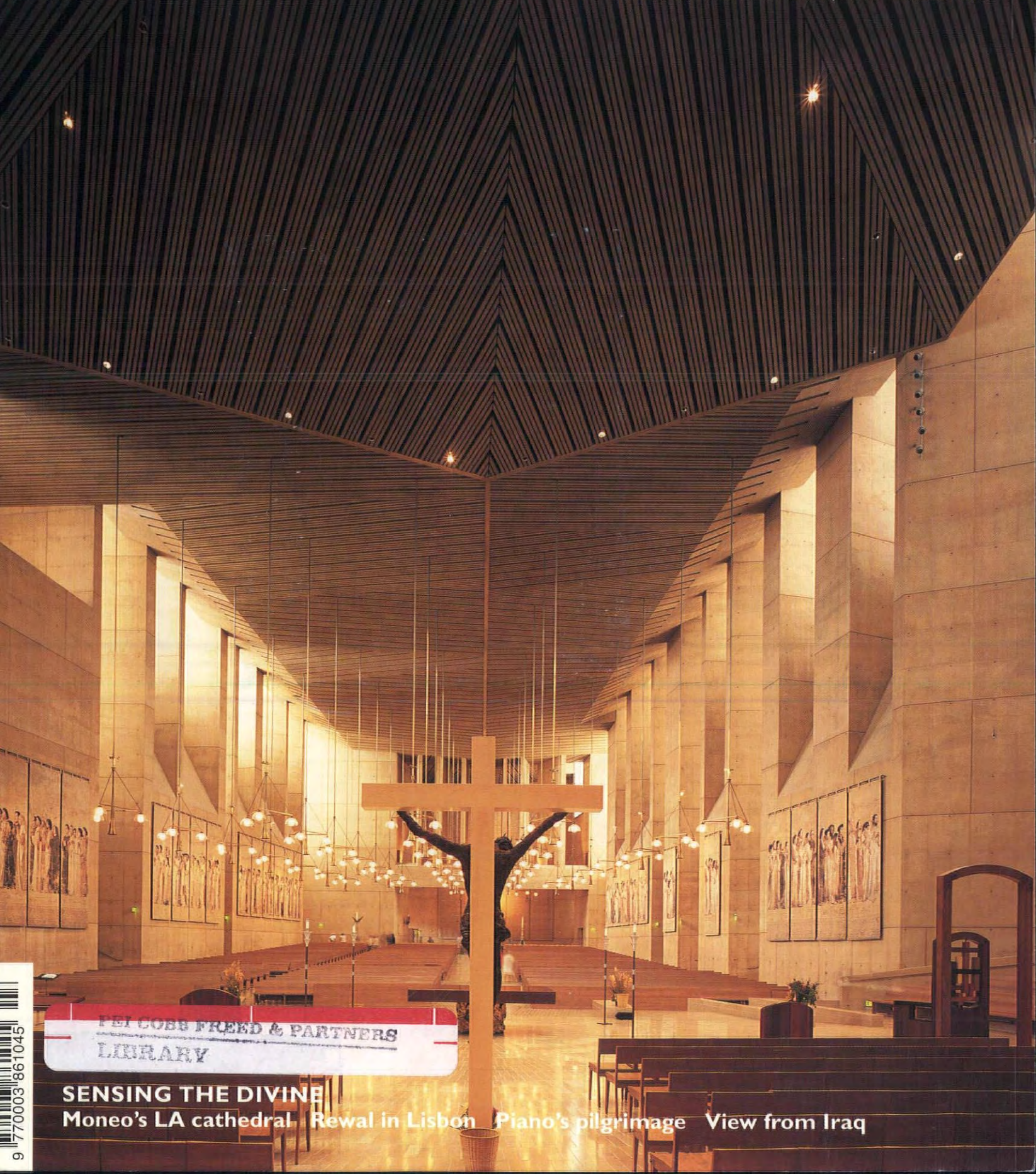


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Cathedral in LA by Rafael Moneo (p44)



Ismaili centre, Lisbon by Raj Rewal (p52)



Kongsvinger church by Hille Strandskogen (p62)

SENSING THE DIVINE**VIEW**

- 24 Architecture for Humanity celebrates mobile HIV/AIDS clinic by KHRAS; Arup invents radical wind-powered ventilation system in Zimbabwe; World Trade Center finalists chosen

VIEW FROM IRAQ

- 32 By Dan Cruickshank

DESIGN REVIEW

- 38 Timber constructions, Finland JAAKKO PERNU

COMMENT

- 42 Building faith: how architecture responds to and shapes sacred space

THEME: SENSING THE DIVINE

- 44 Cathedral, Los Angeles, USA RAFAEL MONEO
52 Ismaili centre, Lisbon, Portugal RAJ REWAL
58 Synagogue, Chemnitz, Germany ALFRED JACOBY
62 Church, Kongsvinger, Norway HILLE STRANDSKOGEN
66 Pilgrimage church, Puglia, Italy RENZO PIANO

PLACE

- 70 Chandigarh: once the future city JIM ANTONIOU

INTERIOR DESIGN

- 77 Offices, Oklahoma City, USA ELLIOTT+ASSOCIATES ARCHITECTS
80 Art centre, Turin, Italy CLAUDIO SILVESTRI

HOUSE

- 84 House, Toronto, Canada SETH STEIN ARCHITECT

PRODUCT REVIEW

- 88 Ahrend 230 chairs and Ahrend 500 desks and tables
90 Ironmongery, interior shading systems and interior finishes

BOOKS

- 96 Digital world; Raphael Soriano; representation in the visual arts; soundscape of modernity

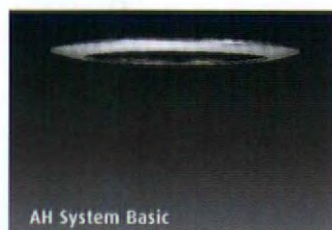
DELIGHT

- 98 Tiny public library, Calvi, Corsica

COVER

- 44 Cathedral, Los Angeles, USA RAFAEL MONEO Photograph by John E. Linden

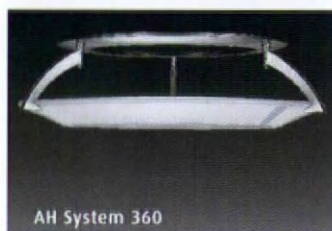
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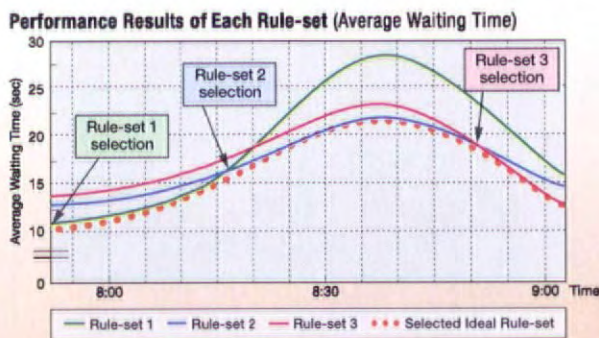
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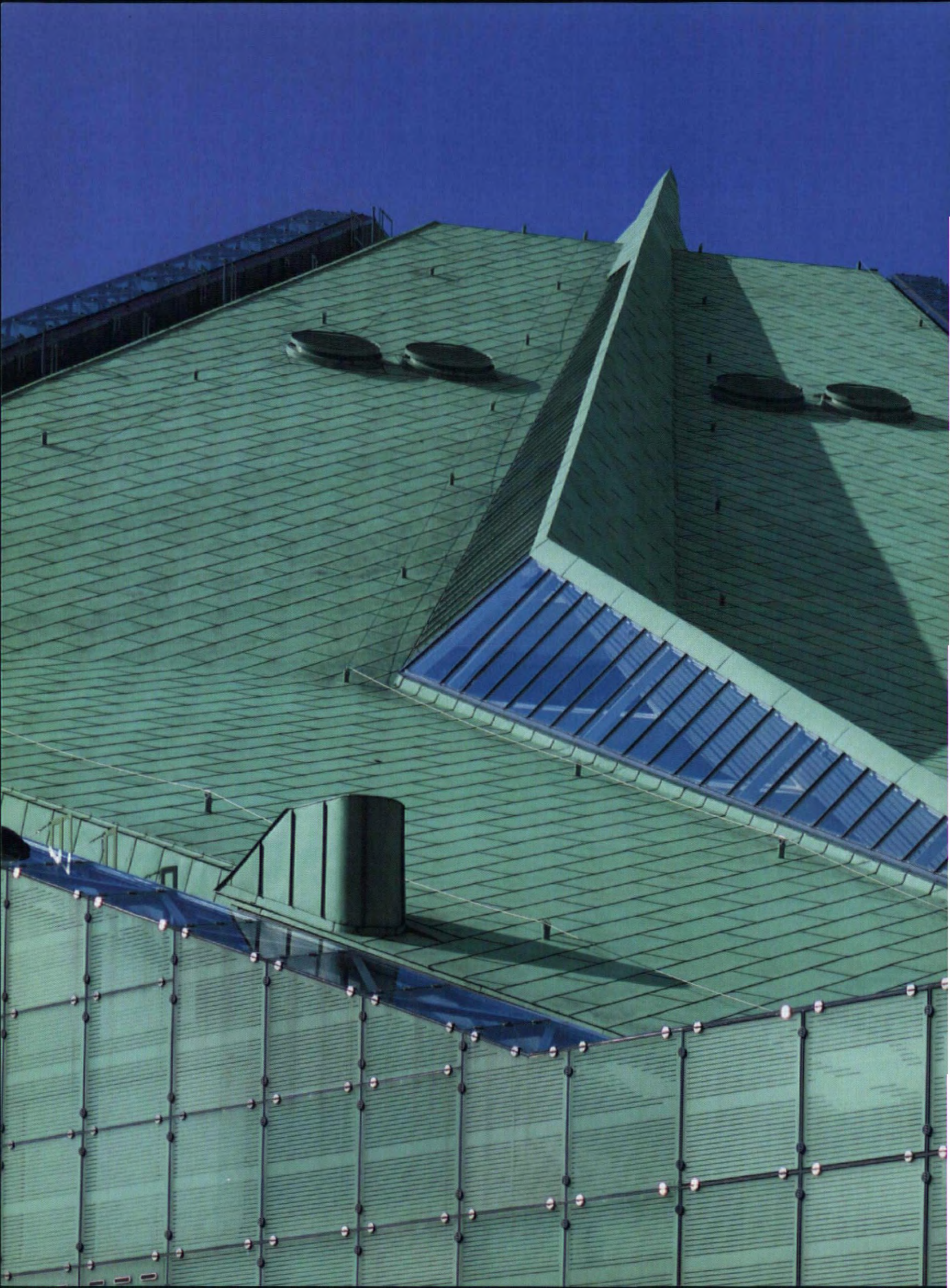
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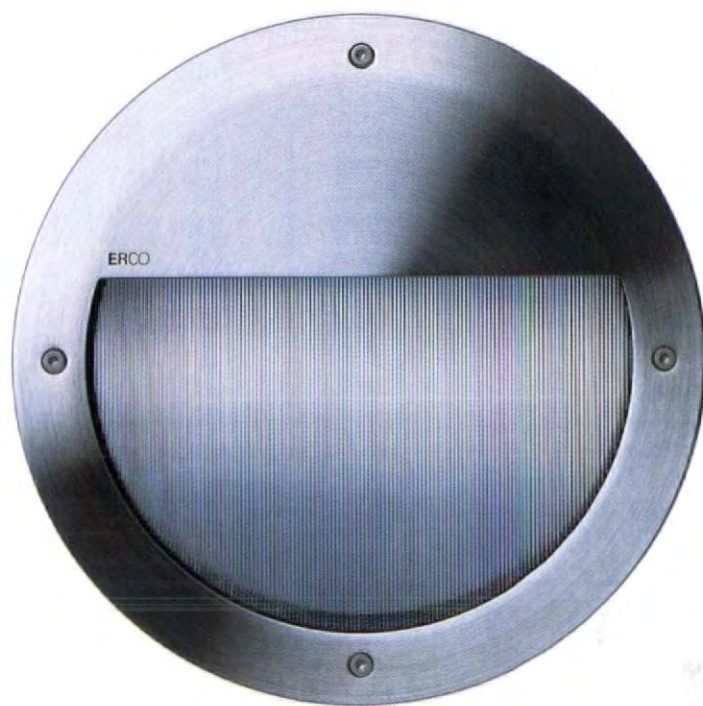
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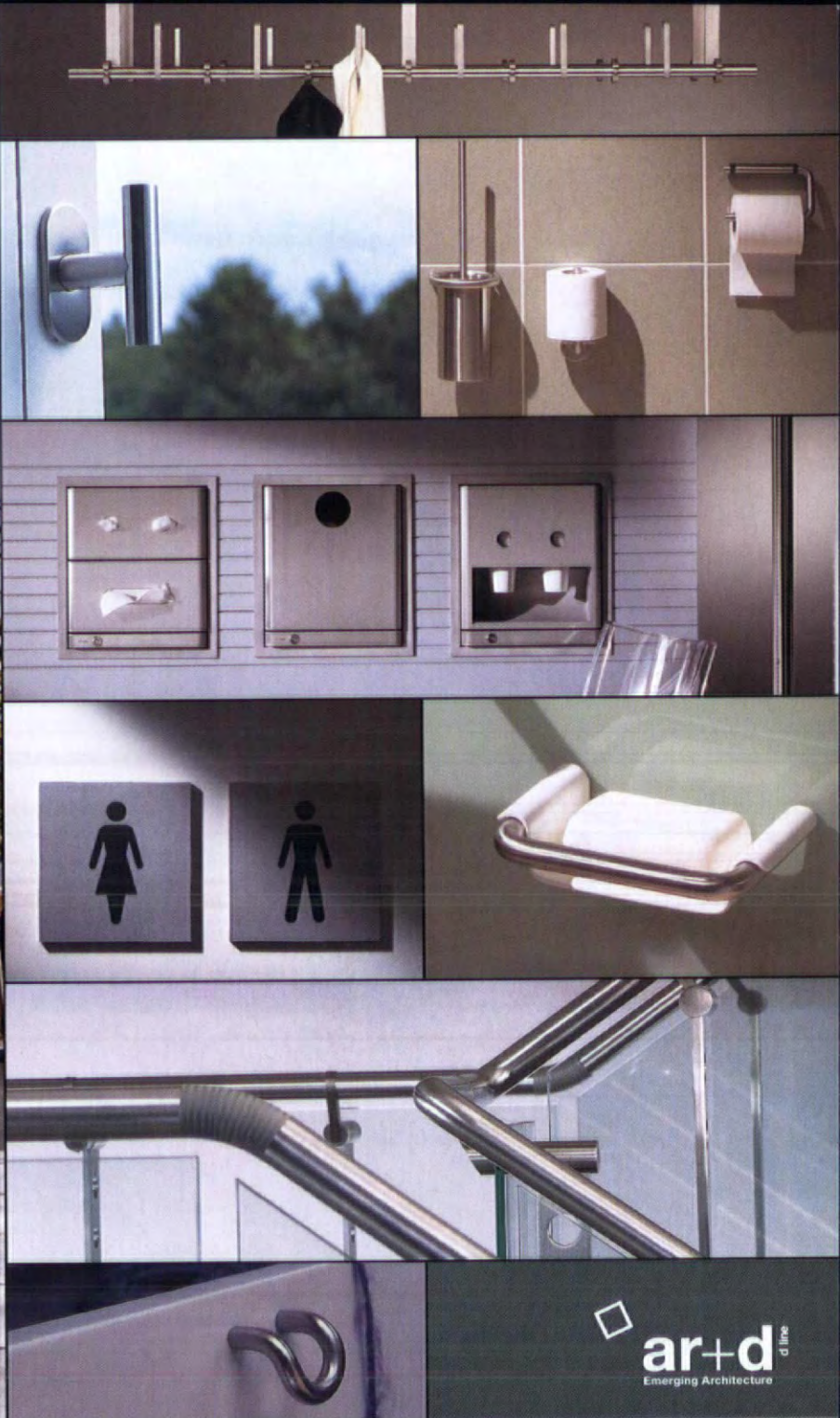
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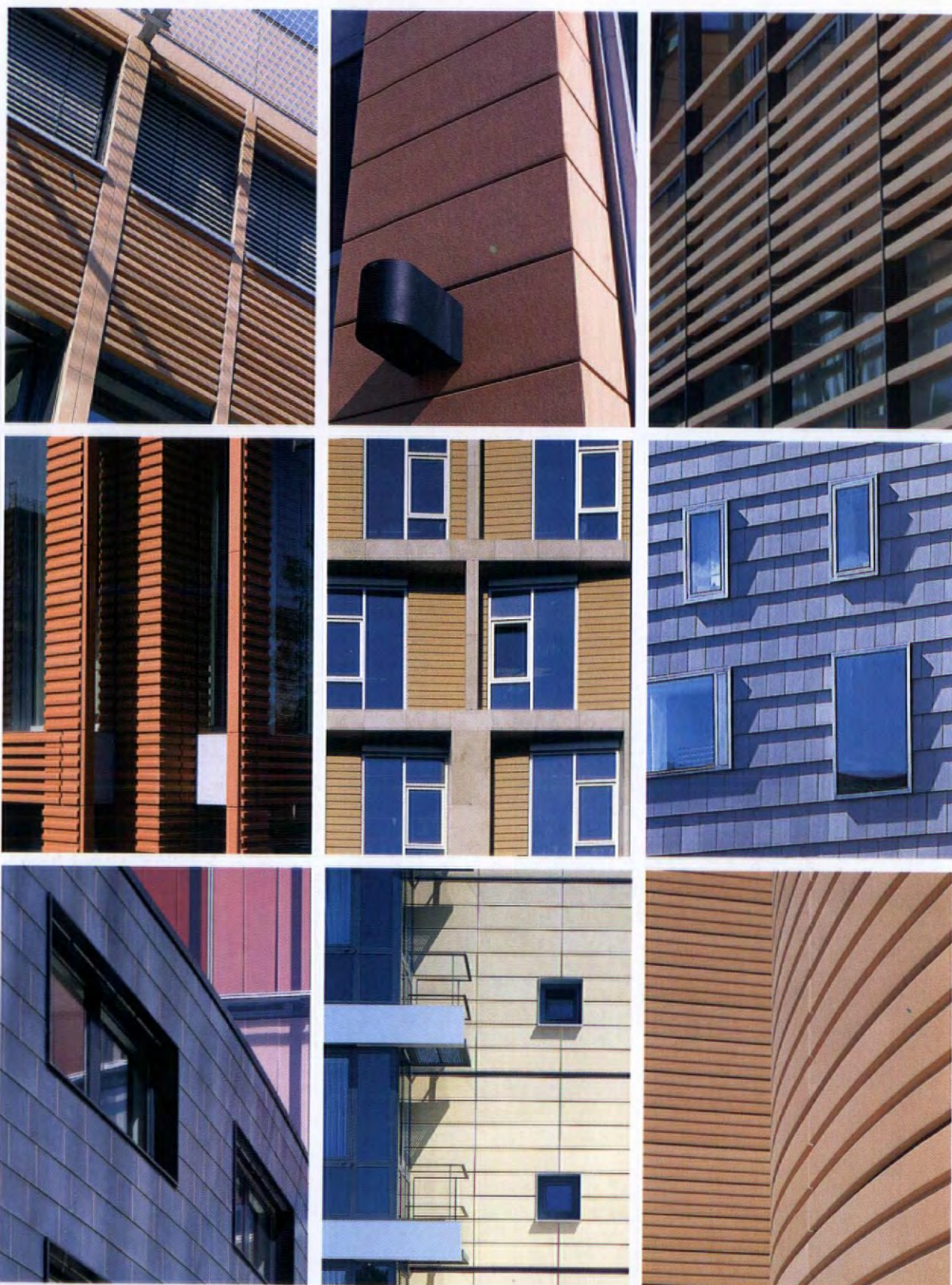
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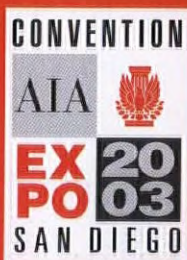
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view

REVOLUTIONARY APPROACH TO LOW ENERGY VENTILATION IN ZIMBABWE; ARCHITECTURE FOR HUMANITY SPONSORS SCHEME FOR ECONOMICAL AIDS CLINICS IN AFRICAN BUSH; DAN CRUICKSHANK VISITS THE GREAT MONUMENTS OF IRAQ, THREATENED BY WAR; IS CHARLES JENCKS'S PERSONALITY CULT REALLY NECESSARY?

REVOLUTION IN VENTILATION

Arup Zimbabwe have won the innovation category of the Worldaware business awards for their Vawtex – vertical axis wind turbine extractor, which uses wind energy rather than electricity to power building ventilation and add to convection effects.

A wind turbine rotates on a vertical axis and drives a fan. Conventional horizontal wind turbines like traditional windmills are usually sited in open countryside and cannot cope with changing wind conditions caused by buildings in

cities. In addition, the Vawtex takes advantage of the wind's lifting effects (which take aircraft off the ground). Use of this force allows the device to rotate three times faster than it would if pushed by wind speed alone. It will operate in wind speeds of less than three miles an hour (5kph), but it is designed to operate less and less efficiently as wind speeds become dangerously high.

With no wind tunnel available for testing in Zimbabwe, the Vawtex was tried out on the back of a pick-up truck driven fast round a race track. Materials and manufacturing techniques were chosen to suit the shrinking local economy.

Installation costs are similar to those of conventional systems but the device needs no fuel, is more silent than electric ventilation and it causes no pollution. The first installation was at the Harare International School by architects Pearce Partnership; eight Vawtexes are to be installed this month at the Centre for Sustainable Construction in Belgium.

CRISIS MANAGEMENT

It is estimated that three-quarters of the global population affected by AIDS lives in Sub-Saharan Africa. Most have no access to lifesaving drugs, testing facilities or even basic preventative care. One of the major factors inhibiting medical professionals in Africa from treating the disease is the general inaccessibility of the continent and the inability to bring adequate facilities to remote areas. Architecture for Humanity, a volunteer organization based in New York concerned with the promotion of architectural solutions to global social and humanitarian crises, challenged architects, designers and medical professionals to design a mobile health clinic that could be used in the African bush. Designers were given six months to develop schemes for a fully equipped, mobile medical unit and HIV/AIDS treatment centre that could not only be used for the testing, prevention and treatment of the disease, but also to disseminate information and provide basic health care services. More than 531 teams from 51 nations answered the call.

The winning proposal came from Danish firm KHRAS with a simple yet flexible concept based on studies of traditional types of pavilions and shipping containers. The design consists of a basic steel-framed box with a variety of infill membranes. Local materials such as thatch or fabric can also be woven into the frame. The box is designed to slot into the footprint of a standard container and so can be easily moved using various methods of transport. A satellite dish, solar power unit and water collection system make the box self-sustaining, and a locking system enables health workers in the field to secure equipment and supplies at night and while on the move. 'In Africa, especially in remote areas, you don't just get a spare part from down the road. So instead of one solution we wanted to come up with a system,' explained



Pearce Partnership's International School in Harare: first use of revolutionary Vawtex by Arup Zimbabwe.



Danish architects KHRAS winning proposal for a mobile medical unit to treat HIV and AIDS sufferers in the African bush. The competition was organized by Architecture for Humanity.

Mads Hansen, of KHRAS. 'If you want to implement this all you need is a simple frame.'

The next stage is to move from ideas on paper to a viable, realizable building. Architecture for Humanity is currently organizing a development workshop to be held in rural KwaZulu-Natal, South Africa later this year. Finalists will collaborate with relief organization representatives, local doctors, engineers, and transport specialists to refine and finalize construction plans for a working prototype.

Further details from: www.architectureforhumanity.org

and architecture that will enable us to live in greater harmony with nature and each other. Further details can be found on p40 or on our website at www.arplus.com.

AR+D EXHIBITION + LECTURES AT RIBA

The winning and commended schemes of the latest ar+d awards (AR December 2002) will be on show at the RIBA in London from 24 Febru-

ary to 29 March. The awards, organized by The Architectural Review and the Danish design company d line with support by Buro Happold, celebrate the work of young architects and designers. Entries were received from all over the world. Winners this year were a memorial bridge in Croatia, a bee-keeper's hut in North Carolina, a cemetery in Hiroshima, Japan, a demountable interior landscape for the UIA in Berlin and a sundial beach house in Victoria, Australia.

AR'S GREEN CONFERENCE: BOOK NOW

The Architectural Review will hold a conference on Greening the European City at the RIBA in London on 19 March. We face a world ecological crisis of unprecedented proportions in which cities and their buildings are eating up the planet's resources at ever-increasing rates.

The most distinguished architects and ecological thinkers from all over Europe, including Stefan Behnisch, Lucien Kroll, Philippe Samyn, Mario Cucinella, Nicholas Grimshaw, Christoph Ingenhoven, Alain Cousseran and Max Fordham, will discuss new forms of urban planning



The seven proposals for redeveloping the razed World Trade Center site in Lower Manhattan (AR February, p18) have now been reduced to two finalists: the scheme by Daniel Libeskind (left, shown here at ground level) and the one by the Think team, which includes Frederic Schwartz, Rafael Viñoly, Shigeru Ban and landscape architect Ken Smith (right). A decision between the two shortlisted proposals was expected as this issue went to press.

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letters

CULT OF PERSONALITY

SIR: Charles Jencks's approach to the wedding of architecture and contemporary science (The New Paradigm in Architecture, AR February) is, as usual with Jencks, ridiculously superficial. He is the main promoter of the star system which evaluates architects entirely by show-biz, shock or just their tendency to be as bloody minded and absurd as possible. Having seen the book with the same name as your article, I was horrified to see that Jencks has fallen even further into the dreadful mire of the cult of personality by printing whole page pictures of his heroes with their girlfriends. Architecture is for people, but architectural theory should not be about personalities.

Yours etc

BASIL HENRIQUES

Singapore

PS I have seen Federation Square, Melbourne by LAB and Bates Smart; it is typical of that city's deep affection for the bizarre and anti-human in architecture. It is completely indifferent to its surroundings, and totally scaleless. It may, as Jencks suggests, be related to fractal geometry, but how does it relate to humanity?

WHAT IS IN THAT CRATER?

SIR: While I was not displeased by the picture in Delight (AR February), it didn't seem to get to the point. If Turrell has been at work inside the crater for the last 30 years, what has he been doing down there? I would be happy to know.

Yours etc

ASTRID ROGN

Copenhagen

We hope to be able to report in a future issue, when Mr Turrell reveals all. THE EDITORS

GET MORE CRITICAL

SIR: I understand that AR will generally review works of evident architectural merit. But I had begun to wonder, from the general tone of your articles, whether the selection of a building for review in AR is in itself a wholesale approval of its architectural merit. Your articles too often consist of admiring description. Peter Blundell Jones' piece on Libeskind's Imperial War Museum (AR January, p36) is a welcome exception. I hope that critical analysis will not be confined to the 'Outrage' page.

Yours etc

BRUCE JENKINS

Caversham, England

YOKOHAMA DISAPPOINTMENT

SIR: Pictures and articles about Yokohama International Port Terminal (AR January, p26) just answer my questions on my visiting the site a month ago. I must say this was one of the most expecting architecture for me in a decade when I read about the competition, but resulted in the most disappointed one after I saw it in reality. If I remember right, in terms of the planning, the biggest impact for me was its 'seamlessness' and 'continuity' of space. The original drawing showed a lot about them, and I found this could be the building that would realize the totally new concept of twenty-first century's architecture.

However when I finally visited the building, I could hardly feel any of the sense I mention above. Cave-like space was disintegrated by awful partitions and dark walls, rather low ceilings depressed me and made me ask myself why it should be so as a building for ferry terminal. Your pictures of the building clearly tell the features of this building which I expected in basic drawings, but as the user of this terminal, you don't understand the whole idea of this building.

I say this again, for this kind of architecture, 'continuity of space' is really essential, but the architects lost such an important idea somewhere in the sea during the course of their constructive cruise.

Yours etc

MOTOKI KOSAKA

Tokyo, Japan

CORB IN STEEL

SIR: Le Corbusier's Pavilion in Zurich is in fact neither '... his only steel-frame building', as stated by Susan Lasdun in View from Zurich, nor was it designed in 1967. Le Corbusier died in August 1965.

The slab of rooms of the Swiss Dormitory at the Cité Universitaire (1929-31) in Paris is a steel frame, albeit raised up on a reinforced-concrete slab supported on concrete pilotis. The free-standing stair tower enclosure is also steel framed from grade level to top.

The Clarté Apartments built in Geneva and designed at the same time as the dormitory were also an all steel frame structure.

The Zurich building was originally conceived as an entirely concrete structure by Le Corbusier and was later redesigned, redetailed as steel frame, with porcelain enamelled steel infill cladding panels, finally executed under the supervision of former atelier staff after his death.

Yours etc

JEREMY SCOTT WOOD

Boston, Massachusetts, USA

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browser

Sutherland Lyall ploughs through the fertile fields of architectural cyberspace.

Drawings that speak to you

The Object Shop at www.theobjectshop.com sells GDL objects on-line. CAD monkeys, as office fodder seem self-deprecatingly to call themselves, are probably aware that GDL stands for 'geometric description language'. The important thing for architects doing CAD is that objects, such as chairs and roof sandwiches, drain pipes, doors, whatever, can be described not only in terms of their two or three dimensions but in terms of materials, of the way they are combined to form the object, of thermal performance, of colour – and basically whatever information you care to associate the object with which describes performance and behaviour. You pass your cursor over a GDL object and up comes the data in a box – or it's spoken to you straight out of the screen. So they are 'intelligent' objects and behave parametrically which is to say according to their electronically embedded rules of behaviour. Actually I got all that latter stuff, apart from the talking, from GDL Technology at www.gdlcentral.com. The Object Shop site rather assumes you knew all about the subject in the first place. OK, it's a fantastic idea and I'm totally out of my depth about how this is usefully applied. I guess the thing for GDL-non-savvy architects to do is to go into the office on Saturday when the rest of the staff is playing five-a-side, try the GDL Technology site and then do a Google search for gdl. Don't hold your breath, though, for the early arrival of 'intelligent' parametric real-life building products.

Museum heating

London's Design Museum web site, at www.designmuseum.org/, once not very interesting, is now really quite good thanks to designers The Warm Company. There are the familiar (and therefore useful) section headings, one about the museum, another about exhibitions, others about education and supporting the place. There's a digital archive of design plus a digital archive of digital design. And the seventh heading is how to rent the museum. Like almost all British museums and institutions you can hire the place for the right dosh: in this case £4.5K plus of course the catering. For whatever this adds up to you can have up to 250 people sitting down to dinner. You probably have long since downloaded Adobe Acrobat Reader and Macromedia Flash stuff but if not give the opportunity to do so here a big miss: instead of just pressing the relevant button there's a boring rigmarole involving going to the root site and clicking option after option. It's as if these big

hitters are reluctant to give up their secrets – which in the case of Adobe is probably the truth. Adobe is the company which horrified so many of its users when it had that visiting Russian programmer Dmitry Sklyarov hurled into the slammer for, essentially, not being respectful about its software. Happily, late last year a US court threw the case out.

Great name, hollow echoes

Some time somebody has to write the history of London's architecture cabals. Apart from Peter Murray's prestigious closed-entry Architecture Club, there is a livery company, several dining clubs which foregather every second month in City livery halls and conduct slightly unhygienic rituals, proper Masonic lodges, hundreds of save this and that century's architecture societies, the private view invite lists of the multitude of architecture-related institutions and museums, groups of like-minded people which meet informally and occasionally give themselves a joke name (one was called the Philistine Fellowship) – plus a lot more whose existence is either apocryphal or carefully hidden from the ears of the press. And some simply keep a low profile. The latter seems to be the case with Art and Architecture whose site is at www.artandarchitecture.co.uk and is not to be confused with the legendary former US magazine of that name or the New York walking tour company which owns the .com suffix although in truth the .co.uk site is more than somewhat pedestrian. The news update and news about new projects is wide columned, un-headlined, straight text sans even a thumbnail or two which makes for seriously less-than-interesting reading. There is an international practitioners' index but the only non-UK country listed is a place called Switzerland. But if you work in London don't give up on them. They run some very interesting lecture programmes and the slackness of the site is what you sort of come to expect of voluntary organizations.

Dutch courage

The Dutch site deArchitect emailed us and said we should look at its new dateline section, cheerfully forgetting to point out that, like the rest of the site, it is only in Dutch. Nor did they remember the www. bit which comes between <http://> and the rest of the address. Our best minds finally sorted it all out and here, correctly, is the url: www.de.architect.nl. The non-English bit is actually less of a problem than you might think. And yes we have scrutinized the home page for even the slightest hint of a union flag or the word English. It does of course mean that you won't get even the gist of the architectural commentary however familiar quite a lot of

Dutch words are: *nieuws* is 'news', *zoek* is 'search' but *links*, *service*, *agenda*, *media* and even *productinformatie* are exactly as they sound. I guess you would look at a site like this for the latest projects (at least we journalists do), enjoy what is there and hope for an English text version soon.

The students' voice

Transatlantic architects may be surprised about the fact that students in Britain don't pay for their university education. Or only a bit. But not for long, it seems when, under new government proposals (by people who all had free university education themselves), students will graduate with massive debts. It's fine for tyros and doctors and, well, lawyers. But architects in the UK, the lowest paid profession apart from old people's home carers, are apparently thinking seriously about reducing architecture courses to four years in order to give the impression to school leavers that architecture isn't all that much more expensive than other courses. In my experience most discussions about architectural education end up turning autobiographical ('I had to do measured drawing and I don't see why these whippersnappers ...'). So it's worth taking a wider look at a quite comprehensive site, ArchVoices at www.archvoices.org and also www.archvoices.com – the 'think tank on architecture education and internship'. The latter has nothing to do with the White House but with years out and other practical experience with architectural practices. There's no space here for all the topics covered and sadly a search for both our standbys Callicrates and Ictinus produced zilch. However there are lots of other goodies: one resource, the library, has articles (not just the references but the articles themselves) on, among many others, women on the job site, studio culture, irresponsibility and on alternatives to the current models of the profession. Some architecture students, it seems, are interested in more than a meal ticket.

Play it again

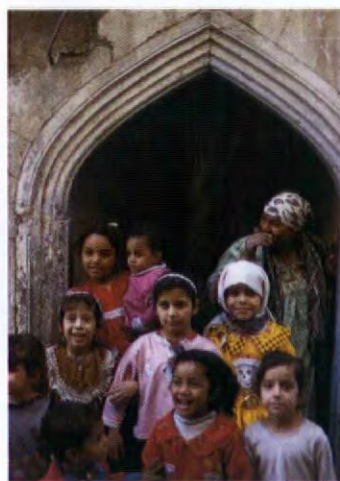
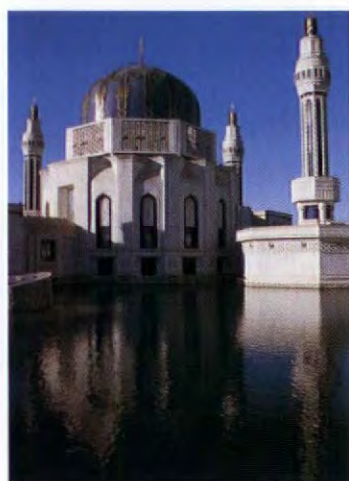
Because architects create frozen music this month's pleasure is Pianographique at www.pianographique.com. Unlike deArchitect this is a French site with an English version, you do some of the work and it's entrancing. Enjoy. Sutherland Lyall is at sutherland.lyall@btinternet.com

erratum

We regret that the wrong credits were published for Andél's Hotel, Prague (AR February, p78). Credits should read: Interior architects: Jestico + Whiles; Project team: James Dilley, Michelle Le Masurier, Johanna Stockhammer, François Bertrand, Toby Ware; Architect for shell building: Tomas Prouzal/D3A.

zanotta





Baghdad, where Saddam Hussein is building the 'biggest mosque in the world'. Mosul, with its cheerfully leaning twelfth-century minaret and the still very much used medieval fabric of the core. In the suburbs, full of soulless developments, is an extraordinary legacy of the 1980s, with Saddam benevolently looking down on Mickey Mouse and his friends.

Letter from Baghdad

Dan Cruickshank went to Iraq late last year to make a film about the country's extraordinary heritage of ancient buildings which are now threatened with further destruction.

I flew into Baghdad in November 2002 as part of a BBC television crew. The aim of the journey was to make a programme about the effect 25 years of war and political isolation has had on the culture of the country. We wanted to look at its ancient sites, buildings and museums to discover what has been damaged through war and neglect and to reveal what is now under threat if military action is renewed. The object, ultimately, was to inform – to remind people in the West what is at stake, what could be destroyed, if the country is attacked. Also, and just as important, we wanted to discover what the people of Iraq feel about the recent onslaught on their culture, through both external attack and through internal civil strife, and about their fears for the future.

This investigation was not easy. Just getting a visa to enter the country was a major problem requiring much explanation and patience. Then, when entry to Baghdad was agreed, it was necessary to produce a list of places that we wanted to visit so that travel outside the capital could be approved. And, from the start, it was clear that we would be under political control, accompanied by government appointed minders who would stop us recording militarily sensitive sites or anything that could show Iraq in a poor light.

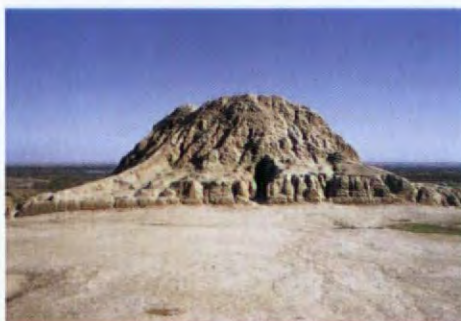
The first few days in Baghdad confirmed our

worst fears. Our papers were, it gradually emerged, not in order. Our journey had not been approved by the various ministries, (though the Iraqi official in London had told us that they were before we left) and it was far from certain that we would be permitted to leave Baghdad. Indeed, in the near hysterical atmosphere that dominated Baghdad in mid November, as the deadline rapidly approached for Saddam Hussein to agree to allow UN weapons inspectors back into Iraq, a tour around the country seemed a remote possibility. We spent six days confined within Baghdad. It seemed that we had come a long way for little purpose. Then, at the eleventh hour, Saddam agreed to let the UN inspectors in, immediate military action was averted, our travel documents were suddenly provided (following the payment of a large 'fee' to film archaeological sites), and we left the Al-Rasheed Hotel as Hans Blix and the UN team moved in. We were off.

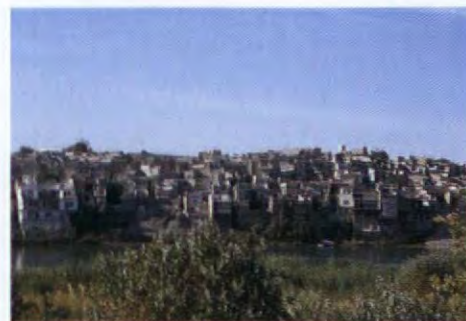
We headed north, to Mosul, the second city of Iraq, and to the heartland of the ancient Assyrian Empire, the most powerful force on earth when it reached the apogee of its glory 2800 years ago. As we drove north I passed through a

landscape that revealed much of its remarkable past. This was the ancient land Mesopotamia, the 'land between the rivers' as the Greeks termed it, and this geographical characteristic was the key to understanding the extraordinary and pioneering things that had happened in this land 8000 years ago. Between the Rivers Tigris and Euphrates was a great alluvial plain, Mesopotamia, and the soil, although sun-baked, was immensely fertile. Man had learned to irrigate the land by means of canals and ditches, and had mastered the arts of agriculture. From this came plenty, wealth – and relief from the need to fight for survival. Man's creative energy had the chance to flourish. Civilization was born. About 5500 years ago the first form of writing (cuneiform) was evolved, then the wheel, mathematics – and the crafts, arts and many aspects of theology now familiar in the Judaic, Christian and Muslim religions.

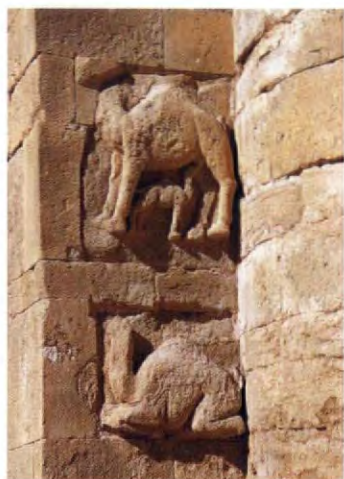
The Assyrian Empire evolved and refined these achievements but there had been civilization, and empires, in Mesopotamia before the rise of the Assyrians. The oldest of which we know is the Sumerian, located in the far south of present-day Iraq. Around 6000 years ago the



Ashur's great 3200 year old ziggurat, now threatened by a huge dam across the Tigris.



Mosul's medieval core, where houses tumble down to the Tigris but are surrounded by vast sprawling suburbs.



Hatra, a 2000 year old city built by Arab princes was once a crossroads of trade and culture. Eastern and Western motifs are freely intermingled, including apparently a very early appearance by the Green Man. Then, Arab rulers were happy to live in harmony with the Hellenistic world. Now, Hatra is flanked by a huge military camp.

Sumerians built the world's first city, Uruk, and, for good or ill, introduced urban civilization. The oldest book we know now, the *Epic of Gilgamesh*, was also written in Sumeria, around 4500 years ago. Gilgamesh, a king of Uruk, set out on a quest for knowledge and immortality. In the end he found them, through architecture. Only by building could a king honour his gods and obtain immortality. To the Sumerian kings, who stamped their names in the bricks of their buildings so they would live in the memory of man for ever, city building – architecture – was divine.

My first confrontation with these ancient civilizations came on the road to Mosul at Ashur, the earliest of the great Assyrian cities. Ashur was first built around 3200 years ago and was the spiritual centre of the empire and a great port on the Tigris with merchandise and peoples coming from all over the known world: Egypt, Persia, India, Afghanistan, and Mediterranean countries. Like most of the Assyrian cities, Ashur was sacked in 612 BC when the ferocious and warlike Assyrians were finally overwhelmed by the combined forces of Babylonians and Medes. Persians and then

Romans resurrected the city but it was finally abandoned in the fourth century AD. It was only rediscovered in the early twentieth century by German archaeologists and now consists of a vast number of mounds covering acres of land – the remains of ancient buildings – dominated by the huge bulk of a ziggurat. Ziggurats – stepped pyramids, formed with a series of terraces and ramps – seem to have been evolved by the Sumerians around 6000 years ago and were taken over and developed by succeeding Mesopotamian civilization like the Assyrians. Ziggurats were the focal and spiritual centre of the city, the earthly dwellings of the Gods, with their ramps being the stairways to heaven which priests would ascend to converse with their deities.

Sumerian ziggurats were built of sun-baked mud bricks faced with kiln-fired clay cones to protect the vulnerable mud-bricks from the weather. The Assyrians made technological advances in building so that they were able to kiln-fire huge and very solid square bricks that they laid in bitumen and used to face the mud brick cores of their ziggurats. At Ashur most of these fine bricks have long been robbed so the

ziggurat stands as a great and vulnerable mud mound, still lordling it over the lesser mounds that mark the presence of palaces, temples and city buildings. Much has yet to be learned from Ashur. Archaeologists have not fully excavated the site but it seems its secrets are to die with the city.

One of the more destructive policies of Saddam Hussein's sinister regime in Iraq has been to dam the Tigris and Euphrates rivers that flow south into the Persian Gulf to an ecologically and environmentally disastrous extent. This has, arguably, improved the quality of life and agriculture for some of the Sunni Muslims in the north of the country (Sunnis are in the minority in Iraq but Saddam and most of his lieutenants are Sunnis), but has had disastrous consequences for much of the country. This is particularly the case in the Shia Muslim heartland in the south.

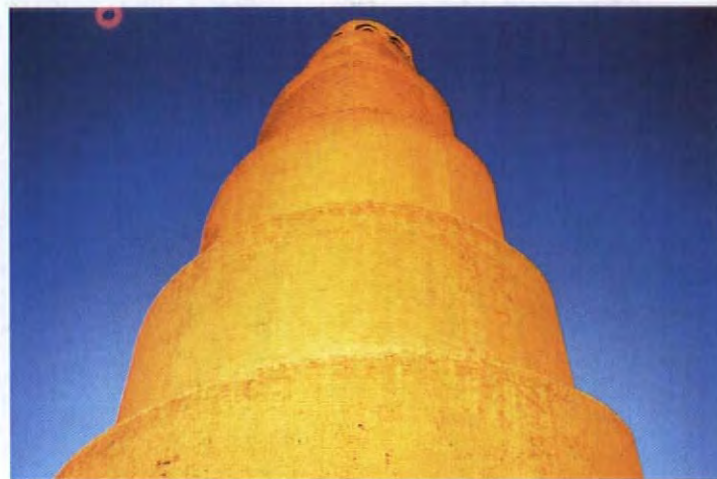
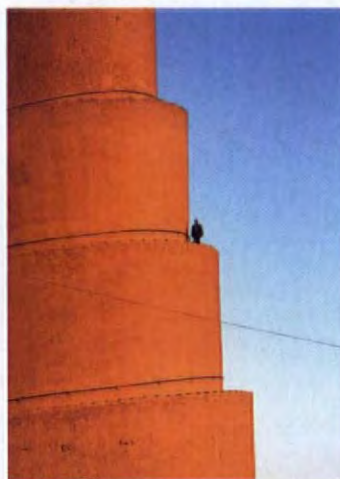
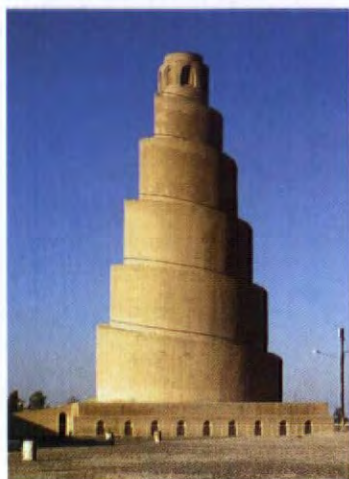
Here, since 1991, Saddam has utterly destroyed the inland seas and marshes that gave the Shia Marsh Arabs a very distinctive way of life, fishing their lakes, herding water buffalo and living in reed huts, a way of life that dated back 5000 years to the age of the Sumerians. By damming the rivers, water has been denied to the region and the marshes replaced by desert – as I discovered to my horror when I drove through areas still marked as lakes on my map – and the Marsh Arabs made refugees in their own land, driven into poverty or forced to flee to Iran. The only reason for this cruel and ecologically catastrophic act is the brutal desire to punish the Shia Arabs in the south for their lack of enthusiasm for the war with Iran in the 1980s. And this ghastly policy of blocking the rivers goes on. Even now construction work has started to dam the Tigris at Ashur so that a large portion of the ancient city centre will be submerged. I was assured by the director of



Mesopotamia was briefly occupied by Romans in second century AD, but Hatra's temples predate that, and ...



... have a command of Hellenistic composition and detail showing lively cultural connection between East and West.



'The most memorable architectural image in Iraq': the Great Mosque with its 52m high spiral ramp derived perhaps from the ziggurats of the ancestors. 'An astonishingly powerful, elemental and mystic structure', which turns out to be terrifying to climb, as the ramp becomes narrower and narrower as it ascends.

archaeology at the Iraq Museum in Baghdad that the ziggurat would be spared but, he admitted, since the water table below it will rise even the future of this moving, ancient and massive mud brick construction is far from assured.

Mosul is a sprawling city with a medieval core formed by closely-packed courtyard houses that tumble down to the Tigris. It boasts a curious twelfth-century minaret that was built so that it leans to one side in a cheerful manner. Around the core are soulless developments and ugly roads and bridges reminiscent of any Western city. And this, given its current plight and the risk of invasion from Western powers, is the great paradox of Iraq. It is one of the most Westernized countries in the Middle East, a largely secular society, embracing many religions and races, in which Westernized values have, for better or worse, long been embraced. This is partly due to the presence of the British who governed under a League of Nations mandate. They created the modern state of Iraq and laid the foundations of its oil industry. Iraq received independence in 1932 but Britain and the West had a powerful and direct influence well into the 1950s.

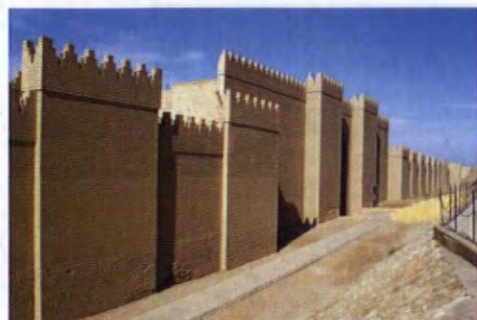
This legacy makes itself felt in many, often bizarre, ways. For example on the edge of Mosul is a sort of Disneyland, peopled by effigies of Mickey Mouse and Donald Duck, all overseen by gigantic murals of a benign and smiling Saddam. Also on the edge of Mosul is the vast ruined city of Nineveh that, along with Nimrud just to the south, was enthusiastically excavated by British archaeologists from the 1840s onwards. These were thrilling times, for the British and French exploratory discoveries of these Assyrian cities meant no less than the discovery of a long lost, almost mythical, civilization that was known only from brief, enigmatic and far from flattering descriptions in the Bible.

From Nineveh, Nimrud and nearby Khorsabad, the British and French acquired (thanks to the Ottoman authorities) vast libraries of clay tablets – including parts of the 4500 year old *Epic of Gilgamesh*, and the gigantic winged-bulls and finely sculpted panels of Assyrian kings, courtiers, gods and warriors that now grace galleries in the British Museum and the Louvre. This was rare booty indeed.

From Mosul I went to Hatra, a 2000 year old classical city built by Arab princes that stood in the desert, at a crossroads of world trade. Abandoned for 1700 years but with its temples miraculously preserved, Hatra compares with the ruined classical sites of Palmyra and Petra. But, due to the long political isolation of the country, Hatra is now virtually unknown. There are no tourists to generate income for its maintenance and it stands hauntingly empty and forlorn. But not entirely alone. Nearby stands a sprawling military camp that I was, of course, not permitted to film. By coincidence or due to cynical intent, many of the great historic sites of Iraq are twinned with factories or military establishments. Is this an attempt to camouflage them, to protect them from attack in the belief that Western bombers will not risk alienating Iraqis by destroying history? Or a heartless attempt to score a propaganda point by conniving the damage or destruction of ancient sites and buildings?

After Hatra, the Great Mosque at Samarra, the most memorable architectural image in Iraq. The minaret was built in about AD 850 and is a 52m tall spiral, rather like medieval images of the Tower of Babel. And that is the point, in its infancy Islam embraced the forms of the sacred buildings of earlier religions and this minaret is, in effect, an Islamic ziggurat. It is also an astonishingly powerful, elemental and mystic structure. If anything happened to this minaret it would be an act of barbarism of the highest order. The prelude of a new dark age.

And then came Babylon, the mythic Biblical city, rebuilt in about 600BC by King Nebuchadnezzar, who sacked Jerusalem and drove the Jews into exile, described in great and lurid detail in the Biblical Book of Daniel and The Book of Revelation. I found the remains of the Hanging Gardens and the site of the massive



Babylon, 'horribly transformed' by the modern dictator's dreadful reconstructions, in which the new bricks ...



... carry Saddam's name, but cannot compare with technical or artistic quality of those made for Nebuchadnezzar (here).

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Uruk, the oldest city in the world, now apparently just a huge mound, was ...



... in fact built with exquisite craftsmanship using remarkable ceramic elements.



The ziggurat of Ur – much reconstructed, but damaged in 1991 by fire intended to harm neighbouring airfield.

ziggurat of Babylon – what could be the legendary Tower of Babel. But here all is horribly transformed. Since the 1980s, Saddam has rebuilt Babylon in an attempt to build himself into the fabric – the history – of the nation. To show that he and his regime are a continuity of the great empires of the past, Saddam has had his name stamped upon the bricks of 'the third reconstruction of Babylon' just as Nebuchadnezzar stamped his name on the bricks used at Babylon 2600 years ago. The result is dreary and destructive in the extreme. To achieve a short-term political end, the authentic ruins of Babylon have been obscured or destroyed by poor quality pastiche, often wrong in scale and detail and using cement mortar rather than lime or bitumen.

The final stage of the journey took me further south to the land of the Sumerians, to the 6000 year old Uruk, the first city of the world and of which Gilgamesh was king, and to Ur. In both, mighty ziggurats still command the mounds that mark the sites of the cities' buildings. But the ziggurat at Ur, the best preserved in Mesopotamia (and much reconstructed during the 1960s), is marked by

cannon fire that raked it during the 1991 Gulf war. The military airfield that attracted the attack 12 years ago still adjoins the ancient site so the prospects for Ur – in the line of fire and on the route of invasion from the south – are far from good.

I finished my journey through modern Iraq at Paradise. Al-Qurnah, near the southern borders of Iraq at the delta of the Tigris and Euphrates, has long been regarded as a likely site for the Garden of Eden and it certainly fits the Biblical description of paradise on earth.

The town is now a quiet, decayed and desolate place but, in a small garden by the Tigris, stands what locals call Adam's Tree. Ominously, though, this Tree of Knowledge of Good and Evil is dead, and the Tree of Life in nowhere to be seen. Standing at this peaceful place, where the two great rivers converge, I could only tremble for the future of Iraq, a country in which every square foot is precious because all is steeped in memory and in history relevant not only to Iraq but to all of us.

DAN CRUICKSHANK



Reputed site of the Garden of Eden at the confluence of the Tigris and Euphrates with the dead Tree of Good and Evil.



April

The April Architectural Review is devoted to places of arrival and departure, buildings in which journeys begin and end. Railway stations of all kinds are having a renaissance. We shall look at new examples of the type, ranging from Peter Busby's small stops for the Vancouver light railway system and SmithGroup's Bart station at Pleasanton, California to the new French TGV stations at Avignon and Aix-en-Provence which contrast with the proposals for the new station in Turin by AREP. Ingenhoven Overdiek and Partner's project for the radical re-organization of Stuttgart's central station (pictured left) will be investigated, as will the bus station (a much more difficult

building type than the rail kind) by Mario Botta in Lugano, Switzerland. Related buildings include the Victorian State Emergency headquarters in Melbourne by H2O Architects for the people who keep the motorways open and two contrasting ferry terminals in Spain, at Vigo by Guillermo Vazquez Consuegra and at Alicante by Javier Garcia-Solera Vera. And, as usual we shall have our regular features: reviews of the latest books, design and products, *Delight*, a View from Moscow by Catherine Cooke, and our monthly analysis of a house. Buy this and 11 other wide-ranging and provocative issues by using the subscription card, or use our excellent web site: www.arplus.com

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Wood spirit

Finnish artist Jaakko Pernu makes works that explore both the physical properties and symbolic dimensions of wood.

TIMBER CONSTRUCTIONS, FINLAND

DESIGNER

JAAKKO PERNU



2



3



5

Jaakko Pernu is a sculptor and land artist who makes remarkably intricate yet monumental constructions using wood. In Finland, blessed with a superabundance of trees, wood has assumed the status of national material, its expressive and regenerative qualities forging a powerful connection with the Finnish psyche. Pernu's father was a boatbuilder, so since childhood he was exposed to the tactile and sensory nature of timber and gained an appreciation of its technical potential – how it could be cut, shaped and jointed.

Since the late '80s, when he completed his studies at the Lahti Institute of Fine Arts, Pernu has lived and worked in remote northern Finland, drawing inspiration from its huge boreal forests and subtle Nordic light. His favourite wood is willow, both cheap and plentiful and also

relatively easy to work, due to its inherent strength and suppleness. Symbolically, willow is associated with the moon, water and rebirth – it regenerates very quickly and its flowering marks the beginning of spring. Its bark also contains valuable pain relieving properties, exploited for centuries in traditional herbal medicine. In Pernu's extraordinary constructions slender willow members are joined using the simplest of techniques – usually just nails and screws although Pernu is beginning to experiment with glues – to create lattice-like arrangements that have a curious delicacy, despite their huge scale.

One of Pernu's largest works, *The Ground Beneath*, was created during a six month placement at Oulu Artists' Workshop. Set in a forest clearing, its arboreal form was inspired by the surrounding trees. A cubic frame was

constructed from 25 woven willow poles that taper gently upwards like tree trunks or organ pipes. Dried and unpeeled willow members were painstakingly meshed together to form a lacey timber cage, suspended 3m above the ground. The effect is of a compact manmade forest (albeit permanently denuded) set within a real forest. At night, the structure is dramatically illuminated, casting angular shadows through the clearing. Though rooted in a practical craft sensibility, Pernu's inventive and intuitive explorations of wood draw deeply on folkloric associations with dreaming and enchantment to distil the material's fundamental essence. C. S.

Photographs

2, 4, 5 Jaakko Pernu; 1, Markku Siekkinen; 3, Jukka Pailos

1
Pernu's arboreally-inspired *The Ground Beneath*, a manmade forest set in a real one.

2
Sky is the Limit, consisting of a trio of 8m high willow columns.

3
Horn resembles surreal topiary.

4, 5
Work in progress for *The Ground Beneath* – slender willow members are nailed and screwed together to form intricate constructions.

GREENING THE EUROPEAN CITY

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**THE ARCHITECTURAL
REVIEW**

A ONE DAY CONFERENCE FROM THE ARCHITECTURAL REVIEW, 19 MARCH 2003, RIBA, LONDON

In the last hundred years, humanity has become ever more urban and, now in the West, increasingly suburban. Cities have generated civilization, but they are increasingly eating up the world. If we are to remain civilized and try to live in some kind of harmony with the planet, we must evolve new kinds of urban planning, new architectures and new ways of relating to nature. If we do not, we will not survive as a recognizable species. How are we to plan? What are we to build? How can we create cities in which we can live in harmony with the natural world?

The Architectural Review is holding a conference on Greening the European City on 19 March 2003 at the RIBA in which distinguished architects, environmental engineers and landscapists from all over Europe will discuss issues, innovations and initiatives (see below). Full details about this conference can be found at www.arplus.com. This conference will address the most important issues facing all responsible for creating the human-made world. To book call +44 (0)20 7505 6745 or email: magdalena.lojszczyk@emap.com

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Emerging Architecture

Next generation architects from around the world show and tell at the RIBA in a lecture series and accompanying exhibition

Emerging Architecture spring lecture series

A series of four seminars with presentations from winners and highly commended architects from the ar+d Emerging Architecture competition. The architects will talk about their recent work in general as well as focusing on their prize winning projects.

The awards are a partnership between The Architectural Review and d line International, the Danish architectural design firm. They celebrate the work of young architects and designers usually at the start of their career and not yet well known.

The accompanying exhibition of winning and highly commended entrants will be in Gallery 2 from 24 February to 29 March 2003.

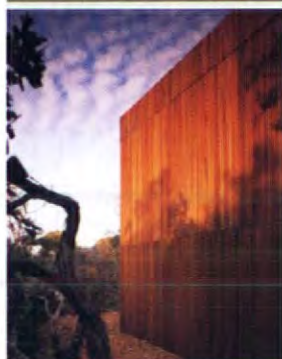


25 February
Helena Sandman +
Niall McLaughlin
6.30pm 6th Floor Conference Room

Helena Sandman, of Holmén Reuter Sandman from Finland, presents their heroic Women's Centre in Senegal, a new social facility built using local techniques and materials.

Niall McLaughlin of Niall McLaughlin Architects from London focuses on their brilliant Bandstand for the De La Warr Pavilion in Bexhill-on-Sea which can be moved around the pavilion for different times and types of performances.

Chaired by Peter Davey, Editor of *The Architectural Review*



6 March
Daniel Bonilla +
Sean Godsell
6.30pm 6th Floor Conference Room

Daniel Bonilla of Daniel Bonilla Arquitectos from Columbia focuses on their small chapel in Bogota which can be radically changed to accommodate 100 to 2000 worshippers by throwing open the two halves of a timber wall.

Australian architect, Sean Godsell, profiles his latest magical house dug into the side of a sand dune on a beach in Melbourne.

Chaired by Peter Davey, Editor of *The Architectural Review*



11 March
Hideki Yoshimatsu +
Sasa Begovic
6.30pm 6th Floor Conference Room

Japanese architect Hideki Yoshimatsu has collaborated with Archipro Architects, and presents their intensely moving symphony of materials and sound, the cemetery for the unknown in Hiroshima, Japan. Represented by 1500 stainless steel rods which form abstracted groves silhouetted against dark vegetation.

Sasa Begovic of 3LHD Architects presents their extraordinarily dignified memorial bridge in Rijeka. Dedicated to the dead in the civil wars, this bridge connects the east and west of the city centre through its project of simplicity and sophistication.

Chaired by Professor Iain Borden, Director of the Bartlett School of Architecture, UCL



18 March
Marlon Blackwell +
Jürgen Mayer
6.30pm 6th Floor Conference Room

Radical ruralist, architect Marlon Blackwell from the USA focuses on his small cabin in rural North Carolina. Built as a structure for a carport, it also serves as a place in which honey from neighbouring hives can be processed and stored.

Jürgen Mayer of Jürgen Mayer H Architekten presents their temporary lounge for the 2002 UIA Congress in Berlin. The abstracted interior landscape provided a powerful yet calm space with reusable modular elements.

Chaired by Professor Iain Borden, Director of the Bartlett School of Architecture, UCL

Images from left:
above: Holmén Reuter Sandman ©Juha Ikonen
below: Niall McLaughlin Architects ©Nicholas Kane
above: Daniel Bonilla Arquitectos ©Jorge Gamboa
below: Sean Godsell Architects
above: Hideki Yoshimatsu, Archipro Architects
below: 3LHD
above: Jürgen Mayer H ©Uwe Walker
below: Marlon Blackwell ©Richard Johnson



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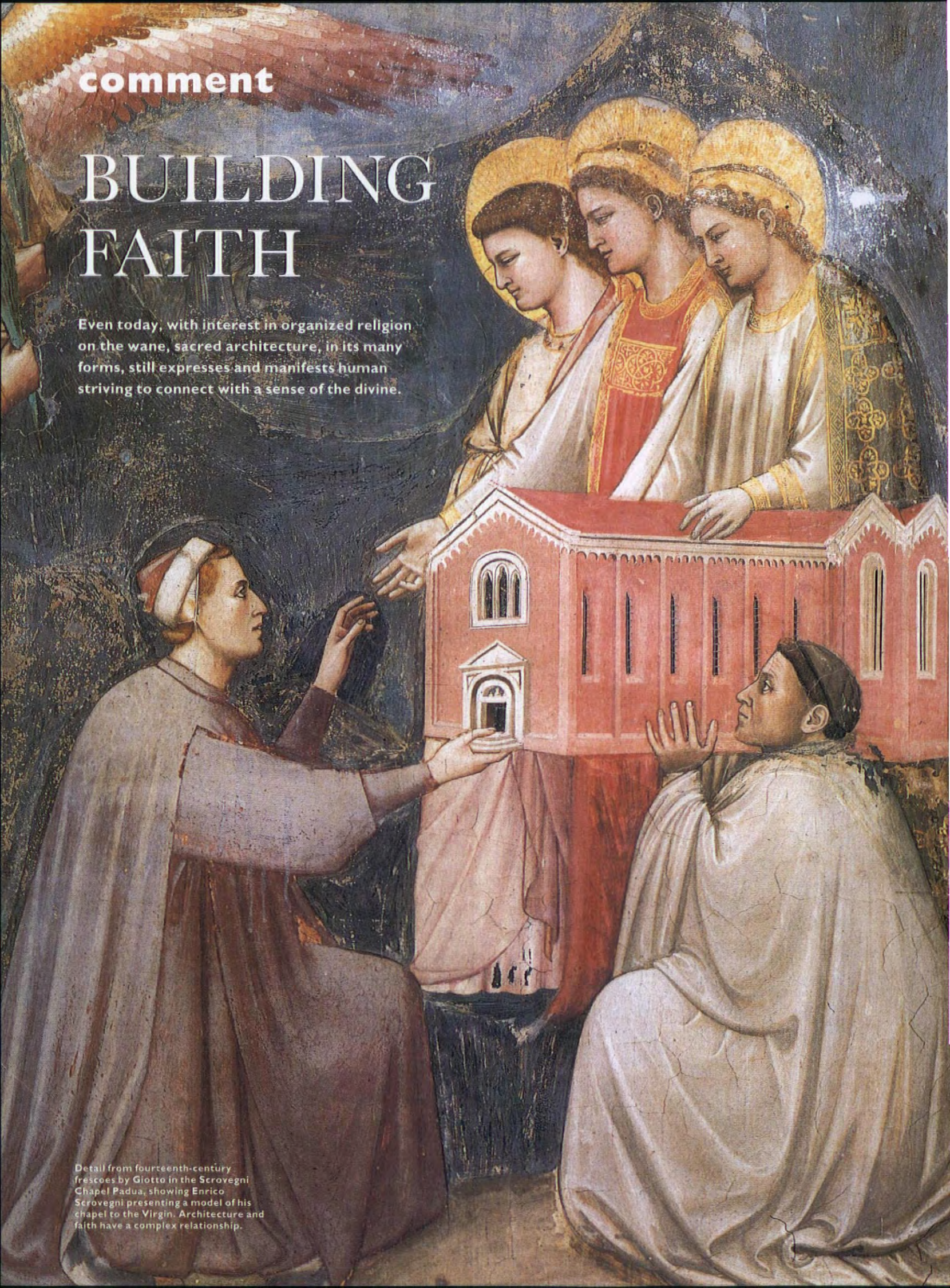
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comment

BUILDING FAITH

Even today, with interest in organized religion on the wane, sacred architecture, in its many forms, still expresses and manifests human striving to connect with a sense of the divine.



Detail from fourteenth-century frescoes by Giotto in the Scrovegni Chapel Padua, showing Enrico Scrovegni presenting a model of his chapel to the Virgin. Architecture and faith have a complex relationship.

*'In building this chapel I wanted to create a place of silence, of prayer, of peace and internal joy. The feeling of the sacred animated us. Some things are sacred, others not, irrespective of whether or not they are religious.'*¹

So affirmed Le Corbusier in his dedication speech at the Chapel of Notre-Dame-du-Haut at Ronchamp in 1955. Ronchamp is a pivotal moment in modern church architecture, a remarkable pantheistic celebration of the mystical presence of the divine, its interior a ravishing synthesis of space and light and its prominent setting on a hill, like a Greek temple, evoking traditions which stretch back far beyond Christianity as a universal expression of the sacred. But this masterpiece was also, as Edwin Heathcote notes, 'a virtual disaster for ecclesiastical design from the liturgical point of view; [leading] to a spate of idiotic "gestures", buildings symbolizing anything from praying hands to doves; buildings emanating from a single bland idea, justified in the name of the new modernism'.² Happily oblivious to the demands of liturgical functionalism and the future consequences of unflattering imitation, Corb adopted a suitably lofty position – when asked if it was necessary to have believed in God to build Ronchamp he is said to have replied 'No, it was necessary to believe in architecture'.

As the last century resoundingly demonstrated, human existence is now largely secular, with religion seen as a marginal, futile and slightly nonsensical pursuit. Thanks to scientific rationalism we now have answers for (almost) everything and thanks to global capitalism the developed world enjoys a level of material fulfilment beyond our ancestors' wildest imaginings. Fundamentalism of all flavours has contrived to corrode and denigrate genuine faith, making it an object of casual scorn or hysterical hostility. (Prior to the chaotic and bloody break-up of the former Yugoslavia, speculation abounded that the country's growing Muslim population might transform the former Communist enclave into Europe's first Islamic state. Thus ensued what was essentially a modern holy war, conducted along the fault lines of competing tribal religions.)

In CBDs the world over, Mammon has replaced God as the object of slaving, unquestioning veneration, business bureaucrats have superseded popes as the great patrons of art and architecture (underlining the Church's loss of its historical wealth, status and power) and shopping is the new religion (although there have always been ways to buy your place in heaven – Giotto's exquisite, transcendent frescoes at the Scrovegni Chapel in Padua, for example, were commissioned by Enrico Scrovegni, son of a notorious usurer Reginaldo, in attempted expiation of his father's sins. Scrovegni senior was condemned by Dante to the Seventh Circle of Hell; Scrovegni junior is portrayed devoutly offering up a model of his chapel to the Virgin, epitomizing the often questionable relationship between art, religion and patronage).

The sacred and the secular

Yet despite currently occupying the margins of contemporary life, religion, mythology and ritual are fundamental aspects of human consciousness. Before the modern age, religion and daily existence were essentially inseparable and there was little distinction between the spiritual and the secular. Even with the benefits bestowed by intellectual and technological progress, much of our social behaviour originates in the past and the human psyche has been immutably shaped by preceding generations. As Thomas Barrie points out 'We are the same species that painted the walls of our subterranean chapels in France and Spain with images of our animal gods, grunted with exertion as we dragged sarsen megaliths across Salisbury Plain, and knelt in adoration before the relics of a saint'.³

Today, traces of our former mythological and spiritual life tend to be expressed in quasi religious behaviour. As in other areas of

culture, architecture embraces and appropriates ancient rites, though often unconsciously. Groundbreaking ceremonies for new buildings symbolically consecrate the site, and the act of topping out marks the completion of the superstructure by attaching a sprig of pine to its tallest point, symbolizing rebirth and regeneration.

Religion and myth have long served as a means of explaining the world and our place within it. The creation of belief systems provided answers to questions of existence and reinforced a crucial sense of security in hostile physical and social environments. Architecture serves a similar purpose, transcending function to respond to symbolic needs and expressing meanings associated with human existence at its deepest and most fundamental level. Religious beliefs are made manifest by rituals and ceremonies that are generators of a bewildering multiplicity of architectural forms, whether the prayer halls of Islam, the monumental stupas of Buddhism, Mesoamerican pyramids, Greek temples, Jewish synagogues, Shinto shrines or Christian churches. Such diversity is not merely pragmatic, with architecture acting as a stage for the enactment of myth through ritual; the myth is embodied in the form of the architecture, the act of the ritual and the interplay between them.

Connecting with the divine

In all sacred architecture, humankind attempts to bring itself closer to the divine by creating a special space to contain and dignify this precious contact. Though we are accustomed to think of sacred architecture in terms of the monumental and the everlasting, the concept of spiritual permanence can also be expressed through the cyclical destruction and rebuilding of temporary structures such as the wooden Shinto shrines at Ise in Japan (reconstructed every 20 years) or certain Mesoamerican temples (every 52 years). As Simon Coleman and Peter Collins note 'Spaces, sacred or otherwise, should not be seen as fixed social forms: they are contested, modified and reconstituted in the official and unofficial realms of culture'.⁴

How, then, to make meaningful architecture that connects with the divine in today's transient society of spectacle? With the dissolution of dogmatic certainty, ecclesiastical commissions are no longer a corset of liturgical convention, but an opportunity for freedom of expression (as Corbusier famously realized). In this regard, Spanish critic Luis Fernández-Galiano observes wryly that 'In the shift from liturgy to artistry, churches have passed from type to *topos*; the forms of cult have given way to the cult of forms'.⁵ Such autonomy invariably reflects the technical and aesthetic concerns of individual architects; for instance, Renzo Piano's ingenious stone arches in his huge pilgrimage basilica in Puglia (p66), Raj Rewal's intricate domed vaults at the Ismaili Centre in Lisbon (p52), and Rafael Moneo's sumptuous alabaster walls in LA's new Catholic cathedral (p44). Paradoxically, such a fragmented, scenographic approach aptly expresses the confused faith of our times and the secular plurality of its languages. But within this perplexing panorama it is still possible to discern and experience moments of inexplicable resonance – the touch of stone, the flicker of light, the processional path, the gathering of souls – that express the human desire to commune with forces more venerable and mysterious than the cosmos itself.

CATHERINE SLESSOR

1 Quoted in *Church Builders*, Edwin Heathcote and Iona Spens, London, Academy Editions, 1997, p46.

2 *Ibid.* p46.

3 *Spiritual path, sacred place: myth, ritual, and meaning in architecture*, Thomas Barrie, London, Shambhala, 1996, p3.

4 'Constructing the Sacred: the anthropology of architecture in the world religions', Simon Coleman and Peter Collins, *Architectural Design*, vol 66, no 11/12, 1996, p14.

5 'Sagrada forma' (Sacred form), *Arquitectura Viva*, no 58, Jan/Feb 1998, p3.

'Thou has ordered all things in measure and number and weight.' (Solomon 11:2)

The most moving art in the Cathedral of our Lady of the Angels in Los Angeles is the faint stains of holy oil on the concrete walls in the nave, traces of the dedication rites witnessed by over 3000 people last September. Fanning out from the altar, priests walked to 12 locations, and with their bare palms drew two lines, the *axis mundi*, on the concrete. Today those cross-shaped drips and smears mark the walls whose golden adobe colour recalls California missions.

It was the human hand which affirmed the space as sacred, a physical act in a spiritual space.

Yet not until the walls were pristine were they worthy of being disfigured. Ensuring that the cathedral's exposed concrete walls would be perfect for a ritual dating back to the fourth century was no less sacramental and certainly no less physical. The even colour and crack-free texture of the walls are so precise, because hydration and curing were stringently controlled. Concrete trucks were hosed down with cold water and aggregate was cooled before it entered a mix of ice and water. Pouring began as early as 3am to counteract the sun's heat, and formwork consisted of double thicknesses of plastic coated plywood, with edges mitred and sanded to accommodate

over 800 unique corner conditions, since no wall meets another at 90 degrees. Fast-track construction began in October 1998, less than five years from start to final dedication.

Designed by Rafael Moneo, with Los Angeles-based Leo A. Daly as executive architect, the new church is home to the nation's largest, most ethnically diverse diocese and is the first cathedral to be built in America in three decades. Moneo's design maintains important architectural and Catholic liturgical traditions, such as the procession of the faithful or the role of light in apprehending God. It is particularly successful in addressing that very Catholic balancing act between the physical (the cross, the body and blood of Christ, the congregants) and the symbolic: the unseen God, the act of faith. It also responds to the objectives of the Second Vatican Council (1962-65), whose radical ideas about the laity/clergy hierarchy and the need to manifest the direct relationship between God and humankind carry profound physical consequences for architecture.

By harnessing contemporary technology and with an updated religious brief, Moneo was free to reinterpret these traditions. The church shows hallmarks of Modernism, but its monumental blocky forms, especially on the east end, have much in common with eleventh-century Romanesque churches. Huge reinforced-concrete shear walls, shingled in places, introduce a sense of human scale and frankly express the masonry's weight and force, though steel trusses are concealed. This is no Gothic church seeking to negate stone to create a diaphanous skeleton. And in contrast to most churches of any period, the pitched and warped nave roof, 95ft (29m) tall at its highest point, is some 30ft (9m) lower than the side chapels. The nave's irregular plan splays



CITY OF ANGELS

Rafael Moneo's new cathedral for Los Angeles affirms and reinterprets the Catholic balancing act between the physical and the divine.

CATHEDRAL, LOS ANGELES, USA

ARCHITECT

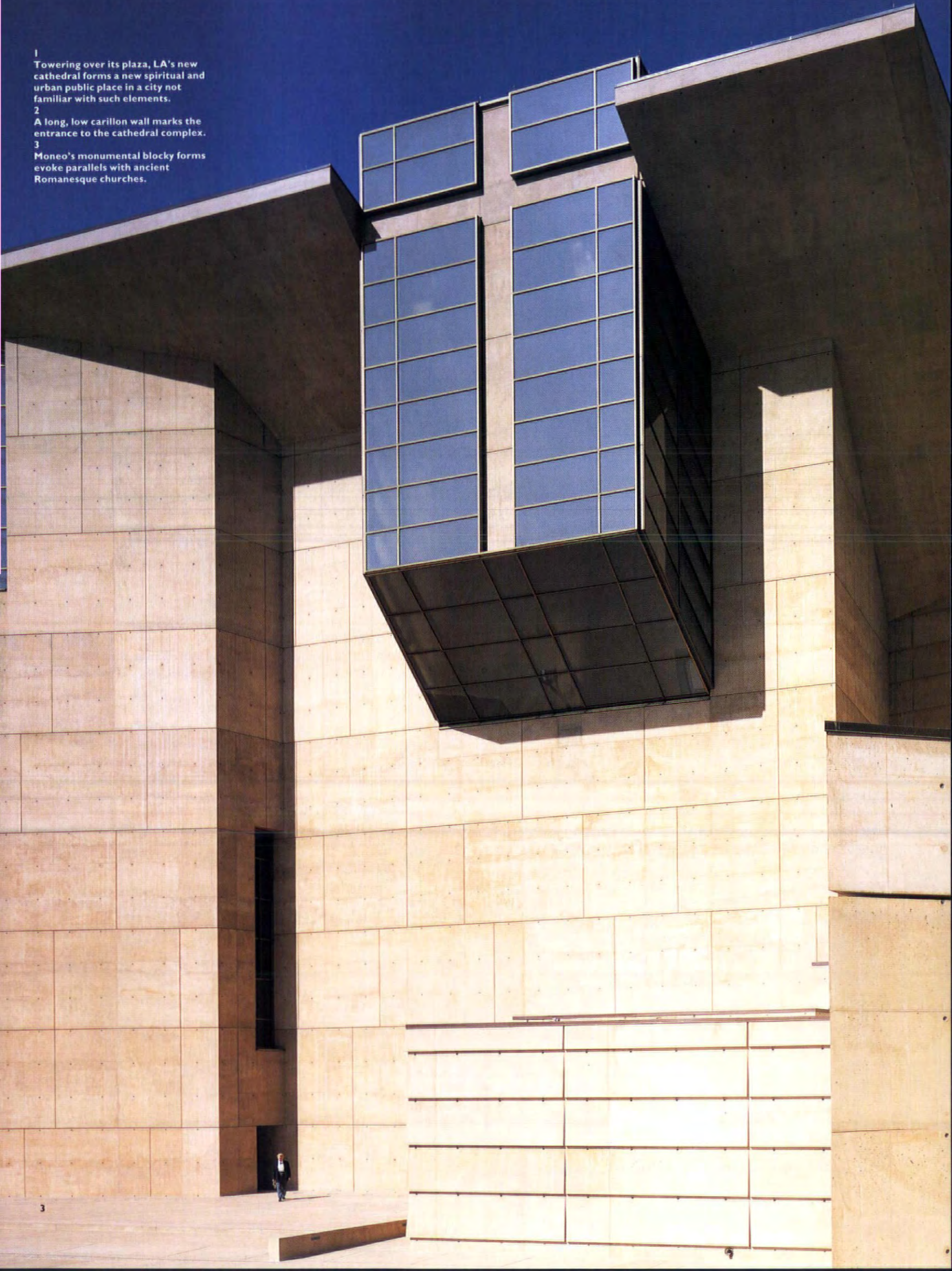
RAFAEL MONEO



1
Towering over its plaza, LA's new
cathedral forms a new spiritual and
urban public place in a city not
familiar with such elements.

2
A long, low carillon wall marks the
entrance to the cathedral complex.

3
Moneo's monumental blocky forms
evoke parallels with ancient
Romanesque churches.

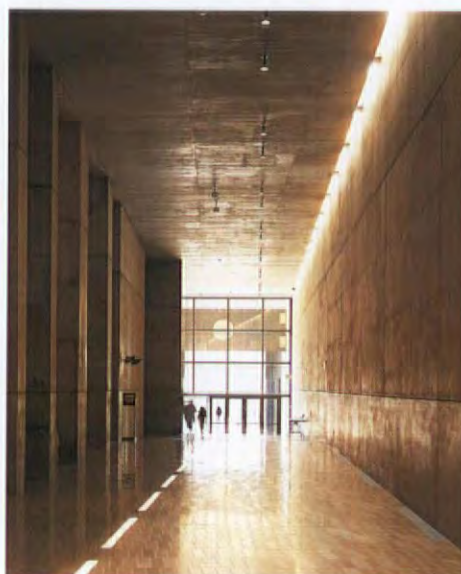




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out at the altar to include the shallow transepts. Some walls stand as tall as 100ft (30.5m) with no intermediate supports and taper in width from one to five feet. (Static Renaissance single-point perspective has no place here.)

The design also recalls Early Christian basilica churches in Ravenna, whose plain squat external volumes are far less important than the decorated interior, the *Civitas Dei*. But even on the new interior, Moneo did not employ the artifice of mosaic glass tiles, intended to transform two-dimensionally flat or badly finished basilica walls. Instead he assembled a palette of finished concrete for walls, cherry for the pews, cedar and fir for the ceiling and golden jana limestone paving. Over 27 000 square ft (1580 sq m) of alabaster protected by a ventilated dual-pane system (specially devised by the architects and Ove Arup, Los Angeles) acts as a prism dictating that light be ambient and gentle. There is plenty of historical precedent for the use of alabaster, including Moneo's own Miro Foundation building in Majorca (AR February 1996) – also, as he notes, home of Father Junipero Serra, father of the California missions. Alabaster can be found in tiny openings high in the walls of small Romanesque churches, beloved of Moneo. Typically, however, such ancient material is now almost opaque because of its intolerance to heat when left exposed. But with current



5

technology, it can be transformed into great walls of light that will remain translucent. This, then, is not the ecstatic stained-glass light narrating saints' lives that Abbé Suger sought for his new abbey at Saint Denis in 1140. Colour in the cathedral will come from the clerical costumes, as the stained-glass figures metaphorically jump out from their windows to move among the congregation.

The city's former cathedral, St Vibiana's, was not only severely damaged in the 1994 earthquake but languished in the lowlands near Skid Row. When controversy prevented its demolition, the building was sold. With Moneo's urging, the archdiocese seized an opportunity to buy a parking lot sited at the one of the most prominent and highest downtown locations, the kind of sites Chartres, Santiago de Compostela and Lincoln cathedrals dominate. Overlooking the Hollywood freeway, Moneo compares the primary city artery to the rivers that defined European cities such as Notre Dame. The church also faces a belching government plant, but he envisaged that it would be gone in a mere century.

Though the walled complex is permeable, it firmly defines the visitor's scope. From the street, you move through a long, broad opening in the carillon wall with its 36 bells. Behind a fountain rise two swathes of steps.

They are oriented either to the cathedral and the sharply angled, gorgeously finished campanile or to the plaza with olive trees and other symbolic plants. To the east are a conference/meeting/gift shop centre and a clergy residence. These two casualties of reduced budgets are inferior in both appearance and finish to the cathedral, but they do create a strong civic edge along busy Hill Street.

Parishioners walk west through Robert Graham's 25-ton bronze doors crowned by a gigantic figure of the Madonna surrounded by a huge halo of gold gilt. The doors include images ranging from Native American to Tai Chi; the Madonna's 'eyes, lips and nose convey Asian, African and Caucasian features' and her long hair is braided in rural Latina tradition, all to androgynous effect. In a pre-literate society, the narratives enshrining doors, openings and columns were rich, clear messages laced with nuance and humour. (Moneo has quoted Victor Hugo as saying that books killed cathedral architecture.) Here, the messages are blurred and then reduced to cartoons of political correctness, perhaps addressing another order of cultural illiteracy. In any case, they undermine the strength of the architects' vision. As does the cathedra [the bishop's chair]. With its multiple woods and craftsman aesthetic, it does not set up a dialectic between forms but rather feels alien. In contrast, the cherry pews, designed by the Moneo/Daly team, resonate quietly with the design intent.

Beyond the doors, there is not the expected narthex but a broad, gently rising ambulatory that flanks the nave. Because of the angled walls, as you move toward the back there are sudden vertical glimpses of the nave and even of the north ambulatory beyond, similar to walking through a medieval town and seeing slices of a cathedral through narrow streets. In the ambulatory, as the word suggests, it's all about *moving*. But it is the nave that matters, and it is Moneo's master stroke. The nave is about *being*. By reversing the orientation of the chapels to face the ambulatory, where noise is more frequent, he allows the worshipper to focus on the altar. The change, somewhat like exposing part of the belly of the nave – a spatial move – conspires to order temporally and

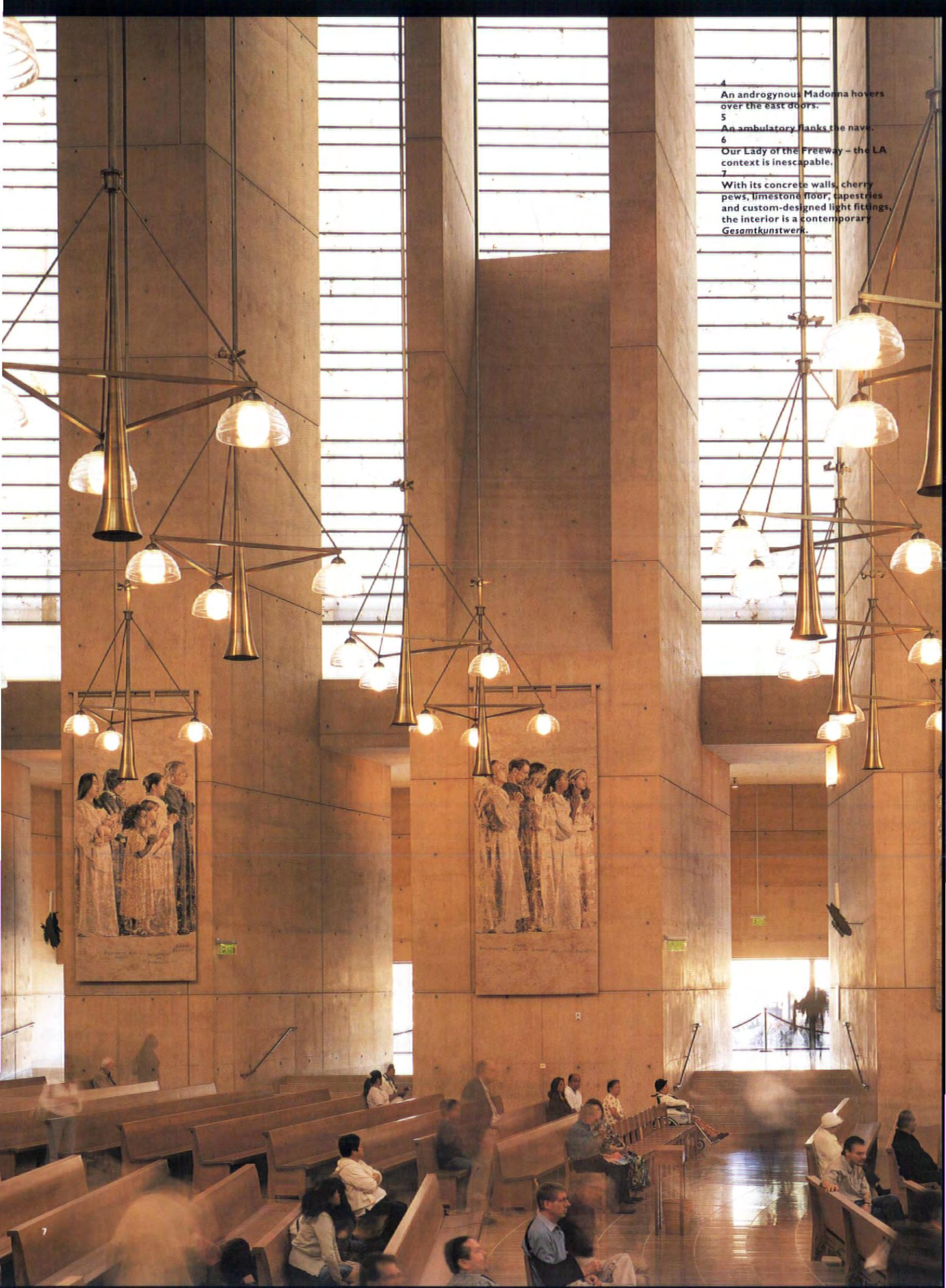
CATHEDRAL, LOS ANGELES, USA

ARCHITECT

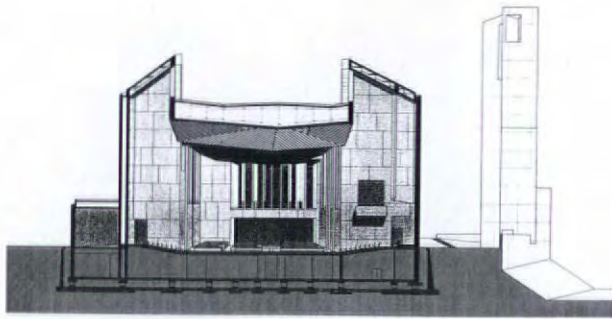
RAFAEL MONEO



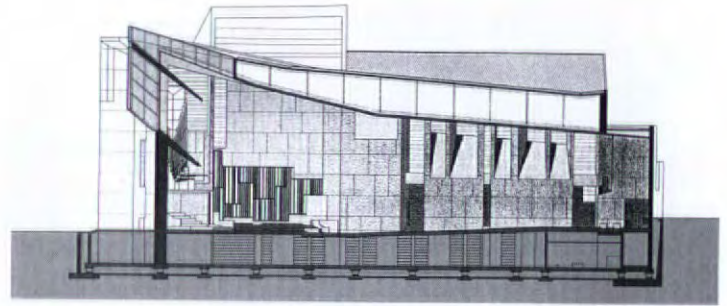
6

- 
- 4 An androgynous Madonna hovers over the east doors.
5 An ambulatory flanks the nave.
6 Our Lady of the Freeway – the LA context is inescapable.
7 With its concrete walls, cherry pews, limestone floor, tapestries and custom-designed light fittings, the interior is a contemporary Gesamtkunstwerk.

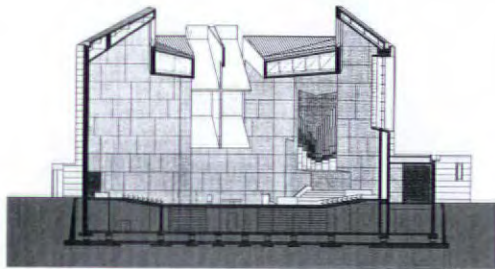




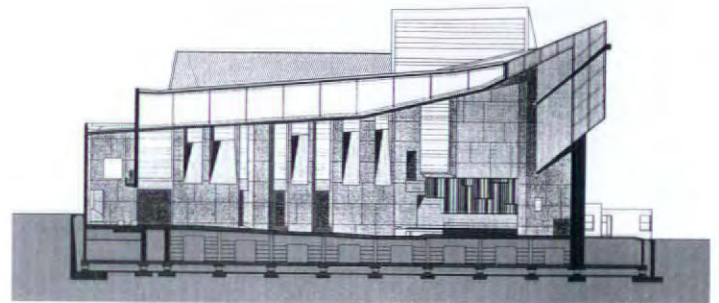
cross section looking west



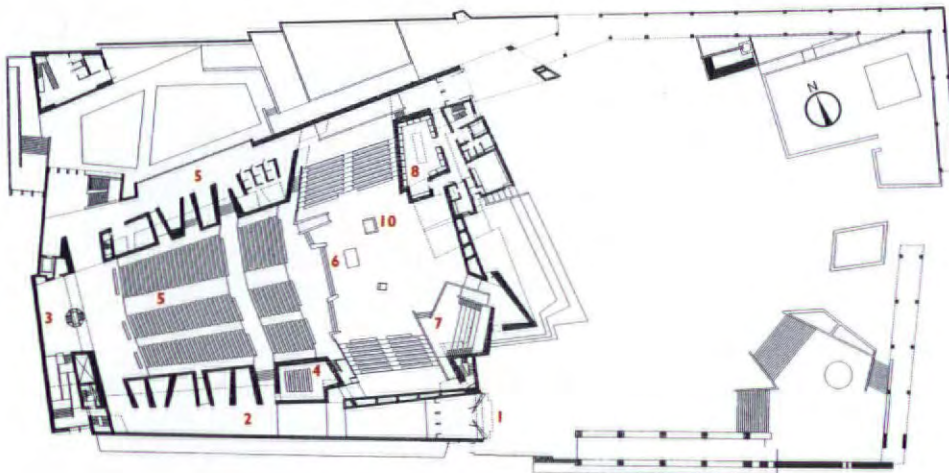
long section looking south



cross section looking east

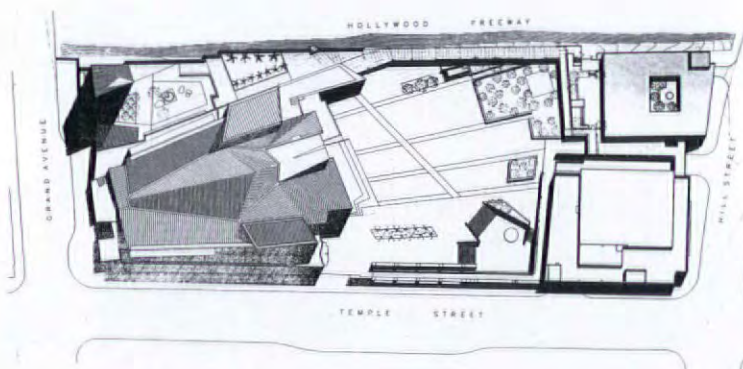


long section looking north



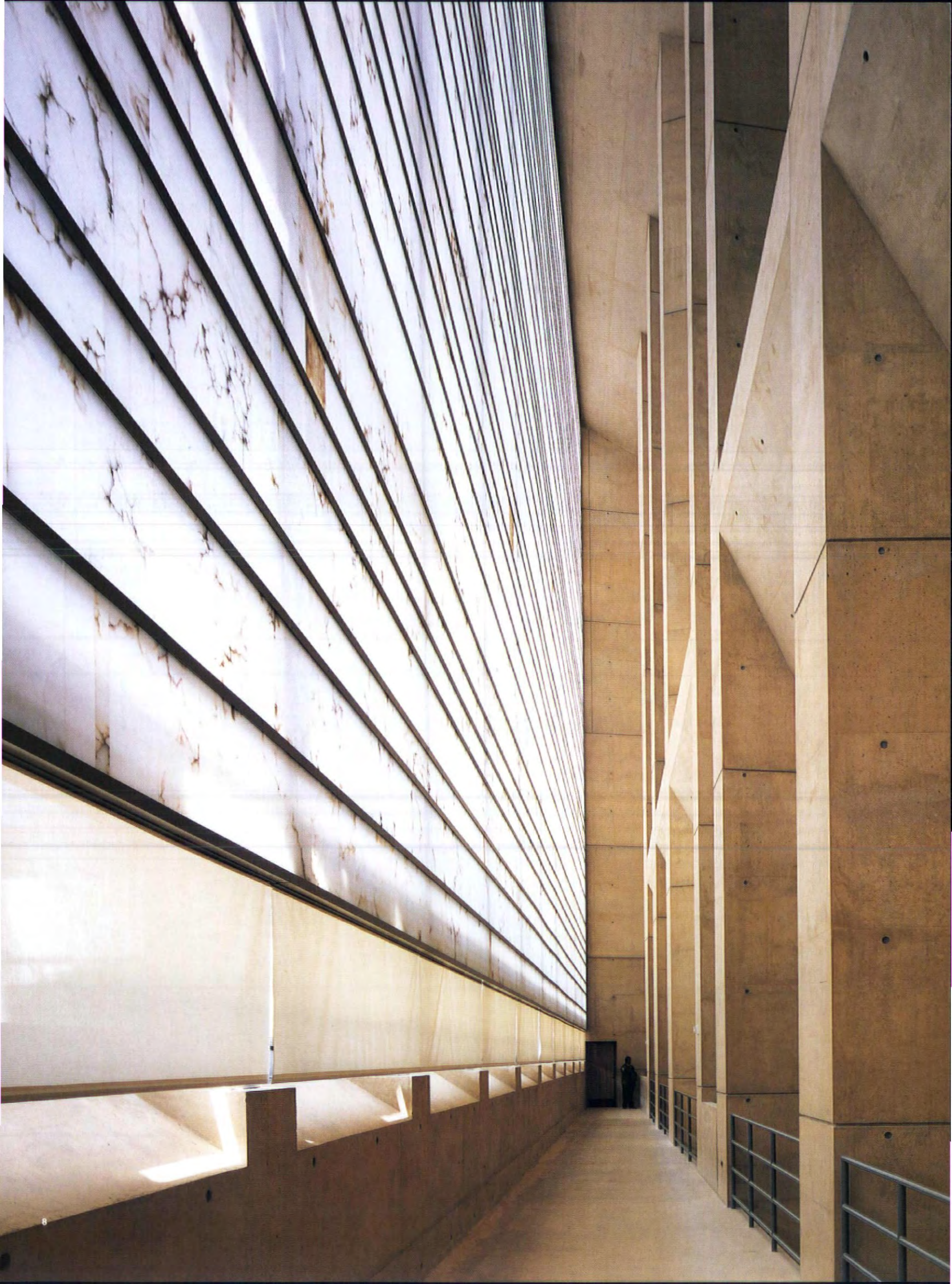
ground floor plan (scale approx 1:1500)

- 1 entrance
- 2 south ambulatory
- 3 baptistry
- 4 Chapel of the Blessed Sacrament
- 5 nave
- 6 altar
- 7 organ/choir
- 8 sacristy
- 9 north ambulatory
- 10 cathedra
- 11 Reconciliation Chapel



CATHEDRAL, LOS ANGELES, USA
 ARCHITECT
RAFAEL MONEO

8 Drawing on historical precedent, daylight is subtly diffused through a huge alabaster wall to bathe the interior in a soft luminescence.





9

ennoble the procession of both laity and clergy as each chapel, daylit from mysterious sources above, invites repose. The frequent openings to the nave also address the human condition of being a tourist, tending a baby, or making your way in and out of the church, both physically and spiritually. An asymmetrically placed seventeenth-century reredos terminating the ambulatory signals a reverse in direction and you turn to face the airy largesse of the 333ft (101m) long nave. The path to the open altar area, well below the floor levels of the side ambulatories, leads downward, so that pews around the altar are higher, subverting the convention of an elevated chancel segregated from the laity.

Just as daylight plays a central role in the nave, so does sound. The long march of tapestries by John Nava along the nave walls not only portray the diverse communion of saints, but also act as sound absorbers. To reduce returning sound being muddled, the rear wall to the baptistry was opened with

angled cuts and a tapestry hung, resulting in unusual visual links to the space. The Moneo-designed light fixtures, each with three lamps presumably symbolizing the Holy Trinity, are also loudspeakers, housed in the trumpet shapes of each fixture's body. However, the pieces are too intrusive and there are so many big light bulbs that together they act like an undimable cutting plane suspended 20ft (6m) above the floor.

Where St Vibiana's was a place to run from during an earthquake, the cardinal's requirement of creating not only spiritual but physical refuge – the local building code term is 'continuity of service' – seeks a degree of permanence unheard of in ephemeral Los Angeles. Designed to withstand magnitude 8.2, a catastrophic earthquake, the cathedral rides as a unit on rubber and steel base isolators, primarily supporting the walls, while Teflon-bearing sliders on flawless faces of stainless steel support the nave floor. A moat permits lateral movement up to 27ft (8m) in any

direction. The building of the church was raised through private donations and it will be maintained through the sale of burial crypts and niches in the subterranean mausoleum, priced from \$50 000 to \$3 million.

On an urban scale, the cathedral inserts something startling in the fabric of Los Angeles: a religiously oriented place in a city unused to such strange urban elements. Nave, the main gathering place in a church, comes from the same Latin, *navis*, things nautical and naval. A ship cuts through water, a foreign element, but one that the ship is designed to inhabit with grace, fortitude and speed. The nave is also where a body of believers gains grace and fortitude (if not speed), and Moneo's wood ceiling looks strikingly like the bottom of a boat. To suggest that the cathedral campus should be more urbanistically inclusive ignores or misreads its primary function, the act of gathering by a body of believers. The new plaza with its fountains, landscaping, bright yellow and orange plastic chairs scattered near the café, joins civic spaces nearby, such as those of the Dorothy Chandler Music Center, the Colburn School of Music, the Museum of Contemporary Art and the Disney Concert Hall, which will open this autumn. And of course, LA is on easy terms with all things retail. But it may take time to learn to operate this new old tool, a cathedral close which invites the Angeleno to embrace an identity larger than being solely a consumer, whether of goods or culture. BARBARA LAMPRECHT

Architect

Rafael Moneo, Madrid

Project team

Rafael Moneo, Hayden Salter, David Campbell, Alberto Nicolau, Lori Bruns, Mariano Molina, Christoph Schmid

Associate architect

Leo A. Daly Architects, Los Angeles

Project team

Nick Roberts, Jaime García, John Williams

Structural engineer

Nabih Youssef & Associates

Mechanical engineer

Ove Arup & Partners California

Acoustic consultant

Dennis Paoletti

Landscape architect

Campbell & Campbell

Liturgical art consultant

Richard Vosko

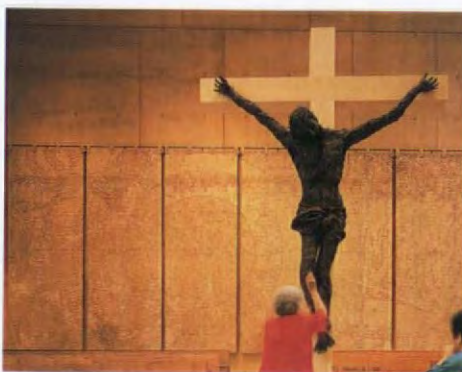
Photographs

John E. Linden/ARCAID

CATHEDRAL, LOS ANGELES, USA

ARCHITECT

RAFAEL MONEO



10



- 9
The cavernous nave, with its hull-like ceiling of cedar and fir.
- 10
One of LA's parishioners gaining grace and fortitude.
- 11
The irregular plan splays out at the altar. Here too light percolates gently through alabaster panels, softening the angular forms and powerfully expressing the numinous.



1
From west, with Prayer Hall at
back of site.
2
Porte-cochère at main entrance.

The past 15 years have seen the environs of Lisbon succumb to ever denser urban sprawl. Oblivious to the erstwhile picturesque charms of the pine, cork-oak and olive grove-studded landscape which so captivated William Beckford's romantic sensibilities in the 1780s, unfettered low- and high-rise development strides relentlessly over hill and dale. This has occurred most noticeably north-west of the city where it has not only crushed the once bucolic horizons of Queluz (the exquisite Rococo summer palace of the Portuguese court), but now encroaches on the Sierra de Sintra itself. Left in the wake of this proliferation, Benfica (its eponymous football stadium apart) has been swamped by a sea of amorphous new 'districts', ring-roads and expressways, what otherwise remained of its identity superseded by the overweening presence of the Colombo Shopping Centre. It is in these uninviting environs surrounded by high-rise apartments, the Avenida Lusitana and the north-south expressway, that one discovers the peaceful haven of the Lisbon Ismaili Centre, recently completed to designs by Raj Rewal.

Ismaili Muslims, whose hereditary spiritual leader is the Aga Khan, have long-established roots in Europe and the new Centre in Lisbon manifests the cultural self-confidence of a well integrated, prospering immigrant community. The London Ismaili Centre (by architects Casson-Conder) opened in 1983 and, by the 1990s, there were demands for a similar religious and socio-cultural centre on the continent. Sizable Ismaili communities have

settled in Spain and, notably, in Portugal which has had an Ismaili national council since 1979 and a branch of the Aga Khan Foundation's Development Network since 1983, both located in Lisbon.

As the Portuguese national council already had plans to acquire the Lisbon site for a permanent place of worship, it was decided the project could be developed effectively for the benefit of the greater Ismaili community in and beyond the Iberian peninsula. Acting on their behalf, the Aga Khan Foundation then invited five architects from different countries and backgrounds to submit designs for the new Centre, among them Raj Rewal's Delhi-based practice.

In conjunction with the spiritual core of the Jamatkhana (Prayer Hall), the brief required a social hall, community and multi-purpose areas, suitable premises for the Aga Khan Foundation and the Ismaili Institutional Council, as well as teaching facilities for the Centre's extensive educational, cultural and economic programmes. Moreover, it was stipulated that the Ismaili community should be provided with an architecture that would not only be distinctive but would also merge into and reflect Portuguese urban values, conferring an appropriate sense of place – something of a tall order given the harsh environment of the site in this new part of Lisbon.

Rewal's concept – using modern technology and functional analysis to devise a novel, composite stone-and-steel lattice framework for his complex of buildings ranged around

cloistered courts or patios – sought to express the link between tradition and modernity, between the Ismaili community and its host country, by fusing Iberian architectural traditions with the iconic geometrical designs that embody the cultural and spiritual canons of Islam. Deemed the most appropriate response to the brief, Rewal's proposal was selected from the five contenders and it has since been refined in detailed discussions with the community's leaders.

Allusions to the morphologies of northern India's rich sedimentation of past civilizations and to resonances encountered elsewhere, around the Mediterranean seaboard for example, have distinguished Raj Rewal's work since the late 1970s (AR August 1987 and October 2002). Exploiting the thematic geometries of urban vernacular traditions as much as temple and later Indo-Mughul architecture, he has developed analogous concepts both in institutional and housing schemes. Devised in rational terms, on the principle of 'change within continuity', they combine new and old techniques and materials to meet functional needs.

The intrinsic merits of local materials – brick apart, long despised in India on ideological modernist, post-colonial and social grounds – have undergone a similar, if more cautious reappraisal. Rewal has taken progressive advantage of local red and buff sandstone for his buildings in New Delhi, whether in the form of cladding panels, chip-faced render or, increasingly, as an integral

**ISMAILI CENTRE,
LISBON, PORTUGAL**
ARCHITECT
RAJ REWAL ASSOCIATES



2

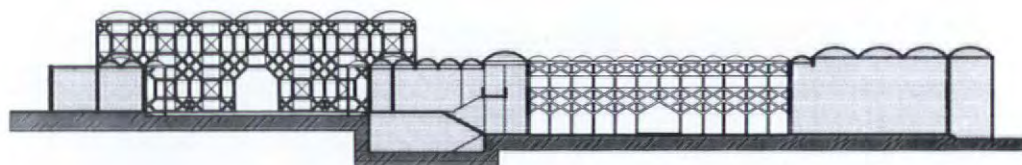
ISLAM IN IBERIA

In creating a building for Muslims in Portugal, Raj Rewal has drawn upon traditions both of the nation and of traditional Islamic countries. Martin Meade reports on the Ismaili Centre.

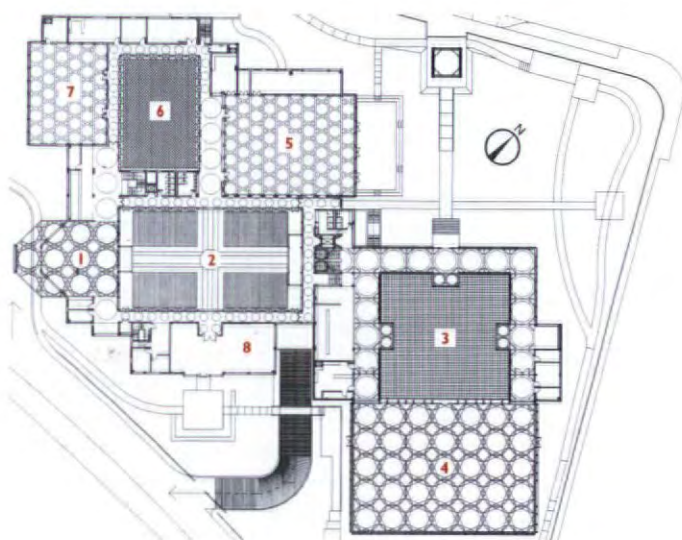
ISMAILI CENTRE,
LISBON, PORTUGAL
ARCHITECT
RAJ REWAL ASSOCIATES



section through Social Hall, community court and multi-purpose hall



section through Prayer Hall court and entrance



ground floor (scale approx 1:1800)



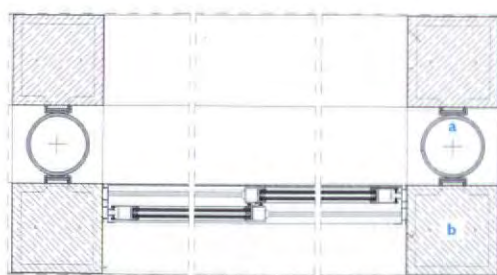
first floor

- 1 entrance
- 2 central court
- 3 Prayer Hall court
- 4 Prayer Hall
- 5 Social Hall
- 6 Community Hall
- 7 multi-purpose hall
- 8 display and exhibition
- 9 offices
- 10 classrooms

- A main entrance
- B porte-cochère and reception
- C Prayer Hall court
- D Prayer Hall
- E central court
- F community court
- G Social Hall
- H multi-purpose hall
- J Av Lusida
- K Rua Abranches Ferrao

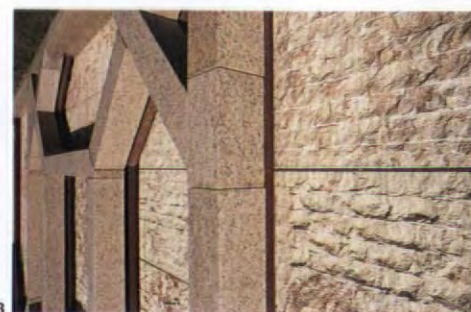


site plan



detail of steel and granite columns (scale approx 1:20)

- a 150mm steel tube
- b 200x200mm granite elements with stainless-steel plates in joints clipped to tube





3
Counterpoint between Sintra
granite structure and Lioz
limestone walls ...
4
... gives main texture of whole
fabric, reminiscent alike of
Portuguese Manueline buildings
and those of the Middle East.

structural component. By comparison with concrete, he says, ancient Indian temples, Fatehpur Sikri (the Emperor Akbar's Palace near Agra) and Lutyens's New Delhi complex all testify to this magnificent stone's exceptional weathering and insulation properties. And, what is more, 'it happens that sandstone in India is also the cheapest building material'.

Rewal's first experiment with computerized precision stone cutting and new jointing techniques was for the World Bank building in New Delhi; they have been fully implemented, too, in his recently completed Parliamentary Library in the same city (AR October 2002) – fruit of a competition he won in 1991, shortly before his successful proposal for the Lisbon Ismaili Centre. Given their closeness in time, it comes as no surprise to find these two buildings have certain features in common. For instance, the domes over the main spaces of the New Delhi Library, with the compression of their cellular shells supported by the tension members of steel trusses, anticipate the concept of the domical vaulting adopted for the Lisbon Ismaili Centre.

In the wake of the New Delhi Library, the Ismaili Centre has provided Rewal with an opportunity further to develop his ideas for a contemporary stone idiom. The Portuguese quarrying industry, perpetuating the country's great tradition of building in granite or limestone, has computerized machinery capable of tailoring its mass-produced slabs to meet the most exacting specifications. Having visited the granite stoneyards at Sintra and seen how they could produce and assemble repetitive components, Rewal decided on a structural system for the Ismaili Centre which, informed by the latest engineering software, would effectively flitch the compressive strength of stone with the tensile strength of steel. The late Peter Rice, who had devised a structure of stone arches and steel tension rods for a pavilion at the Seville Exhibition, was consulted early in the design stage. Then, as Lisbon is within an earthquake zone, the local firm Julio Appleton A2P was appointed for the detailed structural design. The walls of the Lisbon Ismaili Centre take the

form of a composite lattice of granite members and steel tubes: for the large volume of the Prayer Hall, the lattice is doubled and braced by stainless-steel tie rods, while the limestone domical vaults of its roof are supported on similar tubular trusses. Lioz limestone is extensively used for cladding, its contrast with the granite lattice denoting the structural and non-structural use of stone. These materials are woven together to form geometrical patterns with glass or ceramic tiles, to enlarge or enclose spaces.

However, Islamic sources and the Iberian Peninsula's own heritage of Moorish and Gothic monuments (notably the exceptional late Gothic and Manueline ribbed vaults and cloisters of the monastery of Batalha or the Jeronimos in Lisbon) have furnished Rewal with equally significant and appropriate design precedents. The intricate geometries of stone *jalis* (lattices) found in the Islamic architecture of Fatehpur Sikri and Agra in India, or in Spain the Alhambra, provided a direct inspiration for the structural concept.

The same historical morphologies have been assimilated for the functional layout of the Centre. In orienting the Prayer Hall towards Mecca at the higher, north-east end of the sloping site, Rewal has referred to Fatehpur Sikri where the Great Mosque commands the highest point of the ridge and the complex of palace courtyards stretches out in echelon below. Combined with the concept of the Paradise Garden and the Gothic cloister, the Fatehpur Sikri plan has served to group the public spaces in the design (the Jamatkhana, Social Hall and Community facilities) around enclosed but interconnected courtyards on the ground floor.

The first floor is reserved for educational, institutional and Aga Khan Foundation services, disposed round smaller patios. The imposing entrance hall gives onto the central court laid out as a *Char Bagh* or garden-of-four-parts, replete with fountain, stone water-channels and flowering plants – a soothing, peaceful buffer zone after the stress of the urban environment. Contained between the Social Hall and multi-purpose

hall, the community courtyard can function as over-spill space for cultural and community activities. At the head of the complex, approached by a flight of steps divided by a *chadar* or water-chute (a digital ceramic mural by Raoul Rewal covers the east wall), the Jamatkhana courtyard extends the Prayer Hall in the traditional manner. Surrounded by a cloister, this contemplative space is isolated from the rest of the Centre by the change in level; an axial western gateway gives occasional ceremonial access from the grounds.

This inward-looking courtyard layout has been logically adapted to ensure privacy from surrounding high-rise housing and, in conjunction with the landscaped grounds and their protective fringe of trees, acts as a baffle against the busy avenue and expressway. At the same time, it reflects Rewal's overall aim for the Lisbon Ismaili Centre: to provide the community with a distinctive contemporary building 'evocative without mimicry' both of Iberian architectural traditions and the doctrine of cosmic unity 'where one is part of the whole' central to Islamic philosophy and art.

Certainly within the grotesque urban proliferation in this part of town, he has provided a welcome oasis in response to the spiritual and social requirements of the brief. One can only regret that some finer flights of the concept have been translated somewhat ponderously into built form. Rather like Viollet-le-Duc, whose designs for iron tension-strutted masonry domes share an unexpected similarity with the domical vaults in the Lisbon Ismaili Centre and the New Delhi Parliamentary Library (as pointed out by Peter Davey in AR October 2002), Rewal's *passage à l'acte* sometimes lacks a certain lightness of touch.

MARTIN MEADE

Architect

Raj Rewal Associates, Delhi

Associate architect

F. Valsassina

Structural engineer

A2P (Lisbon)

Structural engineer for competition stage

RFR (Paris)





ISMAILI CENTRE,
LISBON, PORTUGAL
ARCHITECT
RAJ REWAL ASSOCIATES

5
From entrance to central court.
6, 7
Prayer hall with its Viollet-le-Duc
combination of steel in tension and
masonry in compression forming the
domed roof.
8
Central courtyard: a *Char bagh* garden-
of-four-parts, with traditional central
fountain and water channels.



Who would have believed that after 1945 there would be a boom in German synagogues? East European immigrants have swelled the numbers of previously dying congregations. Chemnitz, once known as the Manchester of the East, a dour manufacturing centre where Erich Mendelsohn designed the Schocken department store, is now an economically depressed region of high unemployment. But despite this, the city's small Jewish community has grown, from 12 to 550 since 1989, and, in an act of unrivalled optimism, it has built a new religious and cultural centre.

Alfred Jacoby, director of Dessau's Institute of Architecture,

has completed eight Jewish projects in recent years. More than spaces for worship, these are meeting places for the high proportion of pensioners and unemployed who find company among other Russian speakers, with rooms for youth groups and Makkabi Jewish sports association, parties, performances, language and religious classes. As potential victims of racism, their buildings also must deal with security. In Chemnitz a protective margin, patrolled by police, is created by a landscaped forecourt and pool around the synagogue which guides visitors to the entrance where they are inspected from a security office window. The

architectural task is to combine ritual, representative and domestic functions. Through a foyer, fully enveloped in glass and acting as a transparent hub, these diverse activities intermingle. The multi-purpose hall, with its kosher catering kitchen, can form a single fluid space with the foyer by the simple removal of a partition wall. A fan-shaped library, a reference to Aalto, extends into the garden and, with a curved open stairway, leads up to a balcony lounge. This space, in turn, overlooks the foyer and connects by a bridge to the seating gallery in the drum of the synagogue. Another wing contains cellular rooms around an internal open-air courtyard for

the Sukka festival. In the basement there is a Mikwe, a ritual bathing suite.

The oval synagogue sits like a jewel in a glass case. Its outward leaning walls culminate in a stained glass crown, a Keta Tora, optimizing daylight and symbolizing the embracing Talit prayer shawl. The biblically significant blue and white typographic pattern plays on the Hebrew characters for 'life'. As with all living creatures, no two characters are identical. At night, the crown and vertical stained glass window glow like a beacon, publicly demonstrating a Jewish presence in a historically intolerant environment, a recurring motif in Jacoby's architecture, for instance his synagogue in Aachen (AR November 1995).

The three important elements in every synagogue (an Aron-Ha-Kodesh for the Torah rolls, an Almemor pulpit, and separate seating for women), are all present but, in keeping with contemporary liberal doctrine, are translated into modern terms. Contrary to tradition, the focal Torah cupboard is asymmetrically placed, shifting the congregation's focus to a window leading out into the world beyond. This reinforces the belief of community leader Siegmund Rotstein (a Holocaust

**SYNAGOGUE,
CHEMNITZ, GERMANY**
ARCHITECT
ALFRED JACOBY



2

STAR IN THE EAST

Paradoxically, Jewish communities in Germany are now thriving and recent new synagogues, such as this one in Chemnitz, also encompass social and cultural aspects.



1 The oval synagogue thrusts out from the orthogonal body of the building.

2 A fan-shaped library flares out from the rear. The building is also a cultural centre for Chemnitz's growing Jewish population.

3 The synagogue is crowned by a stained-glass roof.

survivor) that Jews must communicate to widen understanding with non-Jews. What is traditionally a richly decorated curtain drawn across the front of a Torah cupboard is here made part of the structure itself. An Yves Klein blue material is stretched over a frame to form a storage space with doors. The Menorah light is a free-standing translucent pylon light and the Star of David is translated into two hanging lamps constructed like Japanese lanterns of white parchment. Minimal building materials, such as glass, steel and fair-faced concrete, form neutral backdrops for the blue accented

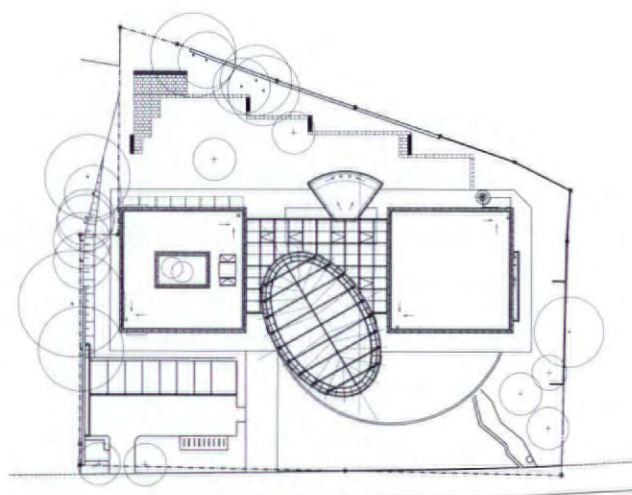
features, and the singular luxurious material, a natural rich green Swiss stone, which is used externally and on foyer walls.

The current site was exchanged for land that housed the town's original 1899 Romanesque style synagogue (destroyed by the Nazis). An agreement was negotiated with the old GDR government, which encouraged the Jewish community to survive post-war. With a budget of 4.5 million Euros from government and private donations, Chemnitz has finally achieved a modest but inspiring replacement synagogue.

LAYLA DAWSON

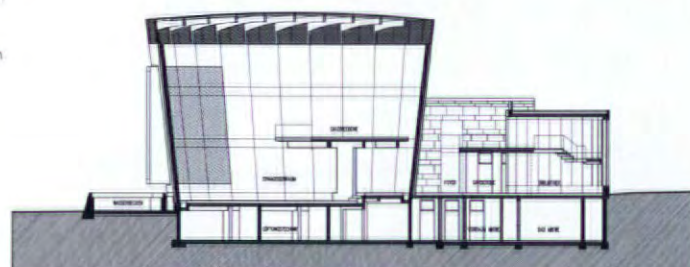


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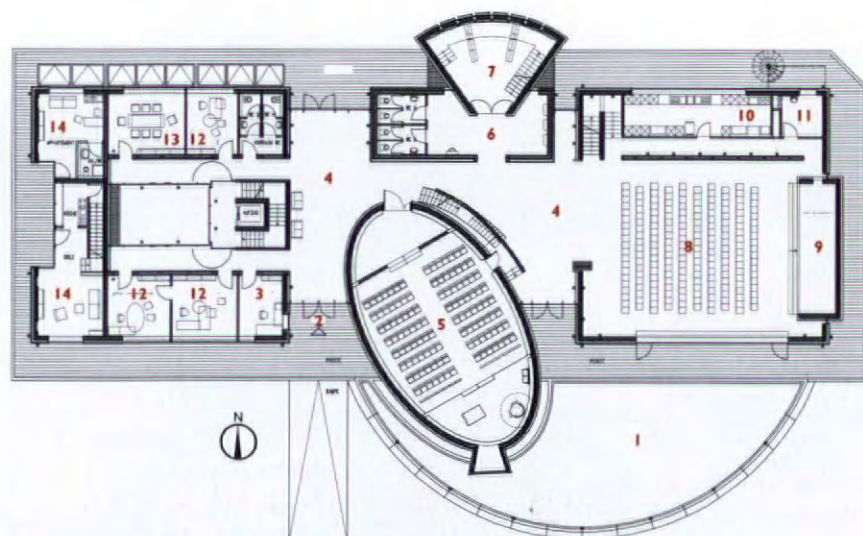


site plan

- 1 moat
- 2 entrance
- 3 security point
- 4 foyer
- 5 synagogue
- 6 ritual ablutions and cloakroom
- 7 library
- 8 multi-purpose hall
- 9 stage
- 10 kosher kitchen
- 11 store
- 12 offices
- 13 meeting room
- 14 apartments



cross section



ground floor plan (scale approx 1:500)

Architect
Alfred Jacoby, Frankfurt am Main
Associate architect
Monika Finger
Lighting
Serien, Jean-Marc Da Costa and
Manfred Wolf
Stained glass
Johannes Schreier
Landscape architect
Ulrike Stockert
Photographs
Werner Huthmacher

4
Upper gallery contains seating for women – although the building is a contemporary expression of faith, it follows traditional Jewish doctrine.
5
Entrance to the upper gallery is by means of a bridge across the foyer.



SYNAGOGUE,
CHEMNITZ, GERMANY
ARCHITECT
ALFRED JACOBY

CHURCH, KONGSVINGER, NORWAY

ARCHITECT

HILLE STRANDSKOGEN

Traditionally, there are not many Roman Catholics in Scandinavia. The small town of Kongsvinger, in Norway, east of Oslo and near the Swedish border, has a Catholic community of only some 200 people, made up of immigrants from Vietnam, the Philippines and Poland as well as native Norwegians. To help bring the disparate group together, a new church was necessary.

Because of the size of the congregation, the building had to be simple and quite cheap: a basic 'framework round the liturgy' was required. The architects replied with a building

of great simplicity, in an arrangement that has become quite common in Scandinavian churches of all denominations: the church faces a roughly similar sized parish hall over an open court that separates sacred and profane areas, with everything being brought together within an overall rectangle – a compact arrangement comparable to, for instance, the church at Mortensrud built for a much bigger (and Lutheran) congregation (AR December 2002, p52).

At Kongsvinger, the parts are simple and elemental – all small

abstractions of ancient types. The church itself with its wide, clerestory-lit nave flanked by narrow aisles is a miniature basilica, with the altar emphasized by a skylight, as was the focus of basilican spaces since Roman times; the confessional and the font are in tiny side niches opening off the aisles. The open courtyard, with its surrounding arcades, is clearly descended from the cloister, itself another Roman type that goes back to the atria of the houses of the rich. The parish hall is, in a sense, a negative of the cloister, with arcades surrounding a roofed

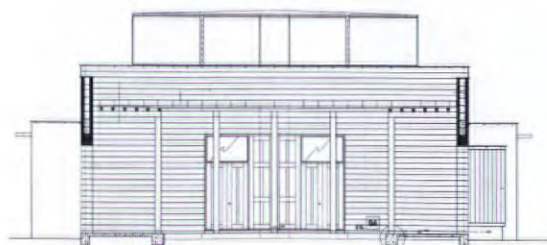
NORDIC FAITH

By reinterpreting traditional types, this little church achieves an intensity which is enhanced by great sensitivity in use of materials and light.

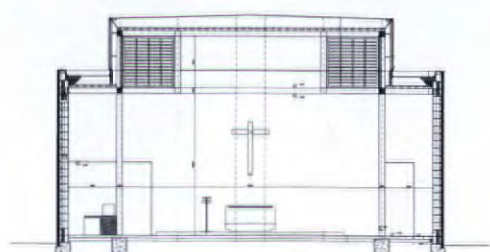


- 1 Approach from south with church, left, and parish hall, right.
- 2 Entrance to court: sawn sandstone ashlar is outer skin of blockwork walls.
- 3 Church main door opening off cloister.





cross section through hall



cross section through church

CHURCH, KONGSVINGER, NORWAY

ARCHITECT

HILLE STRANDSKOGEN

space instead of one open to the sky; to me at least, the rather dark volume recalls tales of the ancient timber halls of Scandinavian legend – you almost expect a lantern as a reminder of the central smoke-hole.

For Scandinavia, this is a relatively poor parish, and construction is economical and very simple, but there has been enough money to cover the outside of the blockwork walls in a sawn sandstone skin with flush-pointed joints and solid stone lintels over the portals to the cloister. Inside, walls are finished in tinted plaster, with no skirtings against the floors, which themselves are of polished pale concrete. All columns and main beams are 200mm square laminated pine members, while secondary roof elements, roof linings and most other woodwork are made of untreated pine, the aroma of which permeates the whole

complex. Special pieces, like the pews, where you are literally most in touch with the building, are in oak.

Everything has been thought out economically, yet with deep understanding of the sensuous properties of light and material. Sankt Clara's church is a small, yet powerful distillation of community and the numinous.

HENRY MILES

Architect

Hille Strandskogen, Oslo

Project team

Ervin Strandskogen, Henrik Hille, Anja Hole Strandskogen

Interior design and landscape

Hille Strandskogen

4 Church is a small abstraction of traditional basilica.

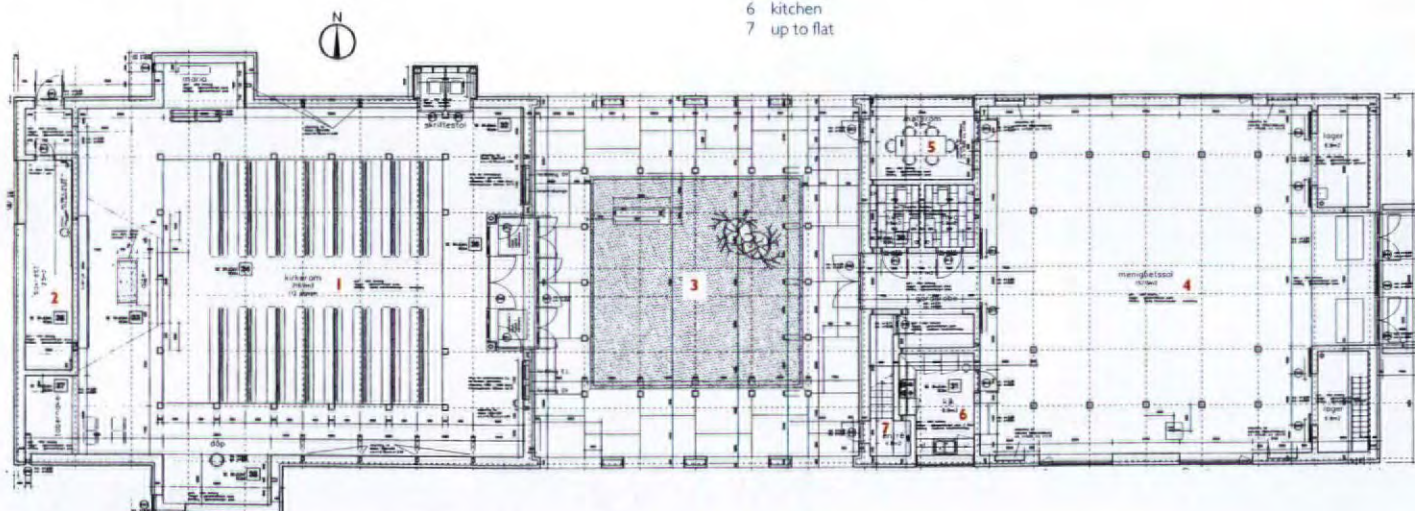
5 Parish hall.

6 Finishes are extremely simple and economical.

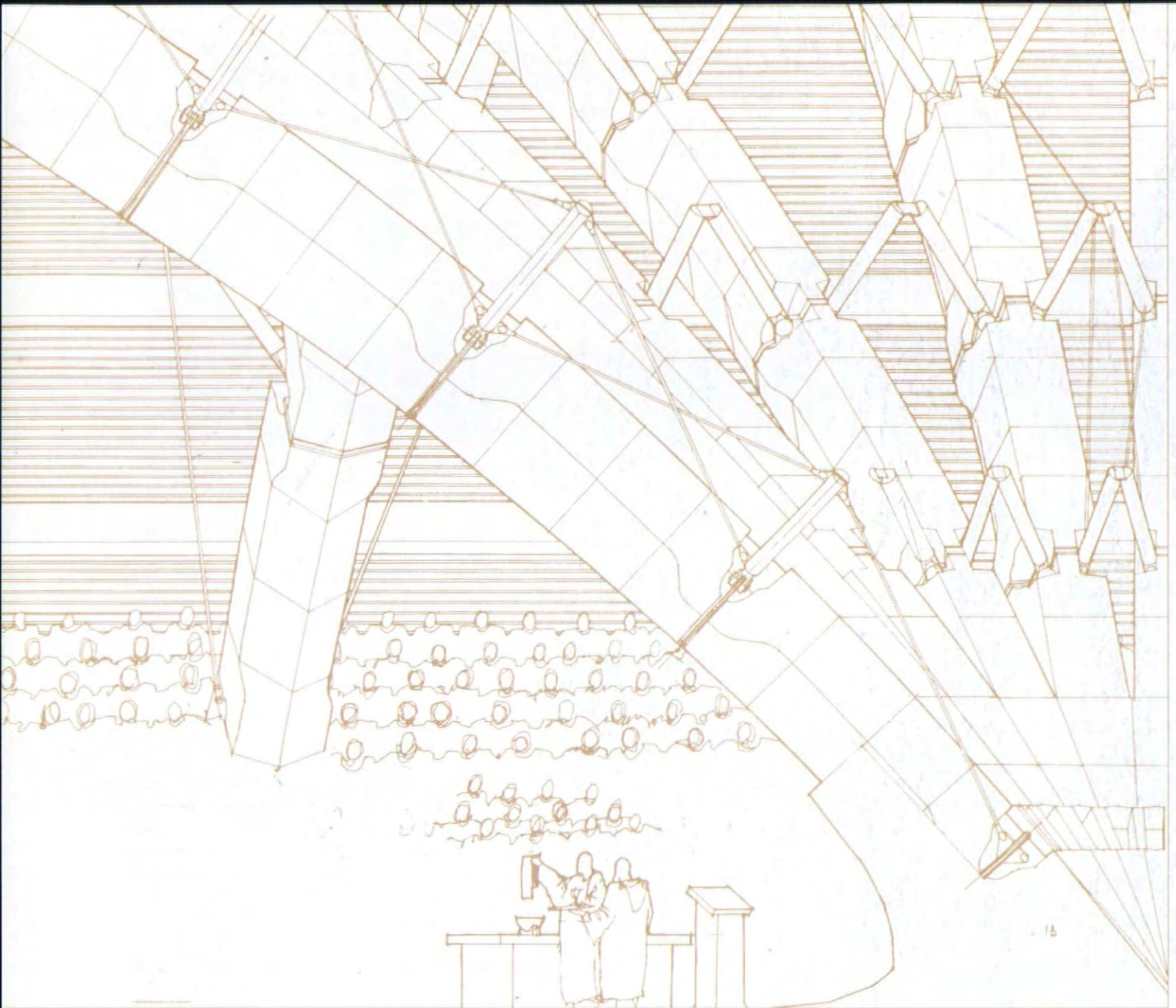


long section

- 1 church
- 2 sacristy
- 3 cloister court
- 4 parish hall
- 5 meeting
- 6 kitchen
- 7 up to flat



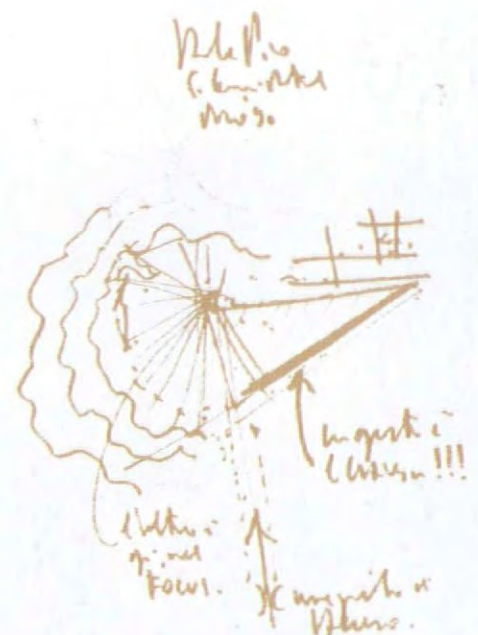




**PILGRIMAGE CHURCH,
PUGLIA, ITALY**
ARCHITECT
RENZO PIANO

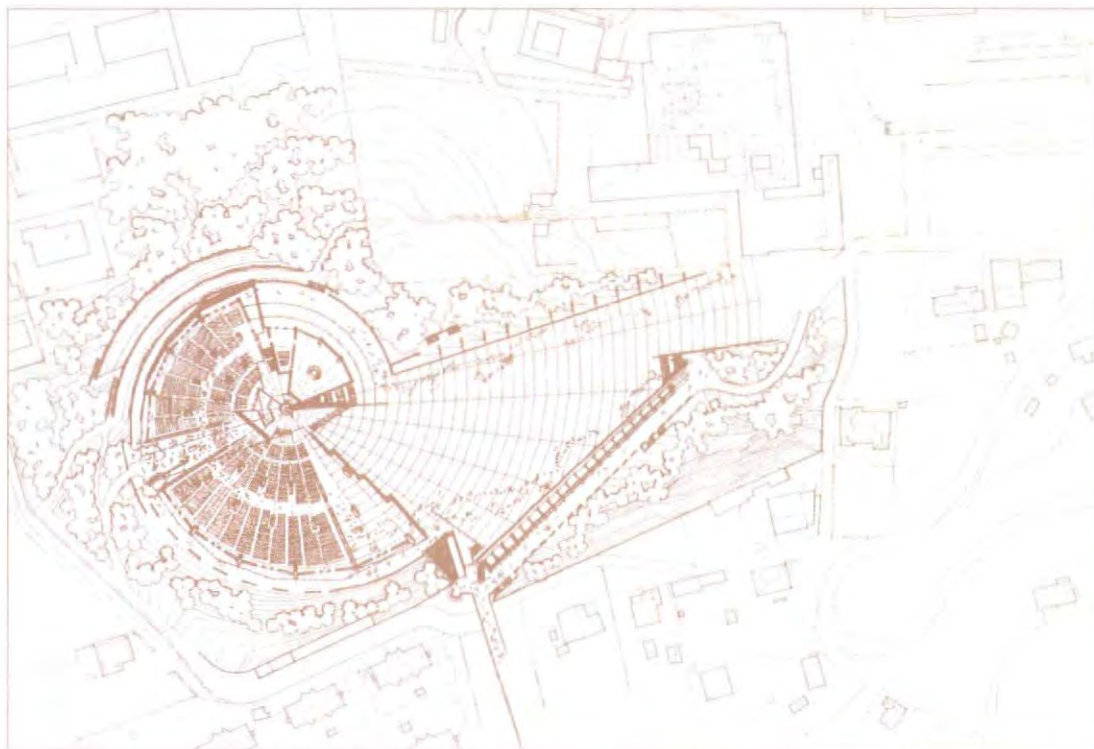
PILGRIMS' PROGRESS

A new pilgrimage church for one of Italy's best loved saints provides a huge gathering space for the faithful that combines grandeur and a sense of the numinous.



1
Muscular stone arches animate the cavernous interior.

2
Site plan showing the new basilica and its parvis in the context of the town. The site lies near to the existing Capuchin monastery.



2

In a country particularly in thrall to the cult of sainthood, St Padre Pio stands as one of Italy's most modern and best-loved saints. Canonized with great ceremony by the Pope in 2002, Padre Pio was a Capuchin monk famous for his bleeding stigmata, miraculous healing powers and the rather enviable ability to be in two places at once. When he died in 1968, his remains were interred in the church of his home village of San Giovanni Rotonda in Puglia, the impoverished and remote province that extends down the south-east side of the Italian peninsula. This rapidly became a site of modern pilgrimage – 8 million people

visit each year, making it the second most popular shrine in Christendom after the Basilica of Our Lady of Guadalupe in Mexico – but it also spawned a familiar growth industry of cheap hotels, souvenir shops and a vast acreage of kitschy Catholic trappings. The modest church of Santa Maria della Grazie, Padre Pio's current resting place, has long been unable to cope with this influx, so it was decided, with Vatican approval, to construct a new basilica, capable of accommodating 7200 people, with room for an additional 30 000, who might swell the capacity on feast days, standing outside in an adjoining piazza.

In 1991 Renzo Piano got the job, through a mixture of charm and obstinacy on the part of the Capuchin monks, who faxed Piano's office a personal blessing from St Luke's gospel ('In your patience possess ye your souls') each day for three weeks until eventually he agreed to accept the commission.

The site lies in a gentle natural amphitheatre near the top of a hill overlooking the town, not far from the Capuchin monastery and existing church, from where Padre Pio's remains will be removed and re-interred in the new basilica when it opens later this year. A new winding approach road will draw cars

and pilgrims away from the town centre below, and groves of newly planted cypresses around the site will enhance a sense of seclusion, despite the great throngs of visitors.

The church was one of the last collaborations between Piano and engineer Peter Rice and reflects Rice's interest in using stone, a traditional structural material, in radical new ways. Here, 21 arches made of blocks of pale Apricena marble break free from the more usual confines of walls to form a series of dramatic free-standing supports. Arranged in a radial pattern, the stone arches are crowned by a shallow domed



**PILGRIMAGE CHURCH,
PUGLIA, ITALY**
ARCHITECT
RENZO PIANO

roof clad in panels of green pre-patinated copper. The most massive arch is 16m high with a span of 50m, credentials that might make it the largest stone arch ever built. Piano was concerned that such a huge interior should not be reduced to the soulless functionalism of an aircraft hangar or sports hall, so the great muscular arches break up and animate the space. Like the builders of Gothic cathedrals 1000 years ago, the architects made use of contemporary technology to push the boundaries – structural calculations were computerized and special digital machines were

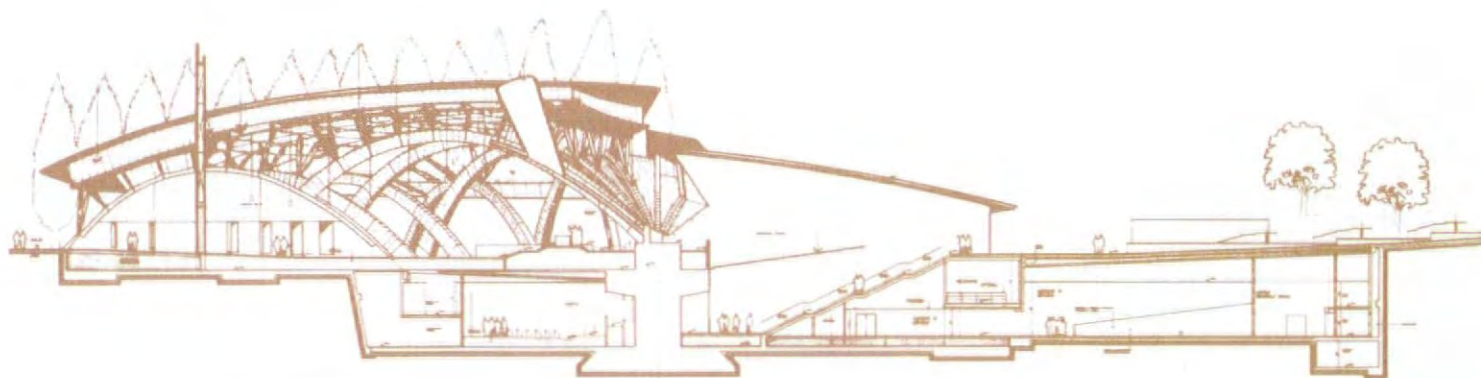
used to design, shape and cut the 40 or 50 stones that make up each arch. As Piano notes, 'Technical virtuosity is not an end in itself, but meets the needs of a precise, formal choice'.

In some ways, the building is six churches conflated into one. Pilgrims are always aware of the altar at the heart of the spiralling, shell-like plan, but are not necessarily aware of the entire space. Shafts of direct sunlight are carefully choreographed to shine down directly onto the altar, their intensity emphasized by the sepulchral semi-darkness of the surroundings. A simple glass wall

separates the church from its huge parvis, dematerializing the boundary between interior and exterior. Paving in the piazza also extends into the church, so that it becomes, in effect, an open house, a notion as ancient as the liturgy itself, gathering hordes of weary pilgrims into the bosom of the divine. C. S.

Architect
Renzo Piano Building Workshop, Genoa
Structural engineers
Ove Arup & Partners, Favero & Milan,
C.O.R.E. Ingegneria
Services engineer
Manens Intertecnica
Acoustics consultant
Müller Bbm

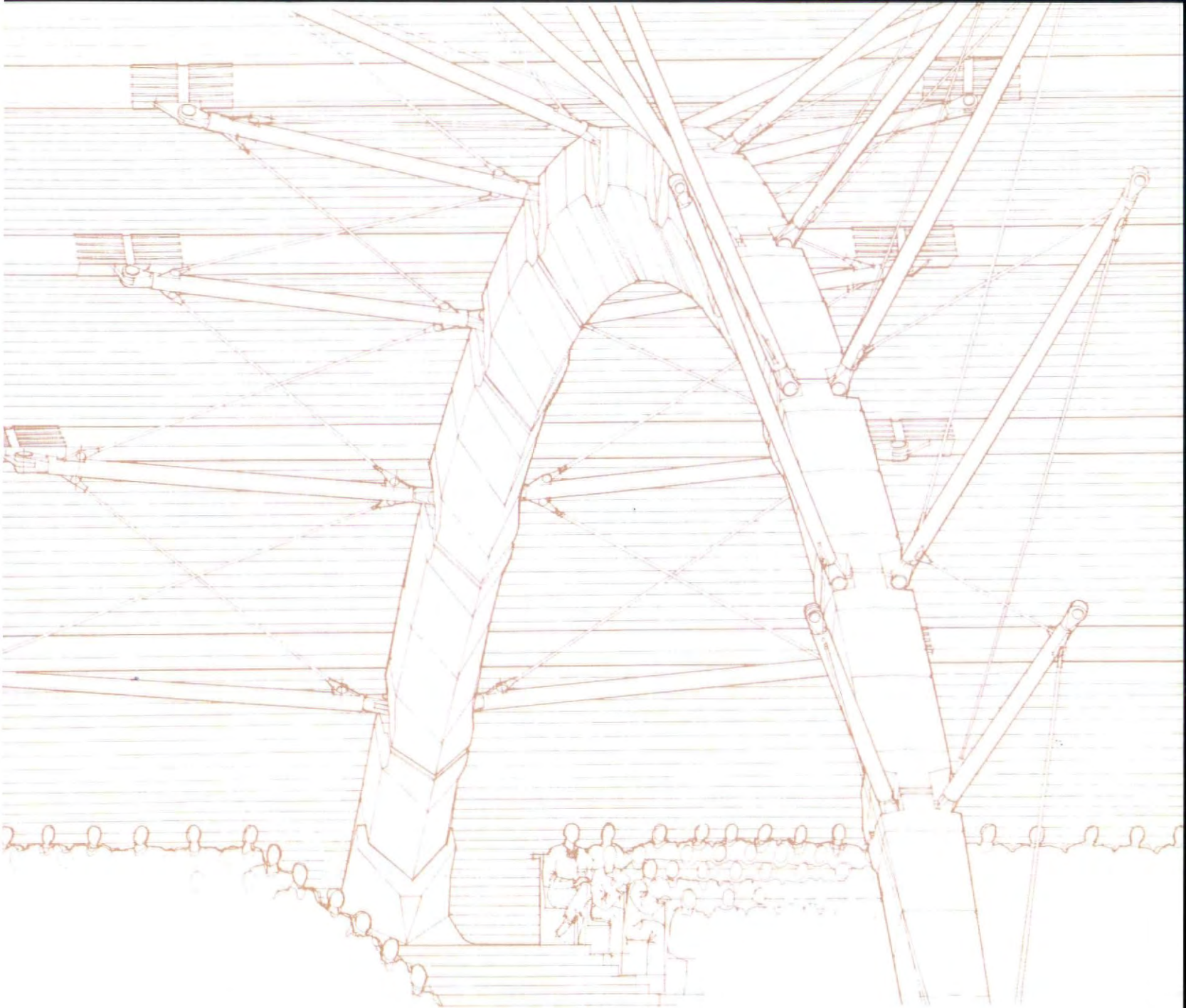
3
The free-standing arches resemble massive spines.



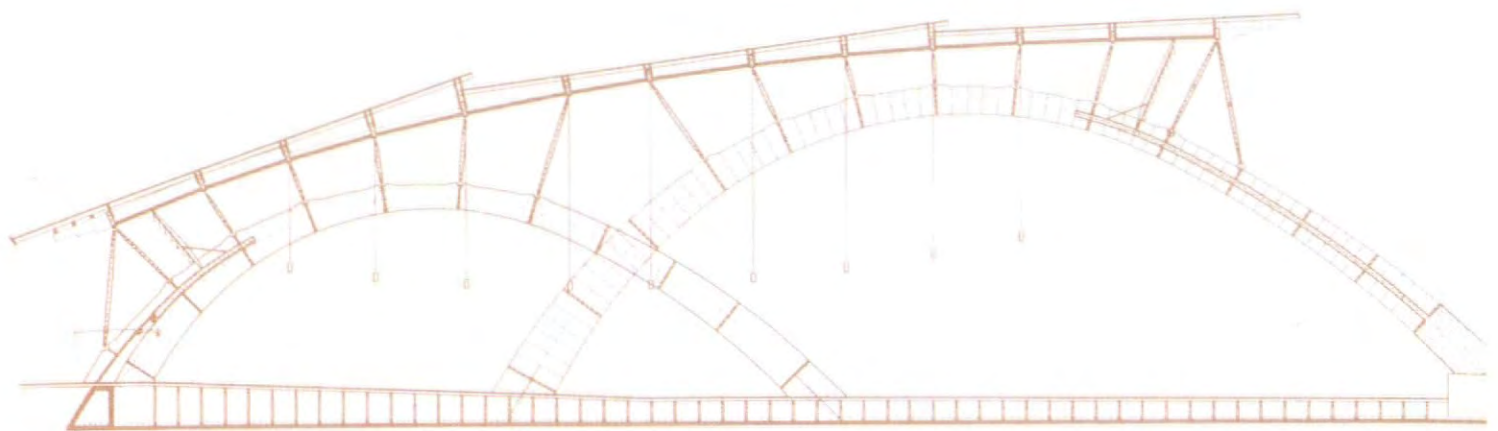
cross section looking north



east elevation



3



cross section showing arches and roof structure

CHANDIGARH: ONCE THE FUTURE CITY

After years of struggle in Rio, Algiers, Saint Dié and Bogotá, Le Corbusier, at the age of 62, had the rare opportunity to apply his theories to the design of a new city. Chandigarh was to be his most momentous assignment: the only urban plan of substance he implemented. Yet, after planning the city's outlines in a matter of weeks, he delegated the design of the fabric to others and concentrated on the group of buildings on the Capitol. He saw the Capitol as a sacred place to match the Acropolis. Separate from the rest of the city, it became almost a prohibited zone to most of the citizens whom he expected to stand back, in awe of his architecture. Separated by vast distances, the Capitol buildings became individual oases, each with its own intricate box of tricks, of which Le Corbusier was the master. Jim Antoniou discusses the city's present condition.

Beginnings

In 1947, when India gained its independence, the western part of the Punjab, with its provincial capital Lahore, was turned over to Pakistan. The eastern Punjab, in India, became a state without a capital. The immediate task was to provide shelter to those displaced from west Punjab within a new permanent capital. Yet, the idea of relocating the functions of a new capital in an existing town on a permanent basis was rejected.

A year later, Pandit Nehru, India's first Prime Minister, decided to build the capital on a site 250km north of Delhi, chosen by P. L. Verma, appointed chief engineer for the Punjab and P. N. Thapar, director of public works. This was to be a modern city, free of existing traditions, for a people with a great ancient past, expressing India's faith in the future at a time of tumultuous transition. The new capital Chandigarh (the first new city in India since Jaipur in 1728) was conceived as a place of prestige and convenience, an administrative centre, with a clear goal and a target population.

When Chandigarh was contemplated, the focus of urban planning in India was unclear. In the 1950s and '60s, the idea of a modern city was vital, especially to a new independent country. Therefore, it was to serve as a model in city planning for India and even the world. With just 300 architects in the country at the time of independence, this was to be achieved by using the best expertise in the West.

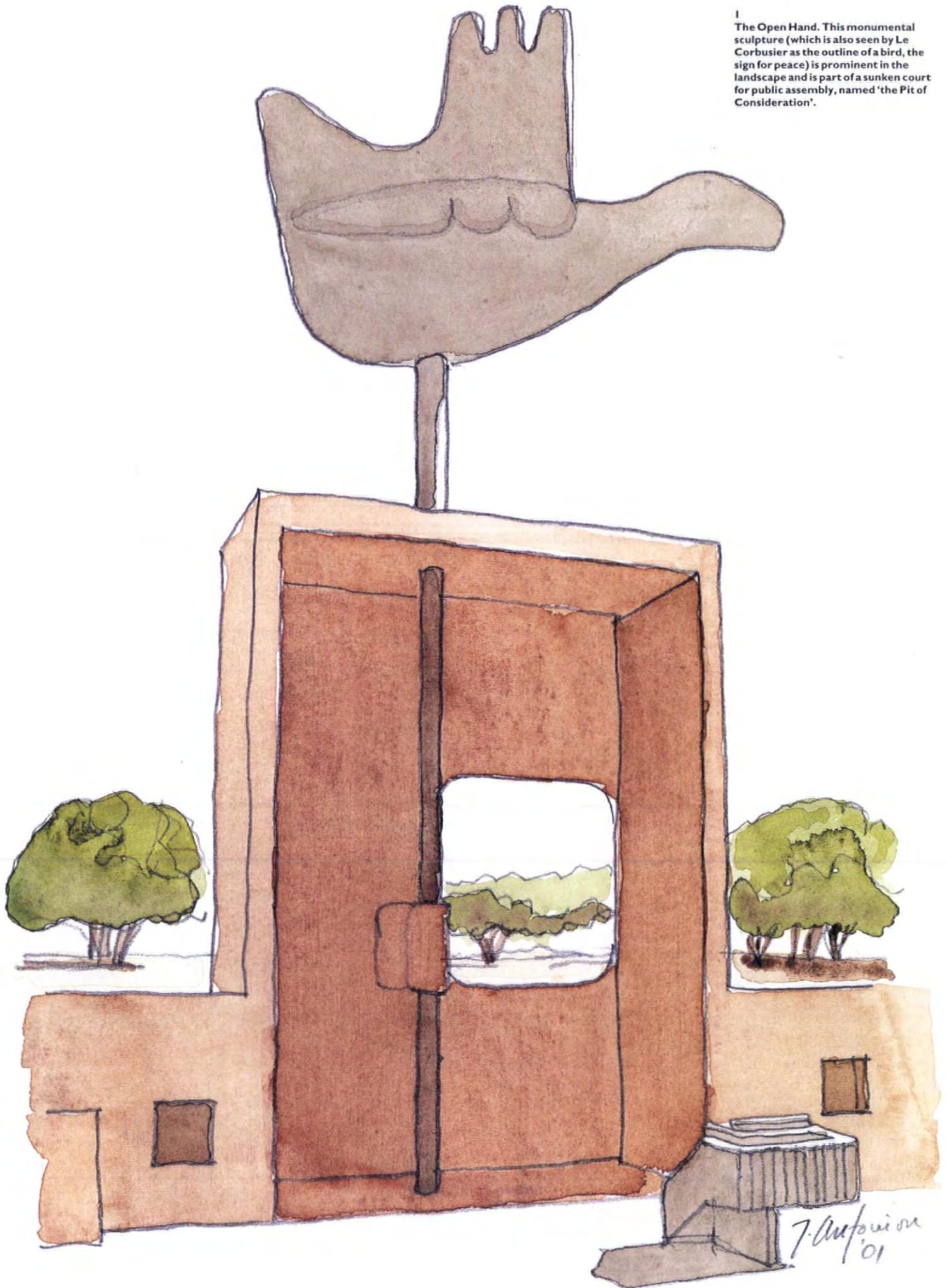
The first masterplan for the new capital was assigned to American engineer and planner Albert Mayer, who was a friend of Clarence Stein of Radburn fame in New Jersey. He worked on the masterplan with his closest assistant, Matthew Nowicki, until the latter died in a plane crash in 1950. Mayer's plan consisted of a fan-shaped garden city, with a curved network of roads and varying

super-block shapes. When Mayer resigned, the Indian authorities put together a new, European planning team. The two appointed administrators, Verma and Thapar, decided on the renowned Swiss architect, Le Corbusier, whose name was suggested by the British architects Maxwell Fry and his wife Jane Drew. At first, Le Corbusier was not keen to take the assignment, but was persuaded by Verma. Le Corbusier's lofty visions and ideals were in harmony with Nehru's aspirations. Equally significant, Maxwell Fry and Jane Drew, now part of the new team, had acquired considerable experience in designing tropical buildings in Africa.

Le Corbusier, as general consultant to the new capital, was assigned to make modifications to the Mayer plan, or prepare a new masterplan. He naturally advocated the latter, insisting on starting afresh, resulting in a radical departure from the Mayer plan. Early in 1951, he prepared a new plan in a matter of weeks, based on his own concept of sectors (although he did incorporate some of the features from the original plan).

Le Corbusier, who saw himself as the 'spiritual director' of the entire project, requested the assistance of his cousin Pierre Jeanneret (with whom he had argued frequently and had recently dissolved their practice). Jeanneret eventually agreed to live on the site as his representative and chief architect. Le Corbusier could then visit India twice a year for a month at a time (he came to the site 22 times). Thus, Jeanneret, together with Fry and Drew, as senior architects working in India for a period of three years and assisted by a team of 20 idealistic young Indian architects, would detail the plan and Le Corbusier could concentrate on major buildings. All four of the protagonists were members of the Congrès Internationaux d'Architecture Moderne (CIAM). The ideology of CIAM was to play a major role in the planning of the new city.

1
The Open Hand. This monumental sculpture (which is also seen by Le Corbusier as the outline of a bird, the sign for peace) is prominent in the landscape and is part of a sunken court for public assembly, named 'the Pit of Consideration'.

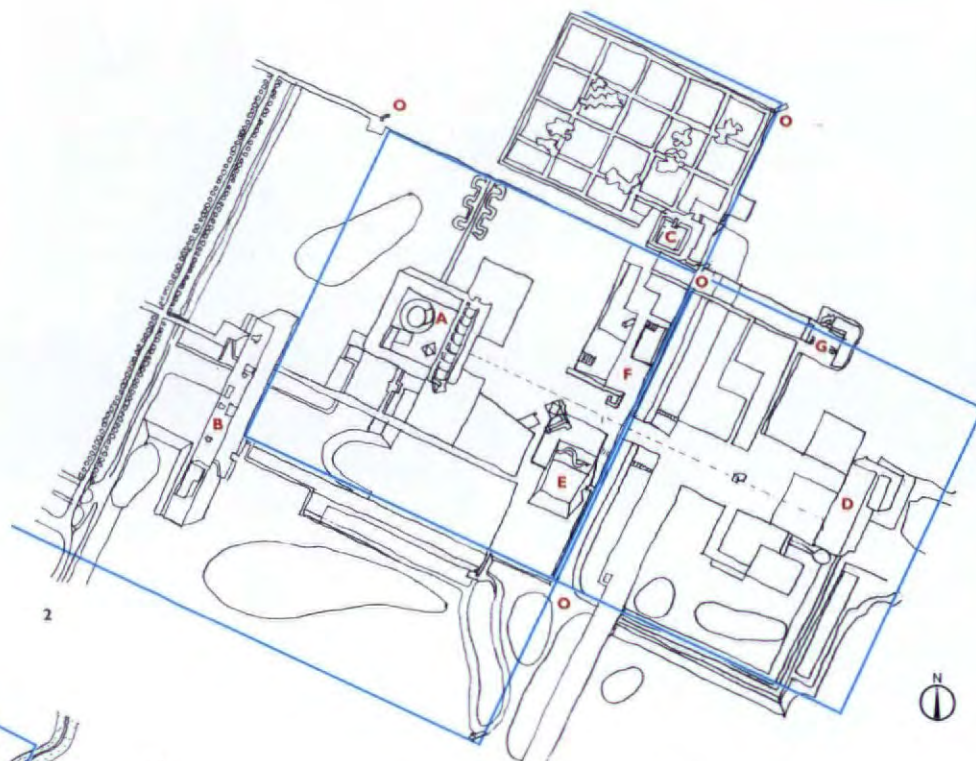


place

2
Setting out the Capitol Area: gigantic squares were pegged out on an axis to position the buildings between vast distances. From the Assembly to the Palace of Justice, there is a length of 450m of unexecuted landscape.

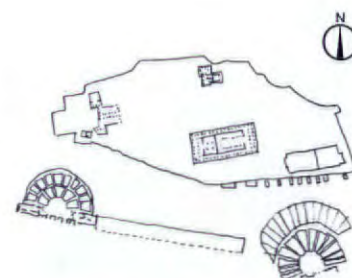
3
Drawn at the same scale, the entire Acropolis, which Le Corbusier greatly admired, can easily fit between the two buildings, while Trafalgar Square seems minute when compared with the massive Capitol area.

4
Plan of Chandigarh: Le Corbusier's sectors of varying densities and a hierarchy of roads define the layout between the two rivers. To the north, two sets of squares (800 x 800m and 400 x 400m) were used by Le Corbusier to set out the Capitol area as a sacred place.



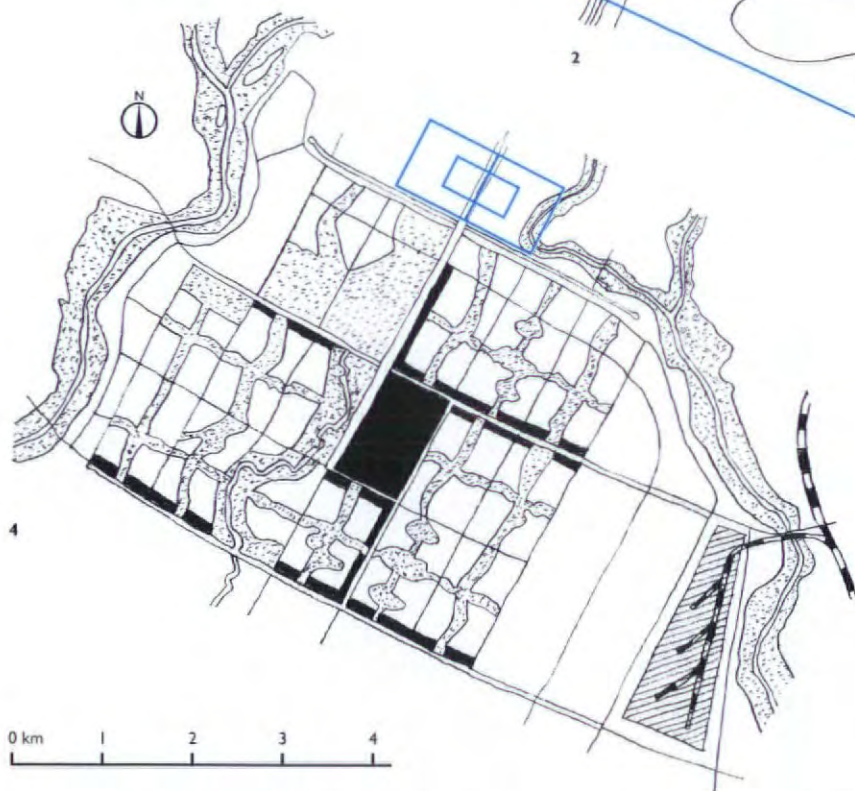
0 m 100 200 300

- A Assembly
- B Secretariat
- C Governor's Palace
- D High Court
- E Tower of Shadows
- F Martyr's Monument
- G Open Hand
- O Obelisk



3

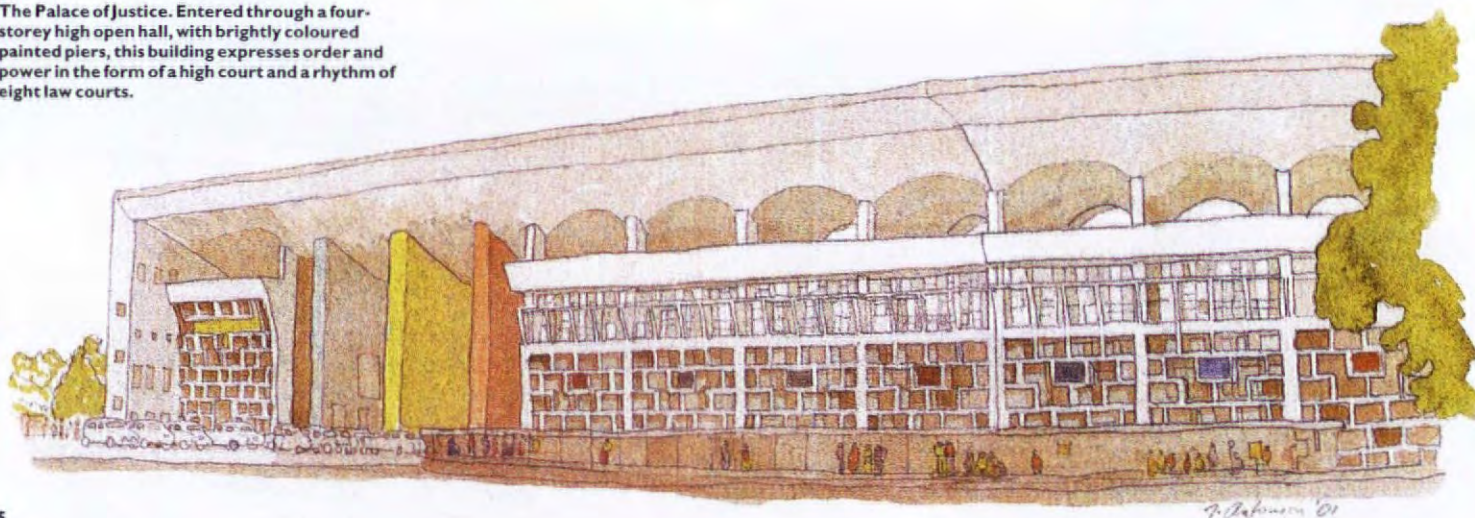
0 m 100 200 300



0 km 1 2 3 4

- government and business
- residential area
- open spaces
- railway station and industry

5
The Palace of Justice. Entered through a four-storey high open hall, with brightly coloured painted piers, this building expresses order and power in the form of a high court and a rhythm of eight law courts.



Plans and principles

The new capital required a secure and central location, easily accessible from all parts of the state. The site had to accommodate an initial population of 150 000 (ultimately 500 000, now one million and still growing). It had to be away from existing towns, with an adequate supply of water, easy drainage and a suitable climate. There was also to be a minimum dislocation to existing landowners and proximity to appropriate building materials for large-scale construction.

The flat and gently sloping site is located between two seasonal rivers, Patiali-ki Rao and Sukhna Choe, some 8km apart, with sufficient altitude to cope with the worst summer heat. To the north-east are the low hills, some 16km from the Shivalik range of the Himalayas, rising abruptly to 1500m as a backdrop to the Capitol.

The urban form of Chandigarh (tilted on a north-east/south-west axis) is a tidy chequer-board pattern, adapted to the particular attributes of the site, resulting in a distinctive distribution of functions and a hierarchy of roads. This city was to be free of the familiar overcrowding, pavement dwellings and squatters' shanties of many Indian towns. Le Corbusier's basis for the plan was the 'sector' (subdivided into 'urban villages' of about 150 families, equivalent to the average traditional settlement found in the Punjab). A classified circulation pattern resulted from his theory of the seven Vs (*les sept voies*). A regular grid of traffic routes (V3) defines the various sectors. These introverted sectors are self-sufficient living units, connected through V4 traffic routes. The first phase of the plan includes 17 sectors, each 1200m x 800m in area. Shopping and bands of open space cut across each sector, fixed at some 400m. Vertical green belts, with pedestrian (V7) routes, contain schools and sport activities. The city's V2 routes cut across and consist of three major avenues: the Peoples' Avenue, a ceremonial approach to the Capitol; the Middle Avenue, connecting railway and industrial area to the university; and the South Avenue marking the boundary of the first phase of the city.

Le Corbusier also introduced a biological element to the layout of the city. He regarded the plan as being similar to the human body. He had come across the figure of the Parushi of the Brahmins (the figure of a man lying on his side with the arms fully outstretched), not unlike his own Modulor man. The Capitol was to be the head of the body, the commercial centre its heart, the industrial area its hand and the intellectual centre the parkland, the location of museums, university and library.

He took upon himself the tasks of designing the buildings of the Capitol and exercising architectural control over the city. Extensive visual controls covered mass, materials, fenestration and even boundary walls and gates. The other three members of the senior architectural group were made responsible for various civic buildings, government housing, the provision of social infrastructure, including schools, and shopping centres. As an element of urban design and as a means of hiding the sameness of the sectors, provision was made for tree planting and a protected green belt on the periphery of the site. Trees were used to give form and identity to the city, blossoming in a variety of colours, according to the seasons.

The Capitol was seen by Le Corbusier as a visual symbol, with the rest of the city (apart from the city centre) as a large mass, based on a uniform grid with a wide range of densities for a variety of government housing schemes (from 5000 to 20 000 dwellings per sector). The highest paid officials, with the largest houses, were located near the Capitol. Conversely, the greater the distance of a sector from the Capitol, the higher the density. Chandigarh was seen as a low-density and low-rise city, with a regular traffic system, so reducing cost of roads and infrastructure. Indeed, the stringent budget became the most compelling influence on architecture and urban design.

Consequently, each of the three major architects of the city developed an individual style, following a common layout of regular box structures made of brick and stone, with *brise-soleil* and *jalis* (perforated screens). Openings were kept small, with standard door and window sizes and precast roof elements. With little machinery available, bricks were made by hand on site. Boulders and small stones were used from the nearby riverbeds in a variety of patterns. All these cost-effective features resulted in the distinctive style of Chandigarh, built at a time when architecture and planning were closely linked. Today planners would say the city was more designed than planned. Le Corbusier was proud of the fact that the distances between buildings and spaces (ie, 400m and 800m) were based on the sequence of monuments in the Champs Elysées in Paris as a proven ideal of best practice. Yet, in reality, his assistant's measurements were incorrect and consequently, Le Corbusier used the wrong scale.

When Nehru visited the site in 1952, the city plan was visible, but with vast and vacant spaces. By 1966, administrative reorganization took place, resulting in Chandigarh being the seat of three types of Government: the Punjab, the new State of Haryana and also, the newly formed Union Territory. These three administrative entities required housing, leading to additional densities. So in many instances, two-storey terraced housing became compact four-storey apartments.

Now, Chandigarh is a hub of economic activity, with large numbers of vehicles and huge rush-hour congestion. Moreover, much of the housing and some public buildings from the first phase are now unsuitable (with, for instance, air conditioners blocking windows), and small units accommodating as many as three generations in a family. The city has to evolve, change and adapt to the twenty-first century.

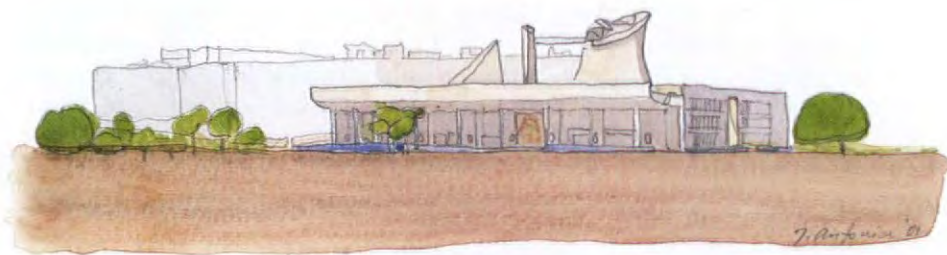
Yet, within the famous first phase of Chandigarh, are the pioneering works of Le Corbusier, Jeanneret, Fry and Drew. Here, within the housing units of the city are to be found the unusual form of the Gandhi Bhawan Memorial by Pierre Jeanneret, cinemas by Maxwell Fry and schools by Jane Drew, and some houses and other buildings by Le Corbusier.

The mystical Capitol area

Le Corbusier saw the Capitol as a sacred place – separate and protected. The monumental scale of the Capitol attempts to be both, precise and enigmatic, worthy of sacred places such as Teotihuacan in Mexico, the Giza Pyramids in Egypt and, most sacred of all to Le Corbusier, the Acropolis at Athens. Therefore, in assembling his elements of urban design, he avoided the conventional symmetry of the traditional Empire style and pursued the drama of a sacred theatre.

Having a fascination for numbers, proportions and symbols, all of which were incorporated into his design using his famous Modulor, he placed the Capitol buildings in their incredible complexity in an area of simple geometry. A diagram of two 800m squares was located on both sides of the axis of the central avenue. But, Le Corbusier abandoned the square on the right side of the axis because it coincided with the erosion of the river. Within the left square, another, smaller square, 400 x 400m was incorporated along the main axis, with an identical square mirrored on the right side. A series of obelisks, or masts, were used to mark out these squares to position the buildings within a setting of cosmological vastness, incorporating the backdrop of the Himalayas and the blue sky. So, within this defined area, Le Corbusier designed asymmetrical but lyrical buildings of emotional intensity and intellectual artistry, related through a series of pools, platforms and levels, expressing the sacred landscape of the Capitol.

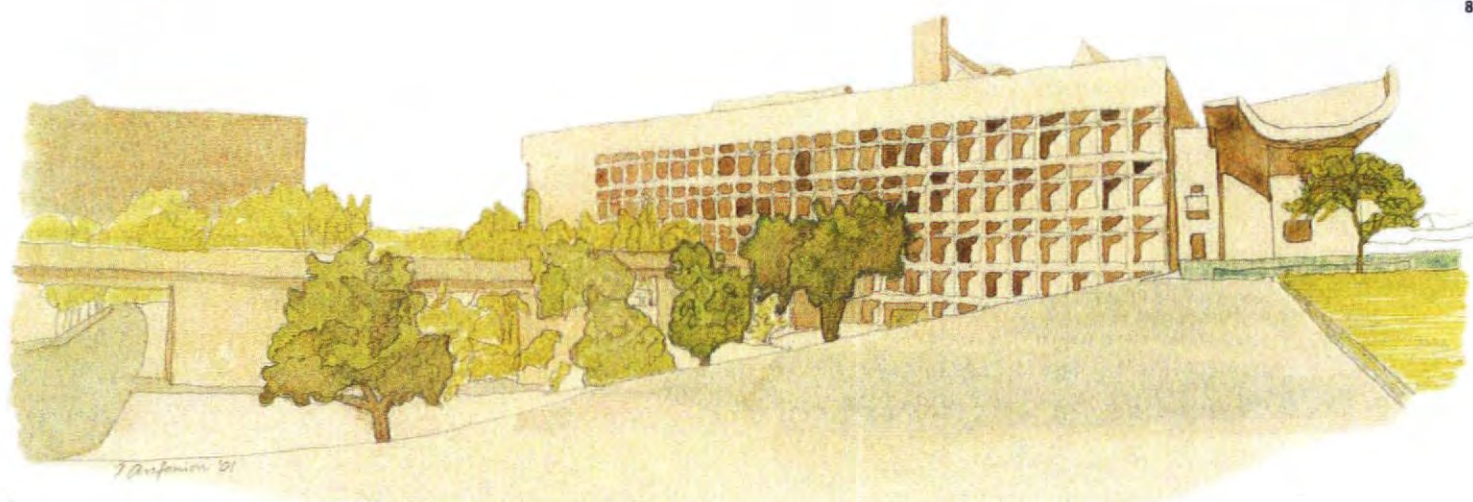
His main concept for the Capitol was to tap into the cultural traditions of India, while expressing the values of the mid-twentieth century. To achieve this, he used a variable balance of forms, with



6



8



7

6 The Assembly with the Secretariat in the distance. Seen from the Palace of Justice, this sketch conveys the desolate spaces between individual buildings. 7 The Assembly Building. The regular facade of the south elevation, with the outline of part of the Secretariat in the distance. 8 The Secretariat Building. The distinctive sculptural facade and interplay of light and shade covers an edifice 280m in length (as long as a seaside pier), accommodating seven Ministries.

columns, terraces, ramps and screens in a range of colours. Yet, in this vast complex of space, he related each building intimately to its own approach, entry, solid and void elements and even texture.

The Palace of Justice expresses order and power and consists of a rhythm of eight law courts and a high court. The entrance is through a four-storey open hall, divided by full-height brightly painted piers. The orientation of the building was dictated by the direction of the prevailing winds and the sun.

Directly opposite is the square shape of the Assembly building, reflected in a pool of water, visually doubling its size. The design of the Assembly was to convey the cosmic forces that rule human life. As in Abu Simbel, in Upper Egypt, sun and moon were to penetrate the interior of the building at significant times. The result is an astonishing interior of a dark hypostyle hall, leading to the bright and colourful circle in plan of the principal chamber and the pyramid of the lower house.

The main doors, in 55 brightly coloured panels on either side (a gift from the French Government) make up the largest painting undertaken by Le Corbusier, depicting his own philosophy of life, in terms of the cosmos, nature, man and the discovery of numbers. The strong colours he used ensure that the doors remain dominant from as far away as the Palace of Justice.

Behind the Assembly to the north-west is the Secretariat building, with its distinctive facade and interplay of light and shade. This

building houses the seven Ministries in an edifice 280m in length (the same length as the entire pier in Eastbourne) and 35m in height, accommodating 3000 civil servants. Each floor is reached by two giant ramps, with offices arranged on either side of a central corridor. The undulating roof is designed for recreation.

To Le Corbusier, the monument of the gigantic open hand, which turns in the breeze to indicate the direction of the wind, became India's symbol of giving and receiving. This monumental sculpture dominates the dramatic landscape and is part of a sunken court for public assembly, which he called The Pit of Consideration. In parallel with The Open Hand was to be The Governor's Palace as the crown of the Capitol, commanding the third edge of the huge space with the vast mountains as the backdrop. It was never built because Nehru thought it was symbolically inappropriate and extravagant. Other structures were also to be added (the Museum of Knowledge, still like the Governor's Palace, not yet started, while Geometrical Hill and the Tower of Shadows were not completed), exaggerating the vast distances between the great buildings.

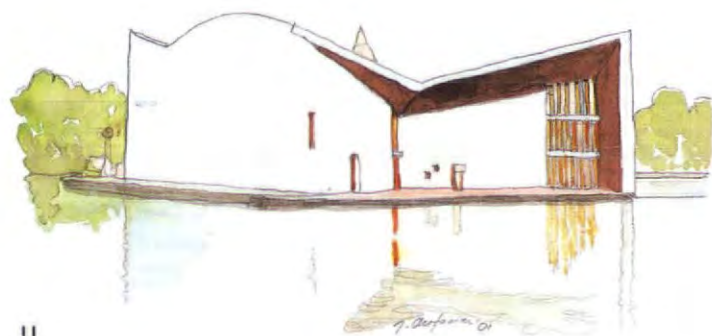
The distance between the Assembly and the Palace of Justice is 450m, equivalent to the entire length of the Acropolis (or three and a half times the width of Trafalgar Square). Since the many artificial mounds and landscape features that Le Corbusier planned have not been carried out, this area remains stark and untreated,



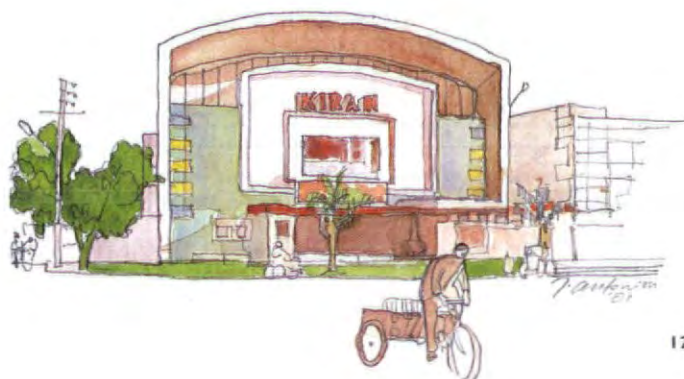
9



10



11



12

9 Detail facade of the Secretariat Building. The elaborate, almost abstract elevation at the centre of the building expresses the double volume spaces of the Ministerial offices. 10 Le Corbusier also designed a number of private residences in Chandigarh, including this house in 1955 for Madam Nirlep Kaur, a prominent Member of Parliament. According to her brother Ajit Singh Saini, Le Corbusier's design fees were paid in the form of a crate of red wine (for him a rare luxury in the Punjab at that time), which Ajit obtained from the then German Ambassador. 11 The Gandhi Bhawan Memorial in a reflective pool, within the University grounds, designed by Le Corbusier's cousin, Pierre Jeanneret. 12 A local cinema, one of many buildings designed by Maxwell Fry in the capital.

resembling an empty airport runway. Moreover, for reasons of security, each building is now separated by fencing and barbed wire. The result is a vast concrete deck with spectacular monuments, by implication, to Le Corbusier himself, since the Capitol stands in splendid isolation from the rest of the city and its people.

Walking through the desolate spaces between the buildings, with their rough and worn surfaces, the Capitol conveys an uncomfortable impression of a living ruin, frozen since its inception. However, the interests of Le Corbusier as an artist and those of the citizens of Chandigarh in the end appear to be not the same. The impression conveyed is that he would have preferred that the inhabitants were grateful to him for enlarging their emotional knowledge of architecture, which to him was a constant source of wonder and vitality. One can speculate that if the Capitol area really expresses the State Government's aspirations, some attempt would have been made to complete and sympathetically add to the urban design. So far, this has not happened. Moreover, 50 years on, the Capitol is still not a place for the people to show civic pride. His ideas on cosmology and mysticism were cryptic and esoteric. Yet, for him, they were to be understood and accepted by everyone, without explanations.

Today, with the complexities and heavy technical demands on modern architecture, it would be impossible for one designer to take on such a colossal task on his own. He insisted in solving all

building problems without expert advice. He was also fearful of any form of dialogue to avoid others influencing or compromising his ideas. Although Le Corbusier took courageous risks at all levels of design, neither the city, nor the buildings have been a practical success. He did not master the climate in terms of hot breezes, the monsoon and uninsulated concrete. Similarly, at city scale, the isolation of the routes and avenues, together with zoning regulations, do not encourage intense urban activity to take place. The city's own rigid character, lacking urbanity, is an image of a vast series of metropolitan hamlets.

In his book *The City of Tomorrow* (1937), Le Corbusier shows a vacant rectangle with the following words within it: 'Left blank for a work expressing modern feeling'. With his great concern for area design, there was the hope that Le Corbusier himself could have fulfilled the ambitions of such an urban space admirably within the Capitol of Chandigarh. Yet, like most of his exciting concepts that have influenced generations of architects, Chandigarh is important for what it could have been, rather than what it is today.

JIM ANTONIOU

Jim Antoniou, who wrote and illustrated this article on urban design, visited Chandigarh for several days as part of an extensive trip to India, sponsored by Cox and Kings, the travel agents. This article is part of an occasional series in AR by Jim Antoniou on international examples of urban design. Other examples include Historic Cairo, Egypt (March 1998); Cartagena, Colombia (October 1999); and The Forbidden City in Beijing, China (April 2001).

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| | forum <small>Let us know your views, join the ongoing discussions, strong reactions to View from Ramallah (Jan-Mar 2002)</small> | ar conference <small>Greening the European City at the RIBA, London (19th March 2002). Sponsored by MIPIM</small> |
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There is a jobs section, directories of museums and galleries, of design journals and websites, and of architects and photographers featured in The Architectural Review – and of course latest information about our awards: the ar+d prizes for emerging architects, with over 700 entries in 2002, and the newly inaugurated Project Prizes at MIPIM, the annual international property and development fair. And you can subscribe securely online.

**THE ARCHITECTURAL
REVIEW**

Image perfect

Offices for a thriving American copy centre were inspired by the firm's history and tradition, and by the nature of the business.

OFFICES, OKLAHOMA CITY, USA
ARCHITECT
ELLIOTT+ASSOCIATES ARCHITECTS

A series of floor to ceiling acrylic sheets suspended between mirrored walls are inscribed with fragments of history. Words and letters are reflected to infinity.



2



3

OFFICES, OKLAHOMA CITY, USA
ARCHITECT
ELLIOTT+ASSOCIATES ARCHITECTS

ImageNet in America is a chain of copy centres that has expanded from a typewriter-repair shop, with one man working on a kitchen table, to a national organization with 350 employees and eight regional offices. In designing the firm's new offices in Oklahoma City, Rand Elliott of Elliott+Associates has used ordinary materials and inexpensive construction to encapsulate the firm's history, and to express the fact that ImageNet is at the cutting edge of the copying/imaging business. The office represents a significant move from an old garage to the third floor of a restored 1920s building in Automobile Alley, at the heart of the city's new business and technology district.

Expression of the firm's history is contrived through design of the lobby. Walls have been given a textural lining of copy paper made into uneven bricks; and the same paper has been used to form three plinths. On top of each one is a rare antique typewriter. Light playing over the pale paper planes illuminates their soft irregular texture and lends them an abstract sculptural quality. From this padded cell you pass into the workspace which, in contrast, is crisply designed with white walls and floor, glazed divisions, overhead ducting and a glass conference room at the centre.

The various sections – copy room, scanning and imaging – are repositories of high technology.

With the manager's office and data department tucked away from public view to the north of the site, the sections are organized so that customers can wander around and inspect the production and assembly process. The tour is enlivened by an installation running down the middle of the room. Conceived as a play on the business, the work consists of a series of acrylic sheets suspended between mirrored walls and inscribed with fragments of copying history and the story of ImageNet. Words and letters, superimposed and multiplied, are reflected to infinity and, in passing between the sheets, the viewer becomes part of the copying process.

At night, blue fluorescent light suffuses both ImageNet and the adjacent Vesper building, where Elliott is creating premises for a sister company engaged in recycling copier-ink cartridges.

Architect

Elliott+Associates Architects

Project team

Rand Elliott, Brian Fitzsimmons, Amberly Russell

Photographs

Hedrich Blessing

2

Gleaming white workspace, with glass wall of conference room to left, and infinity panels beyond.

3

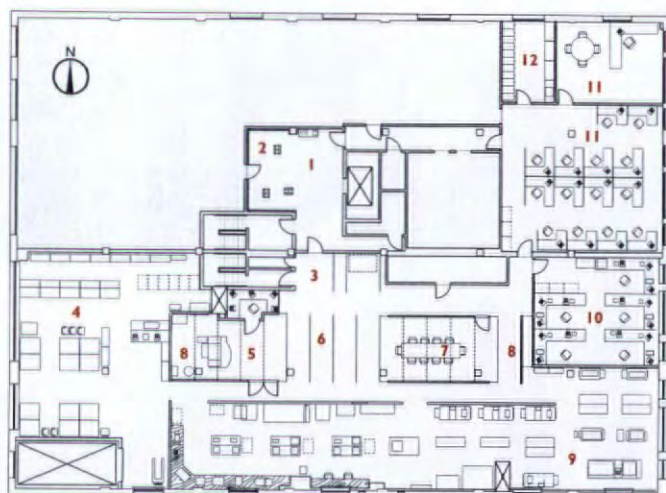
Glass conference room and infinity panels.

4

Detail: antique typewriter on copy paper plinth in lobby.

5

Lobby lined with blocks of copy paper and antique typewriters on plinths.



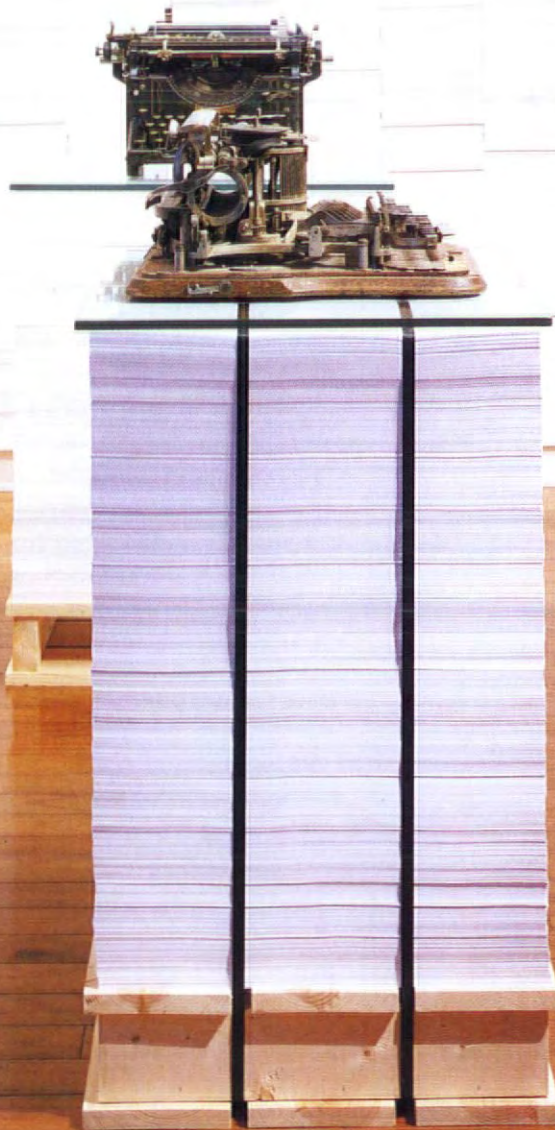
- 1 entrance lobby
- 2 paper wall
- 3 entrance to workspace
- 4 reception
- 5 copy room
- 6 infinity panels
- 7 conference room
- 8 mirrored wall
- 9 production
- 10 scanning/imaging
- 11 office
- 12 store



4

Our History

BMI Systems was incorporated in 1977, and the business originated in 1956 as a small, one man typewriter repair shop called Southwest Typewriter Company. Bobby Roberson started this company from his garage in South Oklahoma City. Today BMI Systems and its affiliates, employ over 400 people in eleven cities and five states.



Seeing the light

Claudio Silvestrin's reticent, austere and luminous architecture is always apt for display. He has redeveloped a factory for a gallery that takes references from its predecessor.

Claudio Silvestrin has been responsible for a number of small galleries – in London, Florence and Santa Fé; of these, probably the best known is the pure volume of the White Cube in Hoxton, London. His now-familiar architecture, whereby buildings become elemental compositions of dense mass, undecorated planes and luminous emptiness, induce the tranquillity necessary for contemplating works of art. As an architect he is content to stand back, to provide a timeless frame within which life of whatever kind can take place.

The contemporary art centre, designed by Silvestrin for Fondazione Sandretto Re Rebaudengo in Via Modane, Turin, is his most ambitious gallery building so far. Specializing in works executed in the '80s and

'90s, the foundation did not want a museum for a permanent collection, but a living centre in which young artists could experiment. Temporary exhibitions, lasting three or four months, take place in the main hall and long gallery; there are artists' workshops, video and teaching rooms, an auditorium for lectures and conferences seating 150 people, a café and a restaurant.

Silvestrin won the commission in an architectural competition to design the new building on a site previously occupied by a small factory. Its demise and replacement by an art centre did not at first prove popular with the local, largely working-class, community, and for a time construction was held up. Once built, the neighbourhood took to the centre with enthusiasm.

Entrance to the galleries is free and the bookshop and café are additional attractions. To the south, the building looks onto municipal gardens and is lined with Silvestrin's monumental benches – now favourite meeting places for local people. Sadly, the practice's proposal to replace the gardens with a landscaped sculpture court was not adopted, and though popular, the gardens are not an inspiring setting for the building.

The shed structure of the building – a long rectangle, 9m high and stretched out for 130m – plainly refers to that of a typical northern Italian factory. Aesthetically, Silvestrin is much attached to the single attenuated form, liking the simplicity and exaggeration of internal volumes that it readily permits. (He has recently repeated it in design of a

house in San Francisco). But here form is underpinned by practicality. A single level (with two floors inserted at both ends) makes circulation easy to arrange, as well as day-to-day management of gallery activities. As usual with Silvestrin's buildings, opulence is suggested by a careful mixture of grandeur (of scale and interior space) and restraint – achieved paradoxically because the budget was tiny. Above all, this is a supremely gentle building; its constituent planes are gently reflective, washed and, in places, dissolved by the northern Italian light, and enriched here and there by the warmth of cedar. Externally, the building is clad in creamy grey Lecce stone, subdued against the sky. The slenderest of glass slots, cut into the long south face at regular intervals, break the



1
Main entrance in south wall faces
park.
2, 3
The great luminous gallery.



2



3



north-facing longitudinal section



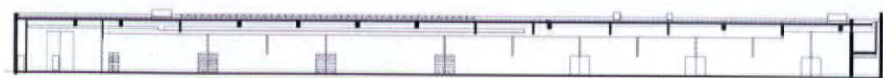
restaurant section



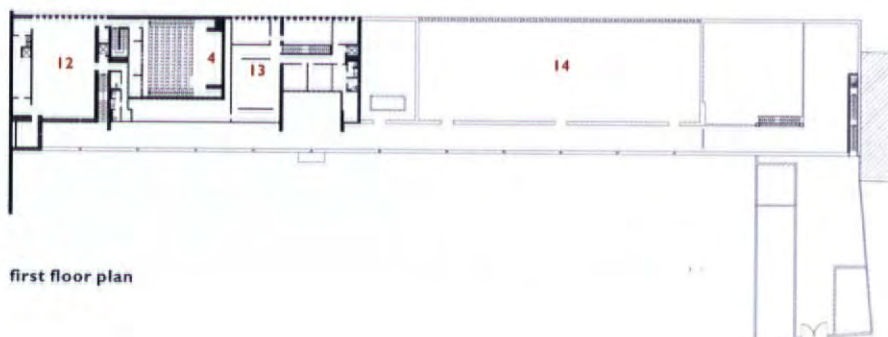
auditorium section



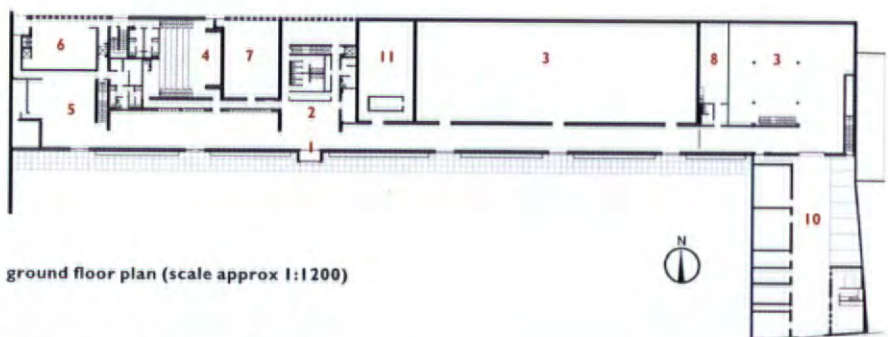
gallery section



south-facing longitudinal section



first floor plan

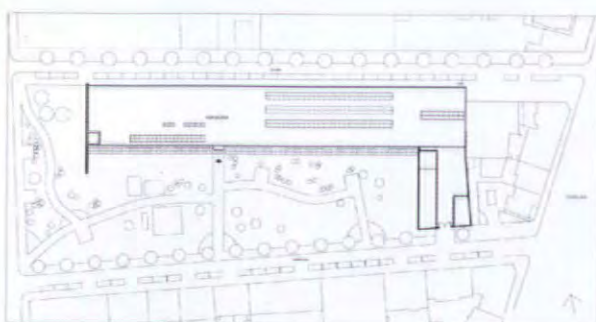


ground floor plan (scale approx 1:1200)

ART CENTRE, TURIN, ITALY

ARCHITECT

CLAUDIO SILVESTRIN



- 1 entrance
- 2 reception
- 3 main gallery
- 4 auditorium
- 5 cafeteria
- 6 kitchen
- 7 classroom
- 8 workshop
- 9 store
- 10 plant
- 11 small gallery
- 12 restaurant
- 13 offices
- 14 void

monotony of the roof beam, compose a rhythm and allow thin shafts of light into the interior. To the north, the stone face is broken by blocks of broader incisions that, in the main exhibition hall, form a slotted clerestory.

Where the centre confronts the road to the west, an immense stone screen shields the building from view, so that its extent is only revealed by degrees as you pass; the screen is also used as a hoarding for advertising exhibitions and events.

You enter the building from the gardens to the south. To the right, a double-height corridor-cum-gallery stretches the length of the building, apparently to infinity. Floor to ceiling openings cut into the dividing wall lead to the main exhibition hall, an immense volume illuminated by the clerestory on the north which diffuses light over the edges of the suspended ceiling and over white-painted walls.

The same vocabulary – light used to accentuate spatial simplicity and dignity – has been extended west into the more domestically scaled parts of the building. Cedar furniture in the bookshop and at the entrance – the handsome monolithic reception desk – was designed by the practice; as was the cedar-framed auditorium seating. (Research had shown that existing seating would have been far too expensive.) Sparingly designed and comfortable, Silvestrin's version – called *Le Erbe* – is being put into production by a Turin firm.

Architect

Claudio Silvestrin, London

Project team

Claudio Silvestrin, James Hardwick, Joanna Eade, Massimo De Conti, Simona Pieri, Pierluigi Veneziani

Structural engineer

SB Tietz & Partners, London

Auditorium seating

Astolfi & Mattiazzi, Turin

Photographs

James Morris/Axiom

4

Cedar reception desk.

5, 6

South wall is penetrated by very fine slots.

7

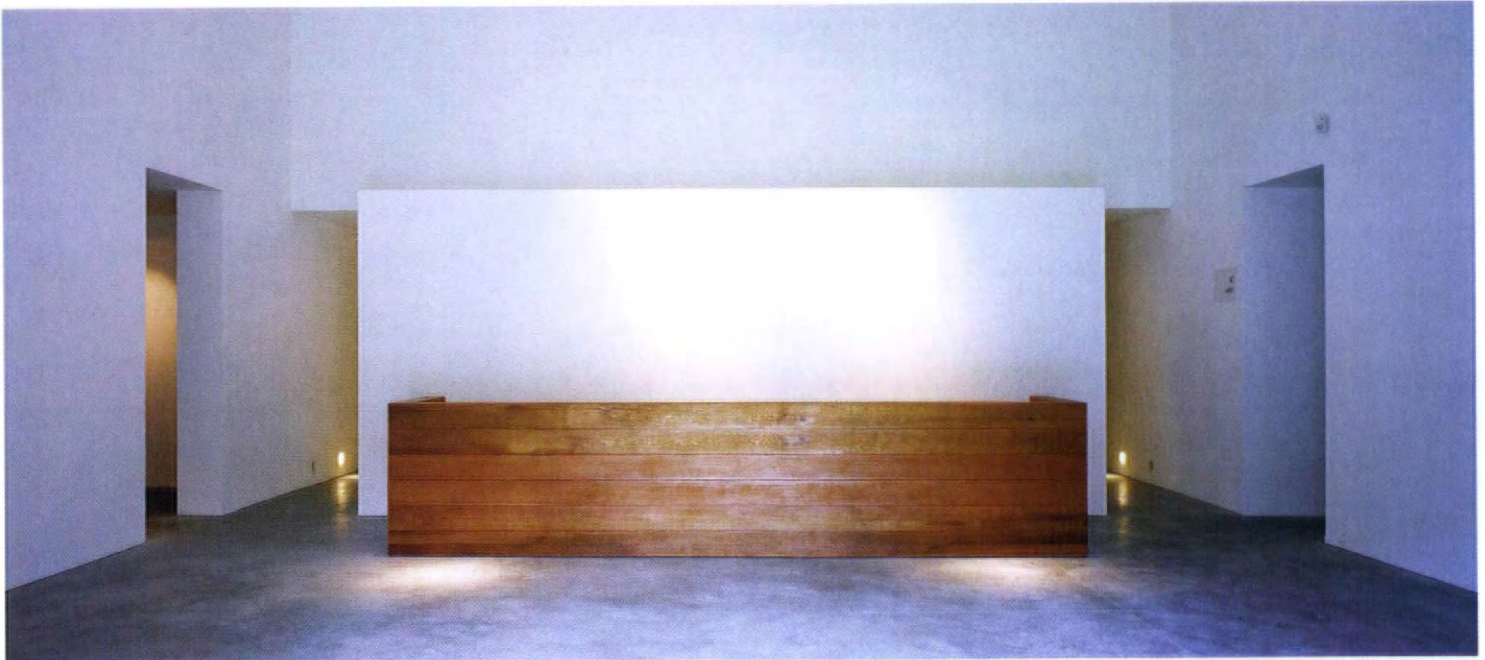
First floor restaurant.

8

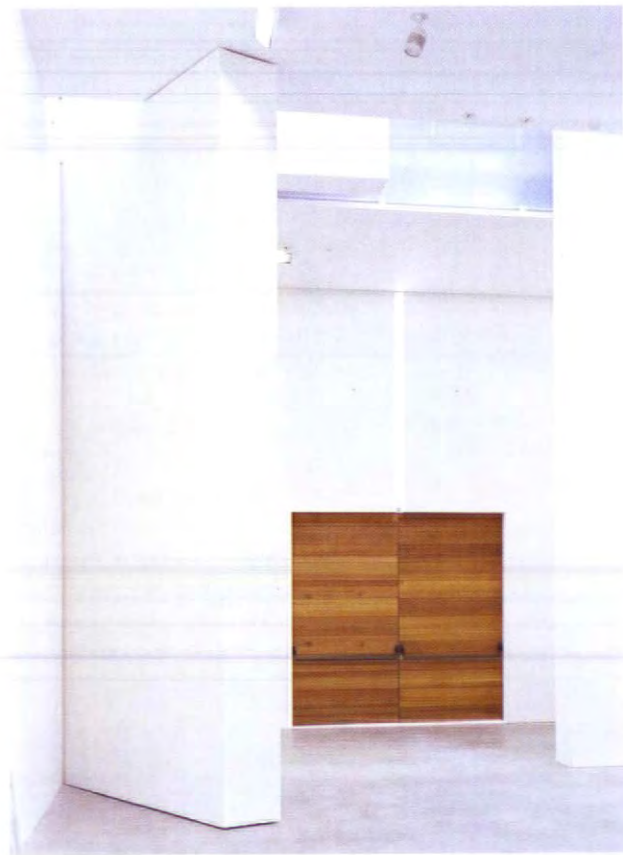
Office.

9

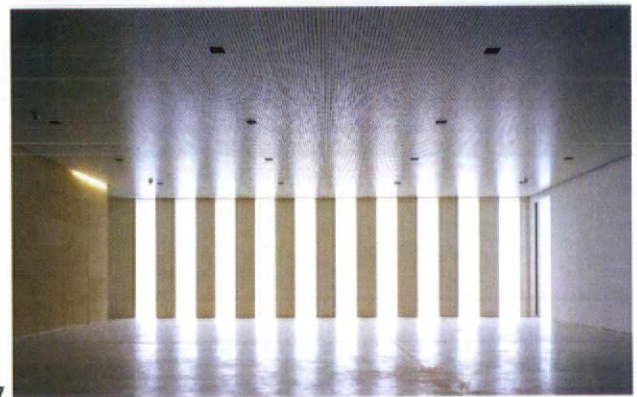
Auditorium.



4



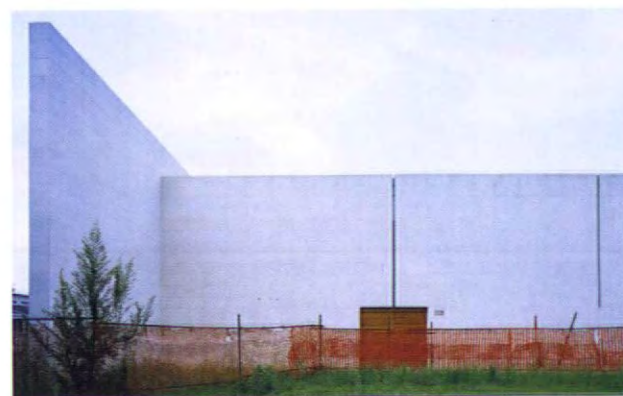
5



7



8



6



9

ar house

HOUSE, TORONTO, CANADA

ARCHITECT:
SETH STEIN ARCHITECT



Seth Stein first drew international attention with design of his own house in London (AR October 1996). Occupying an old builders' yard and absorbing some dilapidated Victorian stables, the house was conceived as a series of different but interlocking rooms around a secluded courtyard. Essentially Modernist in spirit, the composition was delicately interwoven with references to the Victorian origins of the site and English tradition, to the sequestered houses of more southerly latitudes, and Luis Barragán (whose work Stein much admires).

Something of that approach occurs in his recent house in

Toronto. There is the manner in which the building is revealed by degrees as you move from the street to the entrance and inside, and the same kind of spatial interlocking and extension of the interior into exterior rooms. The deployment, in Barragán manner, of brilliantly coloured planes which was seen in the London house reappears here too, as does his appealing attachment to making concrete cylinders into cloakrooms and to brimming pools of water.

In Toronto, Stein has once again taken his cue from the site. This is long and narrow and slopes up from a forested ravine

in a suburban area of the city. Seen from the street, the house is inscrutable, and in its graphic simplicity the building looks like a child's drawing. Two white cubes under pitched roofs are separated by a double-height wall of sand-blasted glass which incorporates the front door. To get to it, Stein leads you through two small courtyards – the second of which contains water splashing over stones. Once inside (as in London), you must skirt the cylindrical cloakroom (the cylinder is carried down to basement level to become a steam room) to appreciate the full extent of the building which stretches out to the main living

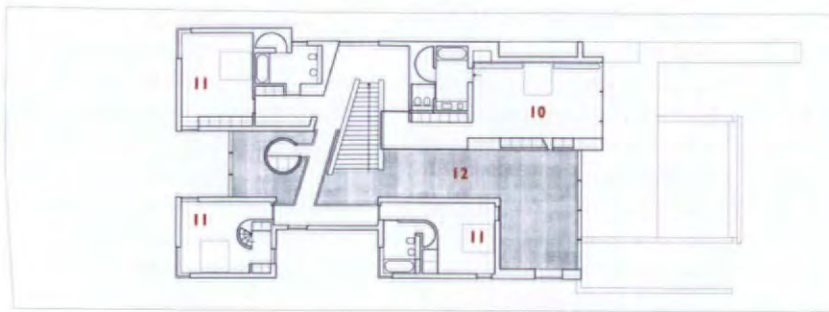
An unassuming house in a Toronto suburb fronts an intricate spatial play of light and colour.



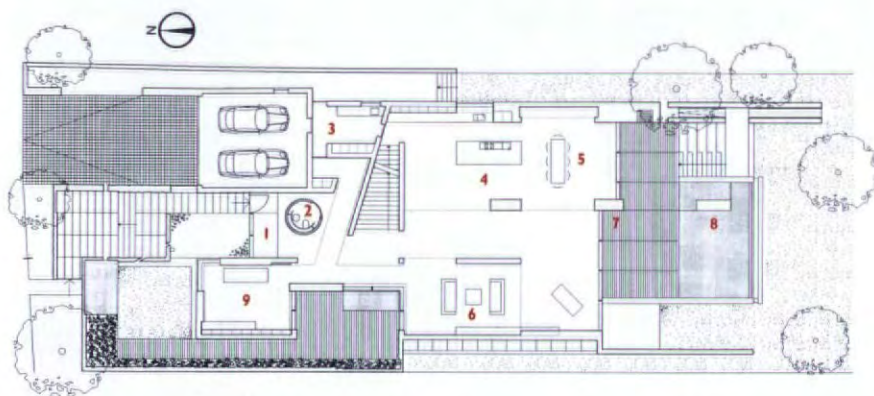
2

Open house

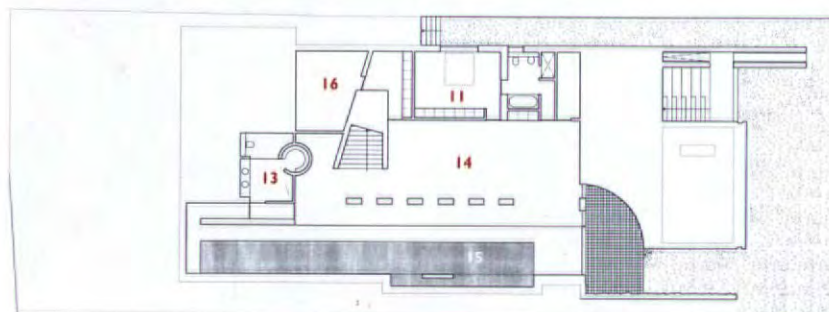
- 1 South front opens to terrace and reveals 'Shaker houses' on stilts inside.
- 2 Reserved north (street) front.



bedroom level



ground level



basement (scale approx 1:350)

- 1 entrance
- 2 cloaks
- 3 mud room
- 4 kitchen
- 5 dining room
- 6 living room
- 7 terrace
- 8 pool
- 9 study
- 10 master bed
- 11 bed
- 12 void
- 13 changing and steam
- 14 activity area
- 15 lap pool
- 16 plant

HOUSE, TORONTO, CANADA

ARCHITECT

SETH STEIN ARCHITECT



north-south section

quarters and south wall of glass and aluminium. Beyond it is a cedar terrace and brimming pool at the edge of the ravine.

Inserted into the double-height space are four little abstractions of houses – Stein calls them 'Shaker houses' to emphasize their archetypal character. They are supported on columns leaving a grand two-storey volume on the south, and a central aisle tracing the main axis of the house. Each of the houses, linked by a bridge across the aisle, has a bedroom (one has a small spiral stair to a secret space under the roof). Underneath, they shelter the kitchen, a study and a more intimate sitting area.

If volumetric juggling is one of Stein's great strengths as an architect, so is his manipulation of light. The double-height section between the elevated bedrooms is covered with a flat glass roof. This is shaded by an elegant brise-soleil ceiling that extends outside over the terrace and can be adjusted to admit stripes of light.

At basement level, which is principally taken over by children's activity, a lap pool bordered by planes of brilliant blue and red catches the light from a glazed slot overhead, and reflects it onto a dividing wall of frosted glass. Similarly, a granite slab submerged in a pool on the west terrace sends the rays of the evening sun rippling over interior walls. It is such details, revealing the architect's pleasure in playing with light and reflection, that add another dimension to the already intricately layered and interconnected design – one that has been executed with supple intelligence and elegance. V.G.

Architect

Seth Stein Architect, London

Photographer

Richard Bryant/Arcaid

3, 4, 5

'Shaker houses' in the long top-lit living area modify space and provide private bedrooms at first floor level.

6, 7
Basement with lap pool.



Dutch firm Ahrend has brought out two new ranges of office furniture, one of chairs and the other of desks and tables.



AHREND 230

The chairs range, Ahrend 230 designed by Kees de Boer (501), offers dozens of variations of form and finish. The manufacturers claim that it is sufficiently versatile to suit everyone. Seat height is adjustable from 400mm to 540mm. The backrest can be varied by 80mm in height, and seat depth is adjustable by 110mm. The angle between backrest and seat is adjustable through a wide range and a damping

mechanism ensures smooth adjustment.

The seats are designed to support the pelvis and back and give with users' movements. Resilience can be adjusted to match the weight of individuals. To avoid undue pressure on the thighs, front edges of seats have extra soft filling and slope forward. Optional soft armrests can be rotated from 44 degrees inwards to 11 degrees outwards.

Visitors' and conference chairs are made in the same style, but they do not have castors nor adjustable options (though they can be provided with and without armrests, and can be stacking or non stacking). A weight-independent mechanism allows the chair to adapt to different users by automatically responding to the weight of users and the degree to which they want to lean back.

Enquiry 501 www.arplus.com/enq.html





AHREND 500

Ahrend's new desk and table range, 500, designed by Wijnse Rodenburg following a concept by IDE Architects (502), is made for adaptation as offices change, both over the year and during the day. Easy to erect and reconfigure, some of the tables are provided with castors so that they can be shifted to create meeting places, group workspaces and individual desks. Working heights of tables on castors can be varied between 680mm and 960mm, while the heights of static 'seated/standing' desks can be adjusted between 620mm and 1220mm.

The 500 range is ideal for hot-desking. An electronic memory is available with electrically adjustable tables so that four people can each store four of their different height preferences. Otherwise, height adjustment is manual.

Cable boxes control wiring. Optional organization rails allow accessories like flat screens and lamps, and trays and partitions to be chosen by individual users. There is a wide range of worktop shapes and finishes.

Enquiry 502 www.arplus.com/enq.html





503

Susan Dawson
reviews the latest in
ironmongery, interior
finishes and shading
systems.

503 ARMOURCOAT

The Donna Karan showroom in New Bond Street, London is fitted out with a range of opulent Armourcoat finishes. The walls are finished with smooth, glass-like polished plaster in black and white; a free-standing rear wall is formed of gold leaf applied to plaster, and the cantilevered shelves have a faux Portland stone plaster finish. The system, a modern reworking of an ancient technique, comprises a gypsum or cement base blended with slaked lime, aggregates and natural pigments applied in successively thinner layers.

Enquiry 503 www.arplus.com/enq.html

504 BOYNETT

The Outrageous Fabric Company has produced the Ostrich collection, a series of realistic but artificial animal skin effects, for contract and domestic upholstery applications. The fabrics are durable, easy to clean and cost effective. They are available in natural colours, but also in vivid pink, ice mint, limes, creams and reds.

Enquiry 504 www.arplus.com/enq.html



504

505 DURAT

Developed by Finnish company Tonester, Durat® is a solid polyester-based material which is suitable for interior surfaces such as worktops, display counters and bar-tops; coherent jointless surfaces many metres in length can be produced, with various forms of edge design and intarsia patterns. It can be moulded into shapes to integrate worktops with wash basins and to produce coordinated bath tubs and stools. The material contains 50 per cent recycled plastics and is itself 100 per cent recyclable. It is available in 46 standard colours.

Enquiry 505 www.arplus.com/enq.html



505

506 INTERFACE EUROPE

Three new designs – Happening, Amplified and Psychedelic – have been added to the Chenille Warp carpet tile range. Their bold colours and strong patterns can be used alone or in conjunction with Chenille Warp to create rug effects or to break up large areas.

Enquiry 506 www.arplus.com/enq.html

507 KVADRAT

A new curtain collection includes fabrics Raita, Ruutu and Tasso, reinterpretations of Scandinavian stripes and checks by textile designer Satu Montanari. Hagi, a textile inspired by English artist Bridget Riley and originally printed in black and white, is now introduced as 'a pure colour explosion'. Fase and Sekvens are fabrics with simple graphical patterns based on a single geometrical figure, the square.

Enquiry 507 www.arplus.com/enq.html



506



507

508 OBJECT CARPET

Object Carpet, German producer of hard wearing wall-to-wall carpets, has introduced Metal, a new collection of contract carpets. The collection is made of metallic yarns in three different textures and two colours, gold and silver. The carpets have unique qualities – a cool metallic appearance with the soft touch of fabric. In colour and pattern they are relatively neutral to emphasize the effects of light and shadow on the metallic yarn.

Enquiry 508 www.arplus.com/enq.html



508

509 FORBO

Inspired by the Pointillists, the new Artoteum collection of floor coverings uses the same principle of juxtaposing pure unmixed colours together in stripes and dots. The result is an innovative range of patterns and colours with a unique structure, neither marbled nor plain. Four patterns are available: Scala, Piazza and Graphic, and a rich new one, Passione. Artoteum is available in 2m wide sheets and 27 different colours. It can be used in conjunction with Marmoleum Global 1 – a collection of over 100 colours and five patterns.

Enquiry 509 www.arplus.com/enq.html



509

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510

510 MERMET

The new TGV station at Aix en Provence, designed by AREP, has a dramatic wave-like roof and a huge east-facing glass-fronted departure concourse. Sunlight and glare are controlled by a series of indoor blinds, 1.5m wide and 3m high and made from E-Screen 4205, 0207 fabric in a white/pearl colour. The blind material distributes light evenly, prevents glare and filters out UV rays. It is non-flammable (fire-resistance categories M1 and B1) and easy to maintain.

Enquiry 510 www.arplus.com/enq.html

511 COLOMBO

The streamlined shape of Mach, a range of handles for door and windows, is designed to make the handles pleasant to touch and easy to grip. The handles are available in four different finishes; polished gold, matt chrome, matt nickel and zirconium gold. The zirconium gold finish, applied by a PVD (physical vapour deposit) process, is highly durable and guaranteed for 30 years.

Enquiry 511 www.arplus.com/enq.html



511

512 VIELER INTERNATIONAL

Vieler, the German stainless steel and aluminium hardware company, has reviewed and in some cases redeveloped its range of products to achieve a visually consistent approach. The company is known for its architectural ironmongery, in particular its door handles, but it also produces bathroom and cloakroom accessories, barrier-free fittings, as well as ashtrays and bins for the contract market. The new products, the Vieler architectural range, can be seen in a brochure produced by the company.

Enquiry 512 www.arplus.com/enq.html



512

513 D LINE

The Danish architectural hardware manufacturer, d line, with SALTO, the Spanish electronic access control specialist, has developed a new concept; a minimal door lever design combined with advanced electronic access control management system. The system, which uses smart cards or IButtons, is designed to deal with security and access requirements of hotels, schools, universities, hospitals, offices and other buildings. A high level of security is achieved by using chip cards rather than magnetic strip cards, and by fitting all decision-making electronics on the inside of the door so that they are completely protected. The system requires no wiring and can be used on new and existing building projects.

Enquiry 513 www.arplus.com/enq.html



513

514 SILENT GLISS

Silent Gliss offers a range of shading systems including roller, pleated and venetian blinds, and curtain tracks. The Panel Glide system is an elegant method of screening floor-to-ceiling windows. It comprises full-length panels of fabric, 500mm to 1m wide, which are suspended from a discreet glider channel. When closed, the panels stack against each other; when open, they slide across the glass, weighted by bars set in their bases. The system also makes an effective room divider.

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514

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email: david.schindler@reedmidem.com

Specifier's Information



900 www.arplus.com/enq.html

Wright Style

Wright Style, one of the leading suppliers of steel glazing systems in the UK, has supplied the University of Hong Kong with a range of high-performance glazing products. Approximately 750m² of specialist fire-resistant glazing systems were provided, including the new SR series curtain wall system, FI Series windows, screens and doors and F30 Insulated Glass – all of which provide 30 minutes fire integrity and insulation.



901 www.arplus.com/enq.html

Vetrotech Saint-Gobain

Vetrotech Saint-Gobain products have been used in the redevelopment of the South Stand of Old Trafford football ground, home of Manchester United FC. SGG Pyroswiss Classic has been installed in single doors and sidelights in a VIP lounge and press staircase. It was chosen for its superior properties; 30 minutes of fire-resistance with safety glass characteristics. The Class A glass has high-impact mechanical strength and tempered glass break-safe characteristics, tested to BS 6206. It is available as a clear glass, or can be tinted to SGG Parsol grey, green or bronze.



902 www.arplus.com/enq.html

Pilkington

A new seven-storey building in Red Lion Street, off High Holborn, London, has a glazed facade which uses the Pilkington Planar™ system. The double-glazed Planar™ facade comprises a 10mm inner pane, a 16mm air gap and a 6mm Pilkington K™ glass outer pane. The system provides a frameless flush glass envelope with no need for conventional frames or mullions. This is achieved by using a series of countersunk bolts at the corners of the glass panels with 902 austenitic stainless-steel fittings.



903 www.arplus.com/enq.html

Vetrotech Saint-Gobain

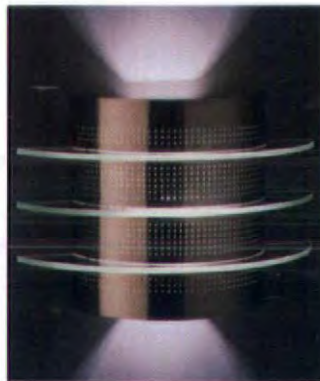
Specialist fire-resisting glass products by Vetrotech Saint-Gobain have been used in construction of the Golden Jubilee Wing, a new six-storey building, part of King's College Hospital, London. Designed by Nightingale Associates, it has a central atrium with a bridge across it; fire resisting glass has been used for the perimeter walls of the atrium, for the bridge, and for internal partitions and front entrance and secondary door systems. Nearly 600m² of SGG Pyroswiss Classic, SGG Pyroswiss Extra, SGG Contraflam-N2 and SGG Swissflam Lite were used in the project.



904 www.arplus.com/enq.html

O'Donnell

A new Crowne Plaza hotel in Marlow, Buckinghamshire, has been fitted out with bespoke furniture by O'Donnell Contract Furniture. Bedroom furniture includes wardrobes with coloured melamine interiors and solid walnut mirrored doors, headboards and bedside cabinets, etched glass-topped coffee tables, desks and leather-topped luggage racks. The items were manufactured to a pre-set schedule and stored in the warehouse so that they could be delivered on site as soon as they were required.



905 www.arplus.com/enq.html

Aquila Design

The Moonlight Spheo fitting is the latest interior lighting unit from Aquila Design. It has a stainless-steel body with three clear glass plates which diffuse the light and create a modern, spacious feel. The Spheo is available in two shapes, Spheo Wall and Spheo Angle, of which the latter is designed to fit into a 90 degree space. Both take lamps of up to 150W.



906 www.arplus.com/enq.html

Abacus

Abacus, a major manufacturer of canopies and passenger shelters, offers a range of services including design, installation and maintenance. It designed shelters for South Yorkshire Passenger Transport Executive (SYPT), for rural and urban areas, and specifically for Sheffield's Supertram and its city centre. Three special waiting shelters have been designed, manufactured and installed for SYPT at Hillsborough bus and train Interchange. They comprise a cycle/waiting shelter and two walkway shelters, 38 and 23m long respectively, to give protected access throughout the site.



907 www.arplus.com/enq.html

Carl Stahl

X-tend is a stainless-steel wire mesh system tensioned between a stainless-steel cable framework. It can follow any form and withstand large loads and stresses, without appearing visually overbearing – the mesh is spaced between 60 and 80mm apart to give a transparent appearance. X-tend is suitable for hazard-protection systems on bridges, ramps and staircases, and can be used to support climbing plants or tensioned to form curves or to create tent-like structures.

DIGITAL BY DALEKS

DESIGNING FOR A DIGITAL WORLD

Edited by Neil Leach. Chichester: John Wiley.
2002. £24.95

Conferences don't usually make good books, especially not architectural conferences, whose contributors tend to rely heavily on visual aids and rarely bother to write proper papers. Some chapters of this book, which is based on a conference held at the RIBA in June 2001, are effectively ruined by the process of translation from platform to page. The group or practice known as Robotic Research, for example, is represented by one of those lazily transcribed interviews in which the questions are almost as long as the answers. The artificiality of the form is heightened because the three people being interviewed are combined in one voice.

One imagines them speaking in unison like Daleks. It is impossible to tell how interesting their projects – mainly exhibitions and pieces of software – really are. But then even work that we already know is interesting – Foreign Office Architects' Yokohama Ferry Terminal (AR January 2003), for example – also suffers from the change of medium. A lecture which, in the version I saw, was illustrated by about 100 slides becomes impossible to follow when printed on the page with only a handful of photographs and drawings. Not that the properly written papers are always much more illuminating. The book contains a number of articles by members of the 'ever decreasing circles' school of architectural theory, which make

many references to the writings of other members of the school but few references to anything recognizable as the real world. And yet there are some interesting ideas here, and it is worth having them collected, sorted and stored in a convenient format (ie, a book).

Editor Neil Leach's own contribution entitled 'Forget Heidegger' is woefully shallow (is he being deliberately contrary?) but his introduction to the whole book is a useful summary and his sorting of its contents under four headings – Culture, Cities, Tectonics and Realities – is sensible and helpful. Buy this book to catch up with the latest thinking about computers and architecture, but don't expect a good read.

COLIN DAVIES

SAD SORIANO

RAPHAEL SORIANO

By Wolfgang Wagener. London: Phaidon Press.
2002. £39.95

Raphael Soriano is one of the great heroes of postwar Californian architecture but a curmudgeonly character and a steadfast belief in a machine-based architecture led to his recent obscurity. Access to the archives at CSPU Pomona, and the enthusiasm of the photographer Julius Shulman, himself a Soriano client, has allowed Wolfgang Wagener to produce a comprehensive and well-illustrated if rather unrevealing overview of his oeuvre. Wagener's sources are thorough although almost exclusively secondary. He makes good use of them – his initial chapter on the development of post-

war American architecture is as good as I have read anywhere – but the main text, 'Pioneering Steel Houses: 1935-1970', lacks the immediacy which primary research would bring. What was it like to hire Soriano, or to work for him? – questions which Al Grossman or Pierre Koenig could still answer, if asked. In many ways, the concluding catalogue raisonné provides as much, if not more information about his buildings as does the main text. And here is this book's real value, for it brings together a hitherto confusing assemblage of works referenced by various authors such as Esther McCoy, Reyner Banham, Elizabeth A. T. Smith and myself.

For one familiar with Californian architectural scholarship, it was irritating to recognize, all too frequently, well-worn wordings or close paraphrases of one's own writing, and to see folklore embodied in the text: Craig Ellwood, for example, never worked for Soriano. Wagener discovered Raphael Soriano ten years after I did, but by then, sadly, Soriano was dead. For a man with such a zest for life – 'Joan Crawford', he would say, 'now there was a woman' – this book is a small reward. But for those who did not know him, it certainly deserves a place on the bookshelf.

NEIL JACKSON

ACKERMAN ON PAPER

ORIGINS, IMITATION, CONVENTIONS: REPRESENTATION IN THE VISUAL ARTS

By James Ackerman. London: MIT Press. 2002.
£30.95

This is a remarkable and peculiar book: it is written in an extremely laconic style, rather as if Professor Ackerman was now fed up with people asking his opinions and was barking out short, sharp and definitive answers. This effect is magnified by the fact that the chapters have previously been published separately for different purposes, which has resulted in some repetition, and by the book designer choosing to space both lines and paragraphs very widely. The result of all this is that the book reads like a school textbook (with some editorial oddities or inconsistencies), or possibly an A grade essay by a 16 year old star pupil.

One might therefore be distracted from the fact that Ackerman is here distilling a lifetime's observation and scholarship into some concise observations of great value. This is primarily a study about the ways in which architects capture images on paper: Ackerman presents Villard de Honnecourt's drawings in some detail; accepts Lotz's conclusion that 'the major achievement of Renaissance architects had been to establish for architects the convention



Josef Frank's D House (1953), one of the later and most mellow works of the stern Austrian Modernist who fled from his native Austria to Sweden in 1933 to escape increasing Nazi influence. From *Josef Frank* by Christopher Long, University of Chicago Press, Chicago, \$70 (£49), 2003: a detailed and sympathetic exploration of Frank's work as designer of buildings, gardens and furniture, and the way in which he helped to bring Functionalism from its heartland in Germany to Scandinavia and foster it there.

of orthogonal drawing'; investigates early perspectives and sections; and attempts a definition of da Vinci's achievements in architectural drawing. A sudden jump to the nineteenth century looks at architectural photography, comparing it to the work of the topographical perspectivists.

I regret that in referring to A. C. Pugin, Ackerman does not enter into the contemporary debate about the need for 'scientific' accuracy in reproducing mediaeval remains; for the Gothic Revival, too, was to some extent powered by a change in drawing method. But this is a Classicist's book, and a good one.

TIMOTHY BRITAIN-CATLIN

MAGNIFICENT ACOUSTICS

THE SOUNDSCAPE OF MODERNITY: ARCHITECTURAL ACOUSTICS AND THE CULTURE OF LISTENING IN AMERICA, 1900-1933

By Emily Thompson. London: MIT Press. 2002. £30.95

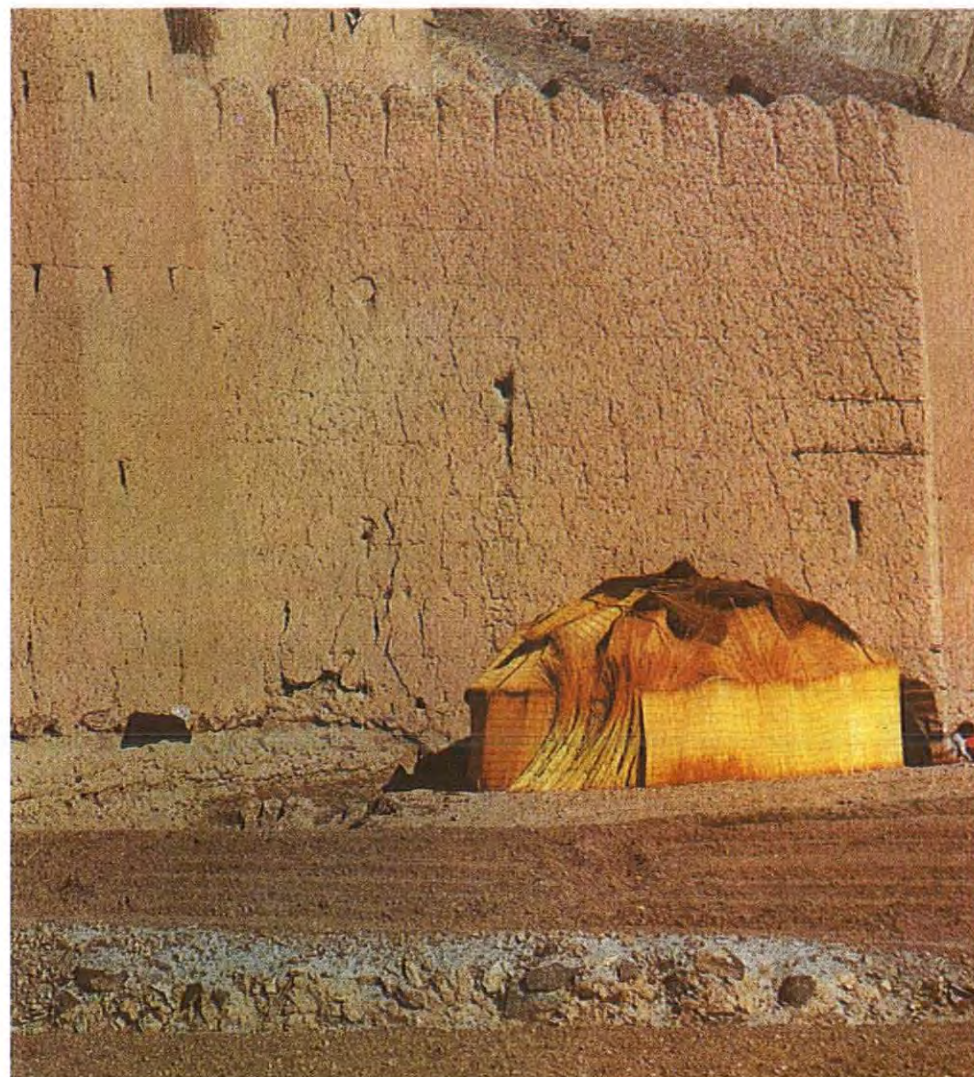
Acoustics have seldom been part of the architect's palette and the history of sound in buildings has rarely been addressed. The story of technology usually lacks clarity, enthusiasm and panache but Emily Thompson's book has all these qualities. Although the title indicates a scholar's very narrow field, the various chapters describe and develop in fascinating detail the American scientists' and engineers' work in creating an 'American sound'.

Chapter 1 gives an introduction to the background of the acoustic history of early America. It includes a memorable sentence summing up the whole thrust of the work of the early American acousticians – 'Reverberation now became just another kind of noise, unnecessary and best eliminated'.

Chapter 2 deals with the seminal work of Wallace Clement Sabine (1868-1919) in producing the first empirical equation which gave acousticians the tools and mathematics to predict and control the reverberation time of an enclosed space. This chapter deals in compelling detail with the schemes and design for Charles McKim's Symphony Hall in Boston and with Sabine's acoustic analysis.

Chapters 3 and 4 explain the development of materials of absorption and insulation techniques to generate the 'artificial' room acoustics of America. This was stimulated, in the author's view, by the noisy American city with her claim that New York probably became the most noisy city in the world in the early years of the twentieth century.

Chapter 5 reviews many of the acoustic materials developed in America to increase sound absorption to levels never considered by



Vaulted Hazara tent made of reed mats, Bamiyan, Afghanistan, from Stephanie Bunn's contribution to *Living in Motion, Mobile and Flexible Vernacular Dwellings*. The book, edited by Mathias Schwartz-Clauss and Alexander von Vegesack, is distributed by Art Books International (£40) for Vitra Design Museum, and is a compilation by various authors of projects and ideas as different as this one and Ron Herron's *Walking City*, self-propelling furniture and portable dwellings for disaster areas. Very wide ranging, provocative and stimulating.

Sabine and architects of earlier generations. This ability to control reverberation led to assumptions about the 'perfect sound' and finally led to what Emily Thompson describes as the 'new ideal type of auditorium' – low, wide and fan shaped with a highly absorbent seating area with a stage of reflective material. Severance Hall in Cleveland (1930) and that icon of pre-war American architecture Kleinhans in Buffalo by Eliel Saarinen (1940) are perfect examples of this 'new ideal'.

Chapter 6 on the modern auditorium is sandwiched quite correctly between the history of electroacoustics and its influence on the aesthetics of aurality. The chapter starts with 'Introduction: Opening Night at Radio City'. Here was the *echt* auditorium of America. A highly absorbent space seating 6200 'while microphones, amplifiers and loudspeakers' ensured that all members of the audience heard

everything as if they were right up on the stage themselves.

This is a marvellous book and a seminal primer on how and why technology modified our taste. The wheel, however, has turned full circle. At a recent interview of acousticians for the reconstruction of Avery Fisher Hall at the Lincoln Center, the two acousticians favoured by the interviewing panel were given as Musikverein in Vienna and Concertgebouw in Amsterdam!

I am now waiting for Emily Thompson's short sequel to her thesis describing why American orchestras and string quartets have developed that 'Transatlantic Sound'.

DEREK SUGDEN

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delight



Photograph: John Perrin

THE TINY PUBLIC LIBRARY IN THE SMALL CITY OF CALVI ON THE NORTH-WEST CORSICAN COAST IS A GENTLE BUT MONUMENTAL DISTILLATION OF THE SPIRITS OF LITERATURE, ENQUIRY AND SCHOLARSHIP.

Possibly the smallest public library in the world is at Place Saint-Charles in Calvi, Corsica. It is certainly the smallest of the 3400 Bibliothèques Pour Tous in the whole of France. John Perrin reports that it was opened in 1966 by the Duchess Pozzo di Borgo, an American married into one of the ancient families of the island. Its octagonal plan is four metres across and it is some five metres high.

The octagon, suggests Perrin, was chosen for its resonance with the baptistries of the ancient and gothic worlds. Five of its sides are fully shelved, two are half shelved with windows above and the eighth

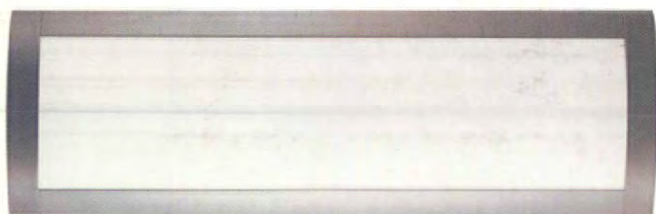
side has the French windows of the entrance. A central octagonal librarian's desk ensures that circulation must be rotatory, but there are usually only four or five users dreaming in the small yet tall and calm space.

Perrin says that when he discovered the building, he had to keep returning to it, 'not just for the novelty value' but 'because I had to experience the process of browsing the books in this tiny building that stands so thoughtfully upright... confident in its role as a provider of fact, fable and fiction to the townspeople of Calvi'. The architect is unknown.



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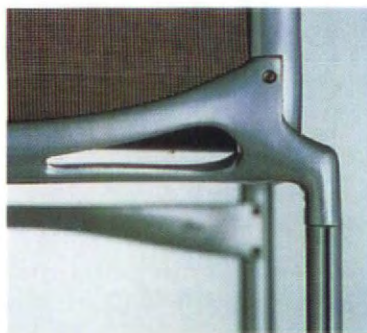
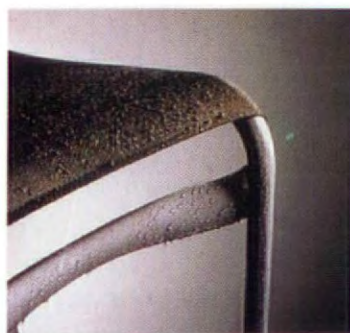
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