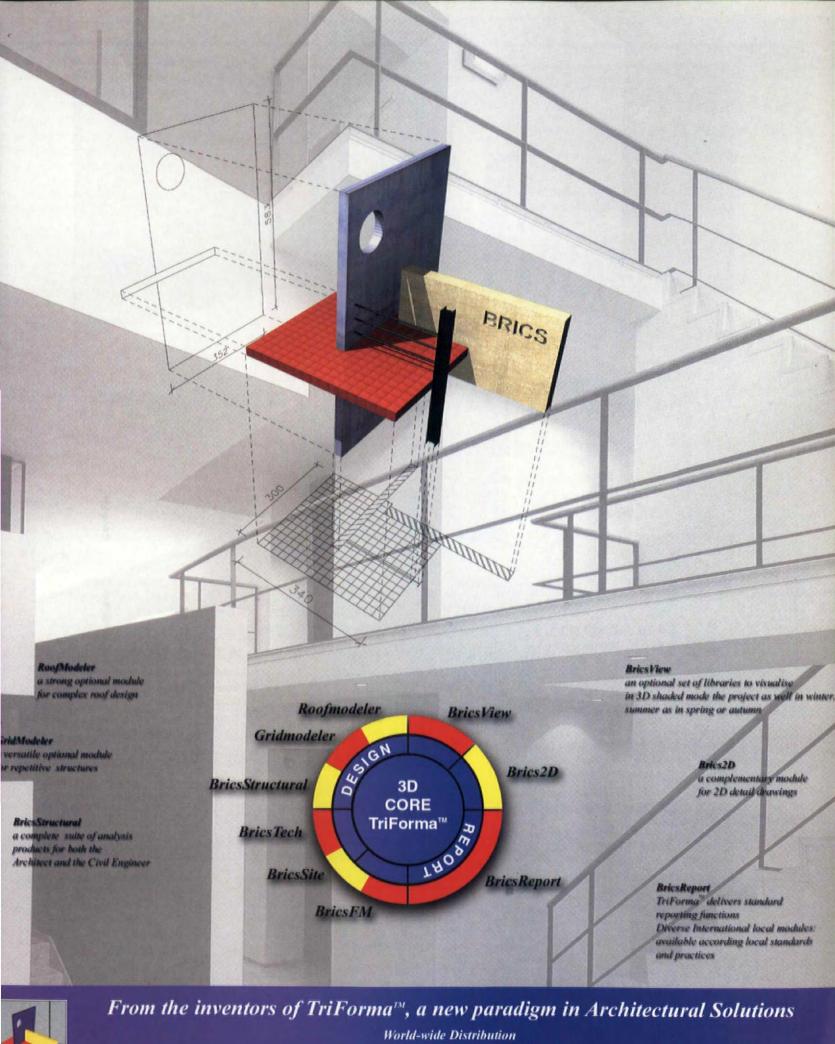




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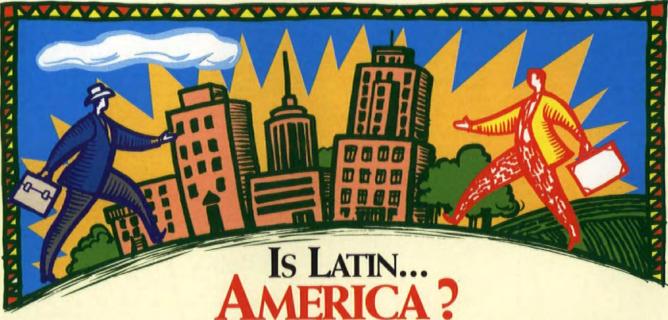




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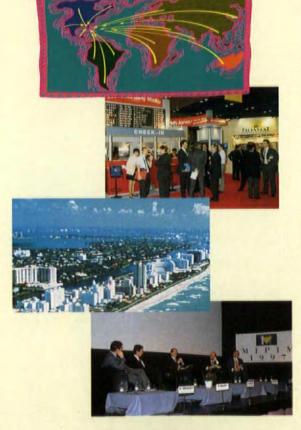
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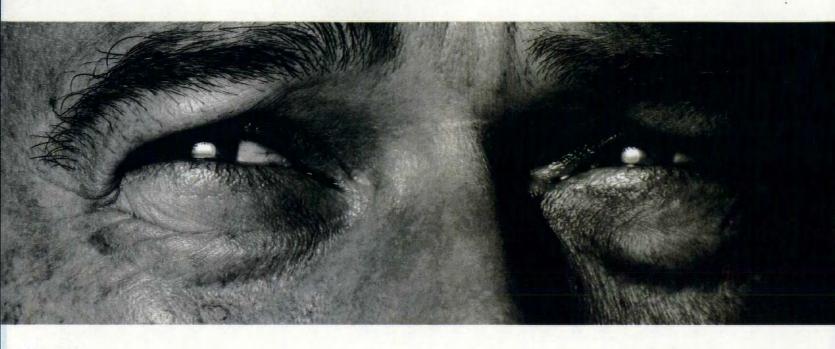




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Think global and act local

"Think global and drink local" it said in large red letters on a banner leading into the Toronto airport bar. Globalisation is a concept ingrained in the Canadian psyche like no other. Many of the representatives of Canada's international firms who attended WA's globalisation symposium in Toronto in June explained that it is the population demographic which defines Canada. "Our office is like the United Nations," explains Ian Grinnell of Zeidler Roberts. "Architects with diverse cultural backgrounds are emerging from Canada," Petroff Partnership's Paul Gogan claims, "and through their work 'abroad' – which is often their country of origin – they are redefining the role of the international architect".

With only two percent Amerindian and Eskimo, the ethnic composition of Canada's 30 million population is not unusually cosmopolitan for the New World. (European nationalities count for approximately seventy percent and, after Tiananmen Square, when Canada immediately nationalised all Chinese immigrants, the proportion of Asians has increased.) But what is unusual is that approximately fifty percent of Canadians living in Toronto are first generation immigrants – abroad is home – Canada is where they have chosen to live. Eb Zeidler described the dangerous circumstances in which he left the Bauhaus in Germany. He acquired Canadian citizenship and has subsequently worked "abroad" in Germany. Montreal based Dan Hanganu and his wife are still very involved in the architecture of their native Romania. Paul Tan de Bibiana has found work in China easier than his peers in Canada because he comes from China. And so the list goes on.

But Arthur Erickson challenges the call to "act local". His trail blazing practice was one of the first in Canada to work abroad. "It is fascinating, don't you think, that we need to be shifted out of our paradigms to understand our paradigm. Canadians are actually able to challenge traditional concepts because they have some distance. Take this courthouse for example," he says, pointing out of the window of a Vancouver coffee house at the building for which he is famous, "it challenges presumptions about the courthouse as a building type – but look at Potsdammer, just look at what is happening in Berlin – it's stifling isn't it?"

So which is best? Should you "act local" wherever you are, or "act global" to be freed of the burden of local traditions? Canada's experience sends conflicting messages. Perhaps the answer from the Toronto symposium is act global for your business and act local for your client. As for drinking, you can do that wherever you want.

Katherine MacInnes

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only way to get

ahead

Congress Centre in

Greenland

and Lassen

In next month's WORLDARCHITECTURE







Country Focus - Denmark

Despite gloomy predictions of a decrease in construction activity on completion of the Öresund Link earlier this year, Denmark's architects look set to enjoy a boom. Helle Bay reports on the business of

Danish architecture, where a third of all practices are one-man bands. Nielsen Nielsen and Nielsen's design for the world's largest saltwater aquarium, in Hirtshals, on the North Sea, is reviewed in detail. Plus Hou and Partners Roskilde Harbour Centre; Henning Larsen Tegnestue's extension to the Carlsberg Glyptotek

and the Danadata headquarters in Aarhus by Schmitt Hammer & Lassen. Poul Ove Jensen of Dissing and Weitling talks to WA about the firm's impressive record of international bridge-building.

Sector Analysis -**Convention centres**

Chuck Twardy tucks his laptop under his arm and joins hoards of international businessmen to discover what it is that makes or breaks a convention centre. As firms increase global activity, and travel becomes faster and more economical, meeting in Honolulu or Hong Kong is becoming a more attractive option than teleconferencing or surfing the web. The latest in state of the art design is reviewed, including Foster & Partners' recently completed Congress Centre in Valencia, Spain, and the renovation and expansion of Salt Palace in Salt Lake City, Utah, by Thompson, Ventulett, Stainback & Associates.

Products - CAD

Richard Spöhrer provides the latest in product news, plus a convincing argument as to why all architects -

whatever their size, and whoever their clients - need to maintain investment in CAD technology. Including a round up of the best from this year's AEC Systems trade fair in Chicago, and case studies of the use of CAD in designing Hong Kong's Chek Lap Kok airport and the new Liffey Bridge in Dublin, Republic of Ireland. Technology can not only help the designer to produce the best work, but can also be instrumental in winning it in the first place. Plus an interview with Yoav Eitel of Bentley Systems on his vision of the future.

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US film studio's US\$1.6 bn theme park

20,000 jobs created as Universal develop Europe's largest playground

SPAIN

Last June, Universal Studios bought a 37 percent stake in the Port Aventura Theme Park on the Catalan "Gold Coast" near Tarragona. The US giant has now announced a US\$1.66 billion expansion of the complex over the next 15 years.

The company purchased its shares from Pearson-Tussauds (UK), current operators of the park. The other owners are La Caixa, Spain's largest savings bank (43 percent) and Anheuser Busch (USA, 20 percent).

Universal currently owns parks in Orlando, Florida and Los Angeles, California, and is building a third in Osaka, Japan also at a cost of US\$1.6 billion.

Universal vice president Gregory Miller, explains that the first phase of expansion (1999 - 2003) will include three themed hotels, providing a total of 3,000 beds and several new attractions in the existing fairgrounds, for a total investment of US\$480 million. The second phase will include seven new hotels, a residential development, and a shopping, commercial and recreational area with two 18 hole golf courses, as well as a new Universal Studios theme park, modelled on its Adventure Island in Orlando. Attractions will be inspired by Universal properties such as "ET", "Terminator" and "Jurassic Park".

The enlarged complex will cover 826 hectares to become Europe's largest, three times bigger than Eurodisney in Paris. It will create 20,000 permanent new jobs, ten percent of the area's active population, and double annual visits from a current three million to six million.

Port Aventura opened in 1995 with the backing of the regional Catalan government. It had modest profits of US\$2.9 million (403 million pesetas) in 1996. It is considered a major attraction for the region's tourist economy, drawing 23,000 million pesetas per year in spending, 17 percent of total tourist income on the Gold Coast.

Koolhaas, urban overlord

International "quality team" oversee new US\$990m city centre



THE NETHERLANDS

A five person team including Rem Koolhaas has been appointed to oversee the development of a US\$990 million city centre development for the town of Almere, 30 kilometres outside Amsterdam.

Rem Koolhaas' Office for Metropolitan Architecture (OMA) won a 1994 competition to masterplan the area. The Rotterdam-based firm completed its designs at the end of the summer, at which time Almere council announced that Rem Koolhaas, and four other international architects and specialists in urban planning, will make up a "quality team" to oversee the appointment

of architects for individual buildings.

The team is made up of Spanish architect Manuel de Solá-Morales, French architect Tania Concko, Maarten Schmitt, city architect of The Hague, Dutch urban sociologist Arnold Reijndorp and Koolhaas.

Koolhaas's high-rise masterplan is underpinned by a curving ground level, on top of which a covered street will separate traffic and pedestrian areas.

Almere was founded on 1976 as an overspill town for Amsterdam's growing population. The town has failed to develop significant employment or social amenities for residents who still rely on Amsterdam for both. It is hoped that Koolhaas' masterplan will create a sense of identity for the city.

Once the 100-hectare site is complete (2015) the population of Almere will have risen from 130,000 to 250,000, making it the fourth largest city in the Netherlands.

Lloyds team in US\$20 m payout

UK

After a two-year legal dispute the construction team that built Lloyd's of London has agreed to a US\$20 million payout for external corrosion. Architect Richard Rogers Partnership, contractor Bovis, engineer Ove Arup &
Partners and subcontractors
Haden Young and Senior
Construction Services have all
agreed to share the repair costs.
The cost breakdown remains
confidential.

Piano hits the high notes

JAPAN

The Ushibuku Bridge in
Kumamoto Prefecture has won
the prestigious Tanaka Prize of
the Japan Society of Civil
Engineers for 1998. The 1.2-kilometre steel box girder road
bridge, which opened earlier
this year, was designed by
Renzo Piano, in association
with Ove Arup and Partners
International and Japanese
firm Maeda KK.



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BOOKS pages 40-41

IN THIS

Enric Miralles won, and no Scottish architect got a look in. David Cohn looks at the politics of regional architecture. ISO-9001 – the biggest story in the history of architecture, or a new roll of red tape waiting to unravel?

Stephen Gage on "Architecture and the Environment", and Andrew Rabeneck goes "Towards a New Museum".

WESTERN EUROPE

500 sign fightback manifesto

Spanish architects dream of good old days

Five hundred architects have signed a manifesto, "In Defence of Architecture", hoping to foment debate on the declining quality of architecture in Spain.

The manifesto's targets for criticism include regressive urban regulations; an alleged institutional disregard for architectural quality; a neoliberal economic climate that deprives architecture of its social and progressive dimensions, and a

demoralised profession.

The supporters hope to lobby public authorities for a return to the positive climate of Barcelona's Olympic works. Specific policies denounced include the increasing practice of awarding design/build contracts for public projects to builders, who submit an architectural project with

The manifesto can be seen at: http://www.izones.com/iaz/extra/gdd a/welcome.html.



French duo win Dupont 1998

Jean-Marc Ibos and Myrto Vitart Architects of Paris are the winners of the sixth annual DuPont Benedictus Award for Innovation in Architectural Laminated Glass in the commercial category. The jury praised the architects' refurbishment of the Lille Palais des Beaux-Arts (WA59

page 33) as an appropriate link between the twentieth and twenty-first centuries. Conducted on a global scale, the DuPont awards programme is a collaborative effort between DuPont and the American Institute of Architects, Rafael Viñoly was the winner in 1997 for his Tokyo Forum.

Contracts

A team led by Helsinki firm Tommila Architects, has designed an energy efficient office building for Finnish developer ProPaulig in the fast-growing port town of Vuosaari - 15 kilometres east of Helsinki. Ventilation and building automation specialist Max Fordham & Partners (UK); electrical designer Lars Bylund of Pelk Design Group



KB (Sweden) and HVAC engineer Harri Ripatti (Finland) have also contributed design expertise.

 A team comprising Florian Beigel Architects, Arup Environmental and the Architecture Research Unit of North London University has won a competition to masterplan a US\$825 million residential quarter in southern Berlin. Located on the 120-hectare site of a former US army base, the development will eventually house 3,200 homes, associated public buildings and a railway station. The developer, Habarent, in association with the German Railways Board, will employ a range of architects over the next 15 years. Berlin architect Daniel Libeskind was second. Austrian Ernst Mayr came third.

British architect David Chipperfield has won the competition to design a US\$25 million extension to Venice's municipal cemetery, which is located on a 400-year-old artificial island in the Venetian lagoon. Fifteen architects were invited to enter the competition by the Municipality of Venice Enric Miralles was awarded second prize.

NORWAY

Norwegian telecommunications giant Telenor has awarded Seattle-based Ellerbe Becket, the fifth largest firm of architects in the world (WA World Survey 1998 WA62), the contract for its new Oslo headquarters. When complete the 255,000-square-metre facility will be the largest office building in Scandinavia, housing 6,000 employees, and consolidating the company's 40 offices in one complex.

SPAIN

 Jacques Herzog and Pierre de Meuron have won a limited competition to renovate the port of Santa Cruz de Tenerife in the Canary Islands, over projects by Rem Koolhaas, the Seville-based architects Antonio Cruz and Antonio Ortiz, and the young London group Foreign Office Architects, headed by Alejandro Zaera and Farshid Moussavi. The project aims to reconnect the centre of the city to the water, and to convert the obsolete industrial port to recreational uses. Herzog and de Meuron's proposal is arranged in a ring around a recreational marina, with low buildings, covered

walks and squares on different levels of the breakwaters and docks. The competition was organised by the Tenerife port authority with the co-operation of local and regional governments. The shipping facilities currently on the site will be moved 50 kilometres to the south of the city.

The Hillier Group, of Princeton, New Jersey, is to build a five-star hotel on a dramatic cliff-top in the

Lara region of Turkey. The commission for the 28,000-square-metre Marmara, Antalya Hotel was won in an open competition. The client is New Yorkbased KiSKA Construction Co. Hillier is working with Syska & Hennessey MEP Engineers of Washington DC on the development. Excavation work has begun on site. Completion is anticipated for Spring 2000.



BSB Architects, London-based but with Turkish origins, has been awarded the US\$10.2 million contract to design the new National Natural History Museum of Turkey in Ankara. Located within the Middle East Technical University, the 24,000-square-metre scheme is divided into two separate



but interconnected blocks - an open plan exhibition hall in shell form, and laboratory space. Depending on the availability of government funding the scheme could go on site at the beginning of next year. BSB is working with structural, mechanical and electrical engineers from the Ankara region.

Two of the international big boys have been awarded contracts for small-scale developments in

Scotland in recent weeks. First Frank Gehry was commissioned to design a cancer care building in Dundee, Scotland; followed a couple of weeks later by the announcement that Moshe Safdie is to design a US\$4.3 million tourist lodge on an estate in the Scottish highlands (pictured right). This news comes only weeks after Enric Miralles was awarded the contract to design the new Scottish Parliament in Edinburgh (see News Analysis).



WESTERN EUROPE

Glasgow homes in on the future

HIN

An apartment block designed by Anglo-Japanese firm Ushida Findlay Partnership (see picture) is the focal point of a US\$16 million joint public/private sector housing development in Glasgow. Developed by Glasgow 1999, in partnership with Scottish Homes, Thenew Housing Association, the Glasgow Development Agency and four private developers, "Homes for the Future" is the flagship project of Glasgow's celebrations as UK City of Architecture and Design for 1999.

Work has already begun on the 3.7-hectare brownfield site, which will also include rental homes designed by Ian Ritchie; two mixed apartment blocks by local architects Elder and Cannon and another by Rick Mather Architects, and terraced flats and housing by RMJM (Glasgow). The masterplanners are Page & Park Architects with Arup Associates. The project is managed by Rock DCM.

The first phase of the devel-



opment will be complete in July 1999, with up to 100 homes open to the public. It is anticipated that up to 250 homes will be available to rent or buy by 2005.

In brief

PORTUGAL

Siza gets premium return

Portuguese architect Alvaro
Siza has won the 1998
Praemium Imperiale prize for
architecture. At US\$100,000
(15 million yen) the prize is
amongst the most lucrative
arts awards in the world. The
Praemium Imperiale awards
equivalent cash prizes in five
categories annually: theatre
and film; painting; sculpture;
and musical composition. The
Praemium Imperiale was
established in 1988 by the
Japan Arts Association.

SPAIN

5.7% construction rise

Construction activity was up 5.7 percent during the first quarter of 1998, according to data from the Ministry of Development. The increase is two points higher than that for the first quarter of 1997.

UK

Paternoster proposal given go ahead

Paternoster Associates, owners of long derelict Paternoster Square, the notorious 2.16-hectare site next to St Paul's Cathedral in the City of London, has been granted planning consent for the square's redevelopment. The Corporation of London's Planning Committee has confirmed that plans to develop six stand-alone office buildings, as well as necessary infrastructure works, will go ahead, A total of 82,000 square metres of new office space will be created by the scheme, which has taken two years of painstaking planning. Whitfield Partners is the architect. Bovis and Stanhope are tipped as construction manager and project manager respectively on phase one of the development. (See WA64 page 27.)



Anglo-German eco-ministry win

GERMANY

Anglo-German practice
Sauerbruch Hutton has won the
competition for the new
Umweltbundesamt, the Federal
Office for the Department of
the Environment in Dessau. It is
the only new-build ministry of
the reunited Germany.

The US\$58 million administration building has an area of 29,000 square metres. The two-year construction period will start at the end of next year. The cost of decontaminating the site, which is located next to an old gasworks has not been released.

Harms & Partner GbR of Berlin is quantity surveyor. Krebs und Kiefer Ingenieure of Berlin and Battle McCarthy of London are structural engineers.

Gehry's Guggenheim loses out to Siza's Santa Mariá

SPAIN

The Guggenheim in Bilbao, arguably the most talked about building of last year, has lost out to a little-known church in provincial Portugal in this year's FAD awards.

Founded 40 years ago to honour architectural work in the Catalan region of Spain, the prestigious awards, organised by the Foment of the Decorative Arts Society, reflect the traditional importance of design in Barcelona's commerce and culture. Architects for the 1992 Olympic Village, for example, were chosen from previous FAD winners.

The IberFAD award for work anywhere on the Iberian Peninsula went to Alvaro Siza's Santa María Church in Marco de Canavezes, Portugal.

Critics in Barcelona have worried in recent years over the lack of strong public commissions among finalists, traditionally a mainstay for quality architecture in the region. This year several categories were declared vacant for lack of worthy submissions.

Other FAD Awards went to Lluís Jubert and Eugènia Santacana's sunken house and garden in the province of Girona; the Julie Shon store, Barcelona, by Conrado Carrasco and Carlos Tejada, in the category of interiors; the Torrente Ballester Park, Viladecans, by Arturo Frediani and SOB Architects, in the category of exterior spaces; and the Patio of Flowers in Can Girbal,



Santa María Church in Marco de Canavezes, Portugal by Alvaro Siza. The winner of the second annual IberFAD award

Barcelona, by the 10 x 10 Collective, in the category of ephemeral spaces.



Tarn shame for environmentalists

FRANCE

Environmentalists have failed in their attempt to stop construction of the Norman Foster-designed Millau Bridge, across the Tarn river valley in southern France.

Described as the last great engineering challenge of the twentieth century, construction of the 2.5-km bridge will start early next year.

ASIA

In brief

JAPAN

HK group plans Tokyo high-rise

Japan Pacific Century Group, a group of Hong Kong real estate investors, announced plans to build a 31 storey, 43 billion yen (US\$307 million) office and shops complex at the southeast exit of Tokyo's main Tokyo Station. The building is to have 57,000 square metres of offices and 15,000 square metres of shops. Construction is to start in spring 1999 and be completed in autumn 2001.

INDIA

Hi-tech Hyderabad in US\$125 m test case

The State of Andhra Pradesh is to construct a model textiles township near Hyderabad - fast emerging as India's first "hi-tech" city. The Silk and Art Silk Mills Research Association, estimates a project cost of US\$125 million. The development, which will be spread over 495 hectares, will house around 300 textile units, along with infrastructure facilities. Final designs have yet to be prepared but, depending on the success of the township, the state government has expressed willingness to invest in similar projects in the future.

CIDCO's ambitious plan

The City and Industrial **Development Corporation** (CIDCO), a Mahrashtra government undertaking, has drawn up a plan to invest US\$165 million in the construction of 7,000 houses in the satellite city of Navi Mumbai over the next two years. CIDCO is also planning to set up a US\$250 million industrial park over an area of 400 hectares at Kalamboli in Navi Mumbai. The park will host only non-polluting industries. It will be developed as a joint public/private venture. A suitable collaborator is to be identif fied through private ' " " n.

Contracts

JAPAN

 The organic steel forms of Javier Bellosillo, of Madrid obtained first prize in an international competition for the street furniture for a new business centre in Osaka. The business centre will be built, like Renzo Piano's Kansai Airport, on an artificial island in Osaka Bay.

PRC

• Gammon Construction has been awarded the US\$84 million contract for the design of the Hong Kong retail centre. The retail centre, complete with car park, will be constructed adjacent to Tung Chung Mass Transit Rail Station on Lantau Island. The fast-track project is being undertaken in conjunction with the MTR Corporation by Newfoundworld Ltd, a joint venture of Hong Kong property developers. The completion date is November 1999. Gammon Construction is a Hong Kong-based firm owned jointly by Anglo-Norwegian conglomerate Kvaerner and Jardine Pacific.

SOUTH KOREA

RTKL's entertainment design studio ID8 has completed designs for CoEx
Plaza, a 95,000-square-metre underground entertainment centre in Seoul.
 CoEx Plaza, which is based on the theme of a flowing river, will link directly to



the Korean World Trade Center expansion. The project is being developed by the **Korean** International Trade Association AKDC, a consortium of Seoul

architects, is the local architect. Completion is due in January 2000.

 Los Angles-based Anthony J Lumsden & Associates, in association with local firm Jung-II Architects has been awarded the contract to design and build the new main terminal at Yong Dong Area International airport in north-east South Korea. Completion is due in 2001.

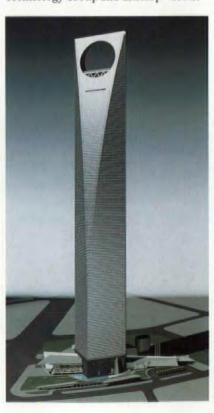
THAILAND

After months of wrangling in the wake of the Baht devaluation, a consortium led by China State Construction Co has been awarded the contract to design and build Bangkok's Rama 8 cable-stayed bridge. The consortium submitted a low bid of US\$72 million, German firm Philipp Holzmann AG was the original front-runner for the contract, before the Baht was devalued at the end of last year. The 465-metre bridge will span the Chao Phraya river. Vancouver-based Buckland & Taylor Ltd is the design engineer.

US companies commit to Shanghai high-rise

PRC

The Japanese developers of the world's tallest building in Shanghai are in talks with US companies – including United Technology Group and Citicorp – about



investment in the US\$750 million project.

"We are now in discussion with some American parties," said Minoru Mori, chairman of Shanghai World Financial Centre Investment, the developer of the KPF-designed 95-storey high-rise.

He declined to say how much would be set aside for US partners, but, when the project was announced in late 1995, the plan was to reserve ten percent of the shareholding for Asian and US multinational firms to accommodate a Chinese preference.

Forest Overseas, a wholly-owned subsidiary of Mori Building, 35 other Japanese financial institutions and a government body own 90 percent of the company. The search for US partners has not been easy.

Based on original projections, the massive complex could take as long as ten years to show a profit, a time-frame considered too long by the majority of Western companies.

Analysts have even suggested the Shanghai's property glut could lengthen the the projections, but Mori remains optimistic about the projections of the city's rapid economic

growth, shortage of world-class office space and falling rentals which would attract more firms.

When completed, Shanghai World Financial Centre will be the world's tallest building at 460 metres, topping the Petronas Towers, Kuala Lumpur.

It is not known whether the round opening at the top of the building – an idea taken from the Moon Gate motif from classical Chinese gardens – will be modified. The concept has not gone down well with some local residents, who believe the round opening resembles the circle on the Japanese flag and would be a reminder of Japan's past ambitions.

Despite the merger of a few financial institutions and the difficulties they faced at home, the Japanese banks which pledged their investments remained in the project.

Mori said the global standard, intelligent building had a 60 percent occupancy rate, including contracts signed and those pending.

Among the tenants are Bank of Tokyo-Mitsubishi, Dai-Ichi Kangyo Bank, ING Bank, Marubeni Corp, Mitsubishi Electric Corp and Toshiba Corp.

ASIA

Route 3 – the greatest challenge yet?

Running from Hong Kong Island up to the boundary with China at Lok Ma Chau, Route 3, which opened in the summer, is arguably the most ambitious infrastructure project ever undertaken in the south China region.

The route of the dual threelane highway runs through the Western Harbour Crossing, West Kowloon, the Tai Lam Tunnel and crosses a country park before reaching the border. It provides a much needed connection between Hong Kong and China. The route also relieves congestion on the highways leading to the new international airport at Chek Lap Kok and Kwai Chung container terminal.

The three-kilometre tunnel

section provided the greatest challenge, with the two main tubes - each 135 square metres across - requiring the excavation of 15 million tons of rock and soil in less than two years.

The Route was designed and built by a consortium comprising the Nishimatsu Construction Corp, Dragages et Travaux Publics (HK) and Gammon Construction. A Build Operate Transfer contract, for 30 years duration, was awarded to the Route 3 (CPS) Company in 1995. The company is a joint venture between Sun Hung Kai **Properties Ltd, Bank of China Group Investment Ltd, China Resources and China Travel** Service HK Ltd.

(See Polemic in this issue for the "Real story behind Chek Lap Kok".)





Scienceland unveiled at Shanghai super-summit

RTKL to design US\$200 million "Chinese Smithsonian"

At a ceremony attended by President Clinton and Xu Kuangdi, mayor of Shanghai in late summer, plans were unveiled for Shanghai Scienceland, a US\$200 million museum/education centre. During the ceremony RTKL was officially awarded the design of the project.

Project developer, Shanghai Scienceland Development Co Ltd, a quasigovernment agency, has slated construction of the 89,000-square-metre facility to begin later this year. Completion is anticipated for October 2001, when Shanghai hosts the APEC World Summit.

RTKL won the commission for what has been described as the "Chinese Smithsonian" in a closed competition. Ten international and two Chinese firms

competed for the project. RTKL and Nippon Sekkei Ltd of Japan were selected as finalists. Among the other contenders was French firm Jean-Marie Charpentier et Associés, architect of the Shanghai Opera House (WA67 pages 58-63).

Above left: President Clinton and Xu Kuangdi, mayor of Shanghai unveil RTKL's plans for Shanghai Scienceland

Above right: RTKL's design - complete with "swooping" roofline

People and practice

NORTH AMERICA

New York, USA

Boston, USA

Two New York city firms, Larsen Shein Ginsberg + Partners and Magnusson Architecture and Planning PC, have merged. The new practice, with a total staff of 65, is called Larsen Shein Ginsberg + Magnusson LLP.

HNTB Architecture, the architecture division of international consulting firm HNTB Corporation, has

appointed Garrick Niemiec as principal architect in the firm's Boston office.

Phoenix, Arizona, USA

DLR Group has unified its 17 US offices with the name merger of two of its regional member firms. DLR John Graham Associates and DLR Lescher and

> Mahoney have simplified their names to DLR Group. The Mid-West member firms of the DLR Group changed their names last year.



Ronald L Skaggs, chairman and chief executive of HKS Inc (Dallas) has been elected as the 1999 first vice president/president elect of the American Institute of Architects. Skaggs will assume his new office in December, and take over the presidency if the AIA in 2000.

TRANS-ATLANTIC CONNECTION

In a move reflecting the changing balance of the international property market post-South-East Asian crisis, international real estate adviser Jones Lang Wootton (JLW) of London is in preliminary discussions with Chicago-based LaSalle Partners Inc (LSP) - real estate services firm with eight international offices. Both sides hope that the talks will result in a merger of operations, in a stock transaction.

EUROPE

London, UK

The healthcare divisions of two of the largest US firms, Cannon (45th largest firm in the world - World Survey WA62) and KPF (37th) have joined forces. The joint venture design consultancy, KPF Cannon Healthcare will operate out of London.



The London office of US financial and corporate sector architect Swanke Hayden Connell has added Angela Sasso, Chris Cox and Carl Blanchard (left) to its strategic planning team.

David Hull has been appointed partner of Buro Happold, the Bath-based multi-disciplinary consulting

Amsterdam, the Netherlands

Dutch management consultant Twijinstra Gudde (TG) has appointed four new partners. All have moved from British practice DEGW. The appointment of Andrew Laing, Douglas Brown, Stephen Greenberg and Philip Tidd follows the merger between the two firms in 1996. Six DEGW employees have already accepted partnerships with TG.

WHEN IS AN ENGINEER AN ARCHITECT?

Alistair Lenczner, former associate director with Ove Arup & Partners, has left the giant engineer to join architect Foster and Partners, in the UK firm's London office. Commenting on the move, Foster partner Ken Shuttleworth said: "[Lenczner] has engineered many of our projects ... he is more than a structural engineer - he is a building designer". Lenczner, who worked with Fosters on the recently completed Valencia convention centre whilst still with Arups (see WA71), will continue to work in Spain on Foster's telecoms facility in Compostela and petrol stations for Repsol (see WA66 page 23).

NORTH AMERICA

In brief

USA

Life's a beach in Manhattan

Environmental approval has been granted for a US\$300 million park on the banks of the Hudson river in New York. The park, which is to be developed by the Hudson River Park Conservancy, will include a 365metre strip of sand on the lower western side of Manhattan. Construction will start later this year and Manhattan will have its own beach by 2003. The fact that people now seriously consider swimming in the Hudson is testament to a remarkable clean-up operation. Only a few years ago sightings of decomposing bodies and syringes were a daily occurrence.

Getty Centre caught short

It cost US\$1 billion; over 10,000 people per day visited it during the summer and many regard its architect as a modern master, but Richard Meier's Getty Center (see WA63 page 25) falls short in one significant aspect. There is an acute shortage of public conveniences. The operators are faced with two options: either to cut some of the exhibition space, or to build an extension to one of the two main buildings.

CLR's US\$230,000 monkey business

CLR Philadelphia, a firm specialising in zoo design, has agreed to make a payment of US\$230,000 to Vilas Zoo in Madison Wisconsin. Zoo officials alleged that it was as a result of CLR's faulty design that disgruntled orang-utans and chimpanzees caused damage to the new monkey cage. Rocks were thrown at windows and mesh over skylights was dismantled. Zoo officials said that the mesh could have been made animal-resistant had it been thicker. Leaving loose rocks on the floor was also thought to be a mistake.

Twin towers for Columbus Circle

SOM design to replace mid-century behemoth on US\$345 m NYC site



USA

After years of botched negotiations New York Coliseum, the giant mid-century structure that has long dominated Columbus Circle, the pivotal public space at Central Park's south-western corner, has finally been sold by the city for a whopping US\$345 million. The Related Companies and Time Warner will spend a total of US\$1.3 billion after demolishing the behemoth and constructing a multiuse, twin-towered project designed by David Childs for SOM.

Hugging the circle itself, the silhouette

of the towers is reminiscent of the art deco apartment buildings that dot nearby Central Park West, but is clad in glass, which may ingratiate the enormous project to its site. The 195,000-squaremetre complex will house the headquarters for entertainment conglomerate Time Warner as well as a 425-room hotel, 325 apartments, a concert hall and additional television studios. The two towers will stand 230 metres high. Demolition will begin next summer – assuming there are no delays on environmental grounds.

Times Square station in US\$180m refit

... and the city foots the bill

USA

Times Square, the self-proclaimed "cross-roads of the world," already has a new face. Now the subway station below ground is to be reconstructed to match.

At a cost of US\$180 million, New York's busiest station, which accommodates 450,000 passengers daily, will both get a facelift, and have its circuitous circulation and ailing infrastructure attended to over the next eight years.

First planned in the 1980s with a significant developer contribution, the project hit a standstill with the collapse of the real estate market. This time around the city is footing the bill.

Dating back to 1904, the reconstruction has been designed by transportation specialist William Nicholas Bodouva & Associates. The largest problem was to ensure that passenger circulation between the four privately-owned lines that converge on the station is clear and easy to use. Transferring from one line to another is often confusing, time-consuming and unsafe as passengers find themselves in little-travelled areas.

William Nicholas Bodouva &
 Associates' new passenger terminal at
 New York's JFK Airport opened earlier
 this year (see WA67 page 26).

Contracts

USA

- The Weihe Design Group (WDG) has been commissioned to design two new office buildings in the Ballston area of Arlington, Virginia. Nine-storey, 19,000-square-metre Fairgate II, is being developed by USF&G Realty Advisors and Donohoe Real Estate Services. Stafford Place II is a 17,000-square-metre speculative building, developed by American Trading Real Estate Properties and Harwood & Associates. The 11-storey building is the second phase of Stafford Place, a 140,000-square-metre mixed-use complex. Both buildings are due for completion early next year.
- Construction of a new US\$190 million terminal, concourse building and pedestrian bridge at Chicago's Midway Airport began this month. The new buildings will provide a total of 85,000 square metres of floor space. Clark Construction Group of Bethesda, Maryland, and local companies James McHugh Construction Co and Rausch Construction Co won the contract for the five year job.
- A team comprising the New York office of Kohn Pedersen Fox, and Madison,
 Wisconsin-based Flad & Associates has won the US\$44 million contract to

design the University of Wisconsin's new Engineering Centers Building for the College of Engineering in Madison. The 18,500-square-metre facility is due for completion in spring 2002. **GPR Planners Collaborative Inc** of Purchase, New York, **Affiliated Engineers Inc** and **Jaspal Engineering** (both of Madison) are also members of the team.

- The Cleveland Clinic Foundation has announced plans to build an all-suite Inter-Continental hotel, and an Inter-Continental hotel and conference centre at the hospital's main campus in Cleveland. Brennan Beer Gorman Architects has been selected to design the two facilities. Work has already begun on site. The eight-storey, 13,000-square-metre, all-suite hotel will be complete by August 1999. Plans for the second hotel are still in preliminary stages.
- David Schwarz of Washington DC is the architect of the US\$230 million arena for the Dallas Mavericks and the Dallas Stars. Dallas city officials praised Schwarz' rather conservative hangar-like design over his competitor's more contemporary schemes, but as is often the case the design community railed against it to no avail. The stadium is set for completion in 2000.

US\$2.2 billion port on the drawing board

COSTA RICA

Should plans unveiled this summer come to fruition,
Costa Rica could take a major leap into the international trade arena. San Jose developer OSI Proyectos Costa Rica SA claims it has a letter of intent signed by the Costa Rican government to develop a new 78-square-kilometre port near the city of Limon, on the central American country's Caribbean coast.

The US\$2.2 billion development would replace the existing port facilities in Limon. The city was hit by an earthquake in 1992 which destroyed two-thirds of the city and raised the seabed by 2.7 metres. The planned port is eight kilometres north of Limon.

The project's initial phases would include a trans-shipment port, marine salvage facilities, dry docks, a new airport and a mixed-use commercial development. The port and related development is expected to break ground next year, with completion in six years time. OSI, who is seeking joint venture partners, is in talks with Kansas City-based HNTB Design Corporation regarding the masterplan for the port.

Plans are also afoot to develop a Costa Rican rival to the Panama Canal. The proposed "dry canal" would be capable of accommodating the larger container ships not around when the Panama Canal was completed in 1913. A high-speed rail link would carry cargo to another new port on Costa Rica's Pacific coast.



TrizecHahn launch massive Central European retail drive

HUNGARY/SLOVAKIA

Budapest's historic and still functioning Western Railway Station – designed by Gustav Eiffel, of Parisian tower fame – is being joined, physically, to a US\$200 million, 40,000-square-metre commercial development.

The project, near the downtown business district, is already on site. When complete (2000) it will incorporate a 220-room hotel, retail and entertainment tenants, as well as a 29,275-square-metre office building.

Designed by US firm The Jerde Partnership and local practice Finta Studios, West End City Center is already attracting attention from high profile Western retailers, attracted by the fact that 400,000 commuters pass through the station every day.

The developer is TriGránit Development Corporation, a joint venture of Torontobased TrizecHahn Corporation and Polus Investments of Budapest. Polus' previous venture was the 56,000-square-metre Polus Centre shopping/entertainment complex, also in Budapest, which opened in November 1996.

TriGránit is also preparing to launch a US\$100 million, 170,000-square-metre second phase of another Polus Center four kilometres north of downtown Bratislava, capital of Slovakia. The gross leasable area will exceed 27,000 square metres, and will include an 8,000-square-metre hypermarket, food court, eight-screen cinema complex and office space.

Beyond that, TriGránit says it is has a \$US500 million, five-year plan of office and regional shopping centre development for Hungary and other central and eastern European countries.

TrizecHahn is one of
North America's leading
publicly-held real estate
development companies;
1997 income and cash flow
from real estate operations
was US\$1.2 billion and assets
were US\$5.13 billion.)

REST OF THE WORLD

In brief

LIBYA

South Korean firm saved by man-made river

Financially strapped South Korean construction firm, Dongah Construction, has won a US\$5.1 billion contract from the Libyan government to build the third phase of the controversial Great Man-Made River. The five phase project is expected to cost US\$27 billion. Dong-ah also built the first two phases. The firm came close to collapse earlier this year but was saved by an emergency loan from the South Korean government. An advance fee of US\$100 million has been promised to help ease Dong-ah's financial problems. Western intelligence agencies claim that the massive development could be a front for hidden military facilities.

SAUDI ARABIA

Aukett in Riyadh concept park development

The Arrivadh Development **Authority has awarded British firm Aukett Associates** the contract for the development of a 29-hectare "concept" park in the centre Riyadh. The practice has already developed a masterplan for the site and is working on designs for individual features - options are limited due to constraints imposed by traditional Saudi society. The site is expected to go into physical development early next year.

Tanzanian tourist trap - cause for concern?

US\$4.4 billion tourist development may put spanner in ancient eco-system

TANZANIA

An untouched 75-square-kilometre area of the Nungwi Peninsula on the island of Zanzibar is set to become home to a US\$4.4 billion tourist development.

The project, supported by both the World Bank and the government of Zanzibar, will provide an economy, infrastructure, an airport and a port on an island where there is almost 100 percent unemployment.

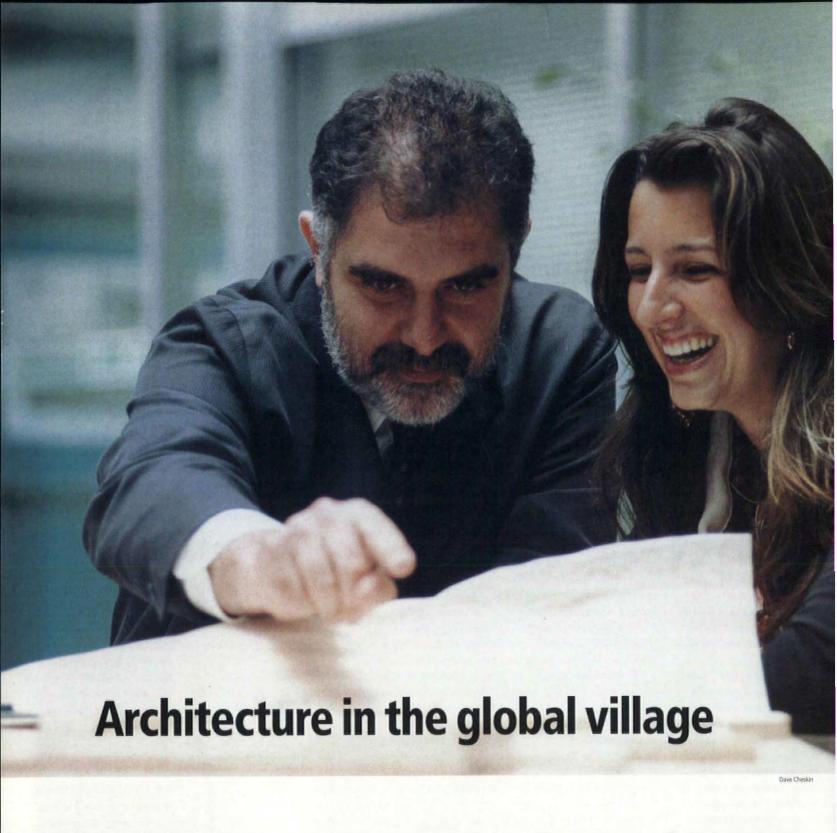
British project manager Widnell is coordinating the development on the semiautonomous island off the coast of Tanzania. A string of architects have been linked with individual projects, including WAT&G, Fitzroy Robinson and John R Harris Partnership.

Pressure group Tourism
Concern has asked all architects
to justify their involvement
with the project. It believes that
the development will have a
damaging effect on the lives of
the 20,000 local residents.

ZAMBIA

US\$24 m airport contract

Architectural consultancy firm Watkins/Gray International /Zambia has been commissioned by the National Airport Corporation Ltd of the Republic of Zambia to redevelop New Ndola International Airport, Ndola, in Copperbelt Province. Preliminary costings are estimated at US\$24 million.



In the summer the Spanish studio of Enric Miralles and Benedetta Tagliabue won the competition to design the new Scottish Parliament, arguably the most sensitive building in 300 years of Scottish history. David Cohn visited the couple to discuss the politics of architecture and regional identity.

The decision to appoint the young and little-known Barcelona couple, Enric Miralles and Italian-born Benedetta Tagliabue, as designers of the Scottish Parliament in Edinburgh, added a new twist to the British Labour Party's efforts to create an architectural identity for Scotland's upcoming self-rule. Chosen unanimously by a jury headed by the Labour Party's Scottish Secretary Donald Dewar, the studio of Miralles/Tagliabue, teamed with local architects RMJM, beat four

other finalists: Michael Wilford; Richard Meier with local firm Keppie Design; Glass Murray (Edinburgh) and Denton Corker Marshall (Melbourne); and Rafael Viñoly (New York) with local architect Reiach & Hall.

Although generally favourable the reaction of the local architecture community and the British press has been tempered with murmurs, worries and qualifications. Of certain concern are the short time frame for construction (the building is due for autumn 2001), and the adequacy of the

Foric Miralles and Benedetta Tagliabue

ANALYSIS

"The decision to build [the parliament] is eminently political, part of a contest over who will shape the new institution."

foreign architects were unheard of before the 1980s, and the spirit of renovation promoted by the governing Labour Party.

But perhaps the most serious objection to the project was raised by architectural critic Jonathan Glancey, who asked why the new building will not be commissioned by the parliament itself, once it is formed after elections in May 1999. Secretary Dewar's haste would seem to contradict the British government's avowed support of Scottish independence. But Dewar heads the Scottish Labour Party, and is a prime contender for control of the new parliament against Alex Salmond's Scottish National Party. And so the decision to build is eminently political, part of a contest over who will shape the new institution.

It takes one to know one

As a native of Catalunya, a regional autonomy with a fierce sense of independence within Spain, Enric Miralles is familiar with the mixing of architecture and regional identity for political gains. "Catalunya as an autonomy has always identified itself with a concrete historic period, that of the Second Republic," he comments, a time when modern architecture was gaining its first Spanish adherents. "In Scotland, the historic moments with which one can identify Scottish independence are much more imprecise."

Miralles (born in Barcelona, 1955) emerged as a brilliant and rebellious talent while still a student. In a city dominated by the discrete modern elegance of Elías Torres, Pep Llinás, Esteve Bonell and other architects now in their 50s, Miralles' work is ebulliently inventive, expressive

and complex, returning to more romantic notions of the architect as a genial and fertile creator. Working in the studio of Viaplana and Piñón, he shared credit for the minimalist Sants Railroad Station Plaza (1983), an epochal work of Barcelona's urban transformation. He and his first wife, Carme Pinós, opened their own studio in 1984, and worked together until their separation in 1991. With Tagliabue, his second wife, he is currently building a housing project in Amsterdam and the Utrecht City Hall, another competition winner, among other designs. The Scottish Parliament is their most important commission to date.

Many of Miralles' past works have the rough textures of civil engineering projects, using exposed concrete and steel, landscape retaining walls of crushed rock in gabion mesh, and partitions in laminated wood, glass block or unglazed ceramic units. His most successful designs merge and spread into the landscape, as does his proposal for Edinburgh. Examples include the Igualada Cemetery (1991), the Olympic Archery Range (1992) and the Morella Boarding School in Castellón (1994).

The use of prefabricated elements is also characteristic of his work, as seen in the boat-like roofs proposed for the parliament, which he suggests could be built in Scottish shipyards. Miralles frequently assembles repeated prefabricated elements in loose, wandering, or organic patterns. As a consequence, his designs often superimpose various layers of assembly at different scales, from floor plates and structural trusses to railings and

carpentry. In some of his larger and less mature works this has resulted in overworked designs, but such excesses now seem to be behind him.

Pushing the boundaries

In talking about Edinburgh, Miralles and Tagliabue emphasise the unconventional nature of the competition, which did not call for a finished building proposal. In this it joins a growing trend of competitions that seek to develop a more fluid working relationship between winners and their clients. "We really based our strategy on learning from the different conversations we had with the client. We offered a dialogue more than a solution. And this I think helped make them feel more comfortable working with us."

From these conversations, several basic design ideas emerged: to preserve as many existing buildings on the site as possible; to nestle new buildings into the topography, particularly the floor of the debating chamber (hence its hull-like roof forms, an intuitive response to the surrounding hills); and to create a university-like quadrangle, including the historic Queensbury House in a representative role, with ministers' offices in low buildings around its garden, and the debating chamber in a more monumental structure terminating the Royal

Concept sketch - the

parliament sits "in" the land

Mile, Edinburgh's medieval artery. The palette of materials includes stone walls, wood finishes, and turf for exterior pavers and landscaping berms. The complex engineering for the design will be taken on by Cecil Balmond of Ove Arup, structural engineer for Rem Koolhaas, Daniel Libeskind, Toyo Ito and others. The architects have until next spring to produce contract drawings.

Miralles and Tagliabue discount the supposedly radical character of their work. They maintain that the idea not to use an existing historic building for the parliament was "much more daring than choosing us". But they also concede that the success of the Guggenheim Museum in Bilbao (another international work designed to give identity to an autonomous region) has helped promote a more receptive climate for their designs. "A good project such as the Guggenheim makes people lose some of their fear of architecture. In this sense it has done a fantastic job of animating people to do things, to change opinions."

budget of US\$83 million (£50 million). More painful has been the passing over of Scottish architects for the job.

Although 40 of the 70 firms presenting credentials to the jury were based in Scotland, none made the final list as principal

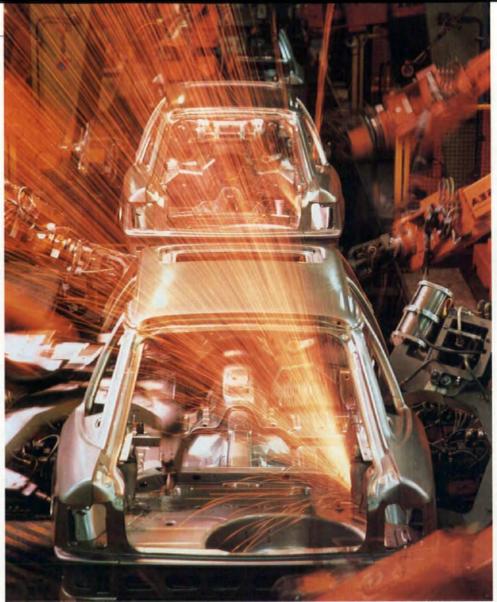
awarding of the commission to foreign architects also raises the stakes in the ongoing struggle between defenders of the traditionally insular architectural tastes of the UK, where works by

designers - an ironic failure for a

landmark of Scottish identity. The

Business

Do architecture firms suffer from disorganisation in epidemic proportions? Is the automotive industry the model upon which the business of architecture should be based? Are there too many small firms for the construction industry to sustain? Should ruthless efficiency take precedence over design quality? These and other questions are at the heart of possibly the single biggest sea-change in the history of architecture. WA analyses the impact to date of the International Organisation for Standardisation.



It's not what you do, it's the way that you do it

In Singapore and Japan it's pretty much impossible to operate without it. The French, Germans and Spanish are "looking into it". The Indian government is delighted that there might be a system by which it can gain some sort of control over the country's sprawling and unregulated market. North American firms don't want to know just yet - taking the view that nothing could become a global standard until they embrace it. Whilst British firms, on the whole, are

it has attempted to reduce the proliferation of business standards in its 60 member countries through a regularly up-dated and monitored series of ISO-standards. ISO 9000, a Standard for Quality Assurance Systems, set the template, through which (it was hoped) international suppliers and international customers could build a trusting relationship based on the fact that both are operating on a level playing field.

"In both manufacturing and service industries there have been increases in efficiency and transformations of companies which a decade or more ago nobody would have believed ... defects in the car industry are now measured in parts per million rather than components per hundred." Extract from Rethinking Construction a report on the state of the British construction industry

> offended by any suggestion that architecture might no longer be "the mother of all the arts", but a business like any other. So what is "it" all about?

The story so far

Like any self-respecting neutral body, the International Organisation for Standardisation (ISO) is headquartered in Geneva, Switzerland. Since 1987

International conglomerates were the first firms to be required to take out ISO certification, due to trade and export requirements. ISO 9001 (established in 1994 and due to be updated in 2000) was the first standard to be applicable to architectural firms. The widely differing ways in which ISO has

been received by all member countries' internal organisations emphasises how far there is to go to homogenise the industry. But as the business of architecture becomes an increasingly global issue, procuring orders risks becoming conditional on whether firms have a Quality Assurance System recognised by ISO - or is taking steps to set one up - more quickly than the majority of firms are prepared to accept it.

It couldn't happen here ...

by Robert P Smith AIA in Birmingham, Alabama

For the most part, the principals of North American design firms look at ISO 9000 with an odd mix of curiosity, suspicion and dread. The curiosity comes from a general impression that quality management structures patterned around the ISO 9000 standard offer significant operational benefits. The suspicion comes from a perception that such quality management systems add significant costs and complexity to the operating structure of their firms. And, the dread comes from a widespread belief that successful implementa-

tion of such systems may be beyond the abilities and enthusiasm of their personnel.

In North America, those design firms that embrace ISO 9000 tend to serve industries which are themselves partici-

pants in the ISO 9000 quality system movement – industries such as automobiles, shipbuilding and nuclear power generation. However, the full extent of design firm interest in ISO 9000 is difficult to gauge with any real accuracy. Not long ago, the Design and Construction Division of the American Society for Quality (ASQ) published a list of the design offices in North America thought to be certified to ISO 9000. This was a very short list – containing only 24 offices, the vast majority engineering firms engaged in heavy construction.

clients really do not understand what ISO is all about. With the exception of the Construction Administration phase of the project, our clients are not willing to pay us higher fees because we are certified to ISO 9001."

David Evans, founder and CEO of David Evans and Associates Inc (a 750-person A/E firm with 21 offices in six states and Mexico) says that his firm "began pursuing certification to ISO 9001 in one of our US offices but, because that office was growing so fast, the preparations got in the way of running our business. However, our Mexico office is ISO certified, largely because our

"We serve the automotive industry in the Detroit area and that industry is one of the few [in the US] placing much emphasis on having their architects and engineers certified to ISO 9001."

Gordon Holness CEO, Albert Kahn Associates, Detroit, Michigan, USA

clients in that country have placed that requirement on us. Ultimately, I believe our whole industry will embrace ISO 9000 because adoption will be client driven. Nevertheless, our clients today simply ask us where we are in the process. I think US design firms are about five years away from serious interest in ISO 9000 and probably ten years away from widespread acceptance."

Albert Kahn Associates, a 300-plus person A/E firm headquartered in Detroit, Michigan is undergoing the ISO 9000 certification process. Gordon

"I think US design firms are about five years away from serious interest in ISO 9000 and probably ten years away from widespread acceptance."

David Evans CEO, David Evans and Associates Inc - with offices in USA and Mexico

However, there is empirical evidence that some North American architectural firms, or firms with an architectural component, are beginning to test the ISO 9000 waters. Consider the following cases:

Byrne Architects, based in Nova Scotia, Canada, achieved certification to ISO 9001 in 1994. Michael Byrne, the firm's CEO, adopted the standard to enhance his firm's ability to meet client requirements. Four years later Byrne observes that, "acceptance of the ISO standard by other architectural firms has been slow to take off. We find that clients periodically threaten to require certification to the ISO standard but have not done so with any regularity. Having made the commitment ourselves, we find that the certification process forces a discipline on us to do what we said we would do. But, our

enthusiastic believer in
the potential of ISO
9000 but finds that
the standard is not
really taking hold
among US design

Holness CFO is an

firms. "Few corporations require this from their architects. We serve the automotive industry here in the Detroit area and that industry is one of the few placing much emphasis on having their architects and engineers certified to the standard. Hence, a few A/E's in the area are pursuing ISO, but it's not wide-spread. And truthfully, we don't see this expanding any time soon. The practice of architecture does not readily lend itself to the ISO process, something about right-brain versus left-brain so, unless there is a driving force for

change, it probably won't occur on its own."

(Robert Smith is senior principal of architect KPS

Group Inc. He serves on the ISO Task Force of the

American Institute of Architects.)

... but it already has here

by Robert Powell in Singapore

ISO 9000 was introduced in the Singapore construction industry in 1991. The number of construction firms achieving ISO 9000 certification in the city-state is growing every year. By mid-1997 98 contractors were certified, of which 67 were general building contractors.

In 1997 the Construction Industry Development Board of the National University of Singapore carried out a survey on the "impact and the effectiveness" of ISO 9000 quality management systems on the industry. Top among the reasons given by contractors for seeking ISO certification was the desire to increase efficiency and productivity in all areas of operations; to improve the quality of work, and to qualify to tender for public projects. Given that the government is the major source of projects for the construction industry, the latter is by far the most important reason.

The major internal benefits experienced by firms are: improved documentation; improved methods of working, and improved quality of work completed. The major external benefits are: to give firms an improved competitive edge and to give them a valuable marketing tool. The greatest barriers to ISO certification in the construction industry were found to be employee resistance and resource limitation.

This latter point was also raised in a memo issued in August by the Singapore Institute of Architects "Small Practice" sub-committee, which noted with concern that many small practices are keen to obtain ISO 9000 but the current cost of certification is a formidable obstacle. This is significant since the majority of clients in both the private and public sectors will only consider consultants who are at least in the throes of pre-qualification. The Institute is negotiating with qualified ISO consultants to provide competitively-priced packages to small practices.

A drop in the Indian ocean

MDIA

by Arbind Gupta in Vashi Navi Mumbai

The Construction Industry Development Council (CIDC) is developing a rating model for the construction industry. The system, being shaped along with an accredited rating agency – India Credit Rating Agency (ICRA) – will rate contractors, clients and consultants on an A-E scale.

While assessing the overall performance the rating agency will also look into: operational results; human resource development; administrative charges; speed of compilation and auditing of results, and financial history. Furthermore, it will consider a firm's recovery performance, with respect to the ability to repay loans, and to mobilise and utilise funds.

The system is intended to enable financial institutions and banks to understand better all the players in a construction project, and accordingly decide on the appropriate level of financial exposure. Traditionally financial

of financiers easy [in India], but will also bring down the cost and time overruns plaguing the industry". While there is no international benchmark for this kind of rating, it conforms to those already prevailing in Japan and Singapore.

CIDC has already launched a series of pilot projects, with the State Bank of India representing the banking community. Commenting on the effort, Ashok Kumar, assistant vice president of international property consultant Lloyds Brooke Hillier and Parker states that, "it is a right step in the right direction for an industry which is yet to organise itself. This will go a long way to restoring the confidence of the investors who want to put in their money in the fund-starved industry". But not everybody feels so positive. Avers Mohan Deshmukh, managing director of Deshmukh Builders believes that, "the success of the entire endeavour will depend upon how fast the government does away with the existing constraints".

With current legislation it can take four to six months to get the clearance for a project.

Prem Nath (see WA58 page 45) suggests that the legislation is premature. "[Firstly] the government should ensure that there be a

should ensure that there be a statutory body which allows only those to enter into the field of building construction who have the necessary qualification." Although architects, engineers and other professionals need registration, anybody can become

"[The rating system] is necessary and we support the step. But the very success of the entire endeavour will depend upon how fast the government does away with the existing constraints."

Avers Mohan Deshmukh, managing director of Deshmukh Builders, India

institutions and banks have shown little interest in funding construction projects due to its disorganised structure. Most projects are funded privately. This has hampered the growth of the public sector.

CIDC PR Swaroop, director says that, "the rating will not only make the job

Wiping the slate clean



by Giles Barrie, Deputy Editor of UK weekly Building

Architects, like the rest of the UK construction industry, got a stark warning on the future of their businesses in *Rethinking Construction*, a government-backed report on the state of the British construction industry published in the summer. Commissioned by deputy prime minister John Prescott, the

report was prepared by the British Airports Authority's (BAA) chief executive Sir John Egan. Among those joining him on the task

force were British retail giant Tesco, developer Slough Estates, and hotel chain Whitbread – all clients determined to get a better deal from construction.

Simon Murray, BAA's group technical director, who played a key role behind the scenes, explains, "construction is fundamental to all our businesses. We spend US\$825 million (£500 million) a year on construction. But the regulatory formula governing BAA means we receive less money ourselves each

year, and with construction forever heading up as a cost we decided we wanted improvement from the industry. For us this is a real business imperative, a real business need."

For architects, the main message is that the separation of design from the rest of the project process is a fundamental problem. Too many buildings perform poorly in terms of flexibility, operating and maintenance costs and sustainability

because these issues are not addressed properly during design. There is also the suggestion that designers – the term "architect" is used only once throughout the report – should integrate suppliers and sub-contractors more closely into the design team. It says the experience of completed projects must be fed into later projects, and that the industry must learn more

about understanding client satisfaction.

a builder.

What the Egan team really wants is for designers to become part of construction "brands" that clients can pull off the peg with complete assurance that they will get what they want. Already some contractors are sounding out designers to see if they will join these alliances, and there is speculation that by the end of 1998 task force members will pick "branded" teams.

The idea is for the "brands" to offer a fully integrated service, working seamlessly and blurring the professional, contractual distinctions the construction industry rests upon. In setting tough performance targets – including a ten percent annual rise in profitability – for all UK construction-related companies the task force accepts that some firms will die out or be taken over.

Rethinking Construction also calls for designers to pay more attention to standardisation of products, in particular to the way in which the car industry reinvented itself through "lean" production. Robin Nicholson, a director at architect Edward Cullinan & Partners thinks that this would be no bad thing. He believes architects "over-customise". Nicholson has also suggested that Britain's horde of one and two-person practices amalgamate into six, seven and eight-

"If we do not set up a more focussed approach in supply chain alliances we will be finished. I am trying to move us from an informal series of specialists under one brand, BDP, toward a more formal series developing their own brands."

Richard Saxon, chairman of BDP (Britain's largest architecture practice) reacting to Rethinking Construction.

strong outfits to provide a better service for clients. With the introduction of the competitive interview that can be won with little effort by a "name" architect, it is already harder for small firms to make their mark. *Rethinking Construction*, with its ruthless emphasis on efficiency and only passing reference to design quality, adds to this pressure on many architectural firms.

Contractors call the shots

by Dana Buntrock in Tokyo

ISO 9000-series certification is no longer a new issue in Japan, although it is far better known among contractors than architects. As far back as 1993 the Ministry of Construction included a recommendation regarding ISO certification in its *Handbook on Public Architecture*. The following year it began an

For contractors, the system comes at a crucial time. The current recession has forced several good-sized contractors into bankruptcy and two of the largest contractors, Shimizu and Taisei, have written off large losses in the current fiscal year. Many of the loose practices of the past are untenable in the current climate. It is widely hoped by contractors that the dry clarification

"Good architecture is not necessarily architecture of 'good quality'. The buildings which remain a part of history are not necessarily of good quality. Mies van der Rohe, Corbusier, Frank Lloyd Wright ... In the end, architecture is evaluated on the basis of new ideas. Those new ideas cannot be assessed within the ISO system. As far as new architecture is concerned, ISO is flat-out a problem." Riken Yamamoto, Riken Yamamoto Field Office, Japan

of practices common to ISO manuals will lead to cost savings and clearer understanding of the roles each member of the construction team plays on site. Architects and contractors agree that

ISO 9000-related survey of construction sector firms. Seventy-six percent of the 127 firms surveyed indicated that they were aware of ISO 9000. Today all major contractors – and even some as small as 27 employees – hold certification, in spite of the US\$21,000 (three million yen) cost for the certificate alone.

The usual reasons for taking ISO 9001 or 9002 include restructuring opportunities, marketing value and even use as a potential defence against litigation – a rare but growing concern. But regulatory compliance is most often cited as key.

The Ministry of Construction is currently monitoring two sites on which the ISO system is being put through its paces. Most people have interpreted this as a test, and if work on these sites goes smoothly ISO compliance on all nationally-funded construction could become a reality as early as 1999 or 2000. Japanese manufacturers already favour architects and contractors with certification.

ISO 9000 certification, in spite of nominal references to quality, is really about dividing and elucidating authority.

But the system remains poorly suited to architecture firms. For Nikken Sekkei, a firm with 1,700 employees, the solution was to redesign the ISO manual, whittling down the 20 categories to only four. Other architects raise deeper concerns. Riken Yamamoto Field Shop has been pressured by one of its clients, Saitama Prefecture, to take certification while simultaneously supervising a fast-track 54,080-square-metre construction site. Yamamoto notes, "good architecture is not necessarily architecture of 'good quality' is it? The European buildings which remain a part of history are not necessarily of good quality. Mies van der Rohe, Corbusier, Neutra, or the American architect Frank Lloyd Wright. Those are not part of history because they are good quality. In the end, architecture is evaluated on the basis of new ideas. Those new ideas cannot be assessed within the ISO system. ISO 9000 is flat-out a problem".

A means of survival or a condition of getting work?

by Jean-Pierre Cousin in Paris

The approach to quality control being adopted by French architectural firms, as promoted by the Agence Qualité Construction (AQC), is inspired directly by the ISO 9001 certification process. The aim – providing clients with a guarantee that every endeavour has been made to avoid any risk of non-compliance of products and services – is exactly

the same. However, the fact that the standard originated in heavy industry has provoked mistrust in the architectural community.

The quality system singles out the quality of architecture itself, as well as correct procedures for architectural design and implementation for the

greatest satisfaction of the client. The former is not deemed to be measurable, whilst the latter is linked to the organisation of the company and its working practices. Moreover, this interpretation of the ways and means is far from being a matter of general consensus. The ISO 9001 standard focuses on organisation and practice, and deals with risk situations – risks of "non-quality" – on behalf of any business buying and selling products and services.

The AQC has identified 25 "procedures" which are common to all architectural firms. Also pin-pointed are the risks encountered within these procedures. Among the procedures identified are: tendering; the handling of complaints, as well as controlling study costs; preparing planning applications, and finally consultation and choosing companies. The door is still open to any specific procedure which a practice might need to integrate in

its quality assurance programme.

Many French architects have expressed concern that quality assurance and/or ISO certification is a virtual pre-requisite for export. The truth is that exporting skills hinges largely on the ability to seek out partners, and certification can facilitate this – being very common in the English-speaking world

"Many French architects have expressed concern that quality assurance is a virtual pre-requisite for export. The truth is that exporting hinges largely on the ability to seek out partners, and certification can facilitate this."

Cost is another concern. Initiating a quality process through to setting up a Quality Assurance system or certification is high. The first certification could cost between US\$8,100-16,200 – including audits and training. Added to this is the time invested in setting up documents and operating rules, whether along the model supplied by the AQC or using the firm's own model. But as Denis Laquaz, a Grenoble-based architect emphasises, the time spent on developing a working procedure or practice is a one-off.

In the long term, procuring orders risks becoming conditional on whether the firm has a Quality Assurance System or is taking steps to set one up. This, in turn raises the question of whether these concepts should be included in architectural training. According to the AQC, contacts have been initiated at various levels in an attempt to address this subject but nothing concrete has emerged yet.

OnScreen

In this month's OnScreen: Infrasoft offer the Total House Solution; Bentley takes engineering software research under its wing; and the competition gets fierce on the architectural desktop.

Strategic alliance

Wilcon Homes, one of the UK's major house builders, has just signed a US\$2.3 million contract with Infrasoft for the supply and management of a major upgrade to its design technology.

Selling over 4,000 houses per year, Wilcon Homes operates throughout the UK, building a range of homes from apartments to five bedroom luxury houses. With the differing topology of sites and the range of construction solutions available Wilcon rely heavily on technology for both planning and architectur-

al design. Allied to this is the need to produce

convincing material for planning authorities and public consultation at an early stage in the overall design process.

Infrasoft are providing Wilcon with an AutoCAD R14-based

solution, integrating Infrasoft's MXSITE site design software with architectural design and material scheduling software from UK-based MBA Computing. Infrasoft Corporation purchased UK-based MOSS Systems in 1996 who themselves had provided CAD software for the construction industry for 20 years. MBA also have a pedigree in house building, with applications such as Total House Solution designed to run in an AutoCAD environment. AutoDesk's CAD Overlay has also been provided to allow the capture and re-use of existing hard copy data.

3D Studio Viz, from AutoDesk subsidiary Kinetix, will be used as the visualisation element of the solution. Viz R2 integrates with AutoCAD R14 providing an extremely efficient means of quickly transforming 2D design information into 3D. With the increasing need to produce visual

information for both marketing and planning requirements Viz sits perfectly in the production cycle.

One of the key considerations in awarding the contract was the ability of the solution provider to offer a comprehensive solution that could be implemented rapidly. Wilcon Homes and Infrasoft have worked closely to develop a project plan which, while maintaining the quality of the solution, will allow it to be fully operational in all of Wilcon's eight regional offices by October this year.

David Lawther, Finance Director of Wilcon Homes Ltd said, "We were not only looking for the best technical solution, but also wanted a partner who understood our business and would design and deliver a system for our present and future needs." For further information contact Infrasoft on +44 1403 259511 or www.infrasoft-civil.com

Bentley's meeting of minds

Prior to the official start of the 1998
Proactive Engineering Symposium
(running from 14-16 October in
Philadelphia), Bentley Systems is
hosting an Architectural Research
and Software Development Seminar.
The event will be chaired by Robert
Aish, Bentley's senior scientist.

The seminar will focus on the development of new design tools, schemes for engineering component modelling and research into collaborative engineering. It will include a series of presentations from the "principal investigators" of some of the high-profile research projects using Bentley tools as their software development environment.

"This seminar will be a unique gathering of many of the leading researchers in the field of Design and Engineering software," says Aish. "It should be of keen interest to managers of design, engineering and enterprise IT systems who want

ENDING SUMM

Right:Architectural Desktop – compatible with AEC 5.1 and available worldwide by the end of the year

to be informed of the latest research directions and the role of Bentley software in facilitating this research."

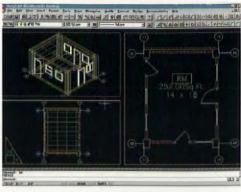
Participants in this seminar will include Kent Larson from the MIT "House of the Future" project, Chuck Eastman from Georgia Tech and Paul Richens from the Martin Centre, University of Cambridge, UK. The seminar will also include presentations by Ardeshir Mahdavi from the Semper Project at Carnegie Mellon University, and Eric Griffiths of the US Army Corps of Engineers Research Laboratory (CERL). Further participation from other leading European research groups is expected, particularly focusing on product modelling and software engineering for construction management. Bentley will also present its latest research into "Custom Objects" and EXPRESS product data modelling tools, both of which use the new Java-based JMDL language.

Aish reminds everyone that what is being researched today will become tomorrow's design tools and deployment strategies. Find out about current research during this seminar, which will take place from 8:30am to 12:30pm on Wednesday 16 October. For more information, or to register for this seminar contact Robert Aish. e-mail at robert.aish@bentley.com.

Competition hots up as Architectural Desktop goes global

Following the showing of Architectural Desktop at AEC Systems (Chicago, 2-5 June), AutoDesk hopes that this AutoCAD R14-based solution will be available in Europe by the end of the year. The news comes hot on the heels of the announcement of the release of AutoCAD AEC 5.1 Plus.

AEC R5.1 Plus incorporates the latest layering conventions for the construction industry found in BS 1192 part 5, as well as extending the comprehensive symbol libraries. This should make the transfer of drawing between professionals of all disciplines much more straightforward.



For presentation material AutoDesk WalkThrough is included providing a means to interact quickly with 3D models.

The new Annotation Manager forms a link between drawings created in AEC, reference documents and project specifications. A master document can be created by the designer to pull together all these elements.

Architectural Desktop is compatible with AEC 5.1 providing an integrated 2D and 3D design environment. The system exploits
ObjectARX fully, making it a good platform for further application development and ideal as a basis for AEC 5.1. Both AEC and AD have links with 3D Studio Viz R2 as they are based on the AutoCAD R14 engine.

These products are aimed squarely at the architectural market, taking on both MicroStation Triforma and ArchiCAD 6.0. Architectural Desktop is not an AutoCAD add-on but is an AutoCAD solution in its own right. AutoDesk needs to be careful not to confuse users with the AutoCAD/Architectural Desktop/AEC R5.1 Plus relationships. It will be down to resellers to match the right solution with the right client. This will give value added resellers (VARs) the opportunity to become far more proactive in their provision of solutions to the architectural community. AutoDesk will provide an upgrade path to Architectural Desktop from AutoCAD R14 for US\$990 with a new license having a recommended retail price of US\$6,200. For more information contact AutoDesk on +44 1483 303322 or www.autodesk.com.

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: hyperm@dial.pipex.com

Above: UK house builder Wilcon has invested US\$2.3 million in Infrasoft construction solutions technology

Right: The Bentley Systems endorsed Proactive Engineering Symposium runs from 14-16 October in Philadelphia

The real story of Chek Lap Kok

Last summer the media was full of stories about the opening of Hong Kong's giant new airport at Chek Lap Kok — most of them devoted to the problems that had emerged there: miles of glass cladding needing replacement, cargo handling equipment inoperative, and fuming passengers marooned on the tarmac. The strategic planning significance of the airport barely got a mention.

This was odd because it was clearly not to watch demonstration suitcases orbiting a carousel that US President Bill Clinton; People's Republic of China President Jiang Zemin; Hong Kong provincial governor Tung Chee-hwa and hundreds of lesser leaders, politicians, administrators and dignitaries attended the various opening ceremonies. Their presence showed that Chek Lap Kok is not just a terminal so big that you can see it from outer space: it is a signpost to the twenty-first century.

Between 1950, when the communist revolution in China brought the first big influx of refugees into the British colony of Hong Kong and raised its population from one to two and a quarter million in a matter of months, and the handover to the People's Republic of China that took place nearly half a century later, the survival of the people of Hong Kong depended on engineering skills stretched to their limit. The result is visible today, from the man-made reservoirs that supply water to its present population of 6.5 million, to the glistening office towers and sprawling container ports that are the engines of its recovering economy. It is only since Hong Kong became a Special Administrative Region of China, with endless development land on its doorstep, that it

has been able to take up planning in the conventional sense.

Ten years ago Chek Lap Kok was a remote islet that took two hours to reach by boat from Hong Kong. Now what is left of it lies beneath a huge man-made plateau reclaimed from the sea. More significantly, from this plateau to Hong Kong itself huge slices have been cut out of the stepping stone islands of Lantau, Ma Wan and Tsing Yi to construct a road and rail link that cuts the journey to Chek Lap Kok to half an hour. Far more elaborate and costly than the airport itself, this Lantau link incorporates the world's longest double decker road and rail suspension bridge at Tsing Ma, a structure that carries a six-lane expressway with mass transit railway tracks below it and enclosed emergency roads on either side for use during typhoons. Together with the mast-stayed Kap Shui Mun bridge that connects Lantau and Ma Wan, as well as associated viaducts and cuttings, these tremendous interventions in the topography of the islands are not only engineering triumphs but feats of planning too.

They are in fact prototypes for the kind of development that might follow the new motorways that already link the old colonial enclave as far inland as the city of Guangzhou. The significance of such demonstrations is political. Before Chek Lap Kok was built, in the whole of the Pearl River delta economic region, there were no less than eight airports, four of them international - Hong Kong's Kai Tak, Portuguese Macau, Shenzhen and Guangzhou. As Hong Kong's economic links with mainland China strengthened during the 1980s, and the free city became more and more of a hi-tech service

centre for the whole Pearl River basin, the probability arose that, if no action were taken by the Hong Kong government, one or more of the other Pearl River airports would be enlarged to absorb much of the air traffic generated by east Asian economic growth as a whole.

Hong Kong's reorientation towards China began long before the handover of 1997. Starting with cross-border enterprises in the Shenzhen special economic zone, and ending with the mobilisation of a whole manufacturing district centred on the container ports of the Pearl River delta, it was in connection with these geopolitical developments alone that Hong Kong's old airport at Kai Tak became a bottleneck. Kai Tak was, after all, the third busiest airport in the world until it was closed down last summer. Only when viewed against the growth potential of mainland China, a country within five hours flying time of half the population of the world, could Kai Tak really be considered too small

Once the hemispherical grandeur of the plan of which the airport at Chek Lap Kok is a part becomes clear, the crucial role of the Lantau link becomes obvious. The reason the Hong Kong government embarked on the construction of a huge new twin-runway airport at the end of a 20-mile high speed link to the city eight years before Hong Kong's return to Chinese rule - at a time when the Chinese government was opposed to any Hong Kong airport scheme - is because the executors and financiers of the airport needed to mobilise the transport infrastructure of the high speed link in true Hong Kong fashion. Five new railway stations were planned for

the link – each one destined to serve as a platform for retail, residential, office and hotel air-rights developments totalling a massive 3.25 million square metres — one half as large again as the airport itself.

The acquiescence of the Chinese government to this developmental Klondike was not hard to bring about, for apart from sharing in the development potential of the Lantau link there was also the potential of the great arc north from Hong Kong to Guangzhou, creating a linear city with a population of more than 50 million.

Seen in this light the data reorders itself. The airport at Chek Lap Kok becomes the rationale for the Lantau link, and the Lantau link becomes the prototype for the 120 mile linear city. Although it had to be a grand one, the airport hardly needed to be much more than a gesture, a pointer to the future. It was in pursuit of this gesture of confidence that the architect devised his celebrated economical space frame roof in the shape of a great airport terminal. The genius of the architect of Chek Lap Kok was to create, not so much a perfect airport as a perfect opportunity, which it remains today.

Martin Pawley



"Apart from sharing in the development potential of the Lantau link, there was also the potential of creating a linear city with a population of more than 50 million."

Book Reviews

Reality bites

Architecture and the Environment – Bioclimatic Building Design. David Lloyd Jones. Foreword by Tadao Ando. Laurence King (imprint of Calmann & King) London, UK. 256pp, 210 colour illustrations. £45/US\$65 (hardback)

Reviewed by Steven Gage
Architects usually claim to have
good reasons for what they do –
even if the real reasons have more to
do with form and style than they like
to admit. In Architecture and the
Environment – Bioclimatic Building
Design David Lloyd Jones examines
the somewhat uneasy relationship
between good reasons and real reasons, at the end of the second millennium, for "green" architecture.

The book is divided into five sections, by far the longest of which examines 44 contemporary buildings from around the world which lay claim to green credentials and which are, in the author's view, examples of inspired design. The buildings are lavishly illustrated and the text is concise. The reader is

not taken through 44 engineering studies.

This section is divided into idiosyncratic typologies where offices, research facilities and libraries are "mansions"; houses and flats are "houses"; assemblages of low and medium rise buildings are "campuses"; big buildings in cities are "metropolis"; and big, tall buildings wherever sited are "towers". This taxonomy has lead to confusion: it's hard to see for example why the new Building Research Establsihment building in Watford (UK) by Feilden Clegg should be a "campus" when a library at Herten (Germany) by LOG ID is a "mansion".

The author describes this stylistic mix as heterogeneous and suggests that bioclimatic building design has no single stylistic base. This is developed in the first and third sections of the book which trace the development of a "green" and "bioclimatic" architectural sensibility from the seventeenth century BC through to the mid-80s of this century. Lloyd Jones argues that when buildings are symbol and status carriers all thoughts

about the sane use of resources disappear, and that this is as true of the builders of Stonehenge (UK) as it is of the builders of London's Canary Wharf tower. Only when the sensible use of resources carries both symbolic value and status is it possible to create architecture which does not consume resources at an unsustainable rate. The stylistic issue that results is that it is crucially important that the "greenness" of a building should be legible to both an architectural and a lay audience.

The buildings illustrated adopt a number of common features. Spatially they often include large central voids, exposed curved and pitched roofs, asymmetrical sections and perimeter zones of glass and/or louvres. Materials vary - one strong root in this work being the arts and crafts movement leading to the extensive use of natural materials in a nearly raw or recycled state, especially wood. On the other hand the control of light and air movement leads to "aerodynamic" shapes and the use of complex interactive controls. This is often made apparent by an extensive use of stainless steel and aluminium. Common to both types of buildings are glass and growing things. Some attempts to marry all of these materials are shown, none achieving the level of inspired bricolloge shown in Herb Green's 1961 Prairie House, rightly quoted as a major precursor of much contemporary work.

The second section in the book suggests that bioclimatic design is important to society at large for very good reasons. Sustainability, recycling and life-cycle energy costing are discussed. The importance of climate and immediate surroundings of buildings are stressed and a table of the way that strategies vary according to climate is given as an appendix.

This is a much better route to a taxonomy of bioclimatic architecture than the typology used in the book, which leaves the reader wondering whether some of the buildings actually do save energy. Very few of the examples have complete energy performance data figures, and the little that is given is in inconsistent units. It would be useful to know by how much each building is better than an average equivalent in a similar fashion. Many of the diagrammatic sections make one wonder what happens when the wind is blowing in the other direction. The book concludes with an indication of future directions – emphasising the importance of government legislation, urban planning and the use of renewable energy sources. Three design projects are shown, including one by the author.

Architecture and the Environment is a serious attempt to look at a very serious subject. It is very well produced and illustrated and should be read by anyone interested in the likely direction of architecture over the next 20 to 30 years.

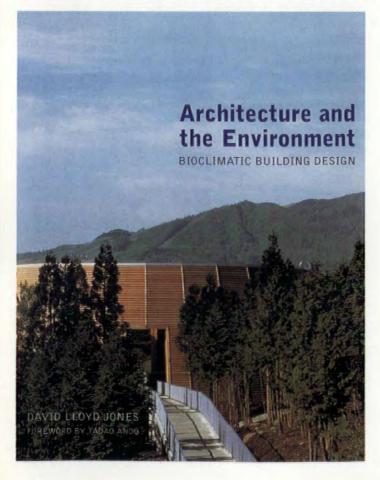
Stephen Gage is an architect and technical co-ordinator at the Bartlett School of Architecture, London

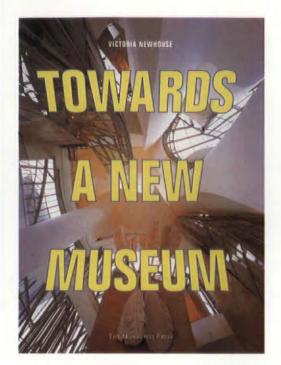
All eyes on the container

Towards a New Museum. Victoria Newhouse. The Monacelli Press, New York, USA. 288 pp, 160 illustrations – 100 in colour. US\$40/C\$55/£27 (paperback)

Reviewed by Andrew Rabeneck
This review of the architecture of
recent art museums is timely. There
has been such a global rash of
museums recently (600 in the USA
alone), culminating in Frank Gehry's
Bilbao Guggenheim, that a credible
typological analysis would be welcome. It would be nice, too, if such a
view could relate the current spasm
of construction to the contemporary
culture of art production and art
consumption.

Sadly, this book falls between too many stools to succeed completely, but along the way Newhouse offers some useful categories of art museum into which her examples are grouped. These include "The Cabinet of Curiosities"; "the Museum as Sacred Space" (where the architecture kills the art eg San Francisco, Barcelona); single artist museums; artists' museums (eg Donald Judd's Marfa); "the Museum as Entertainment" (Pompidou, Lingotto,





the Getty); "the Museum as Environmental Art" (the recent Gehrys, Libeskind).

In addition there are two chapters on good and bad additions to existing museums, and these are the most convincingly argued of the book. Newhouse is rightly critical of the remorseless gigantism of MOMA, the Met and the Louvre, without forgetting the NY Guggenheim addition by Gwathmey Siegel. Few punches are pulled. Praise is reserved for The National Gallery, Stuttgart and Rafael Moneo's latest as yet unbuilt project at Houston. This last is a curious choice given that Moneo has completed four stunning art museum buildings in the last 15 years, buildings which are kind to the art they house, unlike Meier's, respectful of context, and generally exemplary.

Overall this book is a useful receuil of the most frequently illustrated museums of recent years with one or two dips back further (eg Kahn at Yale). But it is not comprehensive and Newhouse's classification scheme although intuitively appealing is not rigorous enough to define any convincing theoretical position. In what she calls the conflict between the container and the contained, she has plumped for the container, which must be limiting. Nor is her style sufficiently scholarly to reward the reader irrespective of her scheme. Her work has the tenor of a grad student term paper in good literature search, worthy attempt to organise the material, but an insufficiently bold hypothesis to

help the reader make sense of it.

Yet the art museum is a culturally important and fascinating topic. Interestingly Newhouse quotes Valery's 1925 essay "The Problem of Museums" which she reads as a critique of modern neutral museum space, but which actually expressed a deeper anger at the over-abundance of the Louvre, at the denaturing of art through the sacrament of the museum. In a marvellous reflection on Valery's essay Theodore Adorno (1982) lays out the issues of the modern art museum with his customary clarity. I recommend it to Newhouse, and I quote: "Whether artists produce or rich people die, whatever happens is good for the museums. Like casinos, they cannot lose, and that is their curse. For people become hopelessly lost in the galleries, isolated in the midst of so much art. The only other possible reaction to this situation is the one Valery sees as the general, ominous result of any and all progress in the domination of material, and increasing superficiality. Art becomes a matter of education and information: Venus becomes a document. Education defeats art."

Art schools, museums and CDRoms are thus devices for putting distance between art and people; devices which, by the evidence of this book, we are learning to perfect. That is a more important issue than whether the container is cute.

Andrew Rabeneck is a Londonbased businessman and critic.

BOOKS RECEIVED

John Pawson

With essays by Bruce Chatwin, Deyan Sudjic and Adrian Dannatt. Editorial Gustavo Gili, Barcelona, Spain. Text in English and Spanish. 168pp, b&w and colour illustrations. 4,000 pesetas (paperback)

Birkhäuser Guide to Twentieth Century Architecture in Belgium, the Netherlands and Luxembourg

Herman van Beergeijk and Otaker Mácel. Birkhäuser, Basel, Switzerland. Text in English. 304pp, 1,500 b&w illustrations. SFr58 (hardback)

Zaha Hadid - the Complete Work

Zaha Hadid. Essay by Aaron Betsky. Rizzoli, New York, USA. 176pp, over 300 colour illustrations. US\$40/C\$53.99 (paperback)

Icons of Twentieth Century Architecture

Prestel, Munich, Germany. 208pp, 250 colour and 320 b&w illustrations. US\$29.95/C\$43.95/£19.95/DM49.80 (hardback)

Welcome to the Hotel Architecture

Roger Connah. Foreword by Lebbeus Woods. MIT Press, Cambridge, Massachussets, USA. 162pp. £9.95/US\$17.50 (paperback)

From Bauhaus to the Modern City

Hasan-Uddin Khan. Taschen, Cologne, Germany. 240pp, 290 colour illustration. £16.99/US\$29.99/C\$39.95 (paperback)

The Architecture of Red Vienna

Eve Blau. MIT Press, Cambridge, Massachussets, USA. 500pp, 299 illustrations – 27 in colour. £29.95/US\$50 (paperback)

Santiago Calatrava - the Breezy Brio of a New Building Style

Philip Jodidio. Taschen, Cologne, Germany. 176pp, 200 colour illustrations. US\$24.99/£14.99/C\$34.95 (paperback)

Pierre Zoelly - Elements of an Architectural Language

Foreword by Mario Botta. Birkhäuser, Basel, Switzerland. Text in English, German and French. 348pp, 800 colour and 200 b&w illustrations. SFr128 (hardback)

Entertainment Architecture - Technology and Design

The Editors of PBC International Inc. Rizzoli, New York, USA. 176pp, over 250 colour illustrations. US\$45/C\$61.99 (hardback)

The Green Skyscraper – the basis for designing sustainable intensive buildings

Ken Yeang. Prestel, Munich, Germany. 184pp, 16 colour and 150 b&w illustrations. US\$25.95/C\$37.95/£15.95/DM48 (paperback)

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Tel: +44 171 240 6995. Fax: +44 171 836 7049. E-mail:

zwemmer.co@BTinternet.com

FREE CARRIAGE WORLDWIDE

Lectures, congresses and conferences

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. 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

1998 Acadia Conference

Convention of the Association for Computer Aided Design In Architecture. This year's theme: "Do computers make a difference in design studios?" Runs from 22-25 October at the School of Architecture at Laval University, Quebec City. Enquiries to Pierre E Cote, Faculte d'Amenagement d'Architecture et des Artes Visuelles de Universite Laval, Seminaire Quebec, Quebec G1K 7P4. Tel: +1 418 6562131 Fax: +1 418 6562131 Web: www.acadia.org

Cuba

Ibero-Americain Symposium

Conference organised by the Cuban Section of the UIA on "Quality and Competitivity in Building" Study tours and an exhibition of building products and materials in Havana coincide with the conference. Runs from 12-16 October. For information contact, Union Nacional de Arquitectos y Ingenieros de la Construccion de Cuba.

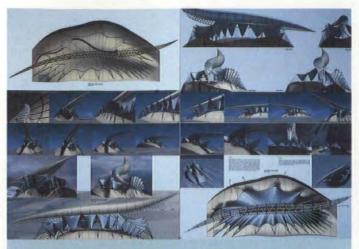
Tel: +537 798357/703896

Fax: +537 333523

France

Third Colloque International – Habiter La Ville Méditerranéenne

Third in a series of biennial congresses focussing on the identity of



Competition, USA: Fabstruct 1999

Student design challenge sponsored by Fabric & Architecture magazine. Calls for the design of a hypothetical International Student Centre to open on the eve of the new millennium. The building should be a membrane structure, which may be a tent, air or tensile structure, or something new entirely. The entry deadline is 4 December 1998. Contact Arik Hanson at Fabric & Architecture.

Tel: +1 651 225 6937. Fax: +1 651 225 6966. e-mail: achanson@ifai.com

Last year's "most audacious entry" - Marcello Villabona's "Australia Project"

the Mediterranean town. This year's theme is the relationship between public space and private living space. Runs from 19-21 November at the Montpellier School of Architecture, 179 Rue de l'Esperou,34093 Montpellier Cedex 5.

Tel: +33 4 67 01 89 89 Fax: +33 4 67 41 35 07

Architecture and design competitions

UK

AIA London Fifth Annual Excellence in Design Awards

Architecture awards whose sole judging criteria is "design excellence". Welcomes entries of new build architecture, rehabilitation, interior design and monument design. Entry deadline, 15 January 1999. Enquiries by post to AIA Design Awards, Kent House, 14-17 Market Place, London W1N 7AJ; or by fax: +44 171 636 1987

The Young Architect of the Year Award

Award aiming to recognise the best of emerging UK architectural talent, open to architects aged 35 or under. The judging panel includes Sir Norman Foster. First prize is US\$8,200 (£5,000). Closing date for entries, 27 November 1998. For information call: Tel: +44 171 861 6467

USA

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 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

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(I)au, Morphosis/Thom Mayne, Eric Owen Moss, Carmé Pinós, Lebbeus Woods and CPPN propose solutions to sprawling slums, conservation and restoration. Runs until 31 October 1998 at MAK, A-1010 Wien, Stubenring 5.

Tel: +43 1 711 36 233 Fax: +43 1 711 36 227

Belgium

Joze Plecnik - Un Architecte Slovène à Prague

Exhibition examining the work of Slovenian modernist Joze Plecnik in Prague, featuring original drawings and concept sketches. Runs until 1 November 1998 at the Fondation Pour L'Architecture, Rue de l'Ermitage 55, 1050 Bruxelles.

Tel: +32 2 6490259 Fax: +32 2 6404623

Canada

The American Lawn: Surface of Everyday Life

The last exhibition in the Centre Canadien d'Architecture's (CCA) American Century series, which seeks to cast a fresh eye over critical aspects of America's architectural culture. This major multimedia exhibition looks at the all-important institution of the lawn, highlighting its multitude of uses and meanings. Runs until 8 November 1998. Contact the CCA, 1920 Rue Baille, Montreal, Quebec H3H 2S6.

Tel: +1 514 939 7000. Fax +1 514 939 7020

Japan

Charlotte Perriand, Pioneer of the Twentieth Century

Retrospective exhibition of the former collaborator of Le Corbusier, placed under the patronage of the International Union of Architects. At the Living Design Centre, Tokyo until 3 November 1998.

Tel: +81 3 53 22 65 00 Fax: +81 3 53 22 65 01

HK

The Work of Charles and Ray Eames

The first UK exhibition of the work of husband and wife design team. Runs until 3 January 1999 at the Design Museum, Shad Thames, London, SE21 2YD.

Tel: +44 171 403 6933 Fax: +44 171 378 6540

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

The East River Exhibition

A large-scale exhibition of projects entered in the Van Alen Institute's "Design Ideas for New York's Other River" competition. Features models, renderings, competition boards and sketchbooks from the best submissions from the competition, as well as the work of the Institute's design fellows Jesse Reiser and Naneko Umemoto. From 21 October 1998 to 1 February 1999 at the Van Alen Institute, 30 West 22 Street, New York, NY10010.

Tel: +1 212 294 7000 Fax: +1 212 366 5836

Japan 2000: Kisho Kurokawa

Organised by the Royal Institute of British Architects, the exhibition examines the work of Kisho Kurokawa and his influence on Japanese design. From 17 October 1998 to 3 January 1999. For information contact The Art Institute of Chicago, 111 South Michigan Avenue, Chicago, Illinois 60603-6110. Tel: +1 312 443 3600 Fax + 1 312 443 0849

Trade shows

China

Chinabex Shanghai '98

The Sixth China International
Building and Construction Exposition
also incorporating Cihex '98 - The
Third China International Hardware
Exposition. Three hundred exhibitors
from 20 countries will descend on
the fastest growing city in the world.
Runs from 3-6 November 1998 at
the Shanghai Exhibition Centre.
Information from Reed Exhibition
Companies, 1304 Tower B, COFOCO,
No 8 Jian Guo Men Nei Street, Dong
Cheng Qu, Beijing.
Tel: +86 10 6526 0941
Fax: +86 10 6526 0940

France

Equip'Baie 1998

Biennial trade exhibition for windows, doors, shutters, locks, ironmongery and solar protection. This year sees the introduction of "Windows Forum" offering talks by leading architects and designers.
Runs from 18-21 November 1998 at the Parc des Expositions, Porte de Versailles, Paris. Contact Helen Cockbill at Miller Freeman PLC, Blenheim House, 630 Chiswick High Road, London W4 5BG, UK.
Tel: +44 181 987 7598
Fax: +44 181 742 8116

Japan

Japan Home Show 98

International building materials and equipment exhibition in its twentieth year. The organisers expect 120,000 visitors this time. From 20 October 1998 until 23 October 1998 at the Tokyo International Exhibition Center, Ariake. Contact The Secretariat of the Japan Home Show, Convention Division, Japan Management Association, Tokyo 105-8522.

Tel: +81 3 3434 3453 Fax: +81 3 3434 8076

The Philippines

Philconstruct 1998

Wide-ranging construction show, part of the "Philipines Mega Infrastructure Show" programme. Runs from 18-21 November 1998 at the World Trade Centre Metro Manila. Contact CONVEX International for information at Unit 705 Annapolis Wilshire Plaza, 11 Annapolis Street, Greenhills, San Juan, Metro Manila. Tel: +632 844 4059

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
26-29 October 1998. For information contact the IT&E Group, Byron
House, 112a Shirland Road, London
W9 2EQ, UK.

Tel: +44 171 286 9720 Fax: +44 171 286 0177

UAE

The Big 5 Show

Contracting show on building, water technology and environment, glass and metal, air-conditioning and refrigeration, and cleaning and maintenance. Expected to attract 1,000 companies from 30 countries. Runs from 18-22 October 1998 at the Dubai World Trade Centre, Dubai. For information contact David Domoney, International Conferences and Exhibitions Ltd, 2 Churchgates, The Wilderness, Berkhampstead, Herts HP4 2UB, UK. Tel: +44 442 878222 Fax: +44 442 879998 e-mail: 106321.547@COM-

USA

PUSERVE.COM

Design Y C – Interplan, Batimat Design-Build and The Design Show

Three shows sharing the same floor, aiming to attract some 20,000 commercial and residential architects, interior designers and construction professionals. Takes place between 27 October 1998 and 30 october 1998 at the Jacob Javits Convention Center, New York. For information call the hotline.

Tel: +1 800 950 1314, ext 2331

Web: www.designyc.com



Exhibition, The Netherlands: Living Bridges

Exhibition at the Nederlands Archtectuurinstitute, coincides with the opening event of the R'Festivals 1998 programme. "Living Bridges" looks at inhabited bridges from medieval times to the present day. The exhibition incorporates a range of activities, including a bridge design competition. Runs until 29 November. For information contact the Nederlands Architectuurinstitute, Museumpark 25, 3015 CB Rotterdam.

Tel: +31 10 4401200. Fax: +31 10 4366975. e-mail: info@nal.nl

Antoine Grumbach + Associates' winning design for the Thames habitable bridge competition (London, 1996)

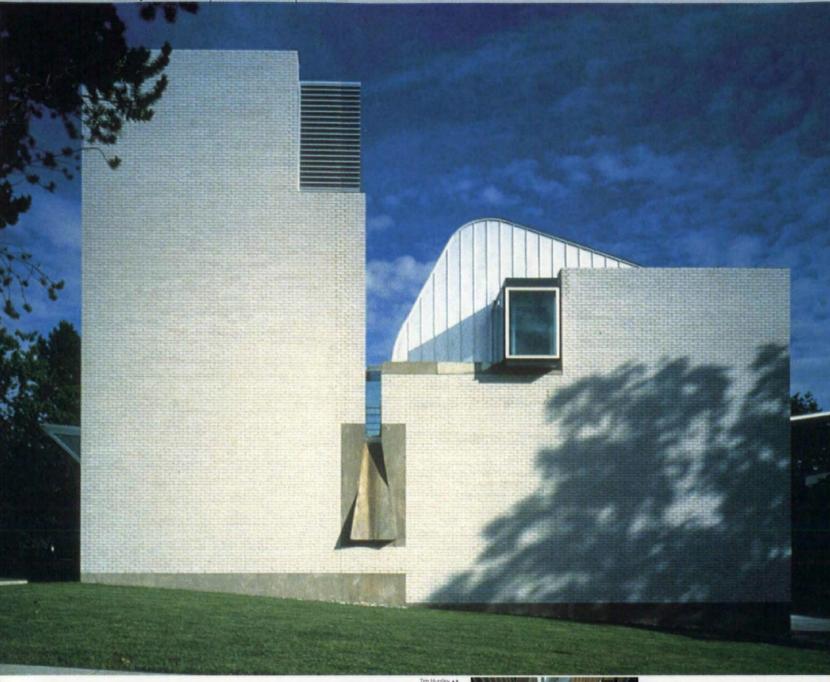


Country Focus

Canada is a vast country with a positive immigration policy. The cosmopolitan inhabitants, many of whom are first generation Canadians, have exceptionally strong links with their countries of origin. Globalisation for Canadians, therefore, is a reality, and one that was capitalised on by architects – already well equipped for working outside Canada – in order to beat the recent recession. Albert Warson, editor of *Building*, analyses the architectural climate both for Canadians and foreigners seeking work in Canada. *World Architecture* visits the major architectural sites and publishes the results of the first globalisation symposium held in Toronto earlier this year.

Canadian architecture is defined by its sensitivity to landscape: The Vocational School, St Jerome, Quebec, by Saia et Barbarese Architects





rchitecturally speaking, Canada is one nation indivisible, even if the country is divided into five distinctly different economic and cultural regions. Atlantic Canada's four postcard-pretty small provinces are hemmed in by Quebec, the most populated, urbanised, ethnically diverse and wealthy province. Culturally and linguistically a nation unto itself, its economy is second only to neighbouring Ontario. The three Prairie provinces are all about booming Calgary, agriculture, energy resources and wide open spaces. British Columbia is beautiful Vancouver, forest industries, commercial fishing, mountains, ocean and retirement communities.

The regions are all different, yet the cities and towns sprinkled across the country are visually similar; national office and shopping centre developers and retail/entertainment chains have seen to that.

Federal and provincially-funded schools, hospitals, government and other institutional buildings also tend to have a universally functional look. The only exception is residential design, which owes more to fluctuations in the climate, immigrant tastes and lifestyle than historic preferences for housing typologies.



Above:

Belkin Gallery, Vancouver by Peter Cardew

Left:

Interior, Belkin Gallery, Vancouver

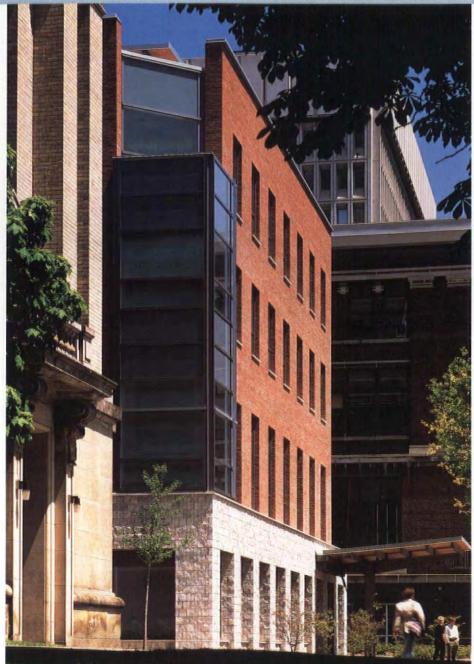
Facing page:

Fields Institute of Advanced Mathematics, University of Toronto, by Kuwabara Pyne McKenna Blumberg Architects

After the recession

Each of those markets has thawed since 1994 from the cold embrace of a five-year-long recession. British Columbia was the only province that was unscathed, buttressed by Asian immigration and investment in real estate.

The Atlantic provinces - Newfoundland, Nova Scotia, Prince Edward Island and New Brunswick - have multi-billion dollar natural resource exploration and energy projects organised by multi-national companies, and an influx of high-tech, labourintensive firms and infrastructure to go forward.



COUNTRY FACTFILE - CANADA

provided by Hanscomb

The land:

Canada is the world's second largest country in area covering 9,970,610 square kilometres. It is bordered on the south by the United States, on the west by the United States (Alaska) and the Pacific Ocean, on the north by the Arctic Ocean and on the east by the Atlantic Ocean.

The polar and sub-polar climate regions of the north contrast with the temporate maritime temperatures of the Pacific and Atlantic coasts.

Population:

About 78% of Canada's population of 30.3 million live in urban areas. Approximately 75% of the population lives in 160 kilometre band along the southern border. Ethnic Composition: British (40%), French (27%), German (4%), Italian (3%), Ukrainian (2%), Dutch (2%), other European (8%), Asiatic (2%), Amerindian and Eskimo (2%), other (10%)

Official languages:

English and French

Consumer Price Index: 1992=100

1992100.0	1995104.2
1993101.8	1996105.9
1994102.0	1997107.6

Exchange Rates: Canadian \$ per US \$

19921.27	19961.37
19931.32	19971.43
19941.40	1998 (May)1.44
19951.37	

Quebec's persistent march toward political separation and Francophone cultural domination continues to stifle investment and drive capital and Anglophones out of the province.

Nonetheless, when the C\$70 million (US\$47 million) downtown Montreal Forum redevelopment is completed next year, it will include the "world's largest cinema" - a 30-screen megaplex with 7,200 seats.

Montreal's main shopping street is coming back to life; a former 20,000-square-metre retail building, for example, will re-open in February as a new department store and 14-screen Famous Players multiplex, after a C\$55 million (US\$37 million) renovation.

Ontario is making the strongest comeback. The provincial government will spend C\$1 billion (US\$ 0.68 billion) to renovate or rebuild nursing homes and homes for the aged by the year 2000. That was part of an earlier pledge to invest up to C\$1.2 billion (US\$ 0.81 billion) per year over the next eight years on long-term healthcare.

Prairie fever

The Prairie provinces of Manitoba, Saskatchewan and Alberta weren't spared the recession, but their agricultural, mineral

and energy resource-based economies mitigated some of the economic pain. Today, there are four highrise office towers about to start or under construction in downtown Calgary, Alberta, notably TrizecHahn's second phase of Bankers Hall Tower, a 50-storey, C\$170 million(US\$115 million), 75,000square-metre tower, expected to open in the year 2000. It had been delayed more than five years by the recession.

Residential

Across Canada, demand for new housing will continue to spur construction for the third consecutive year, according to the federal government's housing agency, Canada Mortgage and Housing Corporation. Housing starts were up, overall, by 3.1 percent so far this year, particularly multiple unit townhouses and condos, which increased 7.3 percent over the previous year.

Seasonally adjusted housing starts from January 1997 to the end of March 1998 jumped from about 141,600 to 159,500.

Different players in a comeback economy

The recovery is so firmly rooted, except, ironically for British Columbia, that the International Monetary Fund last year predicted Canada would lead the industrial world in economic >





Left: Pointe-à-Callière Museum by Dan Hanganu Architects, Montreal
Above: CIBC Electronic Banking, Toronto by AJ Diamond, Donald Schmitt and Company
Facing page, from left: National Trade Centre, Toronto, Ontario by Zeidler Roberts Partnership and
Dunlop Farrow Inc; Georges-Vanier Sports Centre in Montreal by Saia et Barbarese Architects; Bombardier
by Provencher Roy and Associates

> growth (3.5 percent) during 1998.

The development industry is these days more soundly financed, backed by pension funds and Real Estate Investment Trusts (REITs), or publicly-traded investment vehicles, which attracted some C\$4 billion (US\$2.7 billion) last year.

H & R Real Estate Investment Trust, Toronto, for example, is the principal financier of the C\$235 million (US\$159 million), 80,000-square-metre TransCanada Pipelines Ltd head office tower in Calgary, now under construction (designed by The Cohos Evamy Partners, Architecture, Calgary).

Huge portfolios of office towers and shopping centres are changing hands with astonishing speed. What were essentially property management companies before the recession have been reborn as some of the country's leading developers.

Oxford Properties Group Inc, for example, has been expanding for the past four years with partners like GE Capital Canada Inc and a recently merged, former parent like BurCon Properties Ltd, whose Hong Kong investors include billionaire Li Ka-Shing, Oxford, GWL Realty Advisors Inc and OMERS Realty Corp, all of Toronto, are partners in a 23-storey, 40,000-squaremetre Millennium Tower, under construction in Calgary.

Olympia & York Properties Corp, Toronto; the reincarnation of the failed Olympia & York Developments Ltd, managed by the younger Reichmann family members, is closing in on C\$1 billion (US\$ 0.68 billion) in assets in Canada.

Where are all the architects?

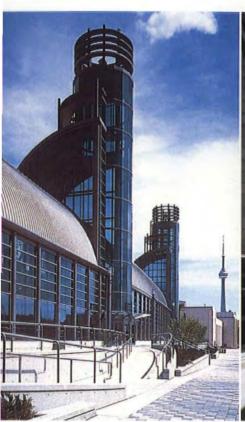
There is a bustling, almost post-war reconstruction mood in Canada, to the point where many firms are actually hiring, looking for more staff and reporting that experienced architects are hard to find.

A snapshot of the profession

A new series of documents on domestic and international opportunities for Canadian industry — Sector Competitiveness Frameworks — produced by the Service Industries and Capital Projects Branch, Industry Canada, Ottawa, includes architecture among the sectors being analysed.

According to the recently published report:

- there are about 3,500 architectural firms or practices across Canada, typically with two to three people
- total revenue for the industry in 1995 was C\$898.9 million; C\$16.8 million of it from outside Canada
- from 1991 to 1994, constant dollar architectural revenues across Canada declined at an annual rate of four percent, except in British Columbia, where real fee revenues grew by 9.7 percent per year
- real fee income increased by 7.4 percent in 1995, and profit margins rose to 12.5 percent, driven by generally improved economic conditions, pent-up demand and absorption of unused commercial space
- a free trade agreement with the United States and Mexico has allowed Canadian architects to practise in foreign jurisdiction and qualify for foreign licenses, subject to local requirements







Michel Brunelle

Much of the work is coming from the public sector. Governments cut billions of dollars from education, healthcare and social services systems to reduce their fiscal deficits.

Now they're starting to funnel billions of dollars back into those services. Architects in most provinces are consequently involved with a new regime of community healthcare facilities, renovations to merged hospitals, new cancer treatment centres and ambulatory patient clinics.

Mergers broaden professional services

Architectural practices are finding economies of scale and overlapping skills that combine well and produce more work from

"Anybody here looking for staff wants someone who can hit the computer keyboard running." Bryce Rositch

clients looking for a single firm, rather than two or three. Two recent examples include the merger of NORR Partnership Limited, NGC Architects Limited and Giffels Associates Limited, all of Toronto, which has created one of the largest such "A&E" firms in Canada, with about 500 staff in offices across Canada and in the United Arab Emirates. The new name has been simplified to NORR Limited. The Stanley Technology Group, Edmonton, bought the architectural firm Laird Polson, of Calgary, in April, and added it to its other acquisitions earlier this year – Edmonton-based Barry Johns Architects Ltd and WSAG Architects (with an office in Vancouver) – creating Stanley Architects Limited.

Opportunities in the five regions: British Columbia

Bryce Rositch, a principal at Rositch Hemphill + Associates, Vancouver, describes the current British Columbia environment as "more volatile". New housing construction is tapering off, although an 18-month provincial government spending freeze is starting to lift, which should stimulate work on schools, healthcare centres and other government-funded facilities.

Resort and retirement communities in the interior and on Vancouver Island, are, like British Columbia's world-famous ski resorts, unaffected by any changes in the domestic economy.

Notwithstanding any downturn, Rositch says "some prac-

tices in Vancouver are looking for people. Another firm asked us if we had any staff available. We didn't, but we called four or five other firms we knew and they didn't have anybody available either.

"Anybody here looking for staff wants someone who can hit the computer keyboard

running, or who has experience in other technical aspects, and in design or project management," he says.

Prairie Provinces

Paul H Polson, an architect shareholder of Stanley Technology Group, Edmonton, says new commercial and governmentfinanced healthcare redevelopment in Alberta is rising and the firm is looking for intermediate to senior architects.

His firm, for example, recently designed the world's first inter-operative magnetic resonance imaging (MRI) facility, with a special operating table, for Foothills Hospital in Calgary, to facilitate the removal of brain tumours.

The trades are scarce...workers from other provinces have to find temporary accommodation in towns within a 75-kilometre radius or in nearby trailer parks, until housing supply catches up with demand," he adds.

"This development boom surpasses the last one of about 20 years ago, but it's more sustained. It still revolves around the energy [oil and natural gas] sector, although this time there is more diversity in manufacturing, particularly high-tech industries," he notes.

spending on projects nursed the profession through the recession.

It hasn't stopped. The provincial government will invest C\$360 million (US\$244 million) into a multimedia complex called Cite du Multimedia, scheduled to open next summer, and patterned after the aerospace and pharmaceutical business parks in the Montreal area.

Now the private sector is investing in development — C\$1 billion (US\$0.68 million) in new plant and expansion of the pharmaceutical industry, another C\$25 million (US\$17

million) in a racing facility, and by the year 2000 a C\$150 million (US\$102 million) airport terminal at Montreal, and healthcare facilities.

Residential renovation and

retrofitting commercial buildings, as well as converting hospitals into long-term care facilities, is keeping Quebec architects busy (80 percent of them are two or three-person firms).

"There is a year or two of internship and qualifying exams before immigrant architects can be registered, at least in Ontario."

In adjacent Saskatchewan, three architectural firms merged in 1994 into McMillan Lehrer Ellard Croft (MLEC), Regina, to become one of the top five in the province. Bob Croft, one of the firm's partners, says "we're working at capacity and looking for staff."

Much of the 25-person firm's work is in the healthcare field, although last year it also designed a C\$26.1 million (US\$ 17.1 million), 22,000-square-metre complex for the University of Regina — the largest building on the campus.

MLEC is also designing schools, healthcare centres and housing on First Nations reservations in the province, whose tribes settled land claims with the federal government and have something like C\$400 million (US\$ 272 million) to spend.

As the recently retired Saskatchewan/Manitoba regional director for the Royal Architectural Institute of Canada, Croft affirms that architects are busy in neighbouring Manitoba, particularly in the capital, Winnipeg.

Previously mothballed public and private sector projects have been resurrected and are moving ahead; finding trades to build them is difficult if not at times impossible. MLEC designed a development on the common border, for example, and expected Manitoba contractors to bid on the job. They were too busy.

Ontario

Every development sector in the province has revived, some more briskly than others — new housing, industrial buildings, shopping centres, entertainment and retail complexes, healthcare and institutional buildings, airport terminals and other infrastructure projects.

Symbolic, if not yet physical, proof that the recession is over is the announced start-up of the 50-storey, C\$300 million (US\$204 million) Bay-Adelaide Centre on a 1.4-hectare site in downtown Toronto. The 100,000-square-metre tower was mothballed in 1992, to await a more propitious time, and is expected to be completed in the year 2000.

TrizecHahn Corporation and CN Pension Investments, both of Toronto, are the co-owners, with a head start in the 1,100-car underground parking garage and seven levels of an incomplete elevator shaft already built. The tower was designed in 1985, and recently redesigned by The Webb Zerafa Menkes Housden Partnership, Toronto.

Quebec

J Robert Thibodeau, a partner in Klein Thibodeau Henderson Architecture + Design, Montreal, says the provincial government

Atlantic Canada

Nova Scotia's provincial government has embarked on a program of public/private sector partnership in "high tech lifelong learning centres", replacing traditional schools operated by publicly-funded and operated boards.

The first private 25-year contracts to lease and manage the schools were awarded a few months ago. Although most of it









involves renovation work, some 30 new schools will be built over the next five years.

James Marriott, a senior architect with Whitman Ben Design Group Architects and Engineers, Halifax, Nova Scotia, says the 100-person firm is busier than it has been for five years.

The Americans are coming...

Some prominent US architectural and architectural/engineering firms have set up shop in Canada, mainly Toronto. US firms can practice in Ontario, for example, because they don't breach the provincial architectural association's rules if they become associated with a local, registered architectural firm.

HOK opened the HOK Canada office in Toronto in association with Urbana Architects Corporation. Cole, Sherman Consulting Engineers & Architects Inc was formed last autumn after US parent Woodward Clyde Group of Companies - which had previously acquired Cole, Sherman & Associates Ltd, a Toronto-area engineering firm, in 1995 - was in turn acquired by URS Griener. With that, URS Griener became the second largest architecture and engineering firm in North America.

...and foreign-trained architects are already there

Most of the international work of Petroff Partnership Architects, Toronto, is retail and shopping centres. About half the 80-person staff originated in other countries. Foreign work saved many of Canada's best known architectural practices during the recession-savaged years - Bregman + Hamann, Zeidler Roberts Partnership, The Webb Zerafa Menkes Housden Partnership, NORR Partnership, Petroff Partnership Architects, The Kirkland Partnership Inc, among others.

Paul Gogan, a Petroff associate, says they have come from every continent. "That has worked out to our benefit, when staff knew the site or the client, whether it was in Asia or Latin America."

The "How to" guide

"Any overseas architect who wants to work in Canada full time," he suggests, "should arrange for their immigration first. They should also try to introduce themselves by e-mail and websites and eventually by personal interview once they've immigrated, so they present a clear picture of themselves, as well as their technical and linguistic proficiency."

It's not that simple for Europeans to apply for reciprocal registration, he adds, but much more difficult for Asians because Chinese architects, for example, have never practised on their own and their accreditation structures are different.

All graduates from the ten Canadian architectural schools are certified to practice in any province, where they become registered with the provincial association. US or other foreign architects can work for architectural firms in Canada, providing their academic credentials are in order. They are registered as architects but can't present themselves as architects, nor approve plans, for two or three years.

There is a year or two of internship and qualifying exams before immigrant architects can be registered, at least in Ontario, and practise in a firm or on their own. In the meantime, they can work in an architectural firm, providing they can demonstrate their abilities and present acceptable credentials.

Facing page, top:

Headwaters Health Care Centre Orangeville, Ontario, by Dunlop Farrow Inc Architects

Facing page, bottom:

Canadian Space Agency, St Hubert, Quebec, by WZMH

Above left:

Simcoe Place, Toronto, by Norr Limited

Above right:

Cambridge Centre Cambridge, Ontario, by Petroff Partnership Architects



La Cité, Edmonton, Alberta, by Barry Johns of Stanley Architecture Ltd

team doing a design/build project, where they deliver the design concept and working drawings.

There is usually some form of competition for government work, to forestall potential criticism of favouring personal friends and political supporters. Timothy Kehoe, executive director, Royal Architectural Institute of Canada, Ottawa, notes that architects can log on to forthcoming federal government projects displayed on a national online MERX database. "The trend in the public sector is to outsource and privatise", says Kehoe.

The urban/suburban factor

Industry has dispersed from the downtown cores of Canada's major cities to their outer fringes or further out to the suburbs.

Rents and property taxes are lower, modern industrial buildings are much better suited to production and generally closer to highways, railway lines and airports.

A 1998 survey of Canadian real estate prepared by Colliers International, Toronto, suggests the demand for space in the industrial sector, driven mainly by surging high-tech companies, last year hit a 1990s peak, and in virtually every part of the country.

The absorption rate last year was 3.1 million square metres, nearly double the 1.7 million square metres absorbed in 1996. New construction amounted to about 1.8 million square metres and the national industrial vacancy rate slipped to 6.8 percent. Calgary led the demand, followed by Toronto and Vancouver.

In most provinces projects that have been deferred for years

> How Canada works

- Canada is a large country. Many architects, engineers and contractors still tend to operate regionally.
- Schedules of Quantities rather than Bills of Quantities are the preferred method of bidding for civil engineering work.
- The most popular form of construction contract is known as the "CCDC-2" or more formally as "Stipulated Price Construction Contract."
- Design Professions: Very few companies have been successful
 in developing national practices that stretch from coast-tocoast. As a result most architects and engineers are relatively
 small, especially when
 compared to similar organisations in the US.
- Contractors: Canada follows the general contracting system prevalent in most English-speaking countries. Unlike most of their archi-

tect colleagues, the general contractors have managed to build national and international reputations.

 General contractors subcontract much of the work on a project. They act largely in a management and coordination role. For this they charge up to 12 percent of direct costs for general conditions, overheads, and profit.

Getting at the work

There are less than 20 firms in Canada that could compete for the largest commercial projects. Outside the country they are almost always competing for the work against leading architects from other countries.

International competitions are rare in Canada; there are more client selections, and more often than not repeat business from satisfied clients.

Russell Acton, a principal of Acton Johnson Ostry Architects, Inc, Vancouver, says that in British Columbia, "clients might invite five or six architectural practices to submit proposals on a project, but they're really interested in the firms' qualifications. They may also pay three firms to do a concept scheme". That isn't untypical of the private sector work in the rest of the country, although it varies.

Architects are often invited to join a developer/contractor

"Younger architects are the future. Without them in your office you're really dead, you can't feed off their energy."

Bruce Kuwabara of Kuwabara Payne McKenna Blumberg Associates, Toronto

are being de-mothballed. But it's a new kind of game.

Developers want architects to tell them exactly what a building is going to cost, relative to their investment, and if an atrium or granite can attract tenants, that's fine, but it has to be done within very tight cost controls.

There is a generation of young architects in the wings that for the most part aren't going to care about developers' anxiety over costs because they generally aren't interested in designing commercial office towers, according to Bruce Kuwabara, a partner in Kuwabara Payne McKenna Blumberg (KPMB) Associates, Toronto.

The firm, established in 1987, has built a reputation for award-winning design of city halls, university buildings, cultural facilities and offices/studios for high-tech film companies.

"Younger architects are the future," he says, "the ones in Toronto, Montreal and Vancouver, who win design competitions, who get published. They have the potential to do better than their predecessors, with a commitment to social values. A lot of younger architects are rediscovering architecture, not concentrating on trying to do more square footage than anyone else. Without them in your office you're really dead, you can't feed off their energy."

CONSTRUCTION FACTFILE provided by Hanscomb

Construction Outlook:

Rates of Inflation: Currently, the rate of inflation for the building industry is estimated at 2% for 1998.

Forms of Contract: 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 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 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, which may involve guaranteed prices or phasing.
- Commercial or Design-Build / Turn-key This is a very common approach that is used for relatively simple industrial facilities. It involves negotiating or bidding from a statement of owner requirements which may be accompanied by very rough schematic designs. A single company takes responsibility for both design and construction. Again there are many variations to this approach.

Construction materials and methods

Material availability: Most building products are produced and readily available within Canada. With the new free trade agreement, some companies are repositioning their manufacturing and supply capabilities, but it is unlikely to effect availability of any key products. Certain specialised and large items of HVAC and electrical equipment may be imported from the USA.

Labour availability: Generally, there is a good supply of construction labour for all trades, although there may be regional variations. The work force is highly mobile and will be attracted to areas of high activity.

In most of the major urban centres, construction unions are quite strong in the non-residential sector of the market. Strikes are not unknown, but have been less in recent years to due oversupply of labour.

Equipment availability: All types of equipment for general construction are available. Most major items are rented.

Construction cost guides

Pricing manuals: Yardsticks for costing compiled by Hanscomb and published by Southam provides unit prices and composite unit rates for eight Canadian cities. A section on gross building costs is also provided. Approximate Construction Costs: The following range of square metre unit rates are provided for rough comparison purposes.

Building type	Can\$/m²	
Warehouse	320-385	
Office building 5-20 stories, shell & core	860-1,050	
Office building 11-30 stories, shell & core	800-1,000	
Mid-rise hotel	1,250-1,530	
Parking structure, 2-3 levels	315-385	
Apartment, low-rise (1-3 stories)	580-710	
Apartment, high-rise (51-25 stories)	615-750	
Industrial buildings	420-510	

Regional cost variations:

City	Index
Calgary	101
Edmonton	102
Halifax	99
Montreal	97
Ottawa	98
St. John's	105
Toronto	100
Vancouver	98
Winnipeg	96

Useful addresses

The Royal Architectural Institute of Canada 55 Murray Street, Suite 330 Ottawa, Ontario K1N 5M3

Phone: +1 613-241-3600 Fax: +1 613-241-5750

Canadian Institute of Quantity Surveyors PO Box 124 Station R

Toronto, Ontario M4G 3Z3

Phone: +1 905-471-0882 Fax: +1 905-471-7545

The Association of Consulting Engineers of Canada #616 130 Albert Street

Ottawa, Ontario K1P 5G4 Phone: +1 613-236-0569 Fax: +1 613-236-6193

Canadian Construction Association 85 Albert Street, 10th Floor Ottawa, Ontario K1P 6A4

Phone: +1 613-236-9455 Fax: +1 613-236-9526

World Architecture Symposium

Critical globalism

Canada's international architects are keen to expand their global practice yet further, according to the participants at the first World Architecture Symposium held in June in Toronto, and chaired by WA's Deputy and Features Editor, Katherine MacInnes. In summarising the day's debate Jack Diamond of Diamond and Schmitt Architects warned that "as architects we have an ethical heritage that distinguishes us from simply commercial services. If we don't realise this 'guardian' role, then the worst aspects of globalisation will, in fact, destroy us."

Is there a distinctly Canadian approach to architecture?

Michael Kirkland (Kirkland Architects): Canada doesn't carry with it the baggage that we associate with American politics and chauvinism. And in many ways, Canada is uniquely well positioned sociologically, technologically and geographically to operate all around the world.

Marianne McKenna (Kuwabara, Payne, McKenna, Blumberg Architects): What has become Canadian is what is termed "critical regionalism" which probably began out west with the Patkaus (See Country Focus).

David Lasker (Globe and Mail): I think there is one building type that Canadians do the best – malls and shopping centres. Design Corp has the biggest mall in Brazil. IDG designed the biggest one in Latin America and Europe. And Eb Zeidler wrote the book on it with the Eden Centre and Queens Key here in Toronto. And it is interesting that Santiago Calatrava's first North American project is the BCSE Place Galleria – a mall.

Jack Diamond (Diamond and Schmitt): The problem with considering the

approach but I think that there is a North American approach. Foreign clients have come to North American architects because they want buildings that compete commercially. What we did learn in the 90s is that buildings do compete with each other – they compete on style and they compete in many other respects. The international market is a designer label market.

David Lasker: When I first arrived in Toronto, I did a big feature story about Boris Zerafa. During the research, I got quotes from Ruth Corker who said "Zerafa is an international master of curtain wall but his architecture does not talk about polemics," and Peter Pran called it an "architecture of commerce".

Brian Andrew (Webb Zerafa Menkes Housden): If there is one thing that Canadians are abashed about it is commerce, which is ironic given the history of the fur trade which was essentially a commercial exercise that obviously changed the course of history in this country. And the spice trade and so on. What we are talking about is a way in which architects do work overseas which doesn't necessarily engage architects who might be designing their own cultural centres. The world of commerce is distinct from that of cultural







question "distinctly Canadian approach to architecture" means that most of the discussion becomes a sort of nineteenth-century view about regional style. The genius of Canada clearly has been to balance private and public interest. Forget about questions of style because it is so eclectic, the influences are so complex, there are so many currents at play in the world that it becomes a misnomer.

Bill Neish (Norr Group): I agree that there may not be a distinctly Canadian

institutions. US-based designers of commercial buildings are held in high esteem – KPF and Richard Meier. But in Canada, you couldn't say that.

Jack Diamond: The signature building paradoxically seems to trivialise architecture. The forces to drive it are these: firstly real estate wants an instant address and recognition in order to lease. Secondly, architects want to have a recognisable style and icon to advance their careers. And finally, magazines only publish buildings which are novel and that is how architects become

Attendees:

JOURNALISTS

Publication Katherine MacInnes World Architecture Canadian Architect Marco Polo David Lasker Globe and Mail Globe and Mail **Beth Kapusta** Building (Canada) Al Warson **Gordon Grice** Perspectives (Canada)

ARCHITECTS

Paul Vincent CSEA/URS Greiner

Paul Tan de Bibiana Breaman + Hamann/B+H International

Rill Neish Norr Group Jeremy McMullin Design Corp

Zeidler Roberts Partnership Fb Zeidler Lou Mancinelli Hellmuth, Obata + Kassabaum

Randy Roberts Cole. Sherman

Kuwabara, Payne, McKenna Blumberg Architects Marianne McKenna

Petroff Partnership Paul Gogan Ted Shepherd Petroff Partnership Rainer Goeller Moshe Safdie Architects Michael Kirkland Kirkland Architects **Dunlop Farrow Architects** Michael Moxam Craig Applegath **Dunlop Farrow Architects** Webb Zerafa Menkes Housden **Brian Andrew** Michael Wong Michael HK Wong Architects

AJ Diamond Donald Schmitt and Company **Jack Diamond**

known. So there are three powerful influences that drive towards novelty for its own sake as opposed to service, user satisfaction and context.

Lou Mancinelli (HOK): Do we have a uniquely Canadian way of servicing our clients? Perhaps we have an intuitiveness that allows us to understand and to translate their ideas and thoughts into whatever the form is?

Marianne McKenna: I think that it is a good point. But although service is part of the profession, I still think that there are issues about the quality of what you deliver that have to be paramount.

Paul Gogan (Petroff Partnership): I believe that Canadians are defined by the things they choose not to export. They choose not to inflict their value systems on the cultures that they work with. It is definitely a dynamic that exists within the Canadian psyche which stems from this diverse culture. Architects with diverse cultural backgrounds are emerging from Canada and Facing page from left to right: Michael Kirkland; Marianne McKenna; Rainer Goeller; Ted Shepherd; Lou Mancinelli; Jack Diamond; Bill Neish; Eb Zeidler; Michael Kirkland; Marianne McKenna; Rainer Goeller; Craig Applegath; Michael Moxam This page from left to right: Bill Neish. Beth Kapusta; Paul Gogan; Ted Shepherd; Lou Mancinelli; Jeremy McMullin; Paul Vincent; Randy Roberts; Katherine MacInnes; David Lasker; Marco Polo; Brian Andrews; Paul Tan de Bibiana; Jack Diamond: Bill Neish: Fb Zeidler: Michael Kirkland: Marianne McKenna, Katherine MacInnes: David Lasker: Brian Andrew: Paul Tan de Bibiana: Jack Diamond

est groups and users, it is very much something to catch the attention of the jury.

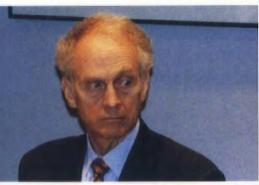
Ted Shepherd (Petroff Partnership): Our experience is that most of our international work is generated through competitions, whereas most of our work in Canada is generated through contacts and direct personal relationships with client groups. In the latest competition that we have participated in, in China, it was an open question to me whether it was a real competition or a sham based on connections between people who were involved.

Michael Kirkland: Competitions, it seems to me, are treacherous and complicated. With it goes a lot of politicking and not entirely sincere competition activity - it is an important activity and it needs to be much better organised.

Bill Neish: I think that, in many situations, competitions are the only way that one can enter the international market - it is a high price but if you can compete successfully it is one of the best ways of establishing yourselves. Our experience in the Middle East is that for several years all our work came by the competition route. We have an office of 90 people in the UAE. Very little of our work is now by competition - because we are established we have credibility.

How important is it to make designs sensitive to the local environment and context?

Michael Kirkland: I think there is a problem which concerns buildings predigested by western developers and "flown in" and put down in a new context. Asia, for example, perceives her traditional architecture as archaic and hopelessly behind "western" symbols of progress and achievement . As a result, there are places in Asia which are evolving into laboratories of mutation and duplication.







through their work abroad - we don't just have Canadians in our office, we have Eastern Europeans, Asians, South Americans, everyone across the board - they are redefining the role of the international architect.

Competitions - a valid means of obtaining overseas work?

Jack Diamond: The problem with design competitions is that they select designs not architects. There is seldom a chance to work with clients, inter-

Ted Shepherd: We had experience of one project which was a renovation in Shanghai where the client was relatively sympathetic to the preservation of their 1930s building in the same way as we renovate buildings in Toronto, which is to preserve the exterior but completely gut the interior. So it is not always as Michael describes it, it depends on the client.

Craig Applegath (Dunlop and Farrow): There is a certain irony in Michael talking about China, and about western architects imposing their vision on ➤ the Chinese. It is exactly what happened to Canadians in the 50s and 60s. We had just shaken off British imperialism and we were in the process of adopting American imperialism, and we imported American architecture and finally American architects.

Jack Diamond: Forget about questions of style, the whole issue concerns the particular environment. It is like a football player with a torn cartilage who is given a pain killer so that the pain – which is there to help protect his knee from further injury – is numbed and he goes on to play and destroys

centres in the US, you don't seem to have to come from a city of 10 or 15 million people to do that.

Randy Roberts (Cole, Sherman): I work for a firm that was short-listed for Vancouver airport and after our interview they literally told us, "Why would we go for a Toronto firm when we could go for a big US firm?"

Brian Andrew: We competed head to head with Ellerbe Becket on a project in the Middle East. The clients visited their headquarters in Minneapolis.

There are hundreds of people on four or five floors. In the ultimate design exercise, we scored better than they did but their fee was lower than our fee.

Paul Tan de Bibiana: One of the problems that we have in Canada is that we have a complex. Many years

ago the banks would only hire American architects because they believed that the Canadians didn't "have what it takes". There was a moment when big clients only wanted big international firms and the big international firms happened to be the American ones. It is unfortunate. Over the years

things have started to change but not fast enough.

David Lasker: One of the biggest projects of the last ten years in Canada is the CBC Broadcast Centre by Philip Johnson. I was interviewing him and I said "Well you beat all these Canadian architects. Did you have a lower fee?" And he said "Oh that had nothing to do with it, it wasn't a competition, we were just the architects that went with the developers – part of the package." Maybe on really big projects the name is main factor and not the fee.

Bill Neish: We have been tempted to set up drawing departments in other countries which can deliver the same work for less money. We actually have offices in Abu Dhabi and Dubai but we still find it difficult to attract employees.

Randy Roberts: We outsource our work to our overseas offices which have a more competitive cost structure.

"I do not like to think that people come to us because we are cheap. We are not. The fee we charge, \$10,000 Canadian, we may think it is nothing but it supports 3,000 people in some nations for a whole month." Paul Tan de Bibiana, Bregman + Hamann/B+H International

his knee. HVAC is a mindless drug for architecture. We see glass buildings in desert climates with air conditioning that kills the pain. The building doesn't feel that pain but the economy does.

Do global clients employ Canadians because their weak dollar means their services are relatively cheap in comparison, for example to the US?

Paul Tan de Bibiana (B+H International): I do not like to think that people come to us because we are cheap. We are not. The fee we charge, \$10,000 Canadian, we may think it is nothing but it supports 3,000 people in some nations for a whole month.

Lou Mancinelli: Low fees may give you an advantage in the global competitive market but our experience has continuously been that it is the service that the clients are looking for. In addition, with reference to the competition theme, if architecture is a service then we are really competing to provide the best service. That is what the clients are looking for.

Brian Andrew: We, and I know that it is true of others in the room, have







lost projects in China, the Middle East and Canada to large US practices for example who are theoretically dealing with a more expensive dollar, so I don't think that the issue of price is straightforward. At home with the Chrysler Headquarters in Windsor, Ontario, for example, our firm competed and won the job — there were two other competitors, one from Chicago and the other from New York — we were the only Canadian firm that was even invited to participate. Interestingly, HOK is from St Louis and Ellerbe Becket from Minneapolis; these are not the largest metropolitan

Paul Tan de Bibiana: I think that this is happening a lot more in Asia. A lot of Hong Kong firms employ Philippine firms to do their working drawings. In Hong Kong they send a manager over to the Philippines to supervise the working drawings that are done there. The manager leaves on a flight in the morning and comes home at night. It is obviously much cheaper for them to do it that way. I don't know whether this is because Hong Kong is becoming so much more expensive, but it is also happening in Thailand and Malaysia.

What distinguishes your approach to local rather than global work?

Eb Zeidler: Because we have offices in the US, our local presence is constantly being questioned. If I want to do a project in Vancouver, I do it under another firm name with Zeidler at the end of it. I can't call it Zeidler Roberts. It is the same in Edmonton, Calgary and Montreal.

Ted Shepherd: We have a large client who we had to service by registering in all provinces in Canada – it took one of our staff members three months. It is actually easier to practice across the border in the US than it is to practice from province to province.

Michael Kirkland: This is a global architecture symposium but I think that architecture is a regional not a global activity. Because of distance we rely on joint ventures. Aldo Rossi could build a building in China because what he did was the schematic design and then handed it over to the Chinese design institute. But 90 percent of buildings are between 1,000 and 2,000 square metres. That is not a suitable scale of activity for international practice. Therefore most projects don't justify joint venture.

How are Canadian practices restructuring to meet the global demand?

Ted Shepherd: Bill, you at Norr have just gone through a restructuring of

Facing page from left to right: Michael Kirkland; Marianne McKenna; Rainer Goeller; Craig Applegath; Michael Moxom. Eb Zeidler. Bill Neish; Eb Zeidler; Michael Kirkland

This page from left to right: Jack Diamond. Michael Kirkland; Marianne McKenna; Rainer Goeller; Craig Applegath; Michael Moxom. Eb Zeidler; Michael Kirkland

overseas is because they try to become a local firm, as Lou was mentioning earlier. We have experts but they know the local conditions and they are able to answer queries in person on a day to day basis. I think that this is the reason that we have been successful in China.

Lou Mancinelli: I agree with you. It makes financial sense to "be global and act local" – we spend very little on competitions because we ARE a local firm.

Is globalisation self destructive? Will the natural technology transfer mean that ultimately the global firm will no longer be required?

Michael Kirkland: Well there will always be show business so there will always be work for the big actors like Frank Gehry.

Marco Polo: Some projects are used openly as a means of technology

transfer. In Malaysia, for example, the Petronas twin towers that were done by Cesar Pelli and Adamson Associates had between 60 and 70 local Malay architects who came over and worked in the Toronto office for the first tower. And the

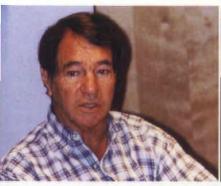
second tower was done entirely by Malay architects so that project is specifically perceived by the client as a technology transfer.

Paul Gogan: Hopefully technology transfer will mean that we can communicate earth-quake preventing techniques, environmentally friendly technological materials etcetera and the world will become better and safer and everyone will benefit from it.

"I agree with you. It makes financial sense to 'be global and act local' – we spend very little on competitions because we ARE a local firm." Lou Manignell, HOK, Canada

your practice, and you are now part of a large engineering practice. Is this something that is going to happen more? Are global engineering firms going to have an architectural arm to increase their ability to compete worldwide for example? Could this be a pattern for the future?

Marco Polo (Canadian Architect magazine): It is starting to happen. Stanley, which works out of Edmonton has an engineering office, 17,000 employees in







45 cities worldwide, and has just started an architectural division. They did it by acquiring Barry Johns, Wensley Spotowsky Architecture Group in Edmonton and Laird Polson in Calgary so now they have approximately 50 architects on staff and that happened pretty much overnight. They are planning to increase the architectural staff to 300 – so it is starting to happen. The big merger firms are coming up.

Paul Tan de Bibiana: I think that the reason that firms like HOK are successful

Paul Tan de Bibiana: I think there will always be clients who want international architects. If you look at us in Canada for example, we are a mature country but clients still want international architects. I think that in Asia, particularly China because it is so vast, they will still be looking for outside help for many years. There will always be a demand.

The WA symposium was held in conjunction with the Ontario Association of Architects on 19 June 1998. For a free copy of the complete transcript please telephone +44 171 470 7019.

New buildings in Canada

Sound of silence

The Chan Centre concert hall, sitting in the hillside overlooking the bay of Vancouver, British Colombia. Its world class design has been achieved through employing the expertise of an international team: acousticians from New York and theatre consultants from London and both the architect and patron are Canadian citizens of Chinese descent. The architect, Bing Thom, reveals his vision of the Chan Centre as a finely tuned musical instrument. The secret to its exceptional acoustics is the successful elimination of extraneous sounds. It is the kind of space from which silence emanates. You can literally hear a pin drop. Katherine MacInnes listens to the story as told by the architect, client, acousticians and theatre consultants.

Architect - Bing Thom

Bing Thom won the commission for the Chan Centre through a process unique to the west coast of Canada which involved the client, the University of British Colombia, and the patrons, the Chan family, both interviewing a selection of North American architects. Thom's was the only proposal which involved preserving the existing forest which obscures the view of Vancouver Harbour. Since most performances are at night, he felt that it would be impossible to appreciate the view, but by lighting the trees adjacent to the glazed reception area, he could create a magical feeling.

The silence essential for perfect acoustics has been achieved through the use of two masonry skins. The outer masonry oval is completely isolated from the inner masonry envelope of the concert hall itself. Between these skins there are circulation spaces: lobbies, corridors and stairwells which create a buffer and lead finally to the inside of the concert hall enclosed in the interior.

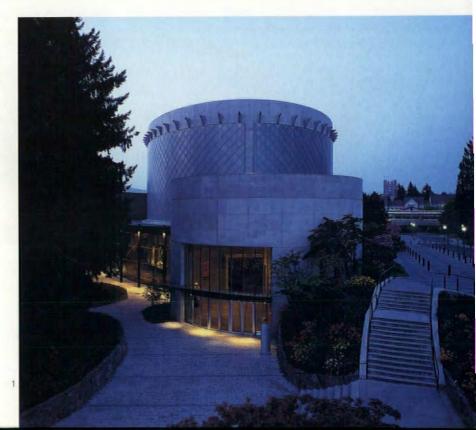
Thom was influenced by many European theatres. The columns in the main concert hall were inspired by the feeling of intimacy they give in old theatres where less advanced technology and smaller roof spans made them a structural necessity.

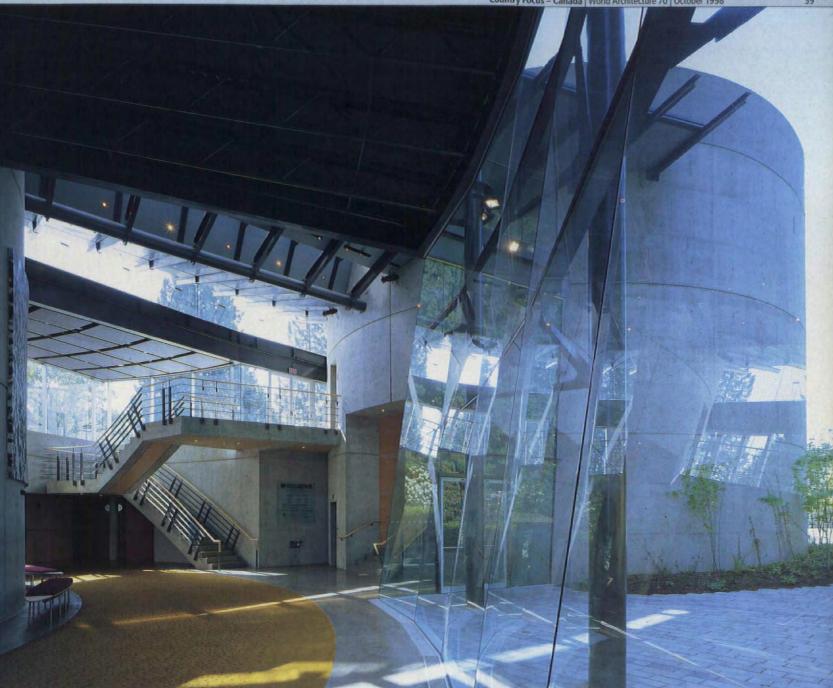


Key to level one floor plan

- 1. Foyer
- 8. Sound and light lock
- 2. Lobby

- 9. Chan Shun concert hall
- 3. Coats
- 10. Stage performance
- 4. Ticket office
- 11. Instrument storage
- 5. Men's WC 6. Women's WC
- 12. Dressing rooms 13. Loading/receiving
- 7. Concession
- 14. BC Tel theatre





In the studio theatre, 12 seating towers can be moved into 12 different configurations for the adjustable performance room were inspired by those at Shakespeare's Globe theatre, recently rebuilt in London.

Client - University of British Columbia

The client was the University of British Colombia. The patron of the building was Mr Chan Shun and his son Thomas Chan who have made their fortune from the Lacoste clothing label. The father, whom the building is named after, died a week before the opening night, but he was present a few days earlier at a rehearsal concert, so was able to hear the room in operation. His son took a personal and direct interest in all aspects of the design.

According to all parties concerned, the budget seemed to increase on a constant basis right up until the opening. Bing Thom claims that the Chan family put forward C\$10 million (US\$6.8 million) which, according to present government policy on funding cultural buildings, was matched by the government. The final cost, however, was C\$26 million (US\$17.5 million).

Thom explains: "The Chans set up the Chan foundation. They stipulated that 70 percent of the fund should be spent on the building and 30 percent on supporting student scholarships, administration and educational projects."

Acousticians - Artec Consultants Inc

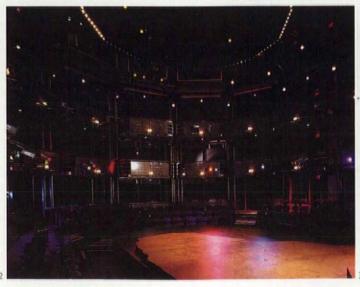
"We were hired by the UBC and asked to submit a prescriptive preliminary design to guide the architect, who was hired subsequently," says Russell Johnson, architect and acoustician who founded the New York based Artec. Johnson insists that the seat count of 1,400 is the key to the Chan Centre's success. Bing Thom had been disappointed by the relatively poor acoustical performance of Roy Thompson Hall which he had designed previously. Johnson attributed this to size. "It has 3,000 seats. The orchestra can only manufacture so much sound energy," Thompson explains. "The only thing to soak up sound energy and kill it off is the audience. 3,000 audience members absorb twice as much as the audience in a 1,400 seat hall.

"The Chan concert hall incorporates several devices for varying the acoustic environment to suit the style of work that

- 1: Main entrance to the Chan Centre showing access from the campus down into the outdoor amphitheatre
- 2: Interior showing angled glass wall of the lobby



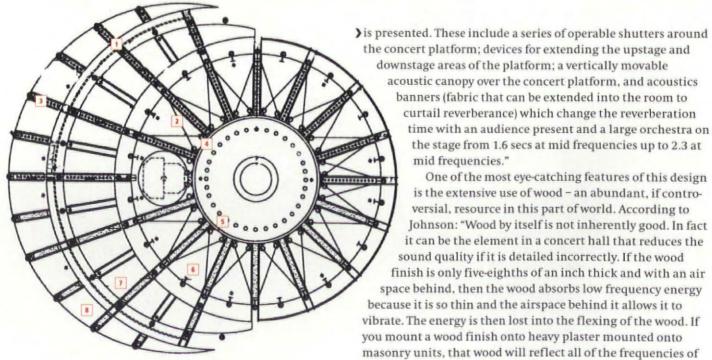
- 1: Main concert hall showing canopy overhead and adjustable acoustic screens around the back of the stage
- 2: Studio theatre showing movable seating towers
- 3: Washrooms
- 4: Adjustable canopy





-





Key to reflected plan of acoustic canopy

- Spotline port
- Stainless steel cables
- 3. Radial glass rib
- 4. Concert light with stainless steel housing

6. Cork covered plywood

8. Zinc clad plywood

7. Painted cork covered plywood

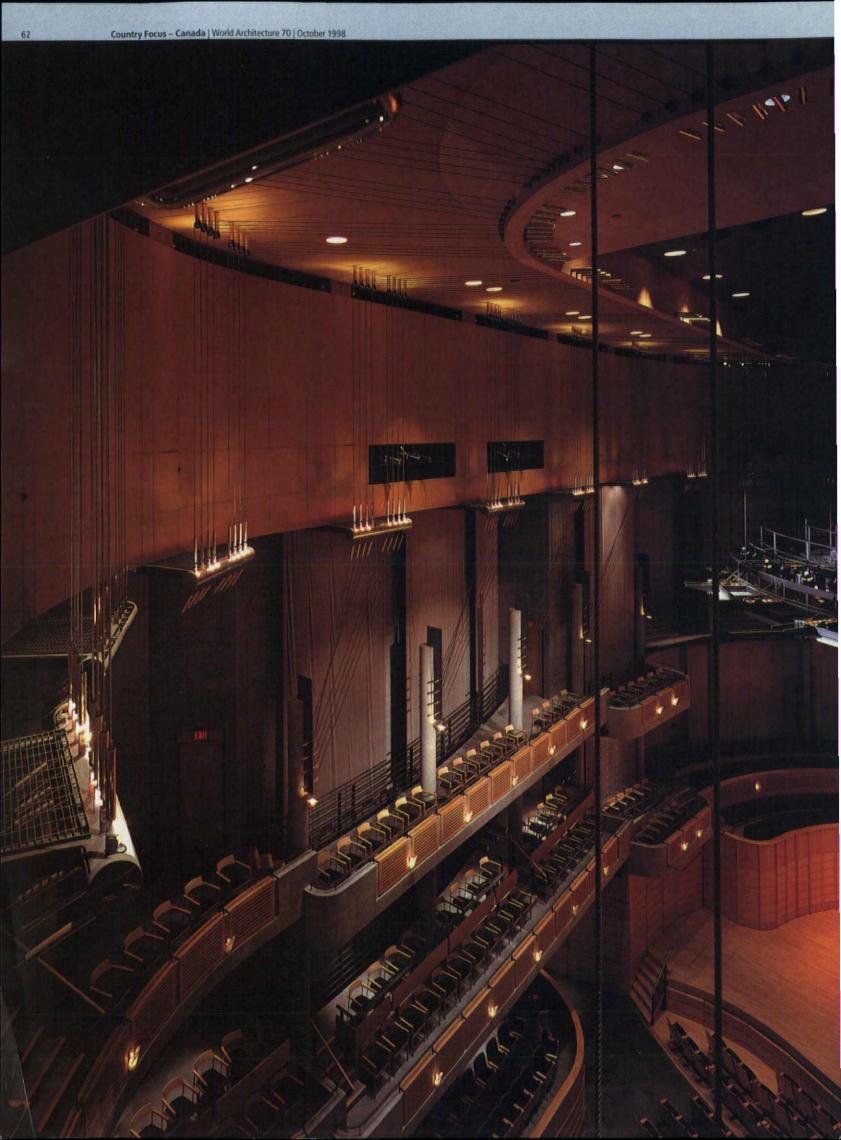
5. Stainless steel clad plywood

curtail reverberance) which change the reverberation time with an audience present and a large orchestra on the stage from 1.6 secs at mid frequencies up to 2.3 at mid frequencies."

One of the most eye-catching features of this design is the extensive use of wood - an abundant, if controversial, resource in this part of world. According to Johnson: "Wood by itself is not inherently good. In fact it can be the element in a concert hall that reduces the sound quality if it is detailed incorrectly. If the wood finish is only five-eighths of an inch thick and with an air space behind, then the wood absorbs low frequency energy because it is so thin and the airspace behind it allows it to vibrate. The energy is then lost into the flexing of the wood. If you mount a wood finish onto heavy plaster mounted onto masonry units, that wood will reflect all of the frequencies of music. In the Chan Centre, all the wood is bonded directly to heavy masonry."

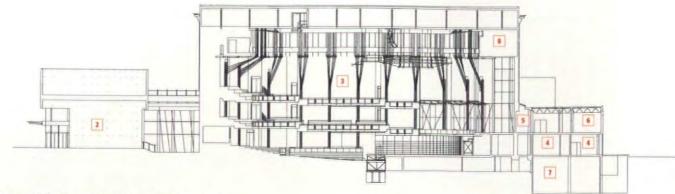
acoustic canopy over the concert platform, and acoustics banners (fabric that can be extended into the room to

Referring to the adjustable performance room, Johnson says "We did not recommend an extensive approach to adjustable acoustics in that room. The position of the movable towers will have a tremendous effect on the acoustics. If they are in a tight >



Key to sections

- 1. Lobby
- 2. Fover
- Concert hall
- Dressing rooms
- 5. Upper lobby
- Washrooms
 Mechanical room
- 8. Catwalk
- 9. Sound and light locks



> circle the acoustics would be good for speech. The towers can be moved back to expand the stage or moved to surround the stage to create a theatre in the round. Some towers can be removed to create a much more reverberant setting for music performance."

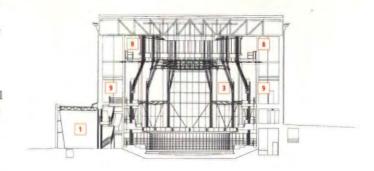
Theatre planning - Theatre Projects Consultants (UK)

Theatre Projects Consultants was responsible for the technical consulting, lighting, sound equipment, rigging, and all of the technical aspects. Artec and TPC have collaborated before. Johnson explains: "We have worked with Theatre Projects on the Royal Concert Hall in Nottingham, the Derngate in Southampton and also the Esplanade Theatres on the bay in Singapore."

Jerry Godden of Theatre Projects is disappointed that the client UBC considers the concert hall to be just another campus building. "It isn't. It is the best hall in Vancouver but they are not marketing it as such." Godden claims that it is extremely cheap at approximately C\$22 million (US\$15 million) – almost half what a building with a similarly excellent concert hall should have cost: "The tight budget firstly meant that the high-quality acoustics were achieved through simple structure – basically concrete with wooden cladding – and that the building envelope dramatically shrunk." Public circulation spaces and backstage areas were scaled down so that "really the foyer is insufficient to deal with the theatre's capacity. It relies on fine weather so that the audience can move outside during the intervals". Godden believes that it is a "great credit to the architects that they have concentrated their resources on the hall".

Theatre Projects focused its attention on the studio theatre as well as the design of technical equipment: sound systems, lighting systems and the canopy in the concert hall. The main contribution was the movable seating towers each of which weigh five tonnes but can be moved easily on air casters. Godden claims that they scaled down a solution that they had applied in 1992 to the Cerritos Centre for Performing Arts in Los Angeles which can seat 900-2,000 people.

Their main contribution to the concert hall was the canopy. "Most concert halls that we work on with Russell Johnson need adjustable sound systems according to the number of performers. The canopy is basically a hard reflective surface which can be lowered if noise needs to be amplified. This, in connection with the adjustable acoustic banners which absorb sound, means that by raising and lowering the canopy one can tune the hall."



The canopy required sprinklers because of an old law made when theatres were lit with candles. "So the canopy needed a water source and sprinklers. Also you have to get on to the canopy, so there is a telescopic ladder. It is a very complicated piece of engineering." Jerry Godden designed the acoustic canopy which weighs 37 tonnes, can accommodate 400 lights and can be lowered to the stage in eight minutes using a mechanism which only requires an engine the size of a lawn mower and an impressively complex system of pulleys in the roof.

Analysis

Michael Noon, Director of the Chan Centre, feels that it is important that "while the ear is listening to music the eye has something to dwell upon". He believes that Bing Thom has achieved this. Already this year the centre has hosted 383 events, not all of them self financing. Some have been funded by the University. It works because it "fills the gap". Noon explains: "The Playhouse is too small, it seats 700 and the 28,000 seat Queen Elizabeth theatre is too big – when it is half full if really looks empty, whereas when we don't sell out it is not nearly so visible."

From an architectural perspective the main consensus, according to Bruce Haden, Vancouver architect and regional correspondent for the *Canadian Architect*, is that "the architects have achieved a quality – shared by the best Vancouver buildings – of a precise architecture engaged with the landscape". But one of the best assessments of this building is surely from the performers themselves. The Moscow Chamber orchestra says it was "one of the best they have ever played in"; Kronos, a new wave music group from San Francisco says that it was "the best" and New York's Emmerson quartet has rebooked already."

Facing page:

Bing Thom conceived of the concert hall as a finely tuned musical instrument. Tensioned wires come from the columns to support the ceiling. The wooden walls reflect sound. The top of the adjustable canopy can be seen on the right hand side

Client

The University of British Colombia

Bing Thom Architects

Acoustic

Artec Consultants Inc
Theatre planning

Theatre Projects Consultants

Structural engineers

CY Loh and Associates Mechanical engineers Yoneda and Associates Electrical engineers

Reid Crowther and Partners Lighting engineers

Lam Consultants

Architect

Saucier + Perrotte/Menkés Shooner Dagenais
Reviewed by

Katherine MacInnes

Collage of life

Schools of Architecture, Urban Design, Landscape Architecture and Industrial Design, Montreal, Quebec Province

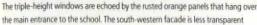
he practice of Saucier + Perrotte is Montreal's "latest thing". The design school which it completed recently has all the sophistication that you would expect of a French night-club. The theatrical full height foyer is dark and cavernous – conducive to student parties – and the auditorium which backs into it provides a pop-concert like canopy for a mini-stage. The sleek black and metalic finishes are, however, a result of the architect's interest in the memory of colour rather than colour itself; "we used colour a lot in the past but now we are taking a break. Grey is more disturbing. Colour will come from the people, from reflection and the kind of lighting that we have used".

The building comprises a conversion of an old convent and new translucent volumes joined by bridges and metal staircases. It is organised around the central organic shape of the amphitheatre, built within the excavated volume of the original chapel, which is suspended in the centre of the building. It seats 400 but can be transformed into two distinct theatres by drawing screens across the balcony.

Triple-height windows are created by joining the existing windows together vertically, dramatically increasing the

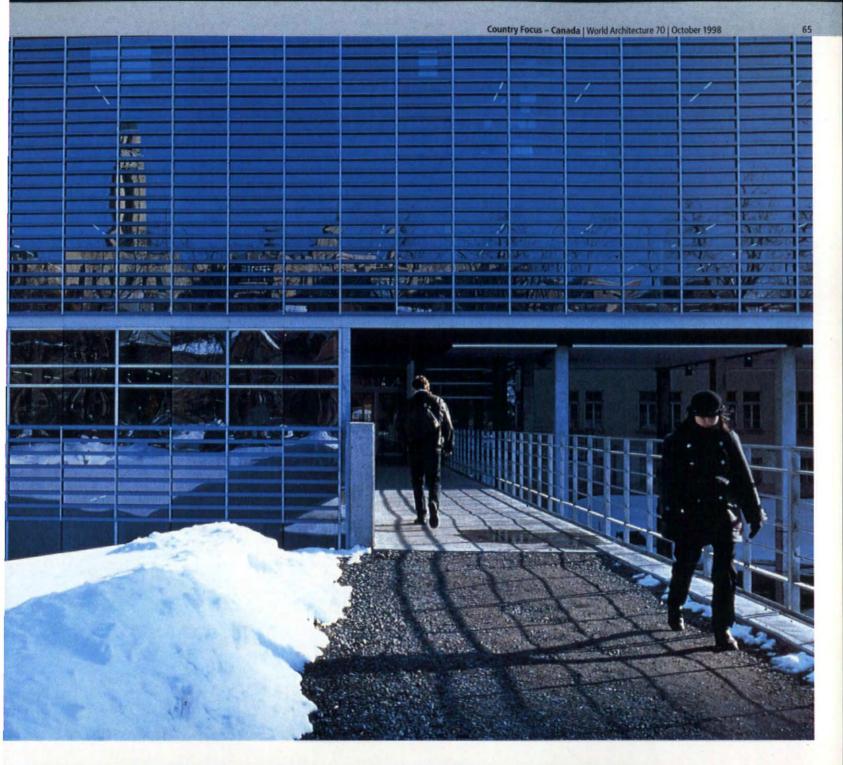








Detail of the rusted metal panels over the entrance





The auditorium can be divided in half to create two smaller, more intimate theatres



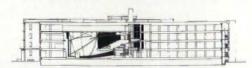
The auditorium is a self-contained volume in the main hall. The hall is dark and theatrically lit



Côte jardin elevation



Ste-Catherine elevation



Coupe amphithéâtre





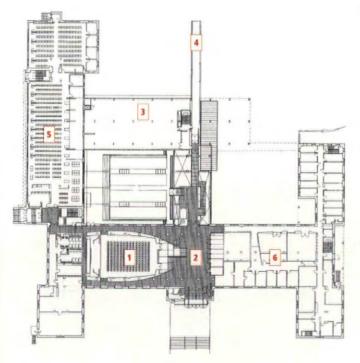






From top left of double page spread, clockwise: The main hall comprises monochromatic surfaces with varying reflective qualities; workshop studio; the dramatic links

between the old and the new buildings consist of floating bridges over cavernous spaces defined by slick surfaces; students hang their work on the glass curtain wall; the open plan studios



Key to ground floor plan

- Auditorium
- Bridge
- 2. Main hall
- 5. Existing rooms
- 3. New studio area
- 6. Staff rooms

) amount of light that enters the building from the south-westfacing Côte Ste Catherine. Orange rusted panels hang over the main entrance echoing these windows and, as Saucier puts it, "describing the promise of discovery - a desire to find out what is inside". The north-east facade on the other side is part of the new building. The glazed garden facade reflects the buildings of the old Montreal campus creating, what Saucier describes as, a "simple connection" with the rest of the university. The contrast between the two faces of the building provides a dynamic which the architects have capitalised on in the interior.

The old and the new building are linked seamlessly despite their inherent differences. The school of landscape architecture on the top floor benefits from panoramic views of the surrounding countryside and the wooded slopes of Mount Royal beyond. The school of industrial design is on the ground level in order to have direct access to the material laboratory and workshops below.

Circulation is achieved using a combination of the traditional corridors and ultra modern perforated metal walkways extending over space. Workshop areas are provided in the form of separated rooms along the joining building perpendicular to the main facades, and studios can be found in open plan spaces divided with movable glass screens in the new volume. Local critics have described this facade as messy because students stick papers on the inside walls, but the architects designed it as a collage of student life and are satisfied that the result means that even on a grey day, the building has a energy of its own.

Architect
Patkau Architects Inc

Reviewed by

Katherine MacInnes

Teaching them a lesson

Strawberry Vale School, Victoria, British Colombia









he Strawberry Vale School is an exceptional piece of architecture. The fact is that it works. But it is not functional in any modernist sense. In plan it is free flowing, connecting with the landscape; it is made of wood but it is not "organic" architecture. The school is the result of a fresh look at places that are conducive to childhood and particularly to learning. It is at once progressive, energising and comforting.

John Patkau strongly resists attempts to classify his work. Any mention of regionalism based on romantic notions of the vernacular, are particularly unwelcome. He is particularly disappointed that so much attention has been focused on the budget, which was increased through a private donation from an enlightened member of the school board – a move which was resented in other educational establishments in the region. The drive towards "equally mediocre designs," is in Patkau's opinion, the result of "the philosophy to which Thatcherite democratisation subscribed".

When Patkau was first presented with the site, it was "semirural", now it is more suburban but it is easy to see that it was the surrounding landscape with its rocky outcrops which the architecture navigates, that inspired his design.

The construction engineering is exposed in the interior with wooden beams allowing spaces which are imaginative and inviting. Varying roof heights produce a feeling of undulating space.

An unusual level of transparency is achieved throughout. The children can see each other in their respective classrooms from the corner windows both in the interior and exterior, allowing for constant interest and stimulation.

Client

Greater Victoria School District

Structural engineer

CY Loh Associates

Mechanical engineer

S W Thomson Consultants

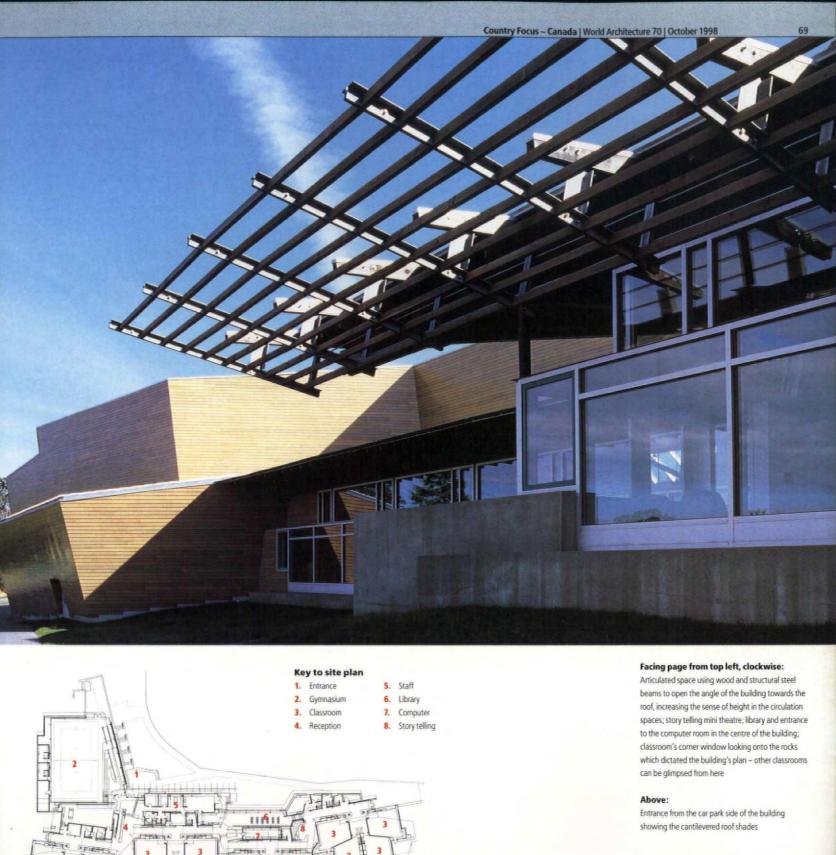
Electrical engineer

Reid Crowther & Partners

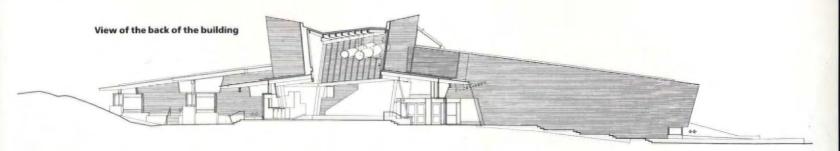
Landscape architect

Moura Quayle/Lanarc Consultants









Architect

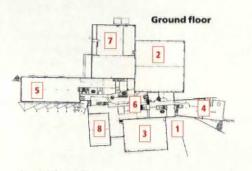
Dan Hanganu Architects

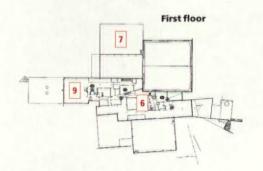
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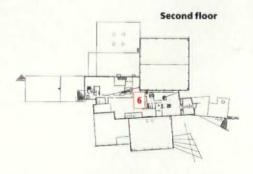
Katherine MacInnes

Acrobatic architecture

Cirque de Soleil headquarters, Montreal, Quebec Province







Key to floor plans

- 1. Visitors' entrance
- 2. Staff entrance
- 3. Practice rooms
- Set construction workshop
- 5. Administration offices
- Cafe
- 7. Physiotherapy
- 8. Changing rooms
- 9. Costume design workshop







Facing page:

Corrugated iron exterior of the main practice room showing the cutaway circle clown face

Left, from top left, clockwise:

The main ambulance access, now enclosed and transformed into a gallery with stairs leading to administration offices on either side; the access road has been replaced by a water feature; first floor main hall with a stair/ auditorium for staff meetings and extractor pipes positioned like classical columns; vegetable gardens on the reclaimed land





he Cirque de Soleil is one of Canada's most popular and successful exports. Dan Hanganu, who was selected by the circus to design their headquarters, found that he had to deal with a client group which was a strange but dynamic mixture of zany entertainers and hard-headed businessmen.

Hanganu is of Romanian descent, and perhaps it is his familiarity with gipsy performers of his native land that enabled him to empathise with the client. The 16,656-square-metre, four-storey headquarters was built for C\$18 million (US\$12.25 million). Using industrial materials, Hanganu has communicated the excitement and risk-taking ethos of a nomadic circus troop and their tents. The corrugated aluminium exterior skin provides a canvas for visual jokes such as the peeled-back aluminium revealing a door and a wall studded with bicycle reflectors which shimmer in the sun.

Flexibility and phasability were major preoccupations with the Cirque – already another architect has been commissioned to expand the administrative wing. All the practice studios and offices lead off the central "back alley" which was originally conceived as an access route which would allow ambulances to enter the building. It was subsequently transformed into a public space articulated with transparent staircases and amphitheatrical steps.

The Cirque's contribution to world-class entertainment is equal to their contribution to the pressing late twentieth-century issue of land management. The site overlooks the second biggest landfill in North America. This was selected partly in the spirit of the Cirque de Soleil's anarchistic risk-taking and partly because of its rock bottom land price of C\$1.10 (US\$.75) per square foot, compared to C\$85-100 (US\$58-68) downtown. True to form, the Cirque commissioned a landscape comprised of vegetable gardens from which their multi-national canteen, which caters for each troupe's home cooking, is supplied.

Client

Cirque du Soleil

Structural engineer

Nicolet Chartrand Knoll

Mechanical/Electrical engineer

Dupras Ledouz

Landscape architects

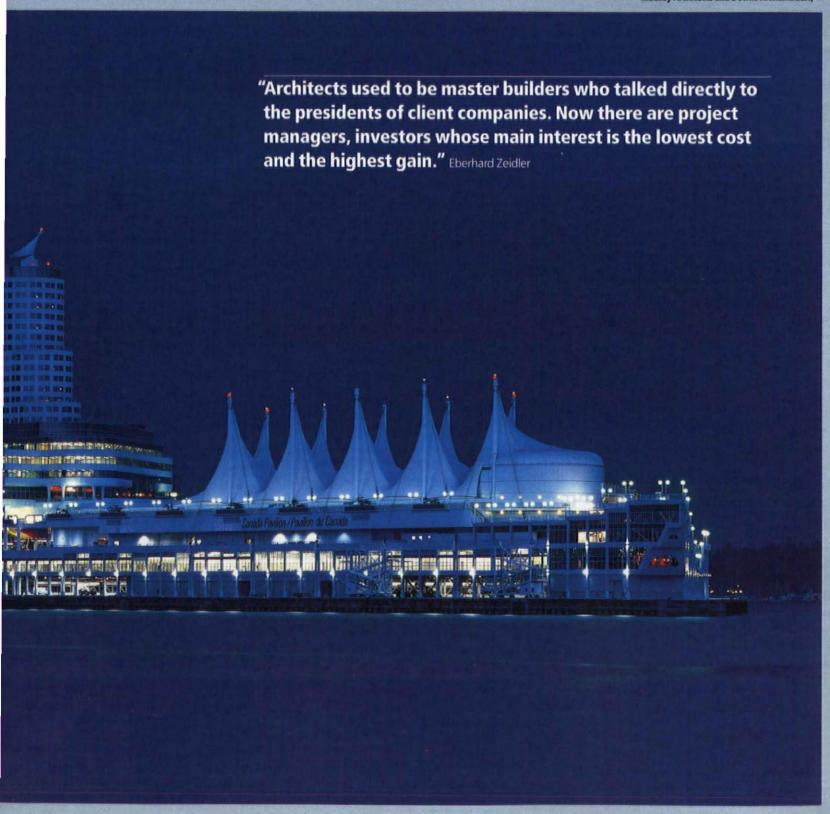
Sheme/Francios Courville

Zeidler Roberts Partnership: Canada's friendly giant

Twelve years ago the Zeidler Roberts Partnership, one of Canada's oldest and best known architectural practices, was busy enough in North America to take an almost half-hearted interest in entering two international design competitions. Against formidable competition it won both, thrusting the firm onto the global architectural stage from which it has never left. Albert Warson reports from Toronto.



Canada Place – a new landmark for Vancouver opened in 1986. Contains cruiseship terminals, a bus station, convention centre, IMAX theatre, hotels and World Trade Centre offices. (Joint venture between Zeidler Roberts Partnership/ Architects, Musson Cattell Mackey Architects and Downs Archambault)





hen Eberhard H Zeidler joined the original firm in 1951 it had already expanded moderately over 30 years. His designs catapulted the firm onto a different plane. Today, a few professional incarnations and hundreds of projects later, Zeidler, Peter Wakayama and Ian R Grinnell are at the helm of a practice that works across time zones in North America, Europe and Asia.

Zeidler Roberts concluded long ago that diversity is the best defence against the cyclical vagaries of development. The firm's portfolio includes commercial, residential, mixed-use projects,

hospitals, performing arts/entertainment facilities, hotels/resorts, institutional, industrial and recreational buildings. The other side of the diversity coin is the varied, creative skills of 23 partners and associates, and a 100-person staff working out of offices in

Toronto, Washington, West Palm Beach, Berlin and London.

Over the years the firm's collective output has garnered more than 100 national and international awards, including five Governor General's Medals for Architecture and four Massey Medals for Outstanding Canadian Architecture, Canada's highest accolades.

So much to live up to

Asked to pick projects that set a certain tone for the practice, the partners invariably name McMaster University Health Sciences

Centre, Hamilton, Ontario (1971). Another is Ontario Place, which opened the same year – 36 hectares of man-made islands and lagoons in Toronto's harbour, with 8,360 square metres of exhibition space, the world's first IMAX theatre, a children's village, marina, restaurants, picnic areas and beaches. It has attracted more than three million visitors a year ever since.

A third would be Toronto Eaton Centre (1977). Zeidler Roberts, in joint venture with Bregman + Hamann Architects (see profile WA67 pages 70-79), designed the 306,000-square-metre downtown shopping centre with more than 300 retail tenants in a 274-metre long galleria, three office towers, a 459-room hotel and two

"Architecture is for people, whether they're in a shopping centre, an apartment building or an office. Developers who know what they're doing understand they have to accommodate that aspect of whatever they build." Eberhard Zeidler

parking garages. It draws an average 50 million people annually. The firm is currently back designing a four-storey retail addition, improvements to the galleria and one of two principal entrances.

A later version of Eaton Centre was Liberty Place Phase II, a 214,000-square-metre, US\$175 million mixed-use project in Philadelphia. Senior partner Ian Grinnell headed up the firm's team. He is also in charge of designing Knightsbridge Green in London – a 116,000-square-metre mixed-use development opposite Harrods and the Shell Centre office tower, across the River Thames from the Houses of Parliament.

Facing page: 1 Peter Wakayama, 2 Eb Zeidler, 3 Ian Grinnell

Right: Eaton Centre, Toronto (opened 1977). Designed by Zeidler Roberts in joint venture with Bregman + Hamann Architects, the 306,000-square-metre shopping centre is dominated by a 274-metre long galleria

Zeidler makes no exception to the type or geography of a project when he says: "Architecture is for people, whether they're in a shopping centre, an apartment building or an office. Developers who know what they're doing understand they have to accommodate that aspect of whatever they build."

In command and in demand

While Zeidler Roberts participates in international design competitions, it doesn't always have to go looking for work. An Austrian developer planning a US\$175 million mixed-used project in Prague in fact went looking for the firm. "The developer had canvassed the world, looking for the most appropriate designers for their project," explains Grinnell. "The initial selection didn't produce the right architects because none of the 20 firms interviewed had major mixed-use experience. Our name kept coming up and they asked us to submit our credentials and make a preliminary proposal," says Grinnell. But work doesn't always walk through the door. Often it comes as a result of competitions, such as the recent win for a performing arts centre near Nashville, Tennessee, for example.

The site is near a river obscured by huge flood walls. Zeidler suggested they build the theatre on top of the flood walls, in full view of the river. This solution won the firm the job. Logical and obvious, but nobody else suggested it.

Senior partner Peter Wakayama sums up the firm this way: "One of our strengths is mobility ... being able to shift staff quickly from one project to another if there are unexpected and prolonged delays, or from one development sector to another. "We have the experience, diversity of projects, design capability and international renown to follow the market, in the event of a downturn. There aren't that many practices in Canada with our kind of portfolio." Nor indeed are there many firms with Zeidler Roberts' staying power in a fiercely competitive globalised environment.







Left: Zeidler Roberts, in association with Adamson Associates Architects, has designed Chapultepec Tower, which will rotate and redirect Chapultepec Avenue in Mexico City

Above: BNI City, Jakarta, Indonesia. The office tower, built in the image of a traditional Indonesian icon, has become a Jakarta landmark. (Designed by Zeidler Roberts Partnership/Architects with DP Architects, Singapore)

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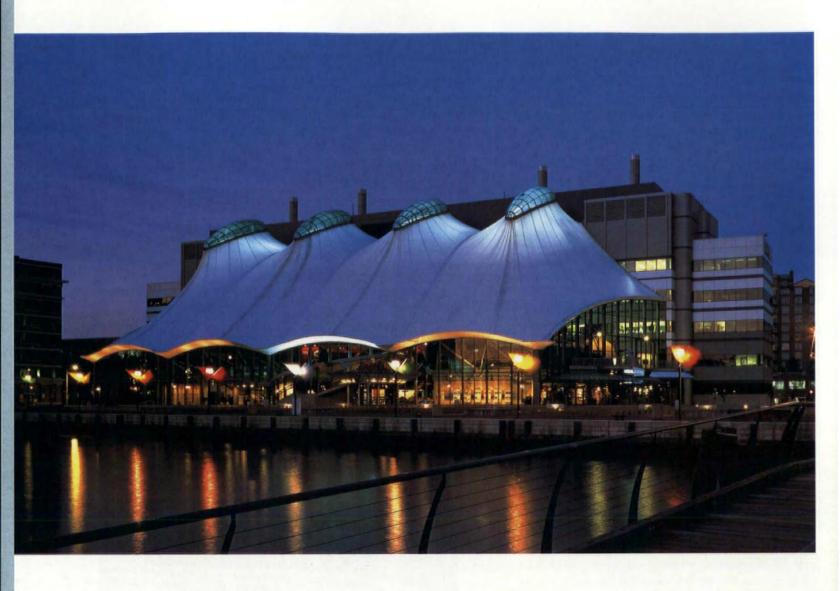
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Columbus Centre for Marine Research and Exploration, Baltimore, Maryland, USA

Credit

Architect: Zeidler Roberts Partnership Inc
Associate architect: Associated Baltimore Architects

Date

1995

Cost

US\$58.7 million

The five-level, 24,000-square-metre Columbus Centre is located on a pier in Baltimore's inner harbour. The majority of the space was intended for a world-class University of Maryland marine biotechnology research facility, as well as Food and Drug Administration seafood safety laboratories. However, a part of the building was allocated to a public Science and Technology Education Centre and Hall of Exploration Exhibit area.

The western atrium section is designed to house these educational

functions and the exhibition and public space at ground level, the Hall of Exploration on the second level, and travelling exhibit space and cafe on the third level. The eastern half contains offices on the second level, with laboratories and research areas on the third to fifth levels overlooking the Hall of Exploration.

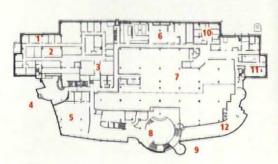
Large glass exterior walls – topped by a translucent, sail-shaped, fibreglass-reinforced Teflon fabric roof – open up views across the harbour. Zeidler Roberts Partnership was the prime architect in the design of the US\$58.7 million Centre. Associated Baltimore Architects was the local associate.

The main thrust of the design was to create an open and visible interaction between pure research functions and visitors. This synergy would stimulate and broaden their knowledge of marine life. Younger visitors might even be sufficiently inspired to pursue a career in marine biology. It was a marriage of research and education.

Above: The Centre for Marine Research and Exploration, in Baltimore's inner harbour, combines a research institute with a public display area Below: Entrance into display area



- 1. Offices
- 2. Library
- 3. Teaching
- 4. Entrance
- 5. Display laboratory
- 6. Mechanical and electrical
- 7. Aqua-culture laboratory
- 8. Exhibit lobby
- 9. Exhibit entrance
- 10. Electron microscope suite
- 11. NMR suite
- 12. Cafe





National Trade Centre at Exhibition Place, Toronto, Ontario, Canada

Credit

Joint venture between Zeidler Roberts Partnership/Architects and Dunlop Farrow Inc Architects

Date

1997

Cost

US\$100 million

Toronto's stature as an international convention city made a quantum leap with the US\$100million, 92,900-square-metre National Trade Centre on the Canadian National Exhibition grounds near the city's lakeshore.

There were some trade show facilities in

the suburbs, but not of a calibre that would capture the largest and most prestigious shows. Nor were they anywhere near Toronto's downtown, favoured by convention and trade show organisers to take advantage of its hotels and entertainment facilities.

The building was won in a design/build competition in joint venture with Dunlop Farrow Inc Architects and PCL Design Constructors Inc as the contractor. The National Trade Centre was conceived with the visitors in mind as much as the exhibitors.

This is not the typical square box of a trade centre, but rather one that is distinctive but respecting the massing, materials and historical relevance of neighbouring buildings. An internal pedestrian concourse facilitates flexible trade show visitor movement.

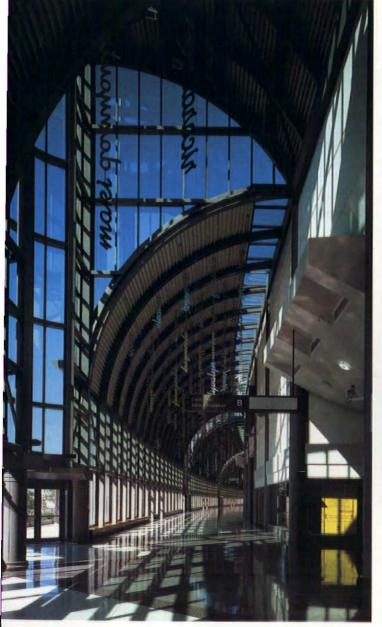
The new Exhibit Hall has 48,000 square metres of continuous, usable space divisible into four separate halls, depending on the amount of show space required.

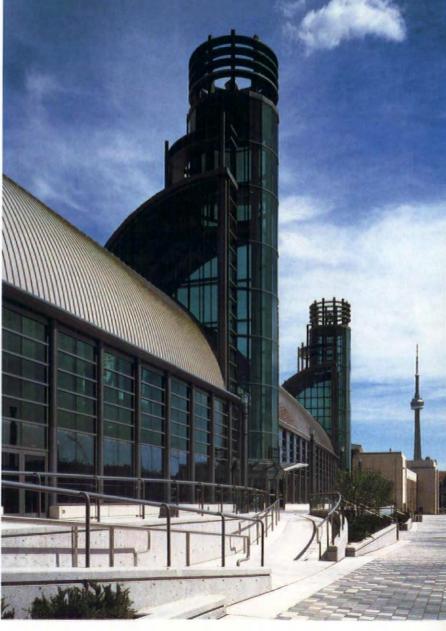
It is connected to the adjacent Coliseum and industry buildings which were in dire need of renovation, and which added another 37,600 square metres of exhibit space.

An underground link was built from the new Exhibit Hall to the old Automotive Building across a wide boulevard traversing the fair grounds, providing another 15,140 square metres of space. One hundred and fifty metres of the 425-metre long Grand Concourse – an interior pedestrian street on the outer perimeter of the Centre's Exhibit Hall – parallels the straight boulevard. They match the Automotive Building and, with the Princes' Gate, form the Beaux-Arts feeling of the main entrance into the Exhibition Grounds. The other 274 metres respond to the future park on the opposite side, into a gently curving, glass-enclosed concourse. At night, during trade shows, the four glass towers punctuating the Grand Concourse act as illuminated beacons.

Underground parking for 1,294 cars allows visitors to enter the concourse.

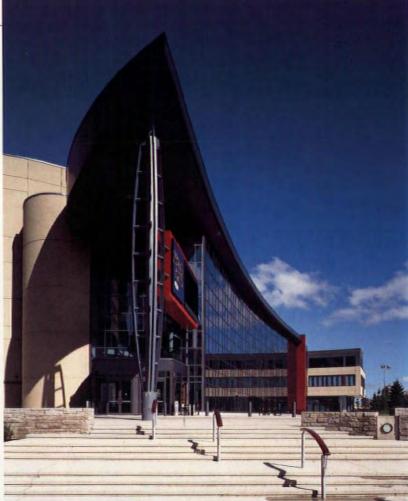
The National Trade Centre's Exhibit Hall is accessed through the interior pedestrian street on its outer perimeter The gently curving 275-metre glass concourse responds to a proposed park opposite. The last 150 metres of the 425-metre Grand Concourse mirror the Automotive. Building across the boulevard traversing the fair grounds, and with Princes' Gate, recreates the beaux-arts feeling of the main entrance into the exhibition ground.





The Living Arts Centre Mississauga, Ontario, Canada





Credit
Zeidler Roberts Partnership
Date
1997
Cost

US\$36 million

There are performing arts centres for concerts and theatre in which audiences share an intrinsically passive cultural experience. And there are visual arts centres where personal, creative skills are actively taught and personally honed. The two are rarely, if ever, combined in a single place, which makes this 19,500-square-metre facility on a 2.5-hectare site in Mississauga so unusual.

The City of Mississauga, on the western flank of Toronto, wanted to include the centre across the street from the city hall and the library in an architecturally cohesive civic core. It wanted to take full advantage of the facility, with programming during the day, in the evening and year-round, as well access for community and corporate social and business functions.

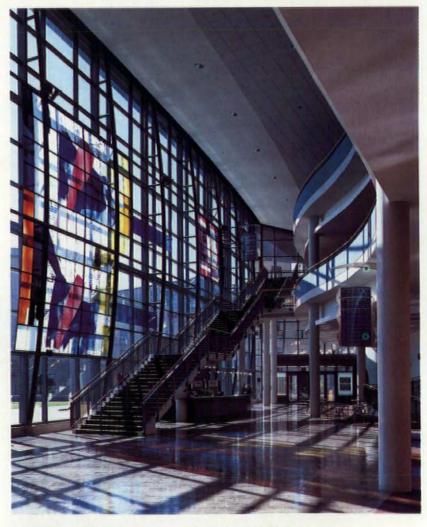
Thirty-four firms competed to design the US\$36 million Centre. Zeidler Roberts Partnership, with several performing arts centres in North America among its professional credentials, won.

The firm designed the Living Arts Centre to facilitate activities ranging from ceramics, to the production of holograms by laser beam. A three-storey Visual Arts Activity Centre encompasses studios for crafts, media and computer arts, practice rooms and laboratories, exhibition spaces, digital arts and virtual reality studios, laser/holography production facilities and offices, all linked to a gallery that connects to the performing arts atrium.

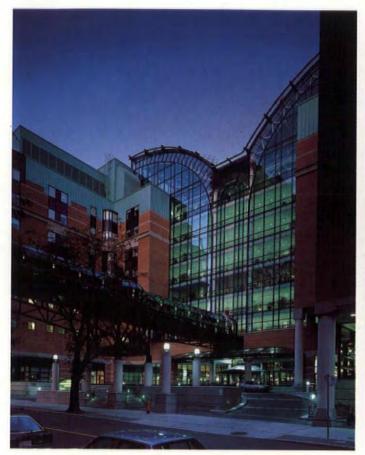
The 1,300-seat Hammerson Hall theatre, pronounced acoustically perfect by performers, presents operas, ballet, symphonies and musicals and plays. It opens to the curving glass wall of the atrium that serves as the foyer. A 400-seat flexible seating theatre also opens into this space.

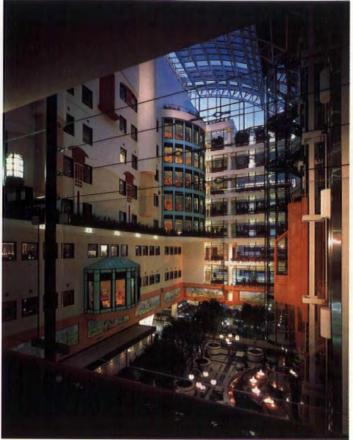
Underground parking for 450 cars, a restaurant, cafe, ticket office, gift shop and child care are incorporated inside the centre. Outside, other arts-related events are staged in an urban park on the site.

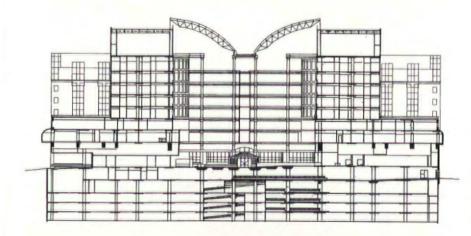
The convergence of the two themes at times creates a mixture of people dressed for a concert or the theatre – in formal wear on opening night – passing people in open studios throwing clay pots on wheels, building furniture, blowing glass vases, creating computer art or a hologram. Live, in the truest sense of the word.



Top left: The 1,300-seat Hammerson Hall is an intimate horseshoe shape with flexible acoustics
Top right: Entrance to the Living Arts Centre, opposite Mississauga's City Hall
Above: The atrium serves as a foyer for the Centre's two performance halls







Above left: Exterior view of the 500-bed Children's Hospital, located on a tight sight in downtown Toronto Above right: Central glass elevators bring visitors past the playrooms into each of the nursing stations Left: Elevation looking east through the hospital

The Hospital for Sick Children, Toronto, Ontario, Canada

Credit

Zeidler Roberts Partnership/Architects in association with Karlsberger Associates Hospital Consultant

Date

1993 Cost

US\$121 million

Canada's largest hospital for children, where numerous neo-natal and paediatric surgical procedures and treatments were pioneered, was in need of redevelopment. The hospital board selected Zeidler Roberts Partnership to work with hospital consultants Karlsberger. Together they produced a master plan for the functional programme.

While the objective of creating a new 572bed patient tower and renovating the existing inpatient building would seem straightforward, the reality was not so simple. The work had to be accomplished without disrupting the continuous operation of the hospital on a tight downtown site.

When the US\$121 million construction and renovation programme was completed, the inpatient beds and their services had been shifted into the new 73,450-squaremetre tower enclosing an atrium, and the old building accommodated outpatient clinics, offices and a research wing with laboratories.

Together with the new space, and a 950-

berth car parking garage, the project covered a total area of 111,000 square metres.

Each typical floor accommodates 96 patient beds in four nursing stations arranged around an atrium. Nearly all of the rooms are single bedrooms with a bedcouch so that parents can stay with their child, which reduces the anxiety and helps in the nursing care. The building includes a new main entrance, emergency department, surgical suite with 14 operating rooms, intensive care units and a number of other treatment and support services, as well as a 722-seat cafeteria.

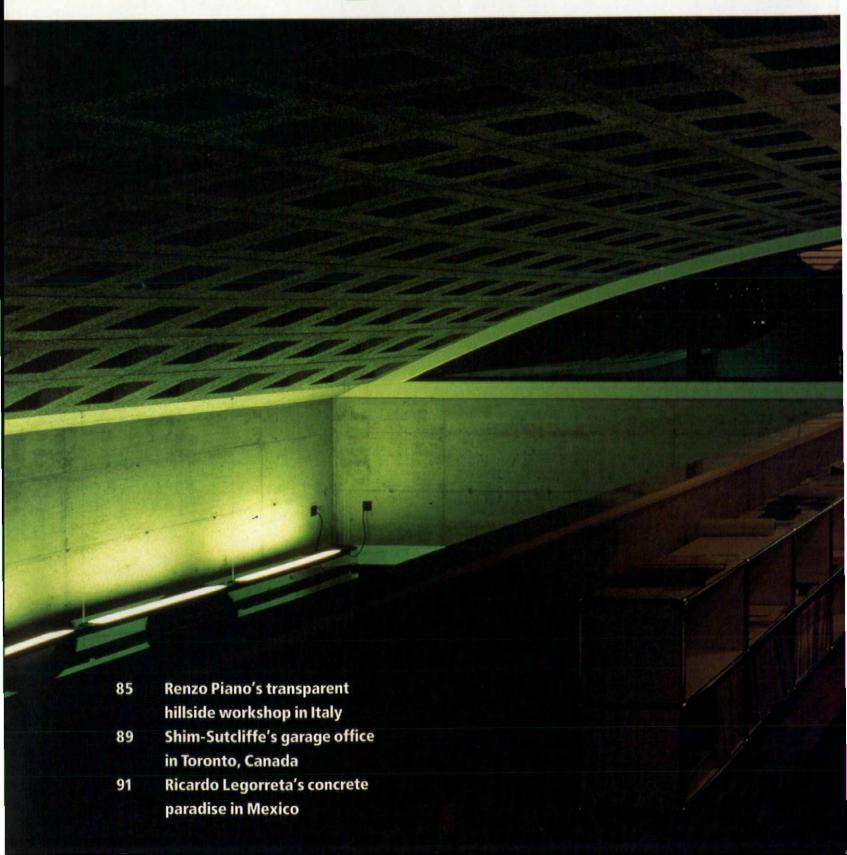
Using the atrium as a unifying element with central glass elevators, the familiar

problem of confusing corridors in large hospitals is overcome. Visitors and outpatients seldom have to ask for directions.

Landscaping and planting in the well-illuminated atrium, finishes and colours – elements that border on the whimsical without ever being childish – all contribute to a pervasive cheerfulness, which is based on studies of hospital environments that demonstrate a 30 percent improvement in patient recovery time and reduced medication.

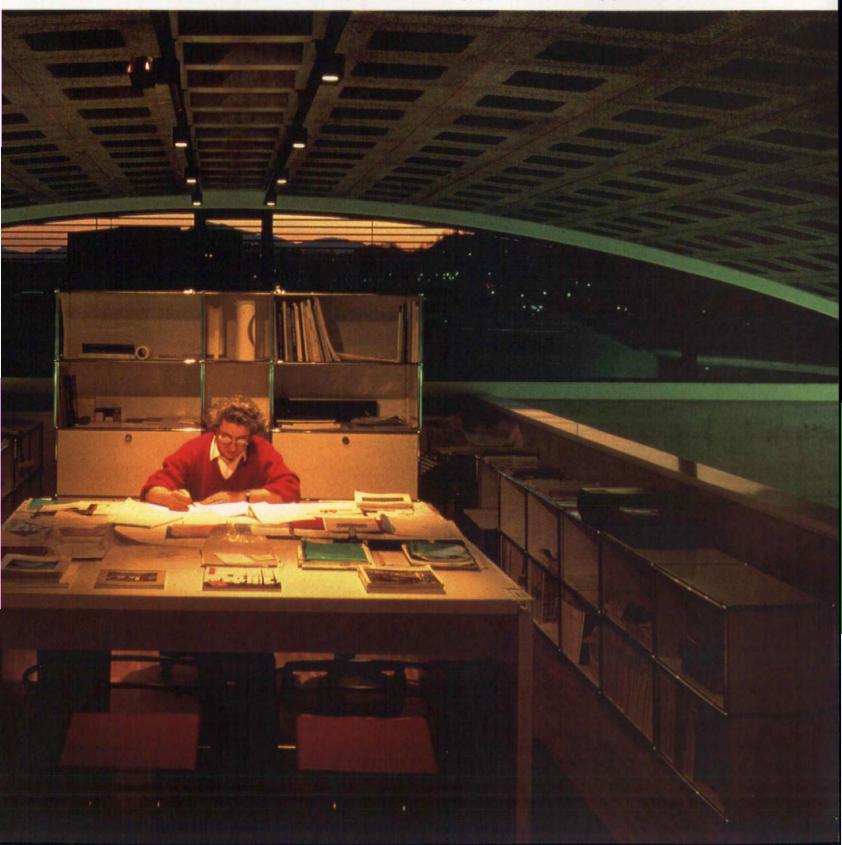
Hospitals evolve over time, through use and emerging technologies, therefore flexibility is an important consideration. Zeidler Roberts finds itself going back to fine tune its health care facilities years later. Sector Analysis - Architects' own offices

Through the keyhole

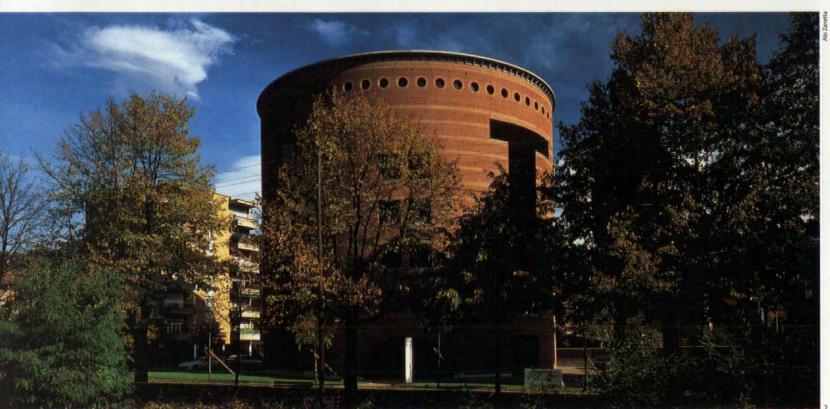


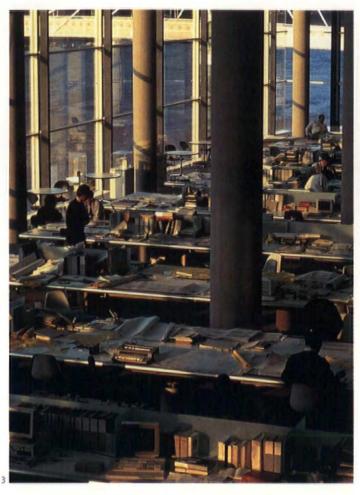
Mario Botta at work in his selfdesigned offices in Lugano, Italy. The building was completed in 1990. Photo: Alo Zanetta

Architects, almost more than any other professionals, are known for their long hours and late nights in the office. But are the spaces that they design to work in conducive to this? World Architecture sent David Cohn, Michelle Martin and Jack Robbins to look around a selection of architects' own offices in Europe, the Americas and Asia respectively to find out if the designers of today's office buildings practice what they preach.







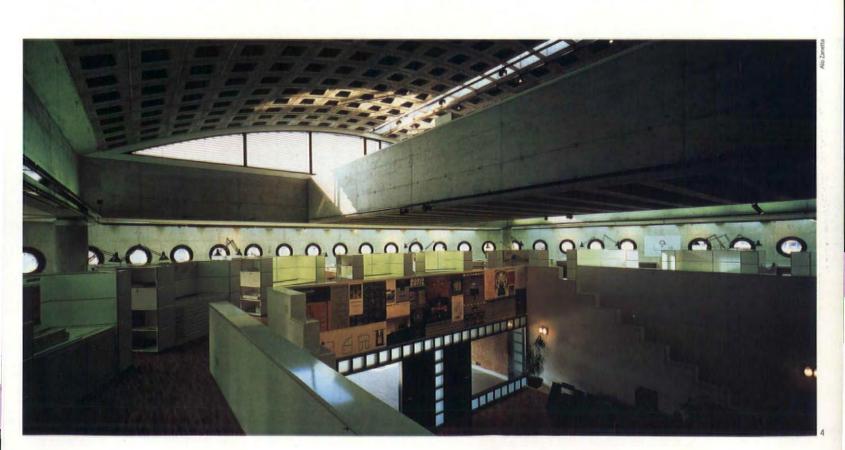


rchitects who work in conventional office buildings are the exception to the rule in Europe.
Instead, you can find them installed in an old schoolhouse (Zaha Hadid), an abandoned cement factory (Ricardo Bofill), a terraced greenhouse overlooking the Mediterranean (Renzo Piano), or even a 1930s garbage dock on Berlin's River Spree (Josef Paul Kleihues).
Vittorio Gregotti works under the damp, dark brick vaults of an old ceramics factory in Milan; the Dutch firm Mecanoo in Delft occupies a former almshouse dating back to 1750; and Jean Nouvel has taken over a seventeenth-century Parisien palace whose salons were stripped for industrial use in the last century.

Free of the constraints of a normal commission but exposed to the eyes of potential clients, the architect's place of work can represent a declaration of principle or a fashion statement, a daring experiment or a happy accident. Even the most casually improvised office tells us much about its users. The nonchalance of the English gentleman dilettante can be discerned in those who maintain an informal practice on the grounds of their own home in high-class residential neighbourhoods. Rafael Moneo started this way in the basement of his 1930s modernist "chalet" in Madrid's El Viso; his drafting rooms now fill two full houses in the neighbourhood. His colleague Juan Navarro, who has set up shop in a nearby house, keeps a painting studio in the garden and regularly exhibits in a well-known Madrid gallery.

At the opposite extreme are those who move in over the office. Norman Foster has created a world of his own on the banks of the Thames opposite Chelsea. The great nave of the studio overlooks the river on a raised basement plinth, while

- Inside Richard Rogers Partnership's Thames Wharf Studios, London, 1989
- The brick rotunda of the Mario Botta offices.
 The drafting room is on the top floor
- The great nave of Sir Norman Foster's studio overlooking the River Thames, London
- 4: The complex top floor of the Botta offices



- The offices of Ricardo Bofill, Barcelona, 1975
- 2: The exterior of Bofill's converted cement plant
- 3: The labyrinthine building is both office and home to Bofil







his duplex penthouse apartment surveys the same view from above. Ricardo Bofill mixes home and studio in a labyrinthine eight-storey cement plant in the industrial suburb of Sant Just Desvern outside Barcelona. He converted its 30 silos into castle-like towers with vaguely Romanesque round-arched windows and climbing ivy, and its truck yard into a verdant garden. A grand central space, known as the cathedral, is used for concerts, lectures and other happenings.

These live-work environments are distant descendants of Frank Lloyd Wright's Taliesin, an iconoclastic communal utopia peopled and maintained by paying acolytes. In the case of Bofill and Foster, like others of their generation, their utopian streak was born in the brave mood of social experiment of the 1960s. At Foster and Partners, top associates and apprentice model builders rub shoulders at the long white benches, in militant defiance of the class distinctions that

Manchester-born Foster had to overcome in building his career. Bofill founded the Taller d'Arquitectura in 1973 as a multi-disciplinary communal enterprise, with a poet, musician, and artist working in collaboration, although the office structure is now more conventional in response to large commissions.

The cooperative workplaces created by Renzo Piano at his Building Workshops in Paris, Genoa, and the Piano-designed greenhouse in nearby Vesima, have better stood the test of time. Making a noontime phone call to Vesima, one is politely informed that "the office is at lunch" over the sounds of relaxed chatter and clattering silver. At Lord Richard Roger's Hammersmith headquarters in a renovated Thames-side factory, the spirit of the 1960s has evolved into a frankly bourgeois appreciation of life's daily rhythms and pleasures, in the form of the famous country Italian restaurant created by his wife. Thus, while the gentleman professional's basement

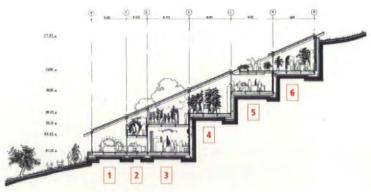
Renzo Piano Building Workshop, Vesima, Italy

We reach the Renzo Piano Building Workshop offices in Vesima, 20 kilometres outside Genoa, via a private funicular or miniature inclined railway, which lifts us from the parking area through steep terraced slopes. Perched on the high point of the site with magnificent views of the Mediterranean Sea, the studios spill down five terraced levels under a continuous glass roof, which is cunningly supported on a handful of thin steel pillars so that it seems to float over the sheer glass walls.

Piano adapted vernacular construction techniques taken from local greenhouses and farm buildings in the design of the building, including the wood-framing for the roof, and the interior retaining walls, finished in rose-coloured stucco with arched masonry openings, which function as natural thermal stabilisers. Raised wood floors conceal air ducts, wiring and other mechanical services. The intense sunlight is controlled by automatic adjustable louvres over the roof glass and simple fabric shades on glazed vertical planes. At night, industrial-grade uplighting fixtures reflect light off the ceiling, converting the building into a luminous glass beacon in the rural surroundings.

The structure descends beside an existing farmhouse that is used as a residence for visiting guests. Exterior and interior stairs run down the slope for access to the different levels. On each level, the terraces extend laterally into outdoor gardens with ordered beds of vegetables and flowers, while other plants fill the interior. The terraced decks slide over and under each other, each level a balcony to the one below, with some spaces almost completely buried in the hillside. Beside the entrance at the top of the building, a communal dining room opens to an outdoor terrace overlooking the roofs and the sea.

Like his Kanak Cultural Centre in New Caledonia, the building is a testament to the softer, "ecological" side of Piano's high-tech image, and to his interest in transparency, light, nature and vernacular culture. Drenched in the dazzling blue of the Mediterranean sky, with all the vital elements of life close at hand - water, light, air, cool damp earth, the shade of soft green leaves, a cultivated garden, a busy kitchen - the only elements that seem out of place in this earthly paradise are the rolls of drawings, the models and the computer terminals.



- Bamboo workshop
- Teaching workshop

Right from top: Aerial view of the Renzo Piano Building Workshop; the transparent roof is equipped with automatic adjustable shades; the building perches high above the Mediterranean Sea; tools of the trade decorate the workshops













Enric Miralles - Benedetta Tagliabue, Barcelona, Spain

When Enric Miralles opened his practice in Barcelona's Gothic Quarter, not far from the city port, he was an urban pioneer. The crowded narrow streets had long been shunned by Barcelona residents as the city's red light district, a haunt of sailors on shore leave and petty criminals. But for his first studio, Miralles rented the main floor of a magnificent if deteriorated palace, with sections dating to the Middle Ages and spaces flooded with sunlight from an unexpectedly large mid-block terrace. Like his older colleague Oriol Bohigas, who located his offices in the regal but equally neglected Plaça Reial, just off the Ramblas, Miralles was taking an urban stand, asking his fellow citizens to take a fresh look at the city's old heart.

Now, with the recent transformation of the obsolete port into a modern recreational and shopping area, the future of the district is brighter.

Simple drafting tables and folding chairs are mixed with old armoirs and furniture of Miralles' own design, including a double-height bookcase wall with a mezzanine-level catwalk "If architecture is a process which, through daily routine, engages the act of living, it follows that the working place should be ordered like a kitchen."

that runs continuously through two of the rooms. The long nave of the first studio has been divided into different rooms for model-making, drawing and competitions, in 400 square-metres of high-ceilinged space arranged around a small patio and generously lit from a rear garden.

Miralles likes to compare the rhythmic, sweeping motions of the workers in the old sewing factory to the act of drawing and designing. "I also like the fact that our office resembles our home," he comments. "If architecture is a process which, through daily routine, engages the act of living, it follows that the working place should be ordered like a kitchen."

Left from top: The office has different rooms for model-making, drawing and competitions; furniture of Miralles' own design is found throughout

>office has a tendency to take over home and private life, the 1960s introduced a more relaxed and humanistic mix of work and living.

The office that Ivaro Siza shares in his native Porto with his teacher Fernando Távora, his chief disciple Eduardo Souto de Moura and Rogério Cavaca, is a rare example of architectural family relations played out in space. The three generations of Portugal's most renowned line of architects work together in the same building, each with his independent practice. For their current quarters on the Roa de la Alegria in the centre of the city, Siza "won" a competition among the four friends to design the building. A larger studio overlooking the Duero River, finished this year but not yet occupied, was developed by the four following another Siza design.

It is surprising how few architects actually work in spaces of their own making. Some will see this as hypocritical inconsistency, but the strategy could also reflect a healthy dose of modesty and critical distance. Look, in contrast, at Mario Botta's self-designed offices in Lugano, a large brick rotunda that towers over a quiet residential street. The top floor circular drafting room, with its tightly-spaced porthole windows, feels as if it were hermetically sealed against the outside world, like the hull of a submarine. Botta commands the space from a bridge-like mezzanine, his desk dramatically centred under a low concrete arch. Never has the assertive geometry of his work seemed more claustrophobic and self-referential.

Michael Hopkins' London offices on the other hand are a more modest introduction to his practice. The series of glass

- 1: The Hotel Industriel Berlier, Paris, 1990. It is designed by Dominique Perrault and also houses his offices.
- 2: Perrault's offices inside the building









Above: The New York offices of Richard Meier & Partners, a building which began life as a warehouse **Left:** Meier uses simple materials and a minimalist palette

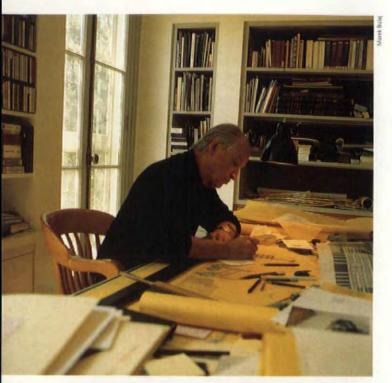
pavilions with waterproof fabric roofing are adapted from an exhibit system the firm developed for the Victoria & Albert Museum, so he literally practices out of a display case of his handiwork. And Dominique Perrault portrays himself as just another tenant in the industrial loft he designed in 1990, located between a busy highway and freight line in eastern Paris. The ten-storey volume, simply sheathed in glass and with up-to-date technical services, is conceived as an "industrial hotel" for fast-changing start-up firms. Perrault says of the depressing industrial surroundings, "Let us cease to believe in ill-fated places, and take energy wherever we find it, in the perpetuum mobile of urban space." This tough, chic Parisian knows better than to imagine his work apart from the world that surrounds it.

n the Americas, for the most part, architects do not design the buildings they work in. Like lawyers, accountants and other professionals, most US, Latin American, and Canadian architects rent space in pre-existing buildings. The United States' giant corporate architectural firms can generally be found in relatively anonymous office towers. Good examples of this are the New York, Chicago and San Francisco offices of Skidmore, Owings & Merrill and Hellmuth, Obata + Kassabaum's San Francisco office. While this corporate image is appropriate to such firms, surprisingly perhaps, many of the signature architects have not chosen to take full advantage of the freedom of being their own client or designed their office to inspire their staff in their own design philosophy.

You wouldn't, for example, recognise the Santa Monica, California office of Frank O Gehry and Associates. Unlike Gehry's 1991 Chiat/Day Office Building in nearby Venice, California, there are no giant binoculars marking the entrance to the architect's office. The building doesn't even tip its hat to the voluptuous forms of Gehry's Guggenheim Museum in Bilbao, Spain.

For the last ten years, this world famous architectural firm has rented a large 30-year-old brick and metal warehouse in a

Below from top: Michael Graves at work in his office in New Jersey; the building is a restored farmhouse dating from 1750





> Santa Monica neighbourhood of commercial, retail and residential buildings. The two-level interior was renovated by the firm. It has an open space floor plan and uses materials of plywood and white walls. A spokesman from Gehry's office confirmed that the staff regard it as "simply a space to work in", rather than one to be inspired by.

Caroline Hancock, Michael Graves' Director of Communications explains that Michael Graves office in Princeton, New Jersey does inspire the staff. "Our office," she says "is a rambling, L-shaped conglomeration of a mid-eighteenth century farmhouse and its 1841 three-storey addition".

It makes perfect sense that he would use an historic home for his office. Unlike the open floor plans so popular today, the Graves studios and private offices follow the building's residential flow-plan and reflect the firm's studio organisation. Michael Graves often speaks of striving to achieve a domestic character for each of his projects, whatever their scale, and this office communicates an unmistakably domestic atmosphere.

More typical of the larger US firms is Richard Meier & Partners' New York headquarters. Since 1986, the firm has rented one of 12 floors in a renovated 1920s masonry office building that began life as a warehouse. Meier made small changes to the existing building using simple materials and a minimalist palette. He has exposed the structural elements and revealed the white sheetrock walls. Perhaps the most telling part of the renovation are the 17-foot-tall windows along three walls which flood the space with light and provide expansive views of Manhattan - a direct illustration of the emphasis Meier places in his designs on the use of natural light in the work place.

Mexico's Ricardo Legorreta designed the Legorreta Arquitectos offices in the manner of his own work. The firm's own three-level, 450-square-metre building sits on a very steep and irregular site in a residential area of Mexico City.

There is a sense of surprise, "something inherent in our culture," says Miguel Almaraz, the project coordinator for the firm, throughout the building, whether it be purple carpeting in a conference room or the open plan studio that is almost like a theatre: each of the rows is at a different level that responds to a steep site.

The long, low, rough concrete form in the lush Mexican suburban landscape is reminiscent not only of Legorreta's other projects but of the work of the maestro, Luis Barrigan. The circulation spaces, however are Legorreta's own - the reception area is at street level from where a curving flight of stairs leads down to the studio, conference rooms and office areas.

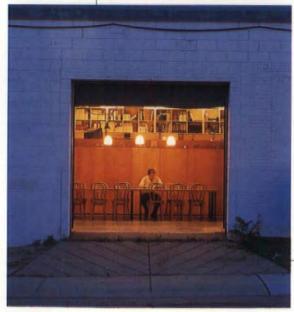
Architect and ex-editor of Arquitectura, Isaac Broid, has his office in a 50-year-old four-storey Mexico City apartment building. When Broid bought the building, each floor had just 90 square metres of space and one apartment. He kept the first two apartments for himself and his nine employees and rented out the top two apartments to other tenants. Like Meier, this minimal architect did to his office what he does for his clients: "I took out all the coverings, so the steel is exposed, the ceiling is rough concrete, and the walls are whitewashed brick, like the towns in Greece."

Surprisingly, perhaps, Canada's usually conservative image









Shim-Sutcliffe Architects, Toronto, Ontario, Canada

In 1994, Shim-Sutcliffe purchased a 40-year-old concrete block building on a major commercial street in Toronto. The building began as a garage. It was then renovated into a photography studio. The building, claims Sutcliffe, is a work in progress. Renovation is ongoing, like perpetual motion.

There are no 90-degree interior corners, thanks to the photography studio's need for a diorama effect. The walls and ceiling appear to merge into each other. The simplicity and open space of the single ninemetre by 12-metre single room, the four-metre-high ceiling, and the lack of columns appealed to Shim-Sutcliffe. "It was a basic white box," says Shim.

The firm's renovation of the 110-square-metre space primarily involved the insertion of an L-shaped

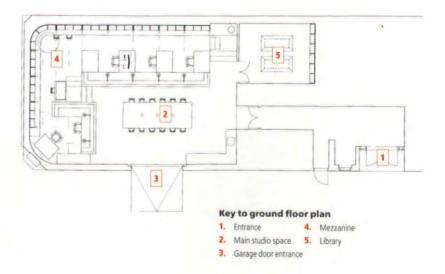
wooden liner mezzanine which holds a series of work-stations, long tables, and individual desks for the five people in the firm, as well as displays of in-process models of current projects. The ground floor has a playroom in a small internal room with

"There aren't partner offices or a drafting office, because those clichés don't exist in the way we think about design or work."

skylights for the partners' two young children. The rest of the ground floor has just one furnishing: a large table that can seat 20 and is used for client presentations. What's on the table constantly changes with the different client projects, which means the ground floor is constantly transformed.

"The interior reflects our design philosophy," says Shim, "but it's very subtle. First, it makes use of peripheral vision. Without directly staring at something, we're able to see everything that's going on in the whole studio. Second, the office has an open configuration. There aren't partner offices or a drafting office, because those clichés don't exist in the way we think about design or work."

The partners also use the scale of the office space to test their ideas and concepts and the scale of the project they're working on. Models are a key part of Shim-Sutcliffe's project work. "The big garage door opens up," says Shim, "which makes it possible for us to build to-scale models, like one bay of a 75 foot long pedestrian bridge, and move them in and out of the building."



Left from top: The studio space with the mezzanine beyond; the studio with the garage door opening onto the street; view of the studio from the street outside; detail of view from outside







Edo Rocha Arquitetura E Planejamento SC Ltda, São Paulo, Brazil

The 24-year-old Edo Rocha firm (ERAP) is one of Brazil's five largest architecture and planning companies, specialising in banks and buildings for high-tech companies. The firm has worked on over 400 projects in Brazil, Argentina and the US.

In February 1998, ERAP completed renovations on one leased floor of a modest 15-year-old, 13-storey office building that had been closed for nearly eight years. "Everything needed to be retrofitted and updated," says Edo Rocha. "The light fixtures, the wiring, the power, the acoustic ceiling. It was a lot of work."

The office building is a compromise for the firm. It has a glass and concrete exterior which Edo Rocha dislikes. "I never use concrete," he says. "Pollution in São Paulo gets concrete buildings very dirty and ages them in an ugly way." ERAP's 800-square-metre floor is divided into two rectangular areas by a lobby, leaving just 640 square metres of usable space. "It is not as functional as I

would like it," says Rocha, "but with the quality of the buildings that are available in São Paulo it is very difficult. There are many high quality/high cost buildings, and others like

"Even my office and all the meeting rooms are glass," says Rocha. "Everything is as transparent as possible so you can see everything."

this that are medium size and affordable. Some things you have to live with."

The new office was designed by Rocha and the firm's seven project leaders. Their chief goal was to better integrate ERAP's 50 architects, designers, engineers, staff and project teams. "Previously," says Rocha, "the guys didn't have a chance to see what was going on. Now, everybody can see everybody. They can talk, exchange ideas, and relax. People are really enjoying this."

Transparency is the hallmark of the office. "Even my office and all the meeting rooms are glass," says Rocha. "Everything is as transparent as possible so you can see everything."

Rocha's second goal was to fully explore the placement and colours of Feng Shui design. "I have always used the Feng Shui intuitively on client projects," says Rocha, "but this was the first time I could really do it by the book. Without great concessions, I was able to select not only a building in an area of creativity and productivity, but also the arrangement of all departments throughout the office, and the selection and placement of Feng Shui colours to create a good ambience, a good energy flow. Everyone in the office feels that sensation. Every day, people tell me 'This is good. I feel so good here."



Key to plan

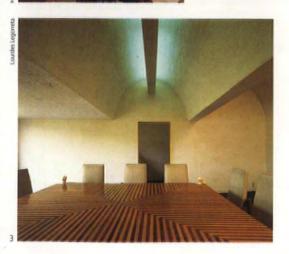
- 1. Conference rooms
- 2. Lobby
- 3. Open-plan office space
- President's office
- 5. Archives

Left from top: The meeting rooms are glass walled; the building had been out of use for eight years when ERAP renovated their floor; all areas of the office are arranged according to Feng Shui design





- 1: The office of Ricardo Legorreta Mexico, 1966
- 2: The Legorreta studio
- One of the strikingly furnished rooms



is challenged by young up-and-coming architectural firms. Their offices are as unique as their project designs. The 10 employees of de Hoog + D'Ambrosio, for example, work on site in a former payroll office in Victoria, British Columbia, while the firm transforms the Cameron Brothers' Sawmill, a plywood mill complex on 10 hectares, into the Selkirk Waterfront mixed-use development with office, retail, restaurants, a Montessori school, light industrial, housing, parks and open space.

While the sawmill was demolished around them, the partners renovated the mill's payroll building, using raw plywood for all the office's partitions and the conference room door. The library entrance is a plywood rolling shipping door. Industrial lighting, typical of a factory, was used for the overall lighting in the office.

While there are no rules, budget constraints are certainly a unifying concern for some of the smaller architectural firms such a FILUM Ltd, in Halifax, Nova Scotia. In January 1998, the partners renovated all three 65 square-metre floors of a three-storey 1850 wooden cottage overlooking the ocean. They rented the ground floor to another tenant, turned the second floor into an office for the three-member firm, and live on the top floor.







ntil the recent end of the Asian development boom, the frenzied pace of design allowed less time and energy for creative self-indulgence of architects' own office space. Architects were too busy worrying whether the ink would dry on their drawings before the concrete it described had set. Land prices in major centres such as Hong Kong and Singapore were, and still are, prohibitively high, and new build spaces are almost unheard of. With the exception of Hong Kong architect Tao Ho's office in a ferry pier, creative adaptations of unusual building typologies are more rare. However, along with most international practitioners, Asian architects recognise that their office is an important expression of

design philosophy and style, and a useful, if not essential, marketing tool.

Gensler's Hong Kong office exemplifies the clean lines and technology-driven environment of international companies that have set up Asian offices. With warm tones, ambient lighting, and a non-hierarchical studio space, the office expresses a crisp, if somewhat corporate, self-confidence.

In contrast to this corporate cool, the office of OMA Asia conveys the energy of creative chaos. On any given evening, walking just beyond the buzz and colour of Hong Kong's Lan Kwai Fong nightlife district, the firm's bright yellow ceiling is clearly visible from the street below, illuminated by the lamps of late-working designers. From the glaring yellow wall







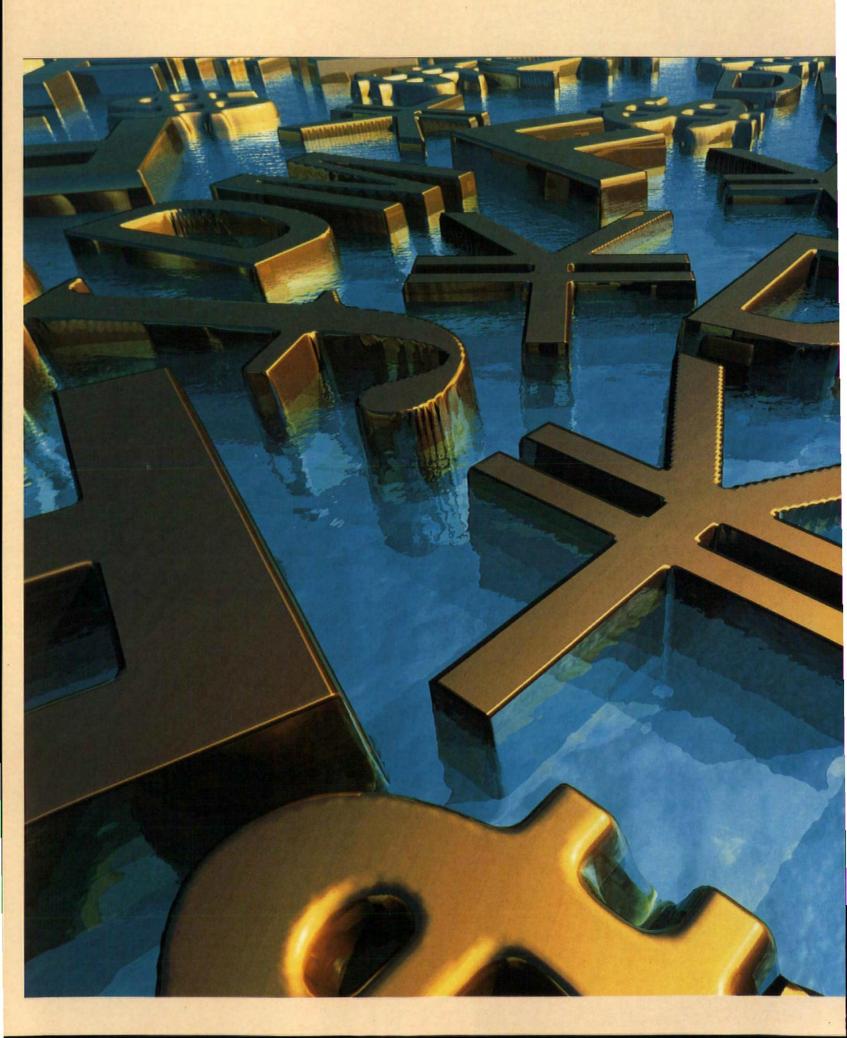
opposite the elevator to the standard parquet floors with their "artificial turf" green stain, the use of colour lends an artistic exuberance to what might otherwise be a small cluttered office. Working with limited space and limited budget, director Lance Chu says they "tried not to design too much", and concentrated on making it "functional but energetic".

A kindred attitude of simple design moves is expressed by Chin-Yueh Roan in Taipei, Taiwan, although he emphasises the loose and relaxing atmosphere of his office space. Located on a tree-lined residential street, with an outdoor terrace and garden at the back, the natural green of the tree leaves is visible from everywhere in the office. Roan sees a challenge in making something beautiful from cheap, common materials like concrete block or particle board, and has used them in his office for their unfinished simplicity. Roan places emphasis on the visibility of his staff as "producers", and credits the pleasant environment with helping him attract and keep quality personnel.

Many Asian offices emulate a family atmosphere in the integration of private and public space. In Villa Bebek, the tropical home and office of Michael White, in Bali, Indonesia, the Balinese styled pavilion compound has some 20 different courtyards and gardens, including a temple and a communal swimming pool. White describes both the design philosophy and daily organisational functioning of his office as "romantic, poetic, and feudal". He presides as a "florid tyrant" over a staff of 75 who eat gourmet meals together, prepared by a permanent kitchen staff of eight. Guests come to lunch most days and provide comments and feedback on the ongoing work.

Housed in a converted shop-house in the Brickfield area of Kuala Lumpur, Malaysian architect Jimmy Lim says his office "works as a big family, everybody pitches in". They too share communal lunches. The open-plan ground floor is supported by a double spine of timber columns, and is furnished with tall antique cupboards, five large meeting tables, and even a grand piano at the back. This multipurpose space provides the main reception area, conference space, and entertainment room for clients. Lim's concern for heritage and quality craftsmanship is reflected in the extensive use of timber, much of it recycled from demolished older buildings. But despite this traditionalist philosophy, Lim is perhaps one of the most forward-thinking of his generation, seeing opportunities for the younger generation of architects to utilise under-used spaces, such as the plant rooms in high rise buildings. "There is an immense amount of space which costs money to the developer, but doesn't generate income which could easily become penthouse accommodation as offices once the space is modified. Architects are best placed to adapt space that already exists and take advantage of it for themselves."







Salary Survey 1998

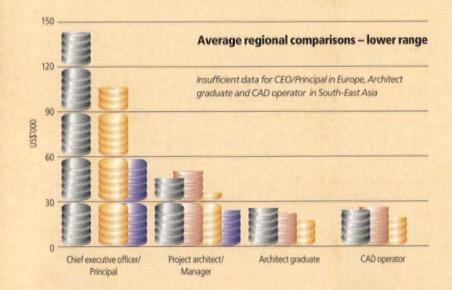
Living in America no longer ensures you are top of the salary heap. The challenge from down under is becoming increasingly strong and Australia, with its attractive lifestyle, is fast becoming a magnet for architectural professionals. WA's second annual Salary Survey reveals the colour of money is changing from the red, white and blue of America to the green and gold of the Lucky Country.

Editor: Sarah Leatherdale

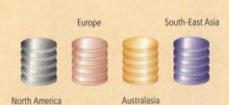


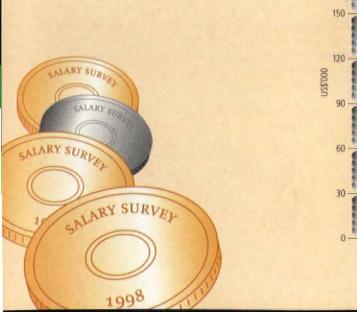
ast year, World Architecture revealed the United States of America as the land of plenty for architects; sky-high salaries, combined with an extensive range of benefits, made Uncle Sam the world's most generous employer. Twelve months on, and architects in America still rank in the upper wage bracket, but a strong challenge from Australia is being mounted on the back of the 2000 Olympics in Sydney. Patterns of recruitment are changing, and although the South-East Asian market has in no way been replaced, the economic strife in the region is allowing other areas to emerge as potentially lucrative markets. Areas such as east and west Europe, the Middle East and the Caribbean are all being cited as areas of growth, both in terms of recruitment and of investment. The flow of international investment has changed, again away from Asia towards those areas mentioned above. However, analysts predict that the flow will change again after 2000 and will be redirected back into Asia once investor confidence increases.

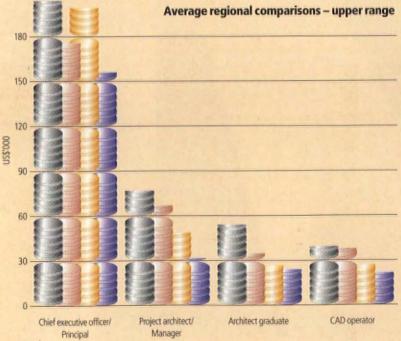
Additional benefits, another strong consideration when seeking employment, remain evenly distributed between members of staff, regardless of location. The company car, medical insurance, pensions and holiday allowance are all essential components of today's employment package. Technical skills remain important, and the more traditional skills, such as languages, are becoming increasingly important bargaining tools, both for employers and employees alike.



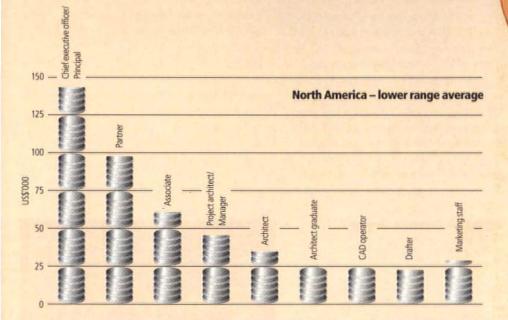
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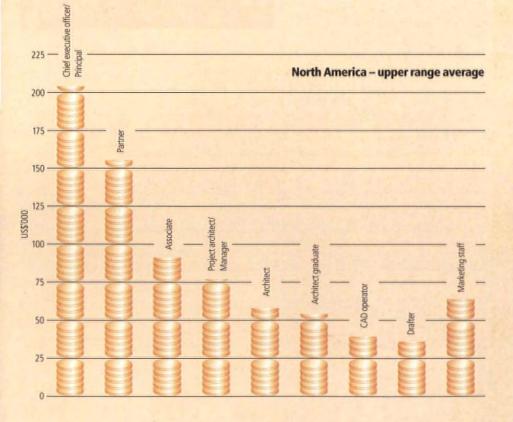






Regional salary comparisons





North America

Architectural salaries in North America over the last twelve months have experienced mixed fortunes. North American architects remain amongst the world's most highly paid and, following a period in the early 1990s when salaries remained stagnant, wage levels across the board have been on the increase at a rate of almost five percent per annum. Salaries in the upper levels have increased in direct proportion to the position of seniority, whilst graduate or intern salaries have remained static or have fallen.

Location of the firm is always an important factor when choosing employment, and nowhere more so than in the United States. Regional differences here amount to as much as 16 percent. The highest paid areas, approximately six percent above the national average, include California and Hawaii, whilst the lowest paid states are all in the west south central region of America, namely Arkansas, Louisiana, Oklahoma and Texas.

Technical experience does command a degree of compensation, which most firms will honour. The average wage (upper range) for a CAD operator in North America is approximately US\$39,000 per annum, compared to US\$37,000 in Europe, US\$26,000 in Australia and US\$21,000 in the Far East.

	Lower range		Upper range	
	High	Low	High	Low
CEO/Principal	300	65	500	110
Partner	135	60	400	77
Associate	95,	24	200	60
Project architect/Manager	58		200	
Architect	40	28	104	34
Architect graduate	32			25
CAD operator			56	26
Drafter	28.8	16.6	55	20
Marketing staff	38.5		235	32

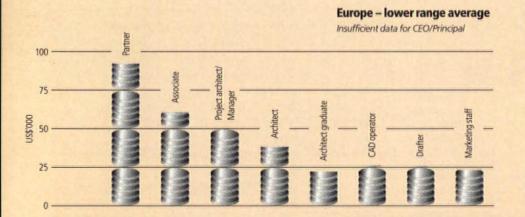


> Europe

As in North America, European salaries have experienced mixed fortunes over the last twelve months. Increases of around one percent have been normal for some of the job titles listed below, whilst some pockets of Europe, most notably eastern parts of the region, have experienced significant swings both up and down. Graduate salaries have borne the brunt of the downward swing, and an overall decline of some 13 percent against figures for 1997 has been seen for graduates across the region. Those in higher salary brackets, however, have seen their salaries increase, albeit marginally, in the last year. The wider picture reveals that, as a result of economic uncertainty in the Far East, some European countries have benefited from increased levels of interest and invest-

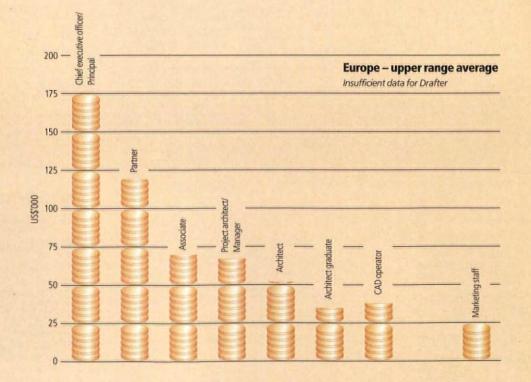
ment from firms which wish to expand overseas but which have postponed South-East Asian projects for the time being. This situation has reflected favourably on the architectural profession, and a recruitment drive, most notably in the countries of Eastern Europe, has forced design firms to examine their compensation packages. Language skills are becoming an increasingly important component of the architect's resumé and premiums are being paid, although minimal, to the right candidates.

In terms of international living, Europe is expensive. According to the Economist Intelligence Unit's Worldwide Cost of Living Survey, European cities including Paris, London and Oslo are amongst the most expensive in the world - an important consideration if choosing to relocate.



(US\$'000)	Lower range		Upper range	
	High	Low	High	Low
CEO/Principal	Insuffici	ent data	345	43
Partner	200	45	200	50.8
Associate	130	36	144	39
Project architect/Manager	102	30	120	24.5
Architect	80	24	95	22.9
Architect graduate		19.6	74	26
CAD operator	40	16.6	56	28
Drafter	28	24.5	Insufficient dat	
Marketing staff	36	16.6		16.6

SALARY SURVE





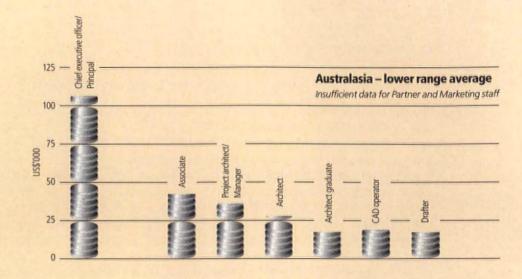
Australasia

Year on year, salaries within architectural firms in Australia have been increasing. Despite the turmoil surrounding the economies of South-East Asia, Australia's near neighbours, the country has been less affected than expected and has shown an

increase in salary levels of as much as 27.3 percent within certain areas of the architectural profession.

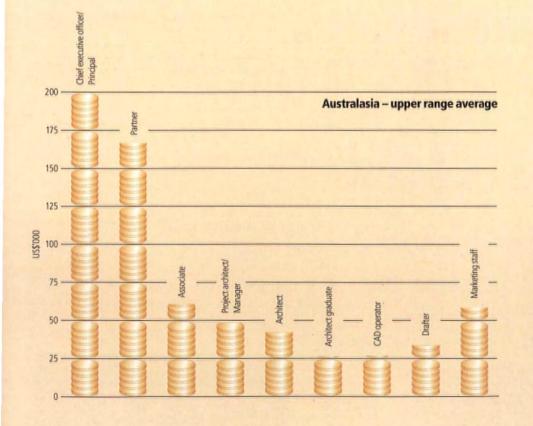
Huge investment in the Sydney 2000 Olympic Games has boosted the Australian construction sector and this has resulted in an increased number of contracts, both for new builds and for refurbishment, across a number of sectors. Transport, communications, commercial and residential building are all considered to be areas of growth. Urban renewal, a key global sector, is also an important area for Australia with several major investment and construction programmes planned for Sydney, Brisbane and Melbourne. Following a period of severe recession in the early part of the decade, the Australian construction sector has emerged a stronger, leaner and more efficient machine and, aided by changes in national legislation, greater flexibility and design innovation is being seen.

The cost of living in Australia is relatively low, and this factor, combined with the country's prospects, its climate and its scenery, are all combining to make Australia an increasingly popular destination for architectural professionals.



>

(US\$'000)	Lower		Upper	
the street of the street of the	High	Low	High	Low
CEO/Principal	220			
Partner	Insufficie	ent data	45	60
Associate	51	20	120	27.5
Project architect/Manager	50	22.5	85	32.5
Architect	40	40	80	25
Architect graduate	20	14	40	17.5
CAD operator	29.2	13	33	16.5
Drafter	21.4	13	60	19.5
Marketing staff	Insufficient data		130	20.2







> South-East Asia

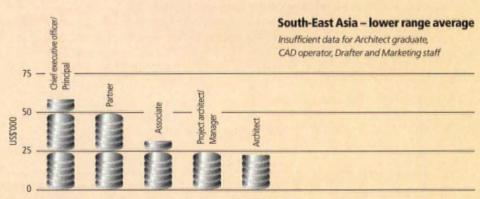
Obtaining detailed information for this region has been extremely difficult this year because of the serious financial problems being faced by all of the major South-East Asian economies. Japanese firms, in particular, have been cautious about providing comprehensive figures. It is therefore important to point out that the figures above are a true representation of the majority of countries in the region with the exception of Japan, from where WA received only five completed salary questionnaires.

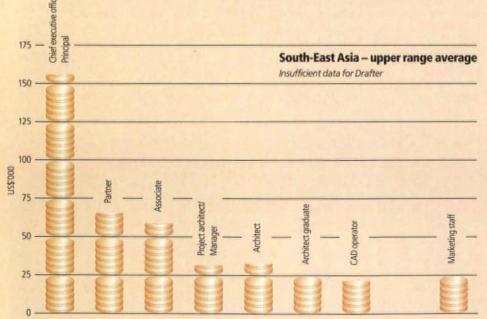
The region's architects have been hard hit, and salaries have fallen by as much as 60 percent in some countries. Salaries for architectural graduates have recorded declines of between 40 and 50 percent. Drastic measures have been called for in an attempt to alleviate the problems caused by the continuing economic unrest, which is also affecting recruitment levels in the region. Reports of expatriates returning by the plane-load are widespread.

Despite the continuing problems, salary levels in the CEO/Principal bracket remain high and are not too far removed from other regions.

The misery of the crisis is being compounded by an extremely high cost of living. Tokyo is the world's most expensive city in which to work and live, and to compensate for this firms find themselves paying over the odds for employees. Firms today simply cannot afford to maintain the high levels of wages paid pre-crisis, and this serves to discourage new and international talent from looking to the east for employment.

As a result of the economic instability, many construction projects, both by domestic and international contractors, have either been cancelled or postponed. Analysts predict the financial troubles will recede by 2000, although the recession has been so severe that it will take several more years to rebuild investor confidence in South-East Asia.





Alt's	(US\$'000)	Lower ra	inge Low	Upper High	range Low
CEO/Principal		92	40	320	44
Partner		76	26.5	91.2	33.5
Associate		75.6	18	91.2	20
Project architect	/Manager	42	21.2	75.6	14.7
Architect		25.2		75.6	15
Architect gradua	ite	Insufficient	t data		13.3
CAD operator		Insufficient	data	42	
Drafter		Insufficient	data	Insufficie	nt data
Marketing staff		Insufficient	t data	42	15

10%

13%

11%

15%

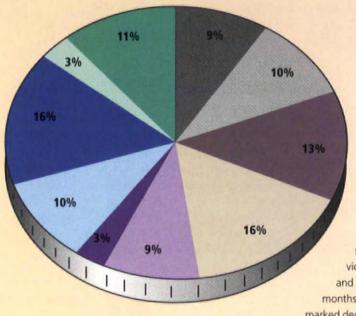
Managers

Additional benefits

The following charts refer to all companies surveyed

Partners/Associates





he pattern of benefits has remained similar to the findings of the 1997 Salary Survey.

Partners/associates receive standard benefits such as healthcare, pension and bonus/profit share schemes, commensurate with the positions held. There is a direct correlation between the size of the firm and the range of benefits available to employees; the larger the firm, the more comprehenisve the compensation package. There are, however, benefits to working within a small company; holiday allowance and personal days are usually more generous for example. In some countries the provision of such items as pensions and healthcare is considered the responsibility of the indi-

6%

17%

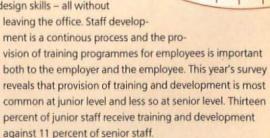
12%

vidual, as in the United States and Japan. In the last twelve months there has been a marked decline in the levels of payments made to senior executives through bonus/profit share

schemes; an obvious reaction to the economic troubles.

The last twelve months has also seen a significant increase in the numbers of managers and junior staff who are provided with healthcare and pension schemes; an encouraging sign. It is becoming increasingly important to employers to hold on to good staff, and to do this they must be "competitive" – providing benefits exceeding, or at least on a par with, the next firm. Pension plans are also important at both management and junior levels.

The provision of in-house training programmes is an important consideration in today's job market; more so than twelve months ago. Opportunities exist to improve computer skills, presentation skills, accounting or design skills – all without



10%

Gensler, one of the largest design firms in America, has a corporate philosophy that "the only way to keep the best and brightest people ... is to place motivation and retention as a high priority".





The provision of a company vehicle is most common at senior level; nine percent of partners in the firms surveyed were provided with a company vehicle, against three percent at management level and just one percent at more junior levels.

Access to leisure facilities amount to just three percent of people surveyed, at all levels. Still a popular benefit, provision of an in-house gymnasium or swimming pool, or of a corporate sports club encourages employees to mix freely with all levels of personnel.

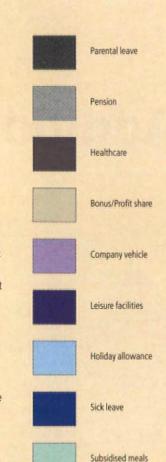
Holiday allowance is a legal requirement in most countries, but not as yet in the UK.

13% 11% Parental le is rare in minin we s

Parental leave is also an important consideration. It is rare in the UK and in the US where the legal minimum allowance is between 12 and 18 weeks, but in countries such as Scandinavia, governments have gone to great lengths to make it easier for parents to combine work and a family.

Japan, Germany and Spain also provide generously for parental leave.

Other benefits not covered here include accommodation and limited flights home, which are sometimes supplied to expatriate workers.



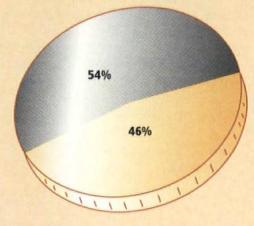
Development courses

Recruitment

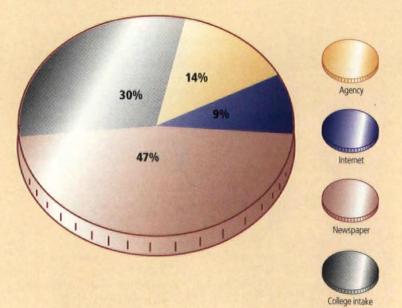
Does your company have a human resources department?







Which is your company's preferred method of recruitment?



Is overtime paid?

12

TUSTRALASIA

UTH-EAST AS

12

ROPE

6

he question of overtime
has been the bane of the
architect. The standard 40-hour
week has long been assumed to be
too short to achieve the workloads

required in the busiest practices. In last year's Salary

Survey, WA pinpointed a particular case in the USA that was

being hailed as a turning point in the overtime debate. Twelve months on and overtime payments in the United States are com-

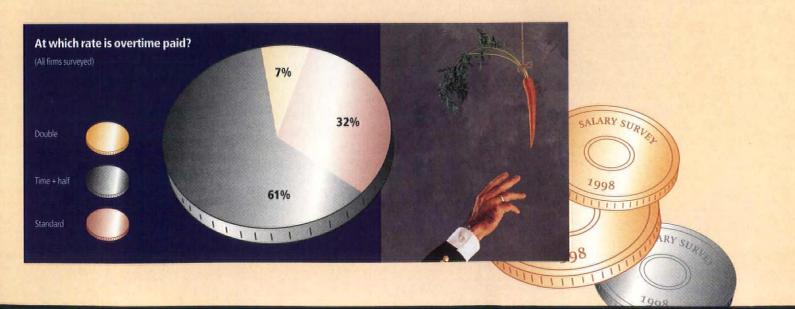
monplace; the survey findings have revealed that as many as

76 percent of firms now pay overtime, either at standard rate, time-and-a-half or double-time against just under 40 percent in 1997. The United States is not the only region to experience such an enormous swing. In South-East Asia, our survey results show that 100 percent of firms do not now pay overtime. How much of this is a reaction to the economic troubles is difficult to evaluate, but the blanket non-payment of overtime would indicate a region-wide counteraction to compensate for the widespread downturn in the regional economy.

Overtime in Europe and in Australia is still the exception, rather than the norm; 29 percent of firms in Europe and 33 percent in Australia do, however, offer overtime payments to staff. (1997 figures not available for comparison.)









Sharon Rue is Director of Career
Advising and Placement at the
University of Texas School of
Architecture. The school is important historically and in 1925 became
the first in Texas to be accepted for membership to the Association of
Collegiate Schools of Architecture.
WA asked her to provide an
overview of the responsibilities and
procedures involved in the placement of architectural students.

Graduating towards success

"Since the establishment of the Office of Career Advising and Placement and formalised reports in January 1993, we have recorded a very high percentage of placements of architecture graduates. Percentage of placements tracked have grown from 83 percent in 1993 to over 95 percent in subsequent years.

"At the present time, we are still tracking the employment status of our May 1998 graduates, of which there were 69. Over 60 percent had secured employment commitments at the time they graduated. We project that 98 percent of our May graduates who are available will be employed by the end of July. There is usually a small percentage of 'unknown' graduates with whom we cannot make contact to track their employment."

Taking full responsibility for one's own placement is positively encouraged by Rue and her team, and the impor-

tance attached to the establishment of a network of contacts is impressed upon the students from the start of their time at the school.

"Although, we still use the term 'placement' that's a misnomer in describing the services we provide to our students and graduates. In the strictest sense, we do not 'place' anyone. Rather, our concentration is a much broader array of services and resources, which we provide in a career advancement partnership with our stu-

dents. The school does provide important connections to firms recruiting our students, and in the spring of 1998 we scheduled over 300 on-campus interviews.

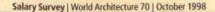
"We also encourage students to become adept at developing and using their own professional networks. We provide workshops on writing persuasive resumés, conduct portfolio reviews, offer individual counselling on interview preparation, and provide opportunities for interaction with professionals in special programmes throughout the year. Our overall goal is to empower our students with effective career-building skills so that they can make smart moves on their own behalf, now and throughout their careers."

The nationwide pool of graduates available for selection by the leading firms at the end of each year is considerable, and is growing. So how selective can a student afford to be when it comes to choosing employment?

"That depends – largely it depends on the economy. In 1997 and more so in 1998, a student graduating from the University of Texas School of Architecture was, and is, in high demand. Even for students with little or no experience in a firm, there are many more requests for our graduates than candidates to fill those requests. Graduates this year are

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"Our overall goal is to empower our students with effective career-building skills so that they can make smart moves on their own behalf, now and throughout their careers."





reporting more openings with firms of their choosing. Those graduating with a year or more experience in a firm are in high demand commanding larger starting salaries, relocation allowances and, in some cases, signing bonuses."

As we approach the twenty-first century, demands and expectations have changed, and will continue to change, both for students and for employers. Rue highlighted the following areas as being indicative of current trends.

"There are several interesting trends that bear watching. One such area is the growing interest by architecture students in looking beyond what we have previously considered traditional practice. As electronic environments become more sophisticated, students are exploring opportunities in multi-media, 3D animation

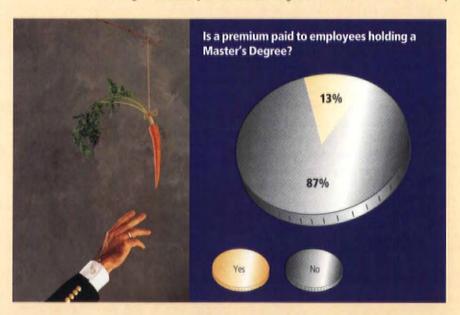
and other high-tech design applications. Designing 'architecture' for computer and on-line games is currently high on the list of 'cool' and lucrative jobs to pursue.

"Another observable trend is the change occurring in many larger firms from compartmentalised operations to working in project teams and small studios. In seeking employees, these firms are emphasising good overall skills, especially strong interpersonal skills and the ability to work as part of a team."

"Architects are seeking more services from consultants. And there seem to be more joint ventures in pursuing projects, more collaborations among firms and across disciplines."

One trend highlighted in the WA 1997 Salary Survey indicated the high level of graduates undertaking either a period of training or of employment in a foreign country. Is this still the case in 1998?

"I don't have years of statistics to cite, but my observation is generally that the majority of our graduates stay in the US right after graduation. We do have a number – about six percent – of international students and, quite often, they remain in this country after graduation working for at least a year before returning to their home countries. Some stay beyond that first year and apply for permanent visas."



CAD and IT are all-important in today's profession and are expected to remain so. In order to accommodate the changing requirements of students and employers, how easily can the university react to these changes?

"Our school's emphasis is on design, not technical training. We do provide facilities and opportunities for students to learn as much CAD as they are motivated to learn, some in the classroom and some in self-directed tutorials. Your question is well-placed in this discussion however, because it is difficult, both pedagogically and financially, to keep up with changes in electronic tools and resources. We believe that these changes are going to continue at an exponential rate, and it will be further up to the initiative of students to acquire the level of technical training they desire"

So, is it common for ex-students who now work in their own practices to return to their alma mater seeking new recruits?

"Yes it is. Some of our most active recruiters are alumni who have their own firms. In addition, some firms – usually the large ones – who recruit on campus, are beginning to use a peer group approach to recruiting, sending recent graduates back to campus to recruit.

"In the future, I see more firms being flexible in developing the unique talents and interests of employees. Rather than a standardised route for all new recruits, it seems that more firms are allowing young professionals to discover and develop their strongest traits, often as part of a project. Related to this, I also observe firms encouraging and facilitating the Intern Development Programme, which is a prerequisite to sit for the Architectural Registration Exam.

"At the 1998 Annual Convention of the AIA in San Francisco, there were several seminars and panel discussions devoted to the subject of bridging the gap between school and the workplace. Although there is a long-standing and beneficial tension between the pedagogical mission of Schools of Architecture and the business perspective of the practicing professional, both sides seem to recognise a need to narrow the gap. Programmes such as our Professional Residency Programme – known in other schools as co-operative education programme – which place advanced students in full-time employment with firms for seven months to one year, are an important way this issue is being addressed."

What are the expected changes within the profession that will affect teaching and learning scope into 2000?

"In conversations with practicing architects and academicians, one common thread emerged and that is that the practice of architecture is becoming more fragmented. Employees are more mobile among firms. Architects are seeking more services from consultants. And there seem to be more joint ventures in pursuing projects, more collaborations among firms and across disciplines. With these practices and continuing trends, it is going to be even more important that the emphasis in schools is education, not training."



Gensler receives international award for best business practice



ensler is one of the world's leading design firms employing 290 registerd architects in 16 offices worldwide. Founded as a three-person operation in 1965, Gensler now has an annual turnover of some US\$70 million. In an international programme sponsored by Arthur Andersen's Enterprise Group, Gensler was selected by an independent panel as a recipient of the 1997 Enterprise Award for Best Business Practice in the category of motivating and retaining employees, an award aimed at all sectors of industry. From October 1996 to October 1997, Gensler grew by 27 percent, yet maintained a staff turnover rate of less than five percent during this period, compared to an industry-wide average of 25 percent.

For over 30 years, Gensler has placed the highest value on providing a work environment where people have an opportunity to grow, to meet stimulating challenges and to enjoy themselves in the process. The philosophy behind Gensler's employee motivation is that if people have an opportunity to pursue their individual professional passions in a creative, supportive work environment, they will excel and so will the company.

A spokesperson for the firm says: "As Gensler grows and prospers, we need to hire, but more importantly, retain, talented people who are best equipped to deal with the realities of our global marketplace. We therefore stepped up our efforts to bring in new talent and create opportunities for the talent that already exists within Gensler. We are as rigorous and demanding in hiring as in any strategic process. We hire people with the right attitudes and train them in the skills they need."

The firm has a number of different ways in which it promotes and maintains staff loyalty, including a range of programmes designed to motivate employees.

These programmes include:

- **BuddyCoachMentor** a programme which assigns each new employee to an existing member of staff. A buddy takes the new employee to lunch on the first day, offers introductions to other staff members, is always available to answer questions and accompanies the new employee to the "Buddy Dinner".
- Contributing to Success a brochure which is distributed to staff and clients

giving a brief outline of the factors considered critical to success within the firm. It describes philosophy and practices essential to employee motivation and retention, and suggests guidelines and concepts which reinforce a belief that people will remain in an environment where they are free to grow.

- HR Bootcamp an intensive human resource training programme for senior staff members that focuses on motivation, retention and coaching techniques.
- Senior Associate Retreat Programme which flies all new senior associates to San Francisco to learn more about each other, about the firm and to make suggestions regarding firm policy.

The firm also provides extensive verbal feedback at weekly studio meetings, and project meetings are held several times a month to explore the same issues at project level. In addition, the twice-yearly Vice President's meeting honours innovative ideas with cash awards that are donated to charity.

Direct benefits for employees include a bonus programme, which allows two cash bonuses per year with the mid-year bonus being based on performance. All appointed staff receive override bonuses in recognition of their work and commitment, and all employees receive a letter from Arthur Gensler accompanying the bonus cheque.

Gensler University is a professional development programme based on regional office needs and demands, and includes as many as fifteen sub-topics including leadership, business and financial, communication, design and presentations, and as many as four different ways to learn each sub-topic including self-directed learning, internal experts/teachers and external resources. Gensler sums up its success with people as a result of its commitment to involve everyone in decision-making processes and, through encouragement, to find something for which they have a passion and pursue it.

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The global perspective

Hays Montrose International, a leading recruitment consultant with 23 offices in the UK and Australia, is at the forefront of architectural recruitment. Matthew Lewis, Principal Consultant at Hays Montrose International's London office contributed to WA's 1997 Salary Survey. This year, Sarah Leatherdale asked him if the last 12 months had bought about any significant changes in demand and expectations within the global marketplace.

WA: Last year, when we spoke, we asked you what were the important issues facing the international recruitment of architects. Have they changed in the last 12 months?

ML: Yes they have – international recruitment has shifted away from the main centres of Asia to closer markets, mainly the Middle East, the Caribbean and Europe.

Also, the types of requirements have changed in the past 12 months. Clients have been recruiting more junior staff in large volumes to make up the numbers required because of increasing workloads. There is a problem, however, of there being fewer graduates and juniors available in these markets than ever before. This is mainly because of the limited number of trainees that have been encouraged into the industry.

WA: Asia was the "boom" market in 1997. This year we all know of the financial problems affecting the region. Is Asia still a popular recruiting ground?

ML: Recruitment levels into Asia were booming prior to December 1997, but the financial problems in Malaysia, Thailand and Indonesia decimated the numbers of people being recruited, plus many expatriates with work in these areas were made redundant or had their salaries slashed. The financial crisis has greatly affected people's chances of working in Asia since January 1998. At the moment, we see this continuing until early 1999. However, even though some countries have had a very rough ride, other emerging markets offer some light at the end of the tunnel.

Plus, since many architects were recruited into Hong Kong, the handover to China has meant that all positions now go on offer locally, and obtaining a Hong Kong visa is becoming increasingly difficult.

WA: The financial crisis has had global consequences. How has it affected recruitment patterns in other parts of the world, if at all?

ML: The effects elsewhere in the world have been minimal, apart from putting lots of well-qualified, experienced individuals onto the market. Other markets have emerged over the past six months as key locations in the international arena. They do not in any way replace the loss of the Asian market, but are still considered to be places of growing significance.

Eastern Europe, namely Prague, Warsaw, Moscow and Kiev have become strong centres for architectural firms. Recruitment here has been heavy at every level.

Western Europe, particularly Germany, Spain and Portugal, has seen an increase in demand for professionals especially with language skills to

complement their design experience, and the Caribbean has been having a mini-boom with money pouring in from the US to fund tourism-related projects such as hotels and ports.

WA: Have employer requirements changed in any way from twelve months ago?

ML: Employers have become even more fussy about their requirements, and with fewer people on the market it makes finding them so much harder. Also all positions seem to be urgent, even though most good candidates are now on a minimum of one month's notice. CAD and IT skills are still high on the agenda for most clients, and further qualifications, such as Master's degrees for management level staff, are becoming more common.

Language skills, especially fluency in European languages are in high demand. Salaries will be hiked up for those with the ability to communicate with foreign clients.

- UK salaries are at an all time high with the average wage being up 8.4 percent over the past year.
- The typical salary for a UK architects aged 30 with five years experience is around £24k.
- Salaries are expected to increase throughout Europe, the Middle East and Asia, on an exponential scale as one moves further away from the UK.

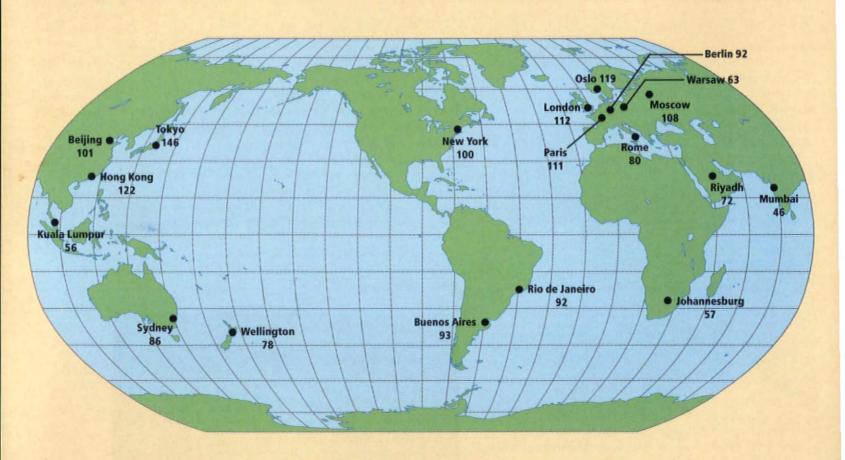
Location	% above the UK	
Spain	10	
Poland	15	
Russia	25	
UAE	20	
Caribbean	10	
Hong Kong	30	Т
South America	30	
China	30	
		_

Benefits for people working in any of these locations would typically include accommodation, between four and six flights within Europe and 2 further afield. A car would be provided in Spain and in the UAE and a driver would also be supplied in Russia.

Source: Hays Montrose International

Worldwide cost of living index

The bi-annual survey, available from the Economist Intelligence Unit, compares prices and products in 120 cities around the world. Its purpose is to provide companies with an unbiased and independent guide from which allowances can be calculated for executives and their families being sent overseas. The EIU can calculate indices based on any one of the cities. The data quoted here uses New York as a base index of 100 for relative comparisons.



London at highest ranking for 20 years

- London is now in sixth place in the rankings of the world's most expensive cities, and is the highest it has ever been ranked since the survey was first published in 1978. It has risen from 14th place a year ago, and was in tenth position in December 1997. The reason for London's current high ranking and relative expense is largely due to the strength of sterling against a backdrop of weaker European currencies.
- The Japanese cities Tokyo and Osaka remain top in the rankings but they continue to slide down towards Hong Kong, the nearest
 rival now with only 18 points between Osaka/Kobe and Hong Kong. Hong Kong's currency has remained pegged to the US dollar
 and so its relative cost of living has not been as badly affected by the current crisis as other cities in the Far East.
- Oslo remains the most expensive European city and the fourth most expensive in the world closely followed by Zurich. Paris has slipped to eighth place and has now been just overtaken by London.
- Moscow has slipped from fourth place a year ago to tenth now, partly as a result of some falling prices in the city.
- Lisbon continues to be the cheapest city in western Europe, with Budapest the cheapest European city of all.

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- Singapore and Taipei have both dropped in the rankings as a result of the Asian crisis, although both remain within the top 20 most
 expensive cities. Jakarta has plummeted from 59th to 120th place and now assumes the role of cheapest city surveyed in the world.
 An index of 39 makes it less than a third that of Tokyo.
- Australian cities have slipped over the past year, for example Sydney from 22nd to 39th position; Perth from 33rd to 49th and
 Melbourne from 38th to 57th. This is mainly a result of weakening currencies in response to the Asian crisis. Similarly the cities of
 New Zealand have also become relatively cheaper.

According to the latest edition of the EIU's Worldwide Cost of Living Survey, the Japanese cities continue to be the most expensive for expatriates to live in, but the cost of living index continues to drop steadily as the Yen weakens against the US dollar. Tokyo now has an index of 146 compared with 154 a year ago. The gap between the highest index (146) and the lowest (39) has compressed to 107 points compared with 120 points a year ago. With the exception of London and Hong Kong, the indices of the top ten cities have dropped or stayed the same.

Regional analysis

Europe

Most west European cities fall in the first half of the ranking (excluding Nicosia and Lisbon) and the east European cities in the second half (excluding Moscow and St Petersburg). The difference between the most expensive European city, Oslo, and the cheapest, Budapest, is a factor of 2.5.

Most west European cities have held firm since the survey six months ago with only minor movements in the indices and a little shuffling in the rankings – all bar London, which climbed to its highest ever ranking as a result of a strong pound. Eastern Europe remains the best bet for a cheap destination.

Americas

New York, the most expensive city, leads the way and was shunted up the rankings by virtue of collapsing Asian cities. Chicago is the second most costly in the Americas. Buenos Aires is the most expensive Latin American city with an index seven points below New York and closely followed by the Brazilian cities of Rio de Janeiro and São Paulo. The majority of the remaining Latin American cities fall in the last third of the rankings, representing some of the better value cities in the world.

Middle East/Africa

Libreville is the most expensive African city, ranking on a par with London, while Tel Aviv is the most expensive Middle Eastern city – just two percent more expensive than New York. Many of the cities from these two regions fall in the latter half of the ranking interspersed with the cheaper American cities.

Asia and Australasia

The most expensive (Tokyo) and the cheapest city (Jakarta) come from this region. A bunching of Asian cities falls in the top 20 and then again in the last 20 with Australian and New Zealand cities scattered in between. The Asian crisis continues to create casualties in the rankings with Jakarta plummeting to the cheapest position and the Japanese cities sliding down the scale closer to Hong Kong and its European rivals in the top ten.

Source: Extract from the Economist Intelligence Unit's Worldwide Cost of Living Survey, Spring 1998.

The Worldwide Cost of Living Survey – July 1998 is now available from the Economist Intelligence Unit. Tel: +44 171 830 1118.

Office furniture



Come the revolution...

Top row, left to right: Fantoni, Meta office furniture collection, by Broggi & Burkhardt; Steelcase Strafor, 1 + 1, storage tower; Knoll International, PL1 range, by PearsonLloyd; Fritz Hansen, Spin, by Burkhard Vogtherr

Bottom row, left to right: Kusch + Co, iHolał, Series 2200, by Jorge Pensi; Willkahn, Avera range; Howarth Inc, DataThing; WillKahn, Conrack Range



The ongoing revolution in "new ways of working" seems to be gathering pace as the Millennium approaches. New technologies, multifunctional office space and an emphasis on teamwork are increasingly defining the shape of office furniture. Reviewing Neocon and looking forward to Orgatec, Nicola Kearton reviews current thinking about the workplace and examines a selection of furniture by international manufacturers which could define the office of the twenty-first century.

Tecno Spa, Compas,

Crinion Associates

Unifor's I Satelliti, S 200, F & L Design

s Frank Duffy wrote in his book *The New Office* (published by Conran Octopus, 1997), "offices are essentially all about knowledge, the highest form of information ... Its rapidly growing importance in modern society and the prediction that the management of knowledge will be

one of the chief features of twenty-first-century life, confirm the centrality of the office in

modern society and make a serious re-evaluation of our attitudes imperative". The implications of this are immense for all concerned especially architects, designers and the furniture industry itself. Many see this revolution as being led by the clients in tandem with advanced technology offered by the equipment suppliers rather than by the manufacturers themselves. The rising costs of real estate also mean that office space has to be used more intensively and efficiently with the personal workspace giving way to shared facilities and open communicative spaces. The digital revolution is already resulting in the office being used in a different, less static, way as work becomes more mobile with the growth of telecommuting and teleworking. As well as symbolising corporate identity and unity in areas where many employees will be spending large amounts of time away from the office, leading thinker in the field, Charles Handy, proposes that the

office of the future will in fact be more like a club; a place of creative exchange and knowledge building.

The impact of these ideas is increasingly in evidence at the international trade fairs where furniture is becoming lighter, more mobile and easier to reconfigure to suit differing needs with space-saving devices

such as the vertical work station. As firms become more conscious of the necessity of design, the key element seems to be the integration of technological needs with an appealing appearance. Elements of domesticity have crept into the office, with curvy, friendly looking furniture which is also suitable for the growing home office market. More investment in fewer furniture systems means that manufacturers are projecting further ahead and trying to accommodate change by producing systems which

can evolve according to clients' needs. Economically, 1998 has been a good year for the furniture industry – the US has continued to show steady

growth, the UK has shown a clear recovery since the end of the recession and the recent decline suffered by France and Germany has now been put into reverse. In

Germany growth rates have once again reached the levels of the late 80s. According to a study conducted by the European Union, due to the

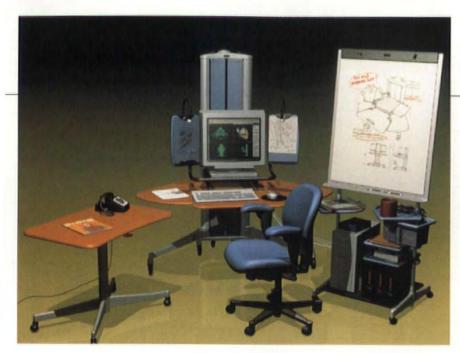
spread of information and communication technologies, six million new workplaces will be created throughout Europe by the year 2010 which certainly bodes well for the future. Forecasts are therefore optimistic for Orgatec while Neocon reported a record attendance.



The Vitra "Wave" table



Flint & Pearl upholstery from the highly respected Danish company Kvadrat



Herman Miller's award-winning Acrobat series

NeoCon 98, Chicago (8-10 June 1998)

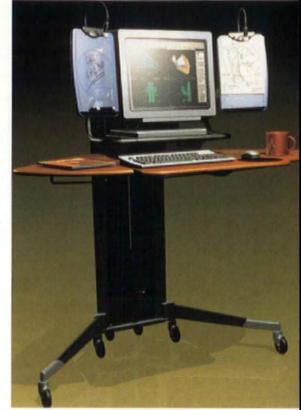
NeoCon, held annually in Chicago, recently celebrated its thirtieth show and is the most important venue for office products in North America. It is also a broadly based contracts furnishings show covering not just offices but also healthcare, hospitality, retail and institutional environments all in one exhibition. Although primarily centred on the American market, a large number of international manufacturers were also showing, commentators mentioned that a certain rapprochement was visible between traditionally distinct European and American products.

NeoCon Awards, who won what?

Amongst the prestigious NeoCon Awards sponsored by Facilities Design and Management magazine, the Best of Competition went to KI's Flexible Workspace 1181, while the company which won the most accolades was Herman Miller Inc with no less than five awards including a Gold Award for Most Innovative Product which went to the Acrobat suite, designed by Richard Holbrook. Aimed at intensive comput-

er users, Holbrook calls it "the next best thing to a wearable computer". Acrobat, with its interaction tower, equipment carts and height-adjustable table, creates a more vertical work environment which allows the user the freedom to move and work in any posture they like from sitting on the floor to standing upright. All components are infinitely adjustable, mobile, and can incorporate monitors of up to 24 inches. Herman Miller also won awards for the Meridian storage system, Passage furniture system which

combines freestanding desks and panel systems, as well as the Reaction chair designed by Jerome and Steven Caruso.

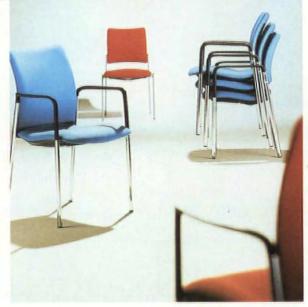


The Acrobat interaction tower from Herman Miller



K + N International's Optima Plus desking system

The Corpus Chair from Allemuir





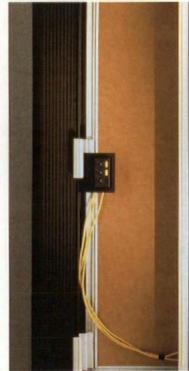
Crossings Mind Gear; additions to the Crossings range from Howarth Continuing the theme of mobility and flexibility in

the office, **Haworth** won a Gold Award for DataThing, a panel-to-panel cabling system which enables systems furniture to work in the way that it was intended, in a true modular fashion, where the panels, the electrical wiring and the communications cabling all snap together. A gift for facility managers, as Gensler's Mark Morton says; "Why have a flexible system if you can't take it apart?" DataThing gets away from the chain-like cabling running through systems furniture which pins it to one place. DataThing consists of three components, the latter two being completely new: an in-feed which connects furniture cabling to the building

cabling; a communications distribution assembly (CDA) which distributes plug-and-play bundles of voice and data cabling through the furniture; and a tap and jack assembly which provides plug-and-play outlets for telephones, computers, fax machines etcetera.

Other Neocon Gold awards included **Bernhardt Furniture** for its Visions desking system and the One seating; **Deepa** for Making Waves in the Fabrics, Leather and Vinyls Section; **Tigerman McCurry**

Architects for its Private
Office Collection; Vecta for
the Kart chair and
Nienkämper ICF Group for
the Tangent storage system.









Knoll International's PearsonLloyd PL1 Range



Vitra's Ad Hoc range, by Antonio Citterio with Glen Oliver Low

Orgatec, Cologne (22-27 October 1998)

Orgatec has decided this year to concentrate its resources on office furnishings and fittings, its traditional areas of strength. Comparing the figures in the area of office furnishings for the last Orgatec held in 1996 and those projected for 1998, shows that the total number of exhibitors has risen by 19 percent from 925 to over 1,100, and the number of non-German suppliers by 24 percent from 525 to about 650, with many new exhibitors incidentally coming from Italy.

Desking

Vitra, anxious to balance its formidable reputation for design by becoming more accessible to a broader market, is building up its desking sector. Although precise details are not yet available, included will be new additions to the Ad Hoc office programme which has been developing over the last couple of years and the new Wave system. Bulo will be launching Lio, a new and very light screening system with in-built storage which will

enhance the existing M2 and H2O ranges. **Steelcase Strafor** will be showing 1+1 with its mobile storage tower and range of curvaceously formed work surfaces creating an informal easy-to-live-with appearance. **Knoll International**, celebrating its sixtieth anniversary this

year, has been working with young British designers
PearsonLloyd on PL1, a new furniture system
designed for greater adaptability with mobile elements. These include the appealing Homer, the



The 1+1 design by Steelcase Strafor







The Conrack range from Willkahn

"briefcase on wheels" created specially for the nomadic worker. More curved forms fixed to a technological hub creating clusters of workstations can be seen in I Satelliti S/200 by Unifor. Abolishing the need for horizontal wire management, I Satelliti also has height-adjustable mechanisms which move the Worktop and computer up and down together in one column. A visual contrast is provided by the minimalist geometry of Kemen's K-Net desking, designed with Daniel Korb, which aims to combine maximum constructive flexibility with minimum possible elements. Wilkhahn will be showing the extended Conrack product range which now includes new cladding panels, drawer units and door assemblies whereby the customer can create open or closed frameworks, or a combination of both for mixed storage and display. Haworth will be showing additions to its Crossings range. Crossings

Mind Gear provides memory shelves, marker shelves, slates, extension clips and equipment trolleys. Allowing the orderly display of those crucial bits and pieces which can aid the creative process, these accessories recognise that many people organise work visually and spatially – in a seeming clutter of paper, photographs and post-it notes – rather than in a linear way on a minimalist surface.



Kemen's K-Net designed by Daniel Korb



The Kevi 209 from Fritz Hansen designed by Jorgen Rasmussen

The B900 chair from Lamm

Seating

Previewing what treats are in store has some limitations at this stage as many new product launches are veiled in secrecy. Vitra, following the spectacular launch of the Meda chair back in 1996 has several new

chair designs waiting in the wings. Demonstrating a stronger presence in the area of office seating **Fritz Hansen** will be showing three new series of office and conference chairs. Spin, heralded as a revolutionary concept in design and ergonomics, has been designed by the German designer Burkhard Vogtherr. Independence, also designed by Burkhard Vogtherr, has been updated with new surfaces and fabrics offering visitor and managerial options.

The well established Kivi series has been extended with the introduction of the fully adaptable Kivi 2009. Steelcase will be showing its fully adjustable swivel chair Please. **Lamm** will have a large showing including its new product range 8900 available in management version, office and meeting versions. **Girsberger** is offering Girsberger 3300, its new lightweight, stackable visitor's chair. Amongst offerings

from Kusch + Co is an updated version of its prize-winning Hola by Jorge Pensi and, another Pensi design,

Capa series 4200. Also on show will be Series 5800 aimed at the conference and meeting room. Warm and elegant, the

series, which met a favourable response at London's Spectrum, is constructed from moulded beech with an upholstered seat.



The Girsberger 3300 designed by Dieter Stierli



The CAPA 4200 from Kusch + Co

Ahrend 1030 ►

The Ahrend 1030 range is height adjustable and available in many sizes, shapes and colours. The 1030 desks and conference tables are an inspirational concept designed by Professor Wim Quist. For more information telephone (+44) 0181 7478383.

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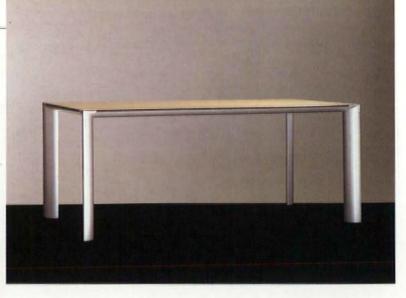


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Enviro HA with writing tray

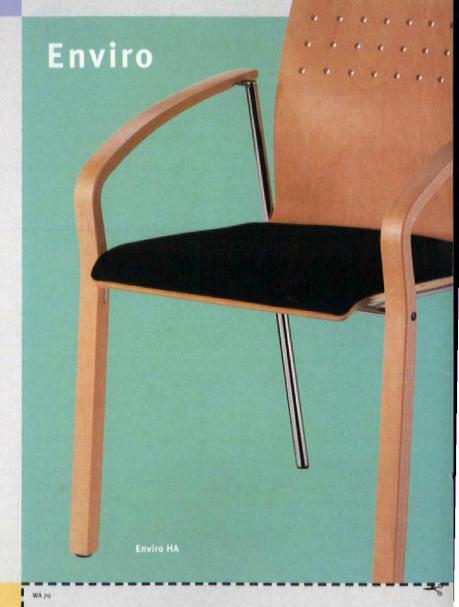
The architecture of seating







Chairs stack up to 15 high





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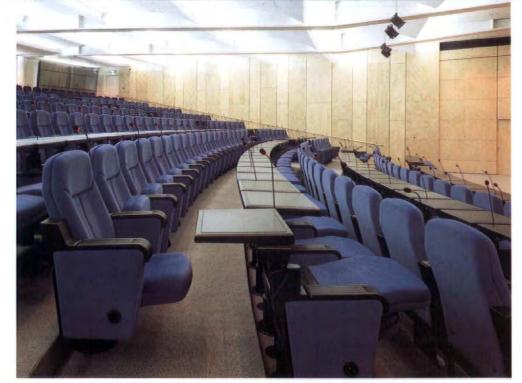
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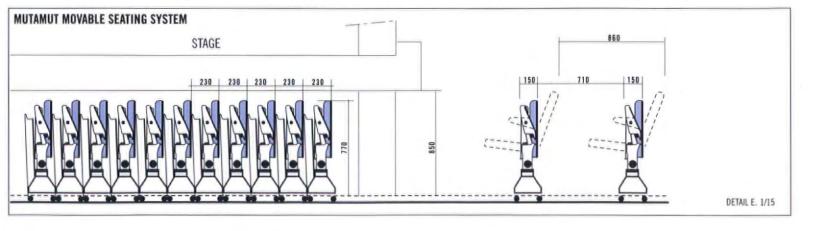
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