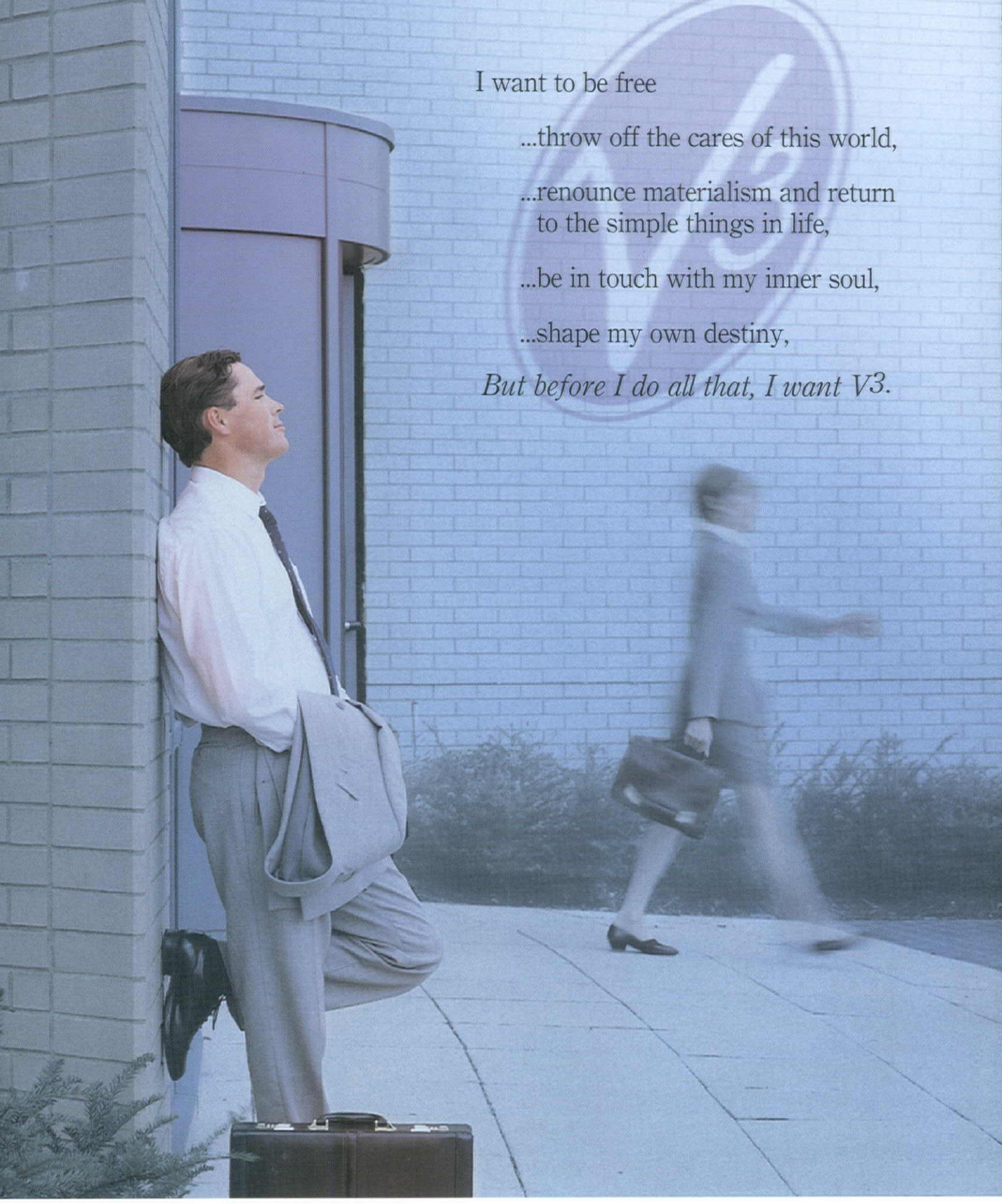
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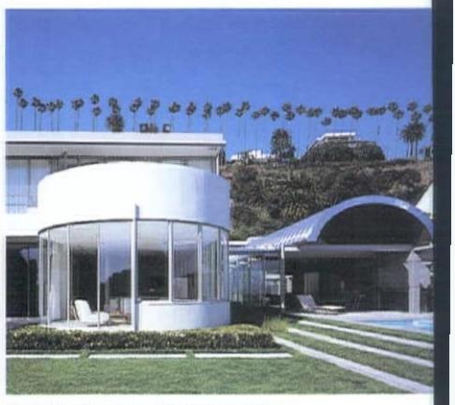
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ALCHEMY AND

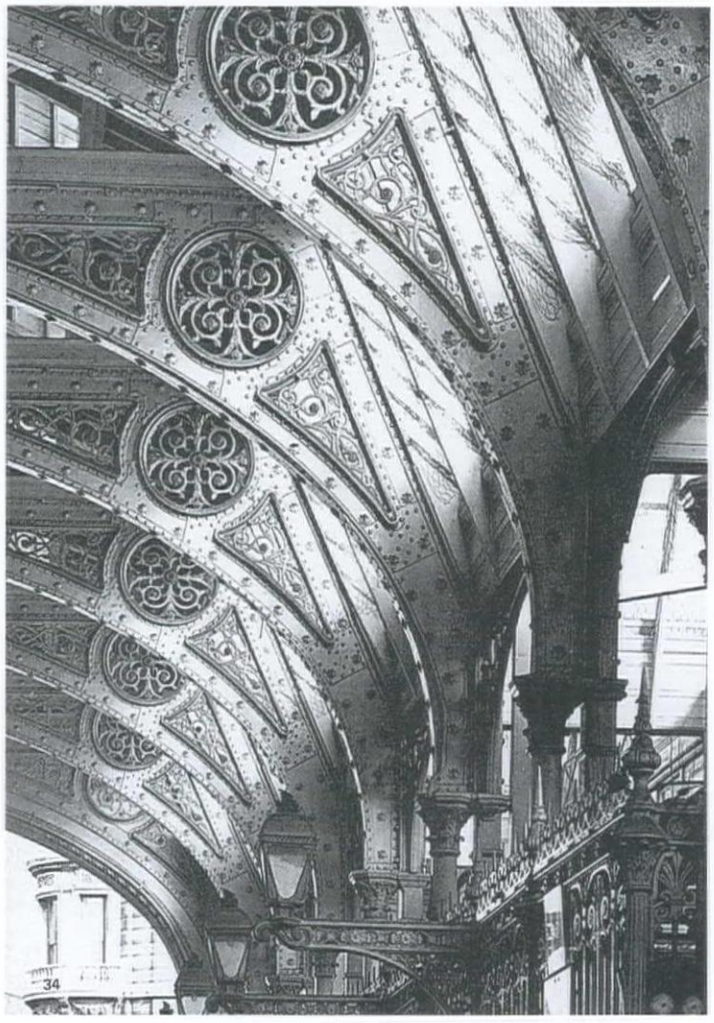
The symbiosis between metal and architecture has evolved over centuries, with successive eras opening up new technical and aesthetic possibilities through the development of different types of metals.

The use of metals is as old as human civilization. Our ancestors knew of just seven metals: gold, silver, copper, iron, tin, lead and mercury. Historically, metals occupied the mysterious realm of alchemy, with its mixtures and secret formulations, and were little understood by those who worked with them. A century ago, aluminium was considered more precious than gold or silver (Napoleon treated his most favoured dinner guests to aluminium cutlery), and the notion that metals could resist nature (for instance, as stainless steel does) was considered fanciful speculation. Yet each era has brought about the discovery of new types of metal, chiefly through the process of alloying (which has its roots in alchemy), whereby a new material is formed from the combination of various constituents. The Ancients experimented with alloys, mixing copper and tin to produce a new metal, bronze, with a lower melting temperature and improved casting properties. (Zinc was also added to copper to produce brass, a gold-like material which could fool the unsuspecting until it eventually and inevitably became tarnished.)

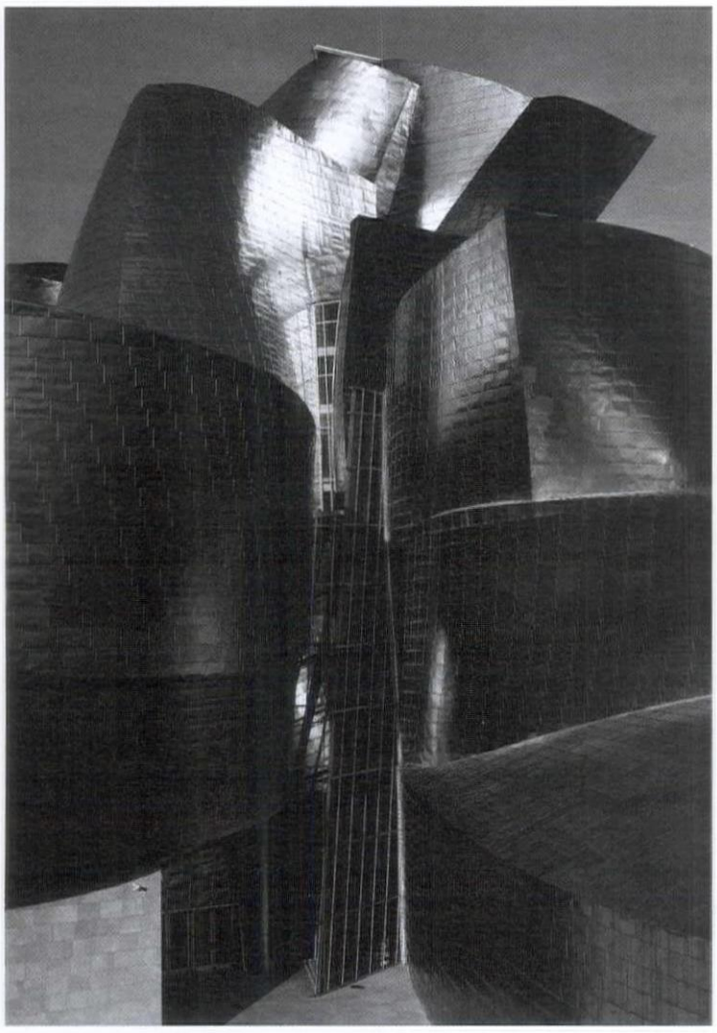
The Romans were the first to use metal as a major building material. The Pantheon had a bronze roof, parts of which survived until the middle of this century; Hagia Sophia originally had a lead roof that lasted 1400 years. Because of their malleability and relative ease of working, copper and lead became synonymous with the complexities of Gothic architecture. Endowed with the rich green patina of age, weathered copper spires and roofs still enliven the skylines of northern European cities. Improved techniques of pre-patination can now bestow an instant, uniform illusion of maturity; Jean Nouvel's new cultural centre in Lucerne (p38) is crowned by a vast, overhanging roof clad in sheets of pre-patinated copper. Sheltering a new urban square in its oversailing embrace, the emerald green structure forms a powerful horizontal datum in the lakeside landscape.

But it is iron and steel that have had the most radical influence on architecture. The skeletal structural frame effectively liberated buildings from the inhibitions of the loadbearing wall and trabeated construction. Cast iron, the great material of the Industrial Revolution, revolutionized Georgian and Victorian buildings. Ideally suited to repetition and standardization, the metal's ubiquity defined the British Empire; cast iron bandstands, ornamental gates, fountains, and entire prefabricated buildings (Victorian 'tin tabernacles') were simply plucked from manufacturers' pattern books and energetically exported around the Imperial world, from Durban to Bombay.

In 1851, Paxton's Crystal Palace marked a defining moment in the history of metal and architecture. Employing 3300 columns and 2220 girders prefabricated from moulded cast iron, it set the tone for iron buildings for the next 50 years. In Europe, seminal buildings such as Labrouste's Bibiliothèque de Saint-Génévière pioneered the use of cast iron internally in Gothicized barrel vaults of prefabricated sections. Yet the metal's associations with mass production and popular taste provoked ambivalence and even abhorrence among the architectural establishment. Frantz Jourdain wrote 'The Institut treated iron with a pious terror that might have been appropriate for a shameful disease'.[1] Ruskin also loathed it – 'No ornaments are so cold, clumsy and vulgar, so



Richly ornamented cast iron structure of London's Smithfield Market.



The shimmering titanium skin of the Guggenheim Museum. Photo: Paul Raftery.

essentially incapable of a fine line or shadow as those of cast iron.'[2]

The evolution of iron and steel frames made it possible to build upwards; the heroic scale of American cities was determined by steel-framed skyscrapers. The development of stainless steel at the turn of the century provided an environmentally stable metal that could sustain a polished, lustrous appearance. The Chrysler Building in New York was one of the first buildings to use stainless steel externally, on its sleek, hypodermic pinnacle roof. After the war, the transfer of technology from military and aeronautical industries generated new metal forms. Mies' reductionist structures composed of steel channels, angles, I-beams and H-columns were tautly elegant expressions of a new minimalist aesthetic. Jean Prouvé's refinement of industrial detailing and use of lightweight sheet metal have been exhaustively explored by the recent generation of High-Tech architects.

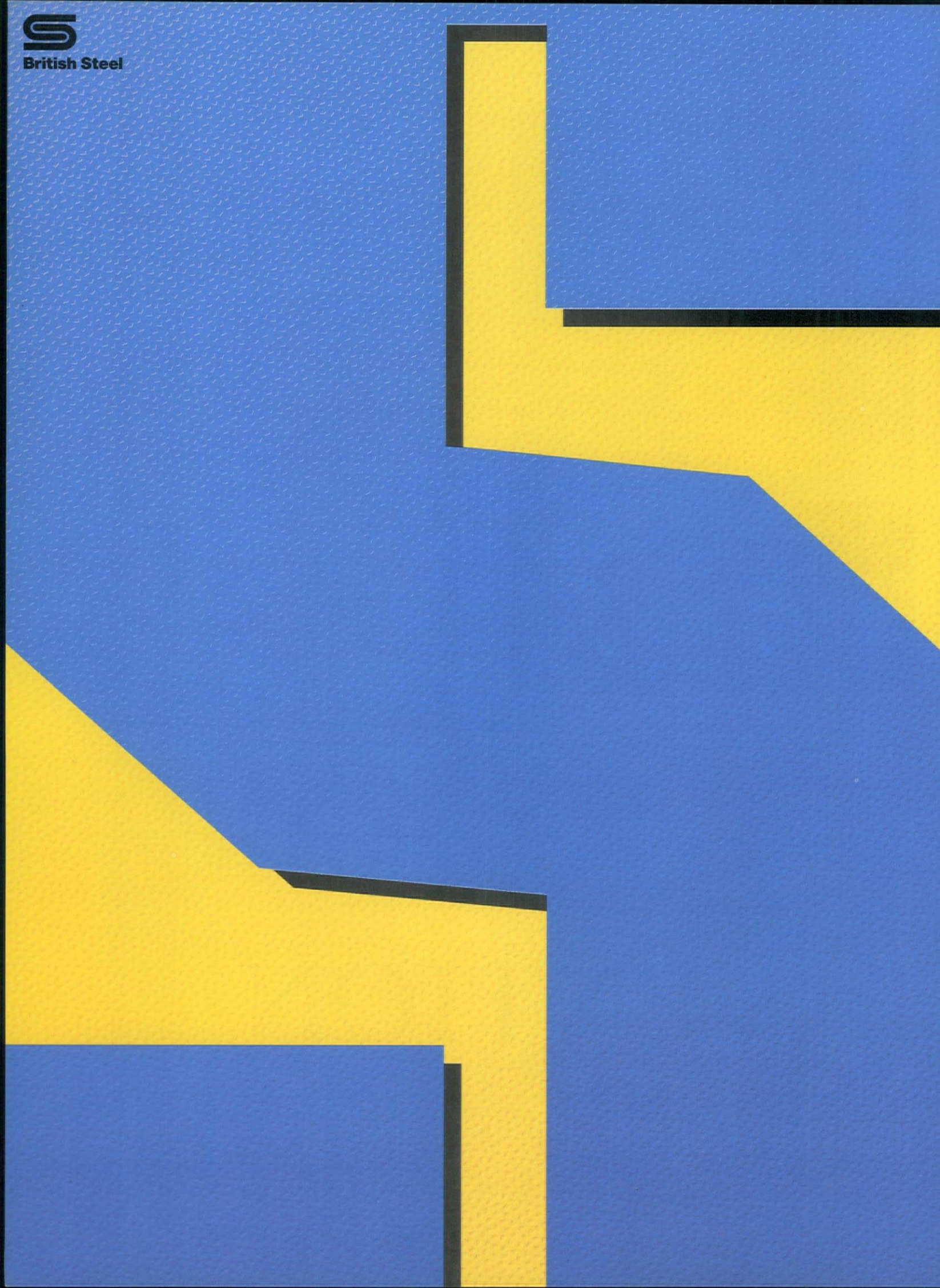
Unlike other building materials, metals yield to the entropic nature of the environment, but can be recovered and reformed. This capacity for recycling gives them some tentative credentials to sustainability. Aluminium, for instance, is very expensive to refine, in terms of energy used to extract the metal from its abundant ore (and the ravaging of the earth's surface to obtain the bauxite in the first place), but can be usefully recycled at a fraction of the original cost. Metal recovered from scrap accounts for around a third of the world's aluminium supply and should play a greater role in future production. Around 75 per cent of copper used in buildings comes from recycled sources. Steel too is becoming greener, with potential for re-use as a structural material. It can be recycled many times, without any loss of its structural strength and although a mass market for used steel has not yet emerged, architects have a potentially influential part to play in selecting and specifying used material if available.

New appropriations of metal continue to evolve. A few decades ago, titanium was considered to be a weak and brittle material only fit for creating pigments in paints. Yet rolled into very thin sheets, its light weight and resistance to corrosion makes it an excellent cladding and roofing material. The new Guggenheim Museum in Bilbao by Frank Gehry (AR December 1997) is clad in an extraordinary shimmering skin of very thin titanium scales. Sophisticated CATIA software, developed by the French aerospace industry, was used to rationalize the metal surfaces of the building established by manual mock-ups, so that even with such complex surfaces, only four standard panel sizes were needed for 80 per cent of the vast surface area. Gehry's imaginative exploitation of the potential of metal generates new paradigms based on the capabilities of electronics rather than mechanics (although ironically the construction of Bilbao relied on the manual metal-bashing skills of workers schooled in the region's traditional shipbuilding industries) and takes its place in architecture's long history of metal alchemy and invention. CATHERINE SLESSOR

1 *Architecture and Construction in Steel*, edited by Alan Blanc, Michael McEvoy and Roger Plank, London, 1993, E & F. N. Spon, p24. In an essay on Auguste Perret, Jourdain was describing the antipathy the French architectural establishment felt towards cast iron.

2 *Seven Lamps of Architecture*, 1849; quoted in *Cast Iron*, edited by Gavin Stamp, London, 1985, John Murray, p7. The splendid image of Smithfield Market (designed in the 1860s by Horace Jones) is by John Gay, whose photographs illustrate the book.

INVENTION


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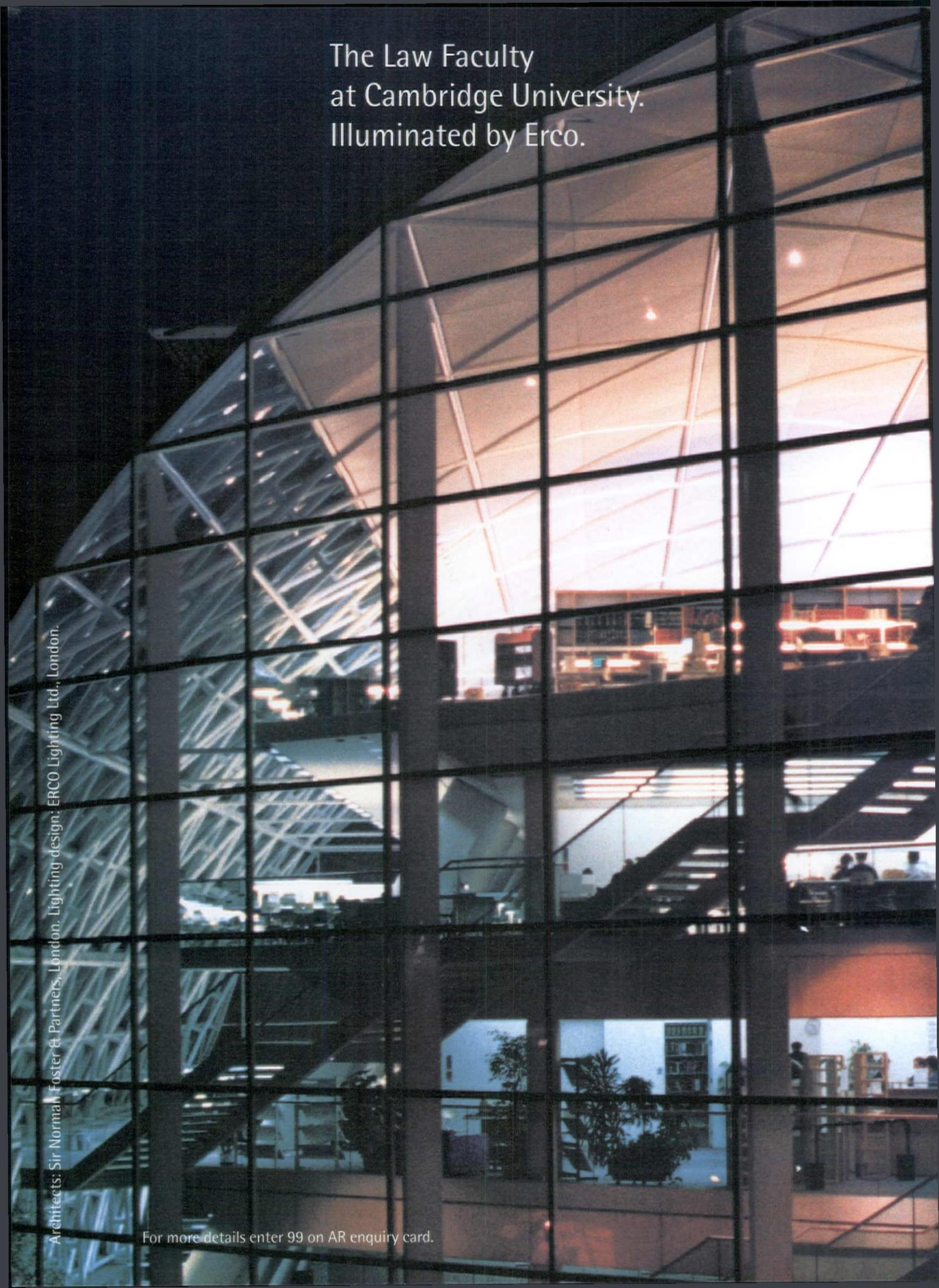
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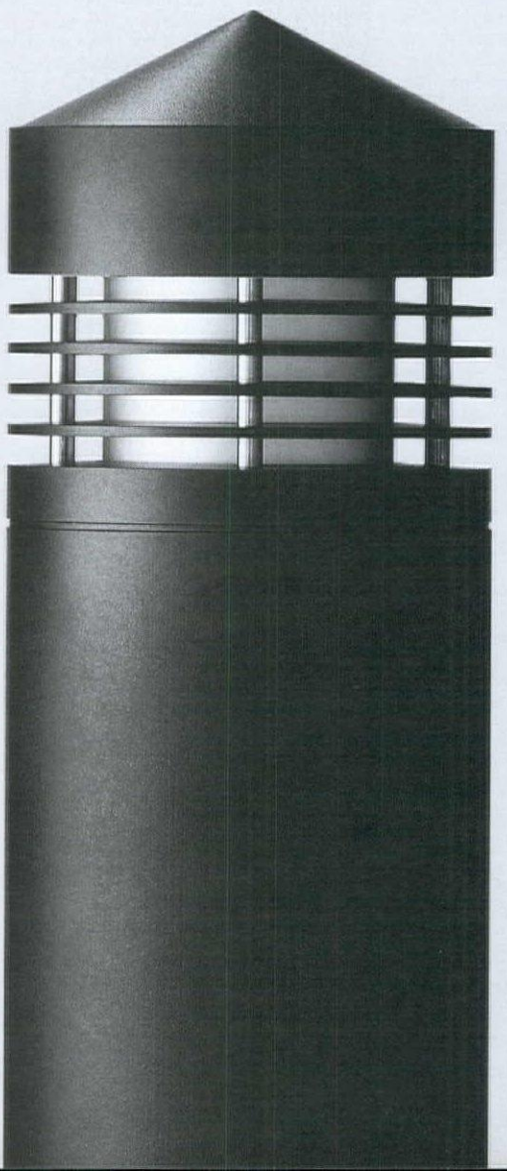
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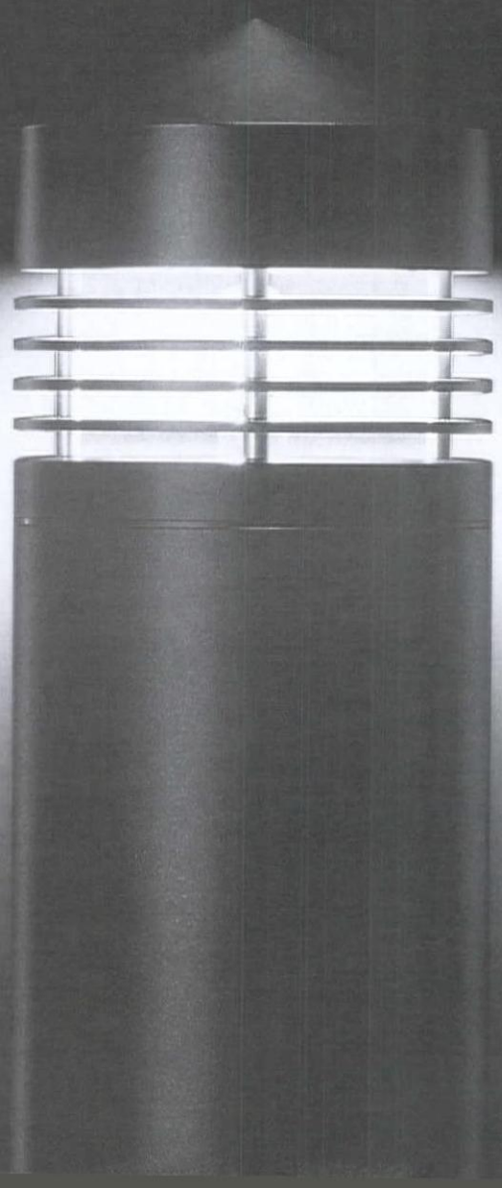
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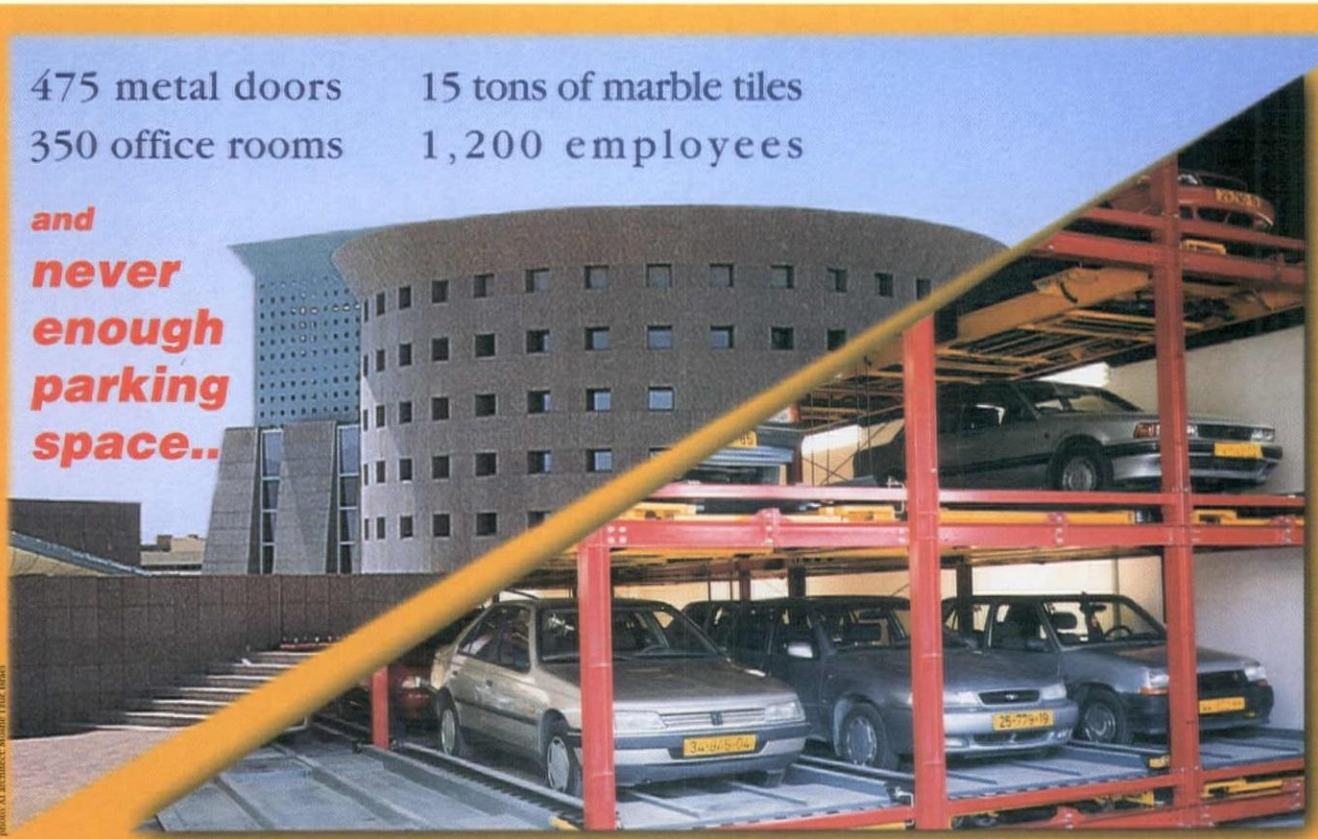


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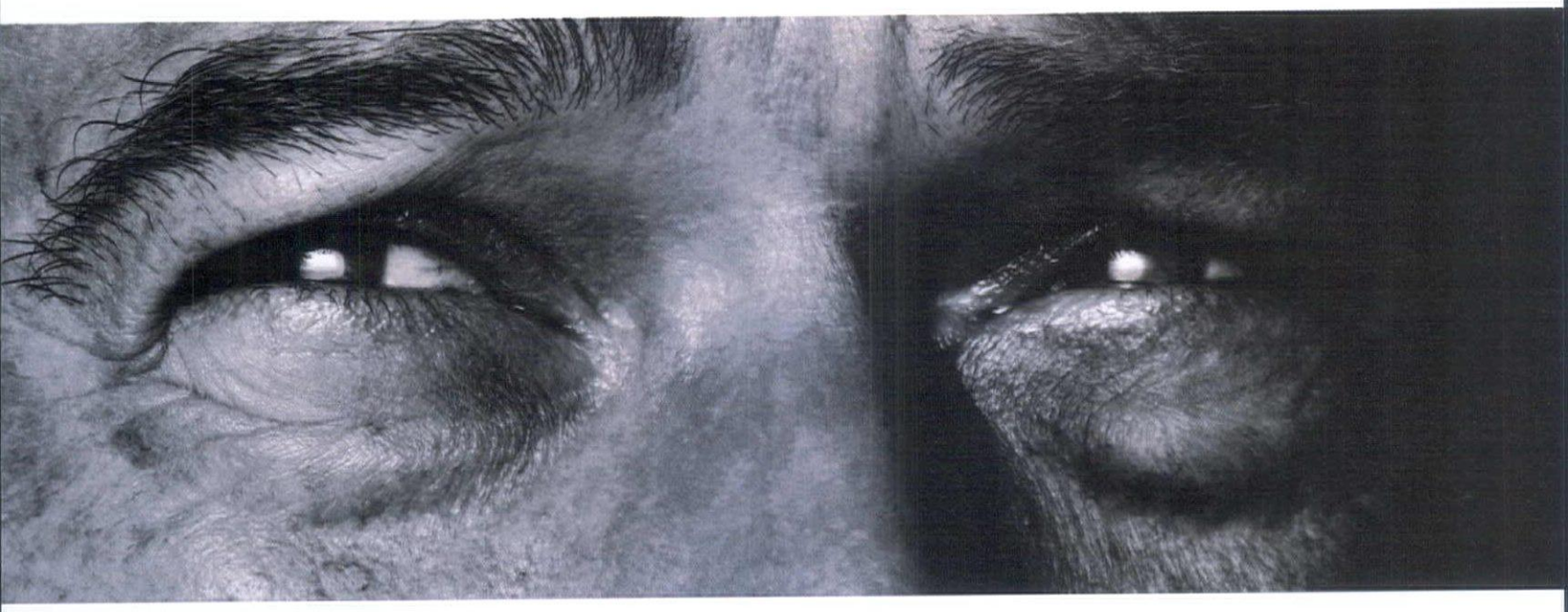
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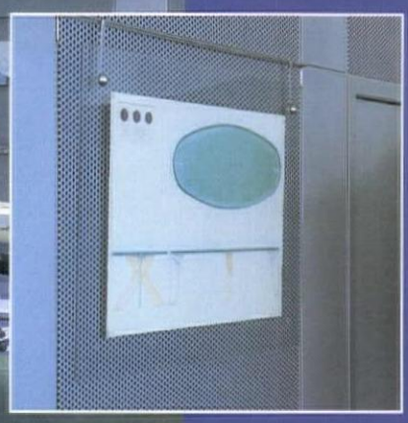
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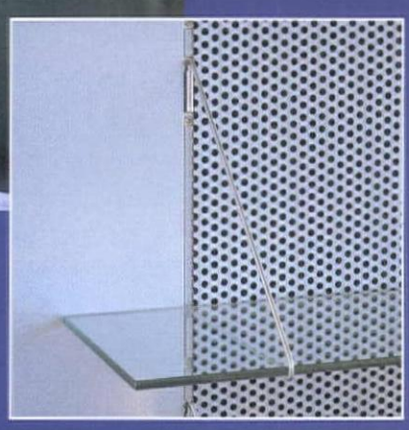
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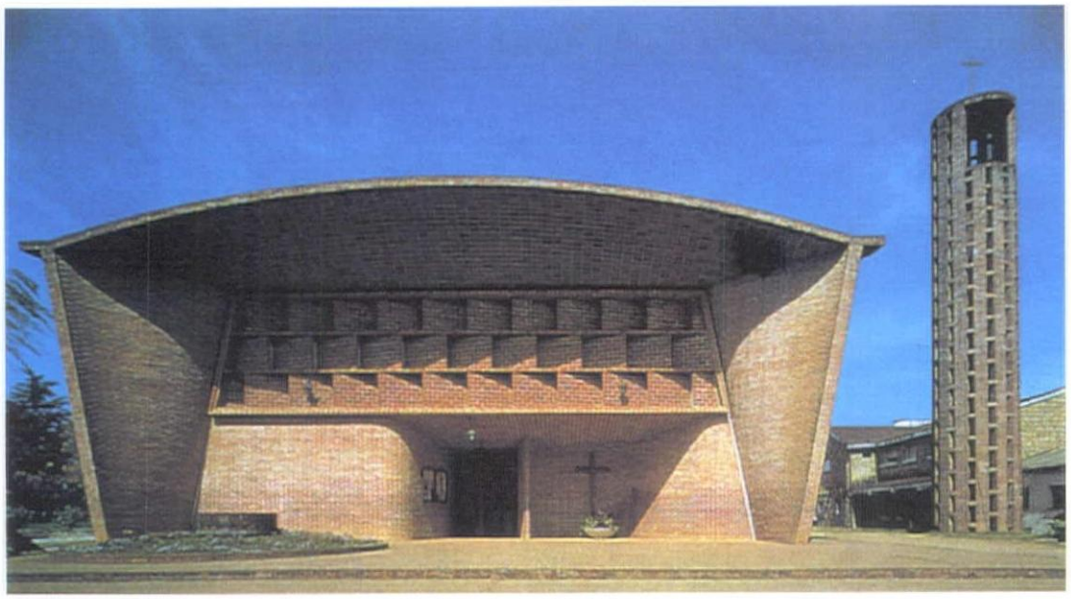
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VIEW



Eladio Dieste, Church at Atlantida, Uruguay, 1959. From *At the End of the Century.*

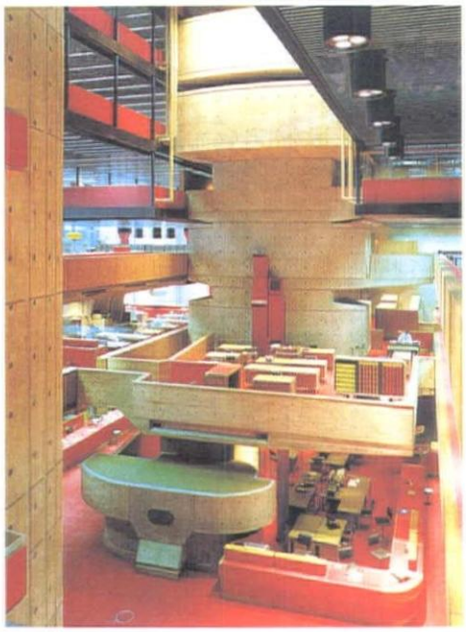


G. Klucis, Radio Announcer Maquette, 1922.

Japanese slant

If you have been brought up on Pevsner and Giedion and the idea of the essentially European roots of modern architecture, you will want to see *At the End of the Century: 100 Years of Architecture*, the exhibition currently filling most of Tokyo's great Museum of Contemporary Art.

The opening pictures are a bit of a puzzle. You wonder what might be the agenda of an exhibition curator who starts off a major review of the last century of architecture with a 1910 photo of men having lunch in the Burnham office and a lot of views of the 1893 World Colombian Expo. It's a show which has been curated by the Los Angeles Museum of Contemporary Art (where it will be seen next year) which explains the US partiality. Historiographers will be fascinated by this and other little biases in the monster 21-section but otherwise fairly straightforward show. These include a slightly sly emphasis on Moisie Ginsburg, the Russian Corb, some generous references to the Smithsons, the inclusion of the model of Cedric Price's Fun Palace together with Walter Burley and Marion Griffin's plans for Canberra and the work of a substantial number of Japanese architects and Nick Grimshaw's Waterloo station canopy. In retrospect most of these biases looked more likely to be right than not in the long term, even if the heavy Japanese presence could well have been a courteous gesture to the show's first hosts. Arata Isozaki is supposed to have made a wry aside on how twentieth-century architecture and planning started off with an overtly social purpose, yet the last section of the show contained nothing but showy monster office towers.



Bank of London and South America, Buenos Aires, 1966, Clorindo Testa *et al.* Photograph: Julius Shulman.

SUTHERLAND LYALL

Carlsberg for Zumthor

Peter Zumthor is the winner of the 1998 Carlsberg Architecture Prize. The award, of 200 000 Ecu (approx US$250 000), is the biggest individual architecture prize in the world. It is given to 'an architect or group of architects contributing to the creation of works of lasting architectural and social value'. Previous winners have been Tadao Ando (1992) and Juha Leiviskä (1995).

The choice of Zumthor confirms that the prize is for people whose work explores the essence of architecture with great intensity and imagination. Zumthor's buildings (as yet mostly in the Upper Rhine valley in Graubünden, Switzerland's most easterly canton) are all very different because they are finely honed to place and programme. All combine unostentatious command of technology with deep understanding of human feelings and physicality. Jury members were unanimous in their choice of Zumthor. The prize was awarded by the Queen of Denmark at the New Carlsberg Glyptothek last month. An appreciation of Zumthor's work by jury member AR Editor Peter Davey is to be found on p68.

Other members of the jury were Hans-Edvard Nørregård-Nielsen, Director of the New Carlsberg Foundation (Chairman); François Chaslin, critic Paris; Kenneth Frampton, professor Columbia University, New York; Toshio Nakamura, critic Tokyo; and Henning Larsen, architect Copenhagen. THE EDITORS



Thermal bath, Vals. Photograph: Christian Richters.

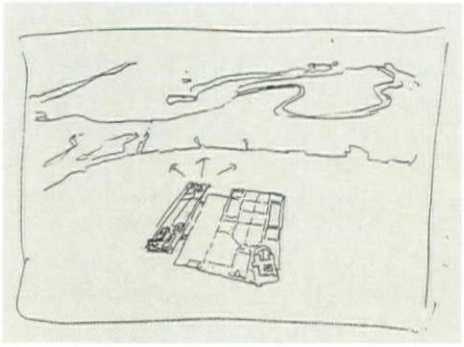
VIEW

Death in Venice

London-based David Chipperfield Architects have been awarded first prize in an international competition for the extension of Venice's San Michele cemetery poetically situated on an island between Venice and Murano.

The historic site includes a fifteenth-century church and convent together with the cemetery, which has been in continuous development for over 400 years. The jury selected 15 architects for the final phase of the competition from 145 original entries. Four prizes were awarded, with second prize going to Enric Miralles, third was Carlos Ferrater and fourth Giorgio Lombardi.

The project consists of two phases; in the first phase the burial grounds of the existing cemetery will be added to through the construction of a series of new courtyards, a crematorium and a chapel. The second phase involves building a new island with gardens at water level. These gardens, outside the walls of the existing cemetery, initiate a relationship between the gardens and the lagoon and create new views both from and to Venice – at present the island is enclosed by a high wall, cutting off contact with the outside world. C. S.



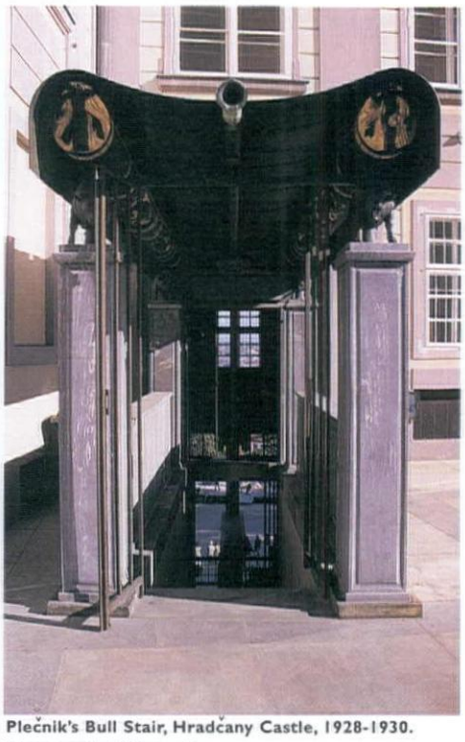
Sketch of Chipperfield's winning proposal.



Montage of San Michele.



For nearly 40 years Zeev Aram, the moving spirit behind Aram Designs, has been insisting on the importance of design as a civilizing force and inspired design as one of the marks of a civilized society. While his company's warehouse gallery in Covent Garden stocks now-classic furniture by Eileen Gray, Aalto, Mies and Corbusier, Aram has constantly been on the look-out for new sources of creativity. Aram's exhibitions are as much to express his delight in the exhibits as to unveil innovation. In the past this has included Ron Arad, well known for his sinuous works, more sculpture than furniture. An exhibition of his latest work is being held in the galleries until 12 October. It will be succeeded by an exhibition on Aalto's Viipuri Library in November and in December there follows an exhibition of Cartel's latest plastic products. P. M.
Aram Designs, Kean Street, London WC2
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Plečnik's Bull Stair, Hradčany Castle, 1928-1930. Photograph: Pelham Davey.

Plečnik in Brussels

Jože Plečnik had a long and extraordinary career stretching from fin-de siècle Vienna (where he was a student of Otto Wagner) to the austerity of Tito's Yugoslavia (his last work was Tito's Brioni pavilion in 1956).

This modest but elegant exhibition in Brussels focuses on Plečnik's inter-war work in Prague. Or rather it augments part of the 1996 blockbuster at Prague Castle with original drawings and sketches, actual chairs designed for institutional and domestic use and with a splendidly bizarre candle-holder loaned from Slovenia.

Plečnik's moment came with the dissolution of the Austro-Hungarian Empire and the independence of Slavic nations. Given major

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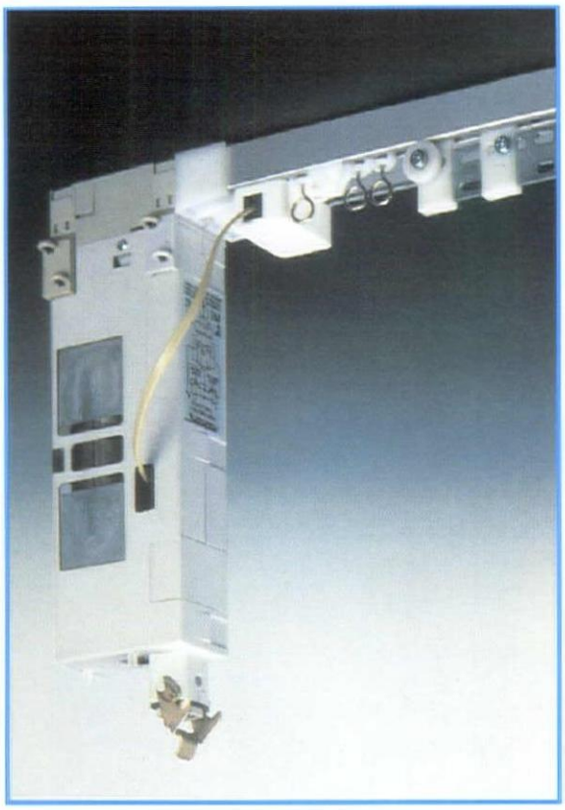
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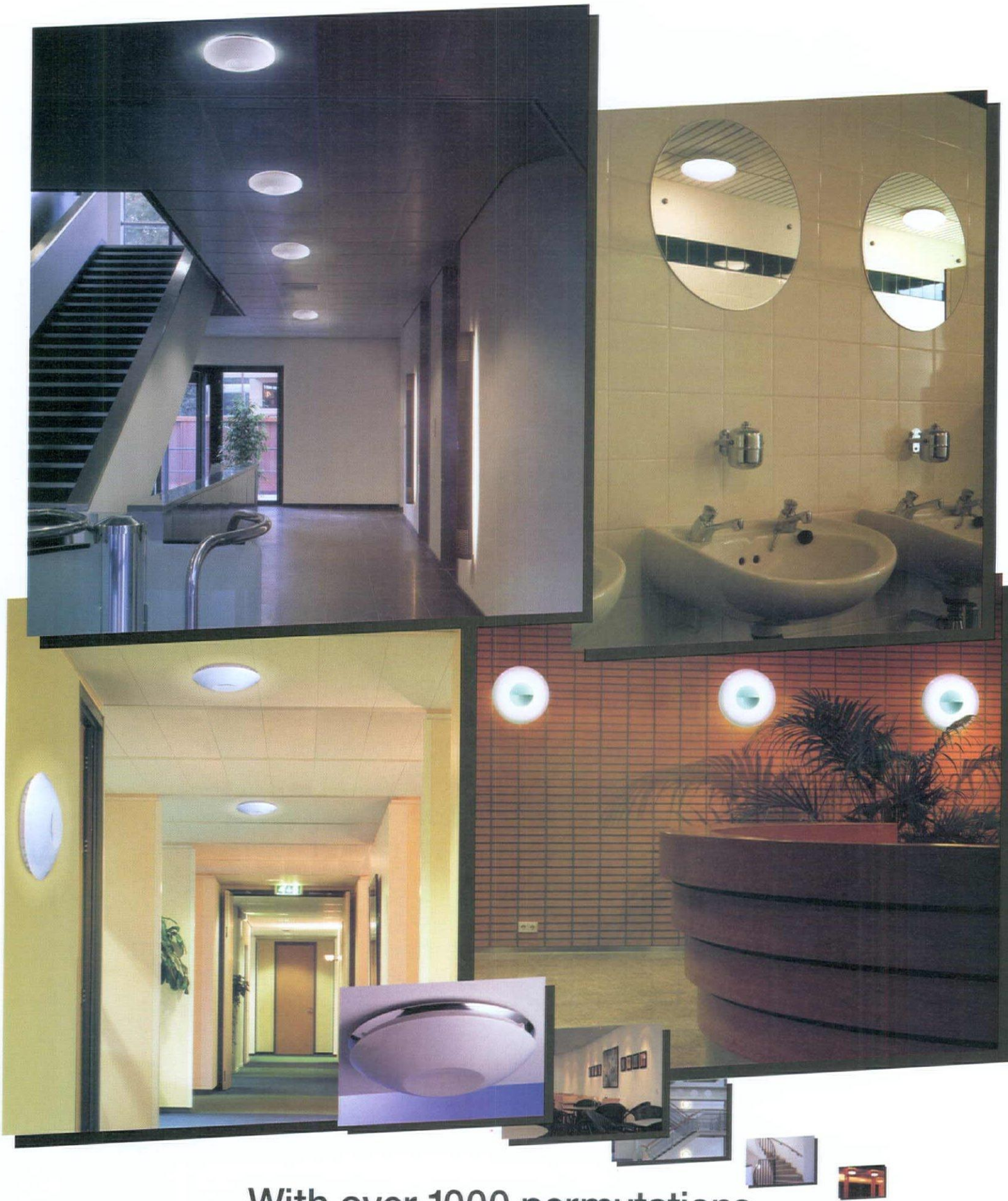
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urban improvement opportunities by Matko Prevlošek, Lubljana's Director of Municipal Construction, Plečnik was simultaneously called north by Tomáš Masaryk, first President of Czechoslovakia, from 1920 onwards. His role was to refurbish the fabric and grounds of Prague Castle as both the president's residence and monument of the nation. He also replanned the president's country house at Lany and built the Sacred Heart Church in the Prague suburb of Vinohrady.

Cultural rebirth and geometric invention are the great themes of Plečnik's life and work: the Castle epitomizes his pursuit of architectural continuity and truth to ideals. Masaryk's successor, Václav Havel describes Plečnik's work as 'monumental and simple at the same time, a modern work which integrates in a harmonious manner the Castle's mosaic of different styles'. The Brussels exhibition reveals Plečnik's meticulous insertions of both practical and ornamental set pieces through videos, models, sketches and furniture and large-scale colour photographs by Pavel Štecha. It enables a very complex ensemble to be understood.

Plečnik's objects embody a curious fusion of universal forms – cone, globe, pyramid – with more personal idiosyncratic twists so that they appear both familiar and strange, timeless and contemporary. Imagine an unlikely conflation of Brancusi's sculpture (Plečnik certainly had a thing for obelisks) with the symbolism of *The Magic Flute* (ditto heraldry and occasion). Plečnik had a world view which valued sense of place, indigenous materiality and Ur-forms of shelter. This exhibition suggests a domestic Plečnik with a deep belief in the home as kernel and guardian of the nation.

RAYMUND RYAN

Jože Plečnik, A Slovenian Architect in Prague, Fondation pour l'Architecture, 55 rue de l'Ermitage, Brussels. 8 September – 1 November.

Profound perspectives

For quite a short time, in the middle of the seventeenth century during his late '20s and early '30s, Pieter de Hooch painted some of the most intense domestic interiors ever composed. He recorded the extraordinary wealth of the burghers of the Dutch Republic (in many ways the first modern state) which was founded on systematic and ruthless exploitation of the Indies.

But nothing could be further from the colonists' cruelty and greed than the calm, modest Calvinist spaces of de Hooch's great period, which is the focus of the artist's very belated first one-man-show (at Soane's Dulwich Gallery in London until 15 November, and at the Wadsworth Atheneum, Hertford, Connecticut from 17 December to 27 February).



Pieter de Hooch, The Courtyard of a House in Delft (1658). National Gallery, London.

Delft, then richer than Amsterdam, provided the spaces which de Hooch immortalized. We have no evidence that he always painted real buildings, but his most memorable pictures distil the essence of seventeenth-century middle class Dutch life: the cleanliness, the precise craftsmanship, the simplicity of single family houses (great luxuries in the seventeenth century). Volumes are revealed in light from huge windows, necessitated in part by the need to reduce the weight of external walls in a country that virtually floats. (Incidentally, many of the apparently simple houses he painted are clearly of the better sort, on corners, for they receive light from the side as well as just back and front as they would in the middle of a terrace.) The son of a master mason, de Hooch depicted the stuff of building with a tectonic sensitivity that has never been paralleled: the texture and bond of bricks, the smoothness of wood, the intricacy of wrought iron hinges.

His usual compositional technique was to describe a room in one-point perspective, with the vanishing point about halfway up the picture and somewhere near the middle of the back wall; this welcomes you into the volume. To left or right of the focus (and sometimes both) are displaced axes penetrating the wall-plane and leading the eye to further spaces and perhaps to the outside.

These simple devices can display the spatial complexities of the compact Dutch enfilade plan to perfection. They provide sets on which characters (from mothers and children to rakes and their victims) enact tales of maternal affection or lust. As most art critics have said, the people are rarely carefully portrayed characters (save for rare moments, for instance when a child looks joyously at its mother). His characters are his spaces, and the people are usually props to emphasize genius loci – for instance the nursing woman bathed in warm light from a tall amber window, or the poignant figure who stands with her back to us looking out over a threshold. They help us to understand the places without dominating them: their very anonymity invites us to join them in the first spaces of the modern world. P.D.



Pieter de Hooch's Woman with Child in a Pantry. Rijksmuseum, Amsterdam.

VIEW

letters

Big Brother

SIR: Your August issue was a curious and unusually catholic mixture of building types, which, while it may not have the iron discipline of your normal themes (everything to do with education, all on religion and so on), was welcome because of the variety of work shown.

Perhaps it is because I have a nasty and suspicious mind, but I wonder if you included Niels Torp's British Airways headquarters in such an issue to mask its nature? No-one doubts that Torp is a humane and kindly man – at least not those of us who have been lucky enough to see the Aker Brygge development in Oslo, or the SAS headquarters in Stockholm. The latter was a triumph of humane arrangement of space for a big organization. Everyone has a particular place to withdraw to, as well as a group space, and then the communal area of the internal street.

But at British Airways, as far as we can see from your description, there are no individual spaces. The street is perhaps even better than the SAS one. But where can you be out of the gaze of Big Brother? Is this a contrast between English and Scandinavian managerial cultures, or a permanent trend in Western capitalism? We must hope the latter is not the case, for in general Scandinavian business has been so much more successful in real growth terms during the last few decades than the British variety.

Yours etc
LEON STEIN
Amsterdam

Bound volumes available

SIR: With some regret, a shortage of space requires me to dispose of my bound copies of the AR for the years 1943-1985 inclusive.. Might there be someone among your readers who could provide a good home for them?

Yours etc
B. L. ADAMS
St Peter's Cottage, Hammersmith Terrace, London W6 9UD

Mash that Swede

SIR: Remembering a rather embarrassing incident in an office in South Africa a few years ago when I was discussing the current Swedish architectural scene and focus shifted towards the implications of naming an office 'White Architects', I was amused (not surprised) to find White Arkitekter in the August issue Outrage section.

Such a shame it was only to be bitterly stung by a monstrous generalization at the end of the article when suddenly the realization of this poor project is blamed on the strangeness of the Swedes rather than on the office responsible. Although few guests actually will hurl themselves to destruction in the Blå Hallen void, I still partly blame my country's world leading suicide rates on White Arkitekter.

Yours etc
SVEN SVENSSON
London SW10

Spiritual Siza

SIR: Robert Levitt's review of the Alvaro Siza church at Marco de Canaves (AR August p61) fails, in my opinion, to take proper note of the radical nature of the 'great historical window' that dominates the right-hand side of the nave. Perhaps he was unable to attend Siza's marvellous talk at the RIBA where he talked for an hour and a half about just this project. And what became clear in Siza's explanation was that he wasn't going to explain what the window meant; that was for us to interpret.

The statue of the Virgin Mary, that is placed where this horizontal gash ends, is there to mediate between the profane and the sacred; between the ordinariness of the town outside, transfixed by this unbelievably long eye-level window, and the extraordinariness of the mystery of the Virgin Birth (and the Christian faith). It is a truly radical idea. In this way Siza is questioning 2000 years of liturgical design since 'transparency' has previously kept to the concept of the glazed end, eg Frank Lloyd Wright, Mies and Ando and therefore to the idea of transcendence.

Siza is questioning this; as indeed the sombre pair of windows behind the altar also intimate. In that sense Robert Levitt's closing remark is accurate: 'We are no longer quite at home ...'

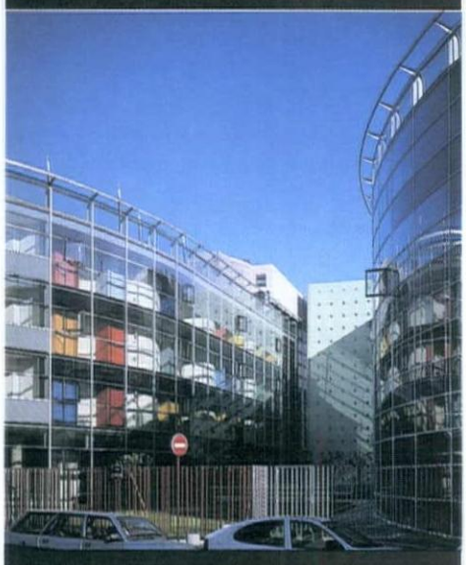
Yours etc
BRENDAN WOODS
London WC1

Abercrombie plan

SIR: I was interested to read Irénée Scalbert's review of Professor Gold's book in AR September (p113), particularly the comment that 'you cannot help but be surprised that it exercised no influence on Abercrombie's County of London Plan'. To the extent that this is so it might well be because Abercrombie and his team, some of whom were MARS group members, were concerned with the production of a plan that would not only be realistic and practicable but would have the possibility of being politically acceptable.

Yours etc
GERALD DIX
Liverpool, England

November

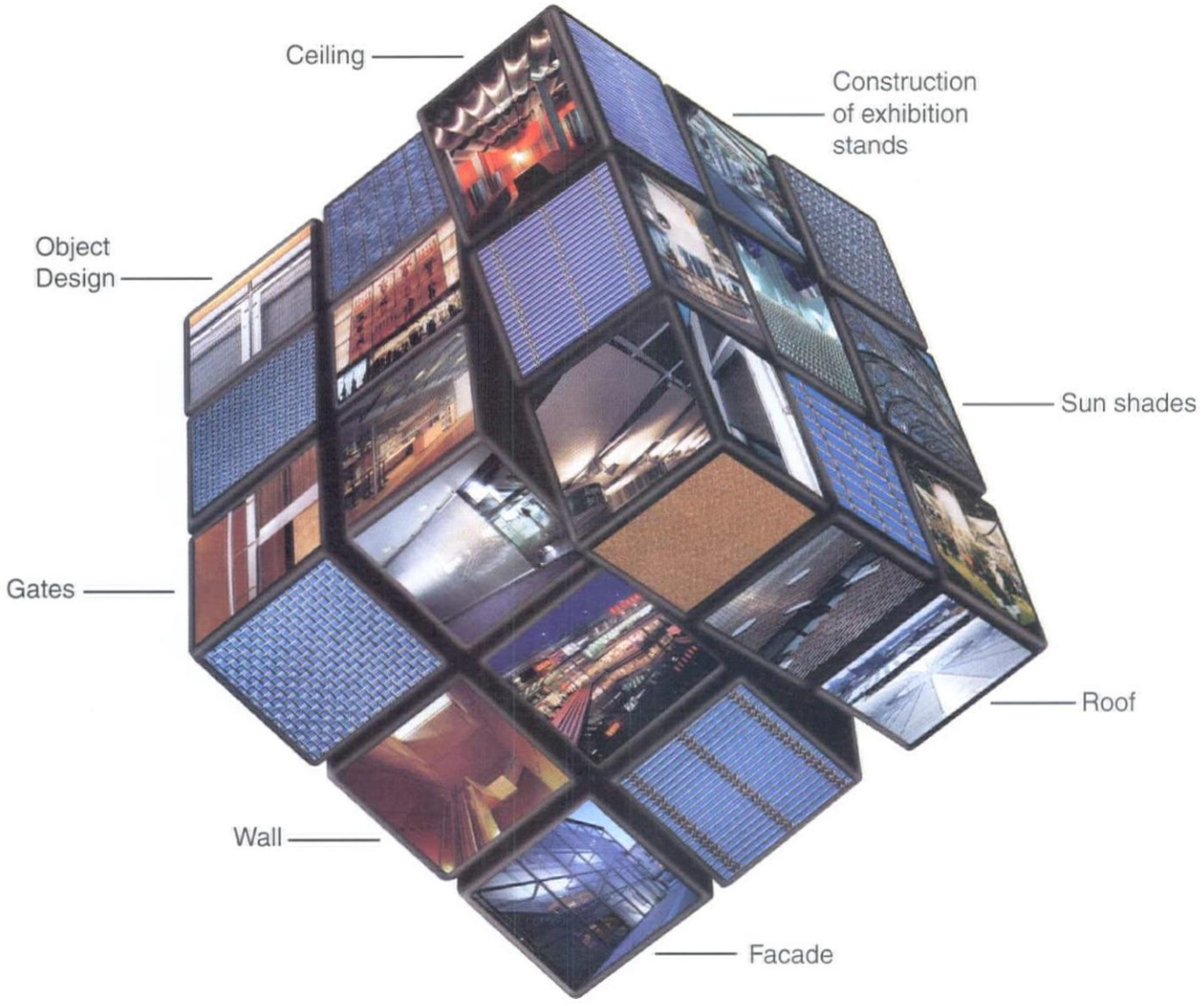


November's issue looks at the relationship between colour and architecture. From Palaeolithic times, when our ancestors adorned their caves with raw pigment, to contemporary experiments with electronic cladding that can change its hue, colour has fascinated man. We look at a wide range of innovative use of colour in architecture drawn from around the world. In Stockholm, Rafael Moneo's recently completed Museum of Modern Art (Moderna Museet) reinterprets the Swedish tradition of using strong colour in a cold northern latitude. In Valenciennes, Emmanuel Blamont's new theatre is a sensuous fusion of colour and materiality. And in Paris, a housing block for the elderly by Architecture Studio makes an invigorating addition to a drab neighbourhood.

Also in November, we feature the results of the triennial Aga Khan Awards for Architecture. Awarded to projects that demonstrate social awareness and improve the lives of communities across the Muslim world, the programme has much to teach both architects and patrons of architecture. Plus the usual stimulating mixture of Interior Design, Outrage, Delight and View, our expanded news and reviews section. Obtain this and 11 other thought provoking issues by completing the enclosed subscription form.

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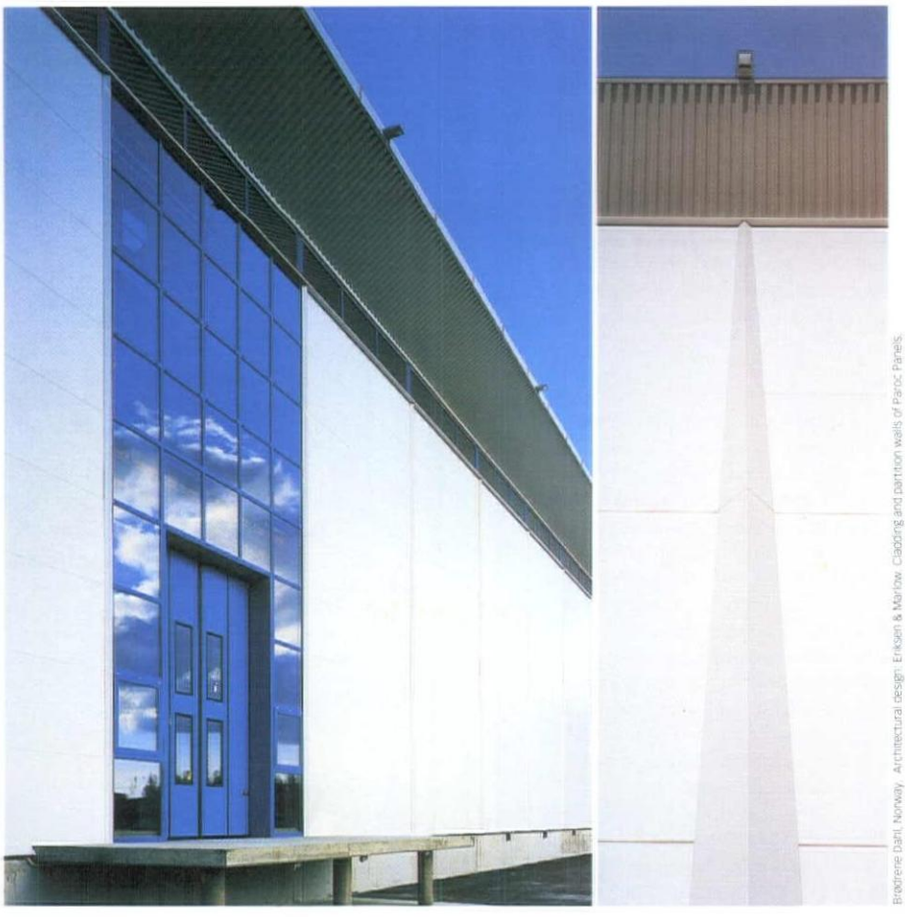
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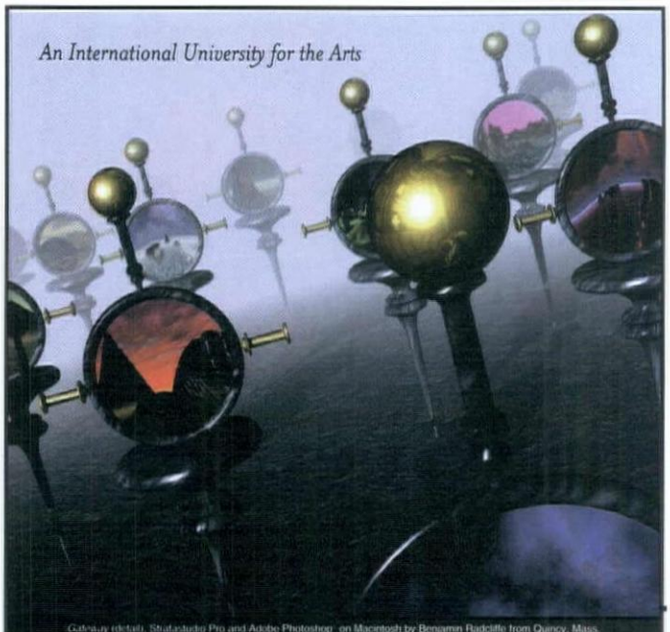
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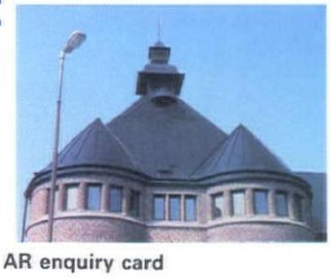












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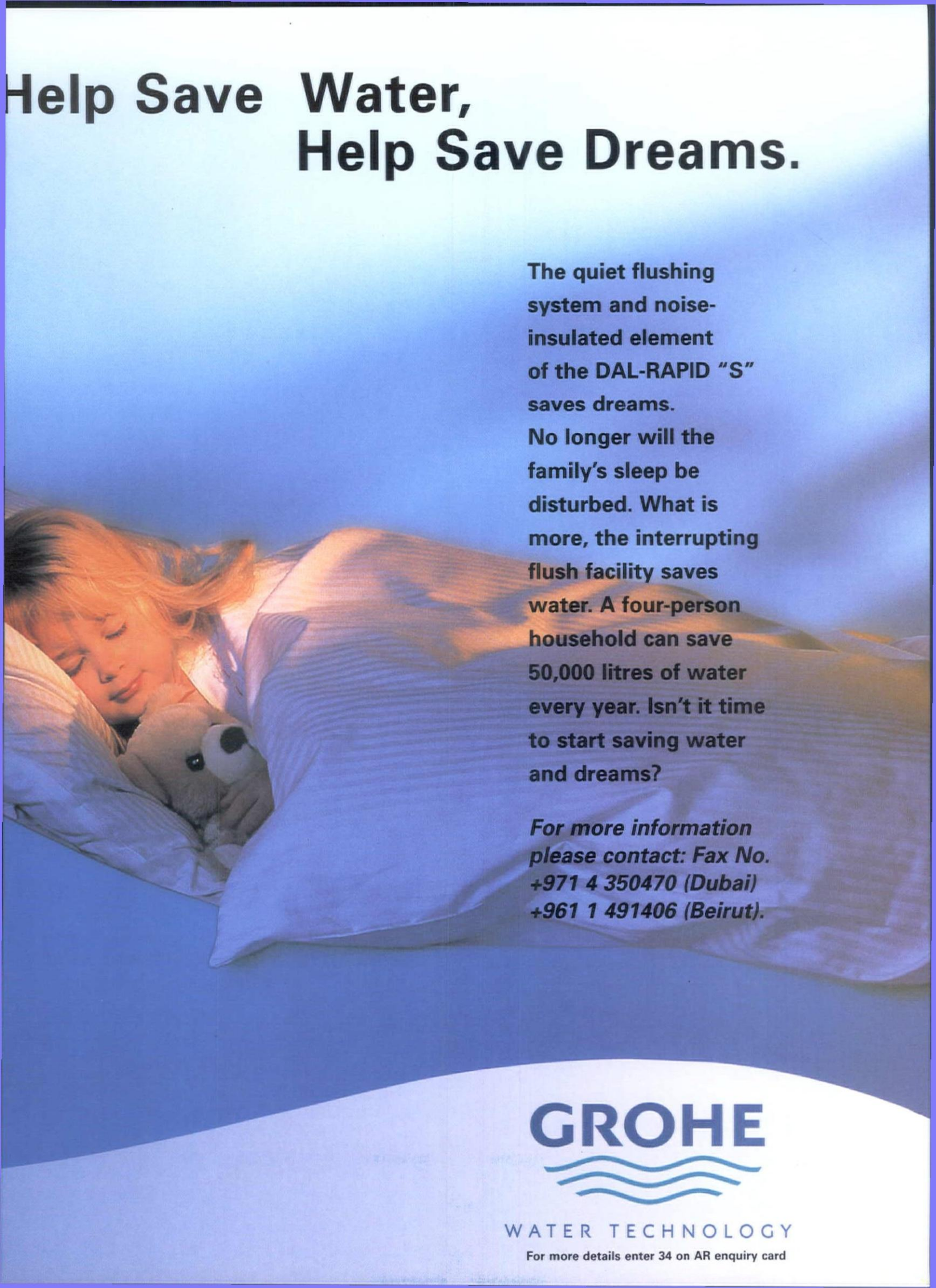
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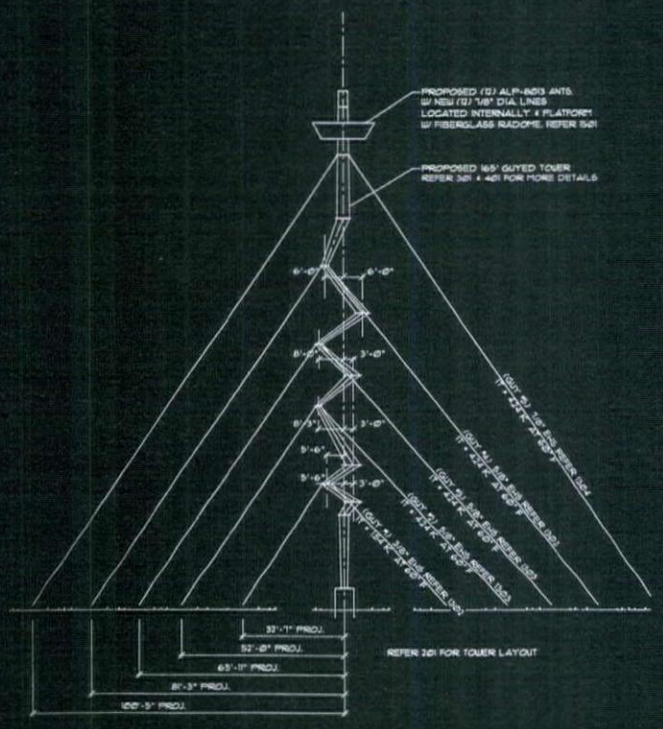
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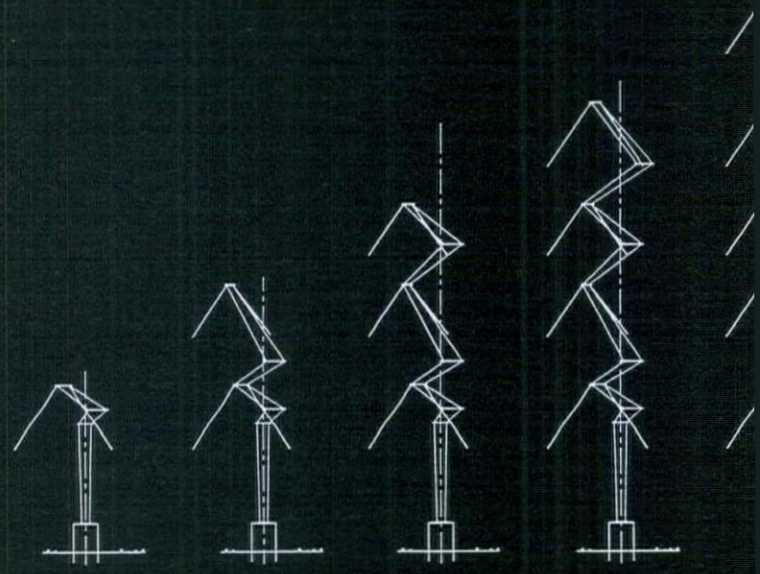
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DR

Mobile phone masts are the modern scourge of the landscape, but as this tower by Gunnar Birkerts shows, they can also be elevated into sculptural landmarks.



tower elevation

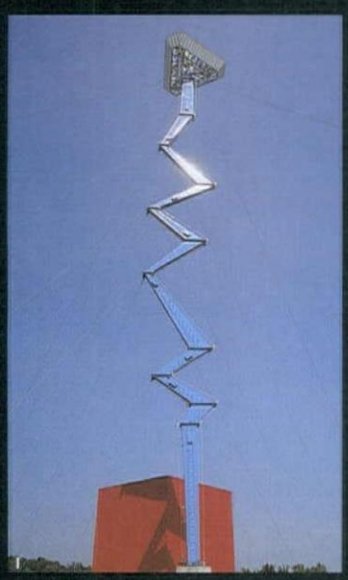


erection sequence

BOLT FROM THE BLUE

Despite the advantages of portable telephones, there are few more pernicious sights in the landscape these days than the telecommunications masts used to transmit their signals. As nothing must stand in the way of progress (or profits), these ungainly structures are simply plonked indiscriminately in the landscape, with scant regard for setting or context. In America, communities are becoming increasingly vociferous in their opposition to these intrusions, as the Airtouch Company discovered when it tried to erect a large tower in the university town of Ann Arbor in Michigan. Thomas Monaghan, the owner of the land on which the mast was to be located, insisted that the tower should be properly designed. Gunnar Birkerts, who had previously worked for Monaghan, was invited to produce a proposal.

Birkerts' tower sits on the edge of Ann Arbor at the junction of two highways. Inspired by the notion of an airborne signal hurtling to earth with the speed of light, the mast is designed to resemble a huge lightning bolt. A vertiginous triangular crow's nest at the top affords access for maintenance. Painted a vivid cobalt blue, the 165ft high steel structure was assembled in sections and stands on a massive caisson 26ft below ground. A network of steel tensile cables attached to the structural joints moors the tower in place. A red, steel-clad cube at the foot of the mast houses associated electronic equipment. At night, the tower is vividly illuminated and during the day, fibre-optic cables change colour in anticipation of metereological conditions, so the entire structure acts like a giant barometer. Visible for miles, the jagged mast is a dramatic presence in the landscape and proves that such structures need not always blight their surroundings. C. S.



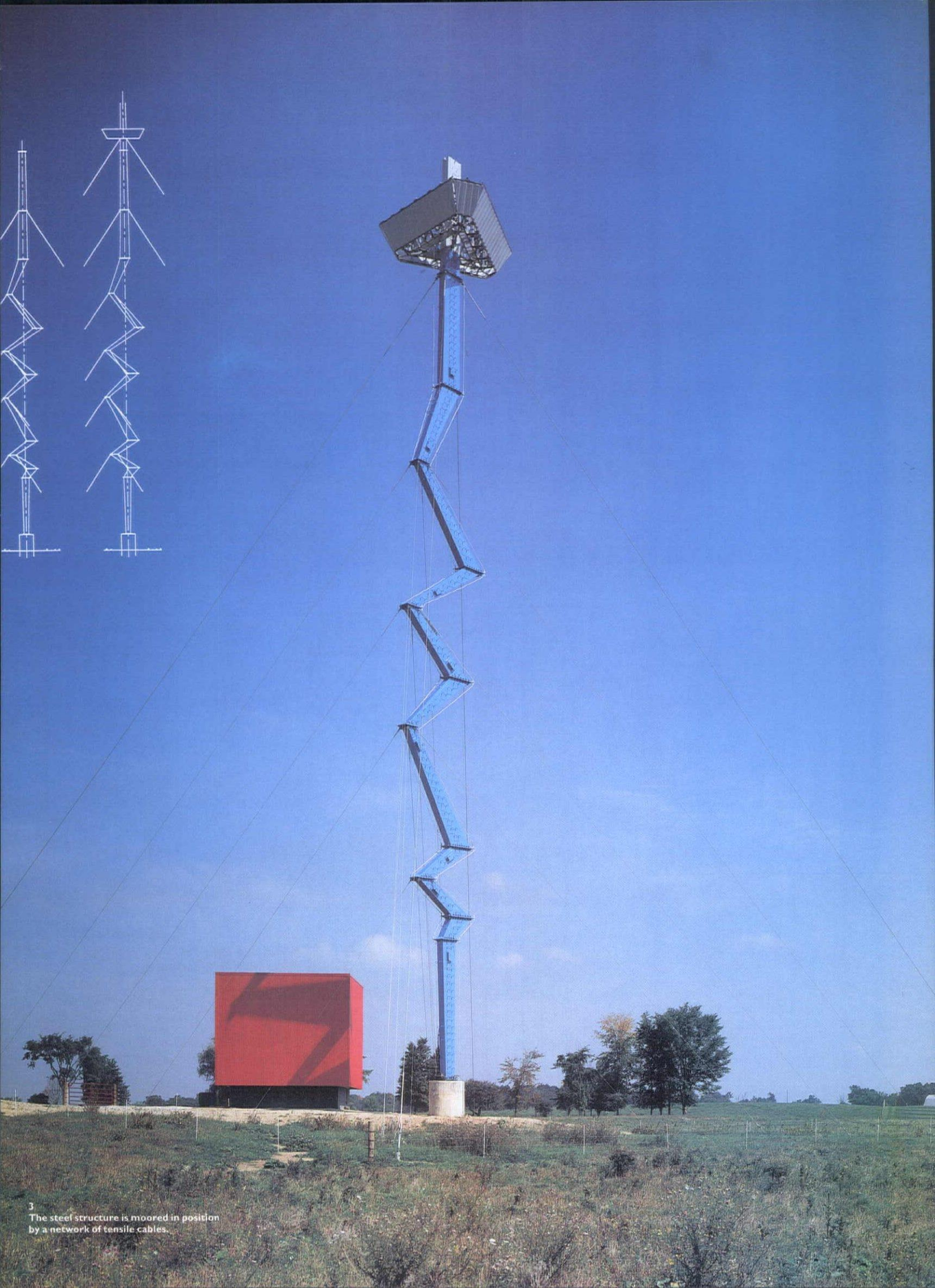
1



2

1
The jagged profile of the tower has elevated it to the status of a local landmark. The red cube at its base houses electronic equipment.
2
The tower in its green, suburban setting.

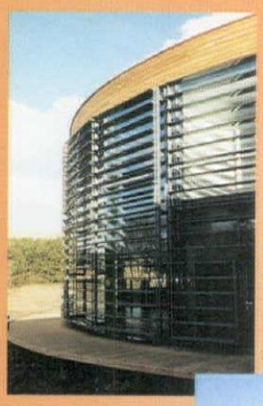
Architect
Gunnar Birkerts
Engineers
Malouf Engineering, Engineered Endeavors, Landmark Tower Corporation
Photographs
Balthazar Korb



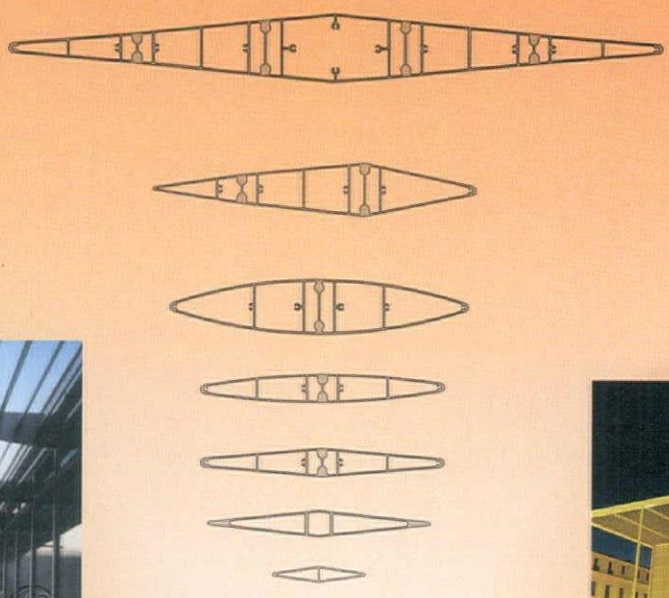
3
The steel structure is moored in position by a network of tensile cables.

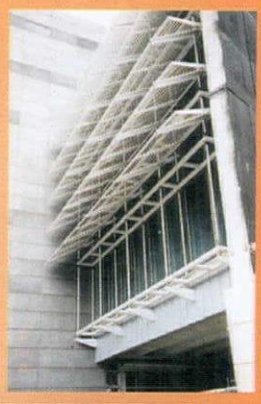
SOLAR SHADING

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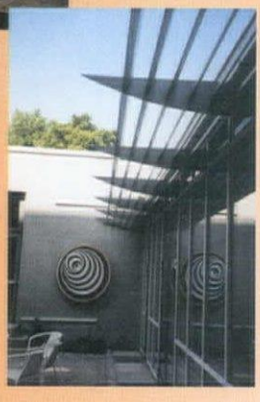


Denmark





New Zealand



Germany

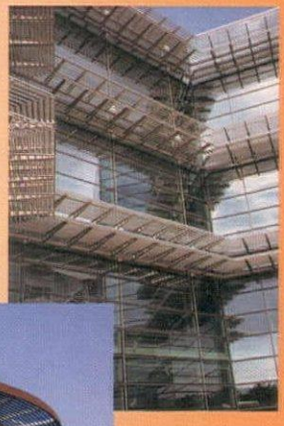


France

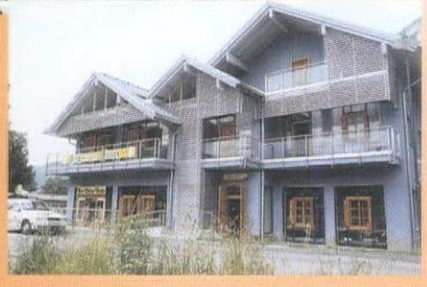
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Interior of Fenny Bentley Church, Ashbourne.

One of the earliest uses of aluminium in buildings is at Fenny Bentley Church, Ashbourne. The ceiling of the Beresford family chapel is made up of decorated aluminium panels with wooden bosses, one of which shows the date of 1895, the date the ceiling was installed.

Hoogovens Aluminium Building Systems

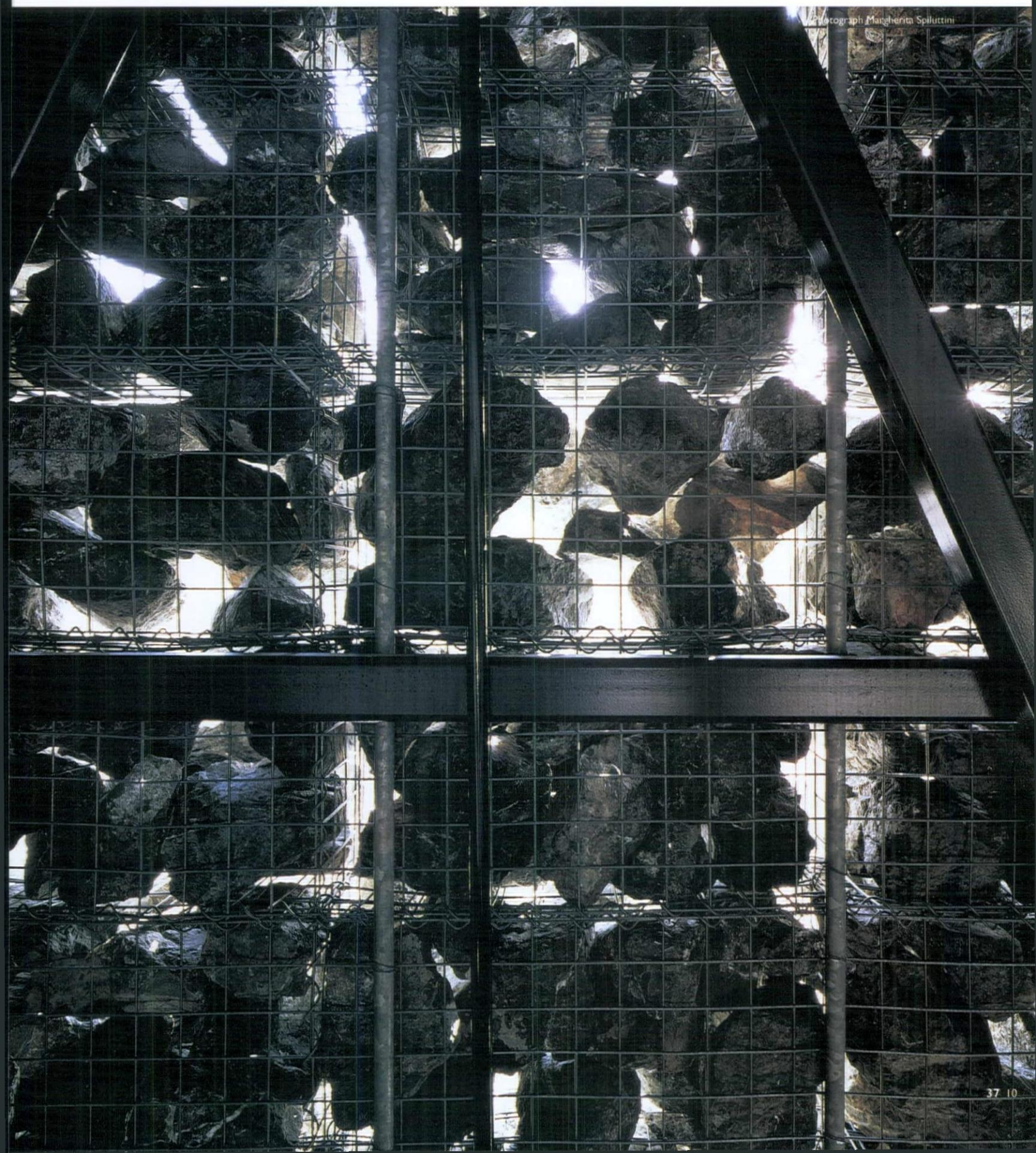
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METAL

This issue considers the ways in which metals are used with increasing sophistication in buildings. Making poetry out of economy, Herzog and de Meuron's Dominus Winery in the Napa Valley (here and p44) boldly appropriates steel gabion construction to create an austerely elegant, light-diffusing box. In Paris, Architecture Studio's new church is structured around a dramatic three-dimensional metal grid (p52), while in Japan, Shuhei Endo's new management offices for a business park are a sensuous, geometric fantasy of curved corrugated metal sheeting (p49).



LAKESIDE SPECTACULAR

Dominated by a vast, copper-clad roof and a series of layered and juxtaposed planes, Jean Nouvel's cultural centre on the edge of Lake Lucerne fosters culture as public spectacle.

Lucerne is known for its staggered timber bridge and Belle Epoque hotels set against the lake called Vierwaldstättersee and a backdrop of Alpine peaks. Since the railway arrived in the last century, tourists have used this compact city as a base for exploring the surrounding landscape and as an affluent cultural venue. Now Lucerne's new Cultural and Congress Centre (KKL) launches the city into the next millennium. Designed by Jean Nouvel, it is perhaps his most impressive performance to date. The KKL rehouses Lucerne's long-established classical music facilities, its various conference facilities and a museum of contemporary art beneath an astonishing copper roof.

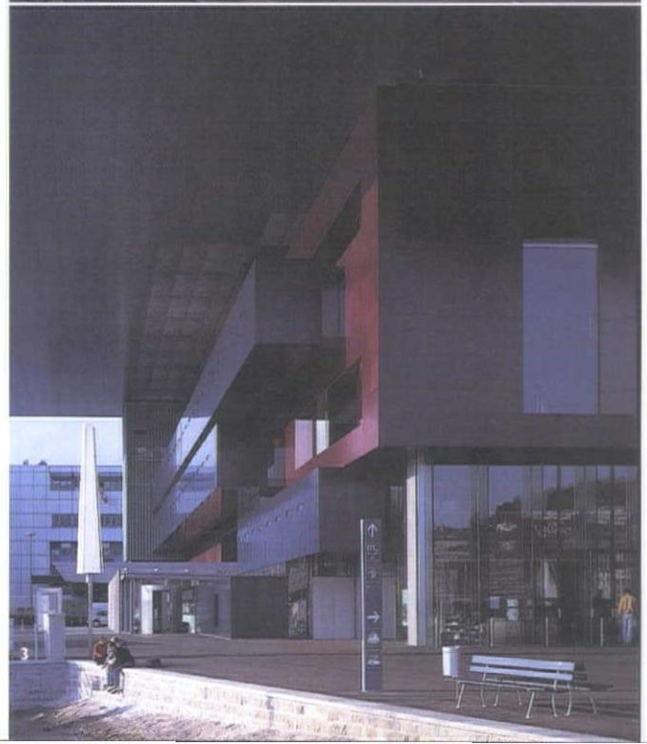
The KKL's roof sets a datum between the intimate scale of the city and the majestic presence of nature. In profile, it reads as a single green line 23m above the lakeside jostle of boats, jetties and ticket stalls, cantilevering out 45m to its north-east corner. Lined with matte grey aluminium, the soffit is dappled with reflections from the lake, from a gushing 1930s fountain and from twin channels of water that lead deep inside the building. If Nouvel's section is breathtaking, his plan is comparatively simple. A blue-panelled pavilion screening the Concert Hall, a dark grey box with twin exposed stair towers and a lucid geometric cage are parked beneath the roof as objects on display. To the rear, Nouvel's roof folds down as a perforated screen to the building's service areas.

The KKL has had a complex history. Nouvel won the original competition in 1989 with a linear roof over the city's Kunsthaus (since demolished). He placed the main auditorium at an angle out into the lake and intensified the nautical allusions by streamlining this principal hall as a sleek ship. For some time, however, an alternative scheme – that of third-placed Swiss architect Rudolph Luscher – seemed to supersede Nouvel's in the ambitions of the Lucerne authorities. When Nouvel returned to the project in 1992, the idea of building in the lake had become politically unacceptable. In response, he decided to divert the lake water across the public piazza to channels deep inside the project and sustain the memory of the shipyard that once existed on the site by treating his programmatic components as vessel-like volumes.

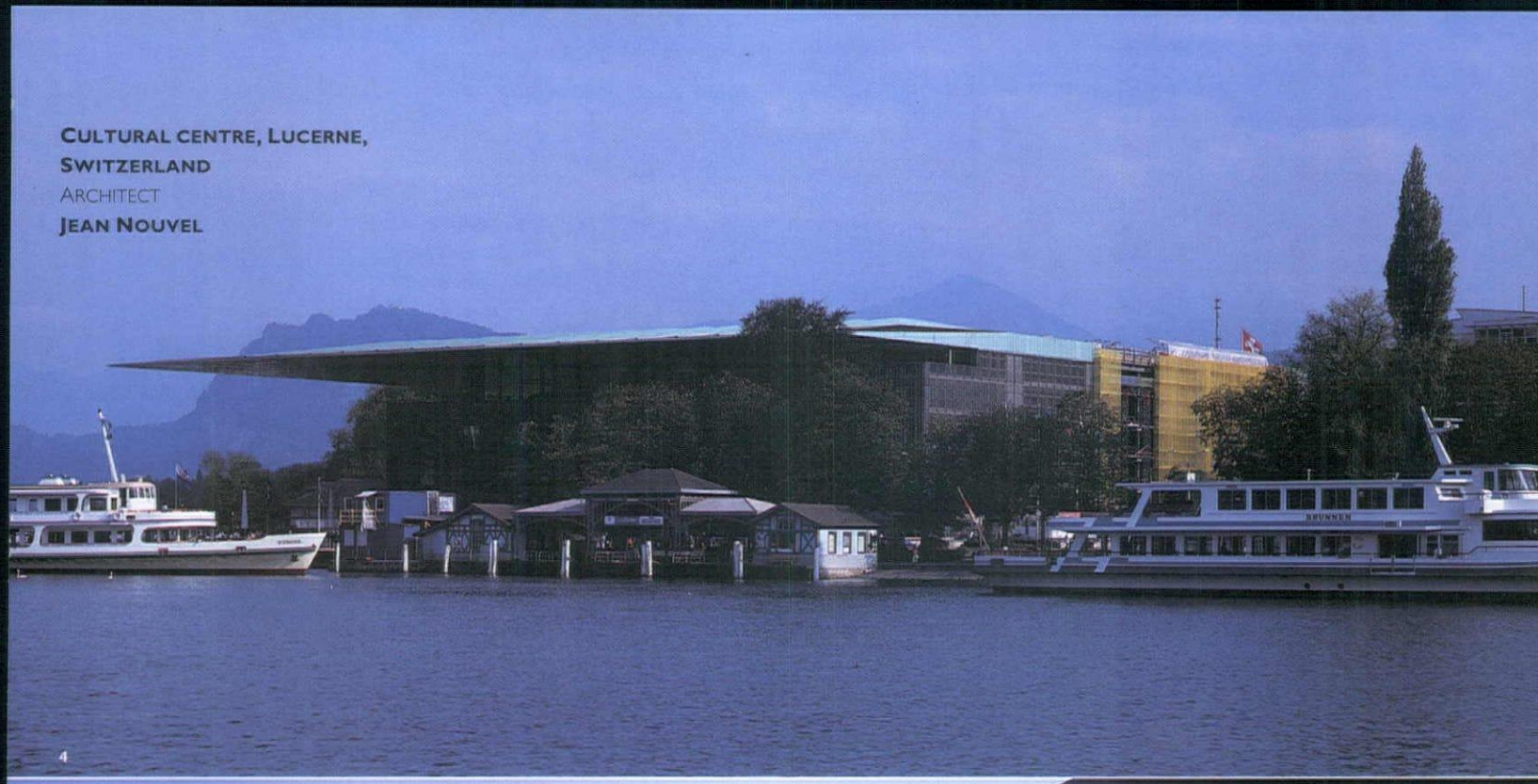
The razor-sharp, 12 000 sq m canopy is a reinterpretation of the classic portico as both urban symbol and public meeting place. It creates a new type of urban space – Europaplatz – a parvis shaded and protected from rain and snow, but open to panoramic views and accessible at all times. Of the three primary volumes, the glass and aluminium box nearest the train station and







Cultural centre, Lucerne, Switzerland
Architect
Jean Nouvel



4

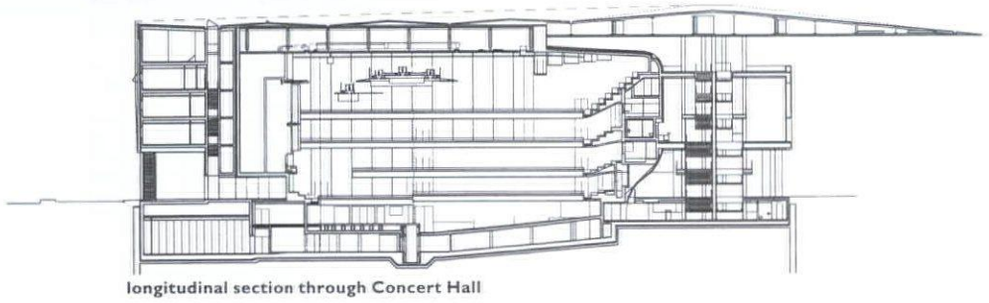
1
Protected by a massive, overhanging roof, a new urban square is created on the lakeside edge of the KKL.
2
The copper-clad roof is the building's dominant element and urban symbol.
3
East elevation of the Concert Hall, animated by geometric projections.
4
The green roof forms a new horizontal datum in the lakeside landscape.
5
Light and water create magical, dappled reflections on the underside of the roof.

5

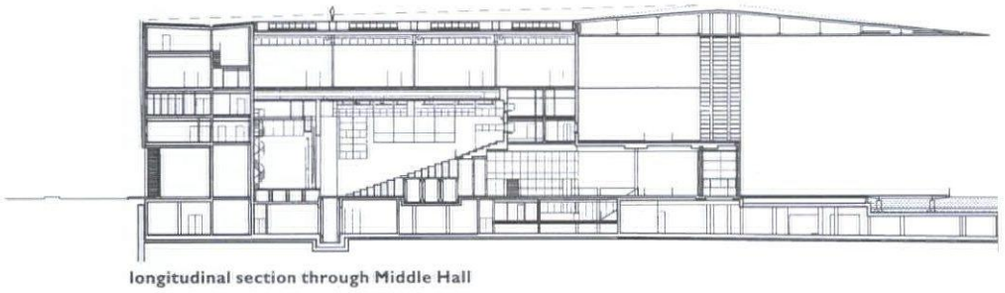


CULTURAL CENTRE, LUCERNE, SWITZERLAND
ARCHITECT
JEAN NOUVEL

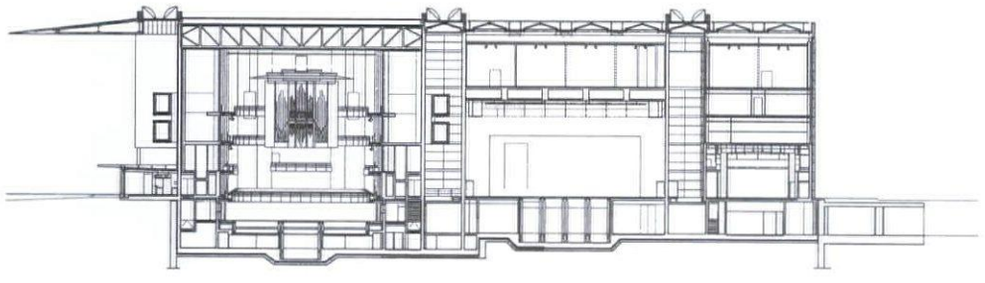
6
Restaurant offers spectacular views out across the lake.



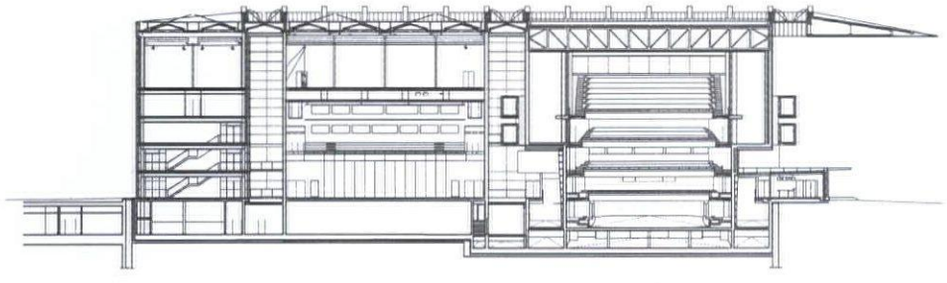
longitudinal section through Concert Hall



longitudinal section through Middle Hall



cross section through Concert Hall and Middle Hall looking south



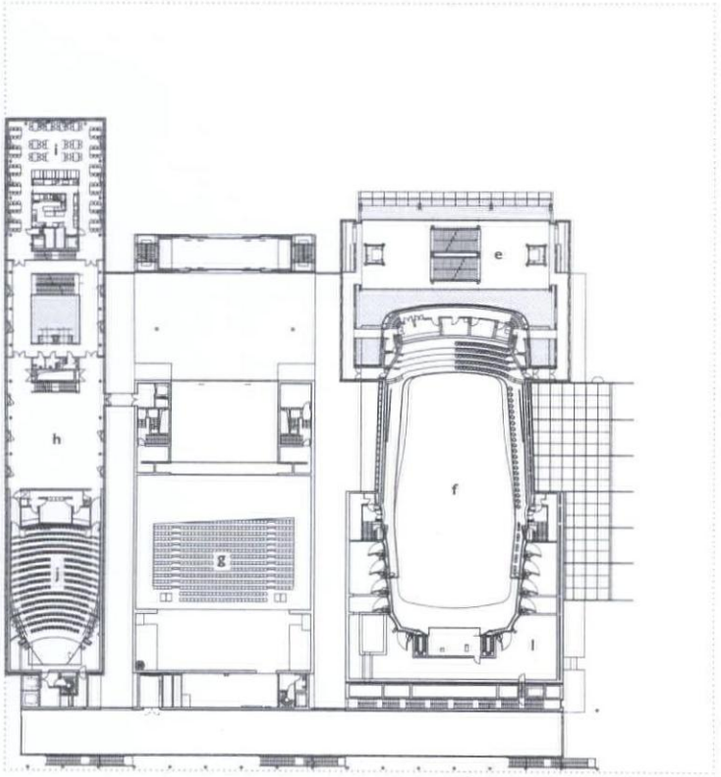
cross section through Concert Hall and Middle Hall looking north

mediaeval bridge is the busiest and most transparent throughout the day. It houses a restaurant, offices, museum entrance and various conference functions behind its decorative grilles. In the far flank of the KKL looking east over the lake is an elegant café, the Seebar, at piazza level and runs of enclosed corridors above, giving access to the Concert Hall behind. Here, Nouvel's copper roof also reaches out above a small, venerable local boat club.

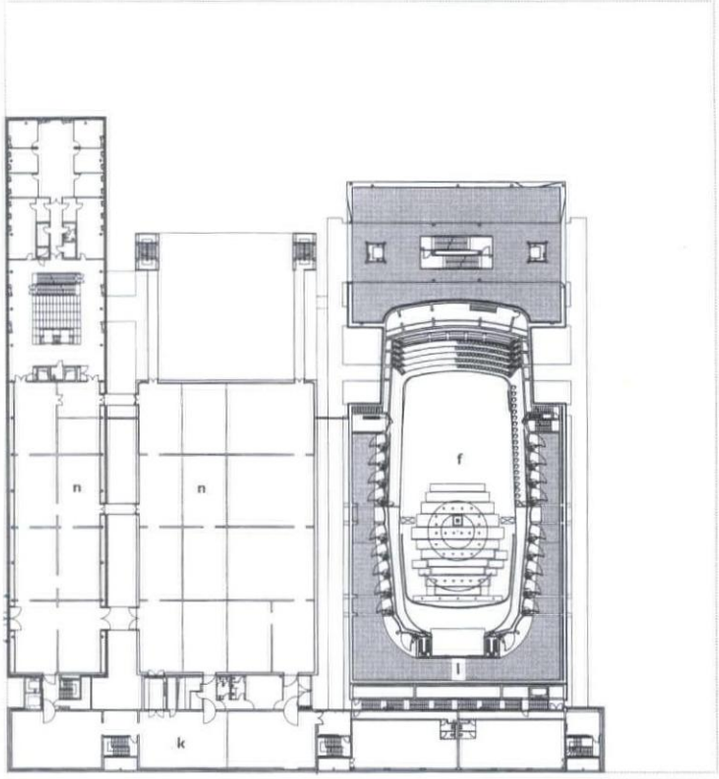
The Concert Hall and smaller Middle Hall share a formal entryway within the pavilion (blue outside, 'Bordeaux' red inside) on Europaplatz. A double stairway criss-crosses itself to rise through four levels of foyer with a glass-enclosed lift at either end. Views out are through large and rectangular windows with canted jambs framing postcard-like images of Lucerne and its hinterland. The Concert Hall is a molten hull of red maple veneer, a gorgeous, contiguous surface. Being separated slightly from adjacent floor planes increases its legibility as a vessel in dock. The pavilion's fourth floor is an expansive open terrace with the roof's overhanging rim drawing a low line over the spectacular views (like a giant baseball cap). The Meeting Hall also has a terrace, but at first floor level to serve as a performance for public events.

By isolating programmatic elements, Nouvel is able to introduce channels of water from Europaplatz and zones of natural light filtering in from the roof soffit, enlivening the foyer space with catwalks and chasms. The monolithic copper roof is punctured in places, especially above the art museum. The museum (which will not be completed until late 1999) promises to be a calm, introverted space lit only from above. Its 2400 sq m exhibition area expands in simple orthogonal cells from the upper reaches of the western block across the Middle Hall. But the strategy of free-standing elements is also of significant acoustic benefit. Working with Russell Johnson of New York-based acousticians ARTEC, Nouvel creates acoustic privacy or independence for the Concert Hall by conceiving of it in this sculptural way.

From the tiered foyers, the curvaceous body of the Concert Hall recalls both a boat and musical instrument. Nouvel inverts that initial reading by lining its innards with thin balconies or gangways, the liner's viewing decks rediscovered inside the hull. That the Hall can accommodate all kinds of musical and oral presentations is due to Johnson's contribution. In essence, the chamber is the traditional shoebox with a high ceiling; it digs down to the first basement level to give the interior increased height. Below an organ loft, the orchestra platform is lined in a pale timber; most other walls are fitted

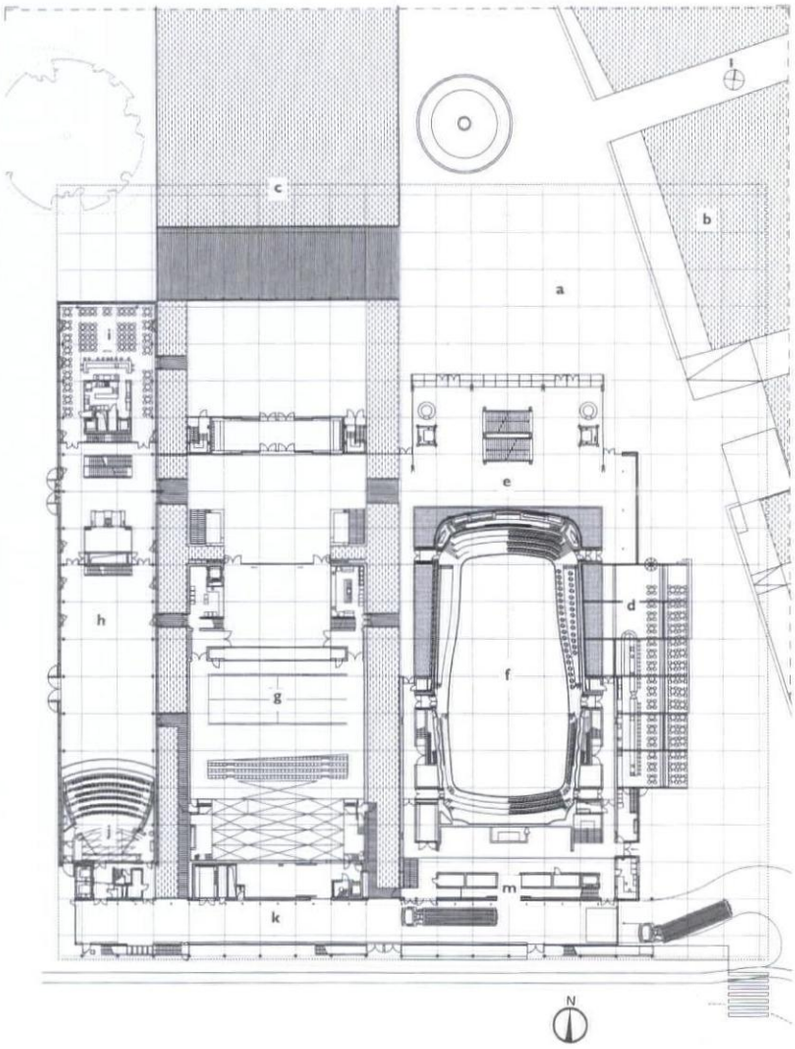


first floor plan

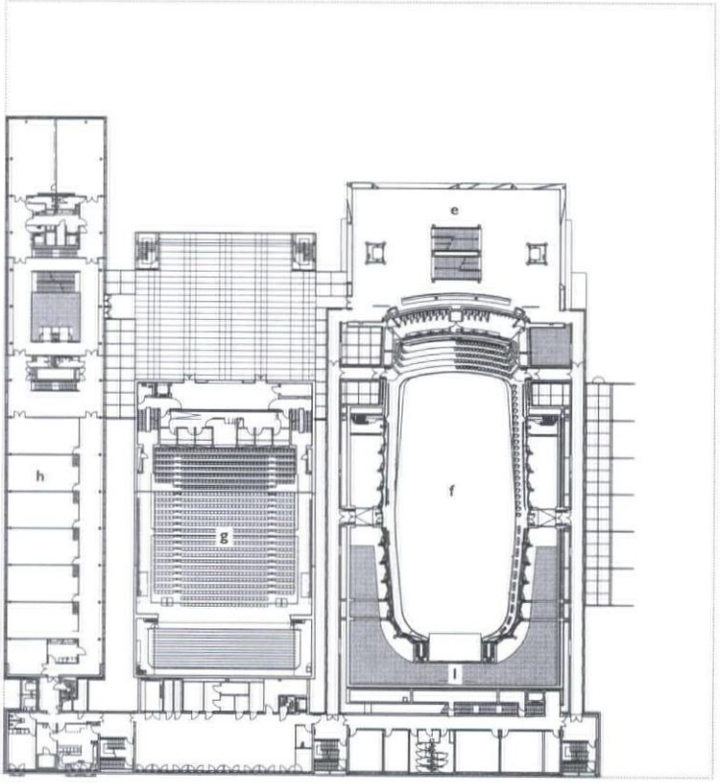


fourth floor plan

a Europaplatz
b lake
c water basin
d lakeside bar
e foyer
f Concert Hall
g Middle Hall
h Congress Centre
i restaurant
j auditorium
k service wing
l reverberation chamber
m backstage facilities
n future art museum



ground floor plan (scale approx 1:1000)



second floor plan

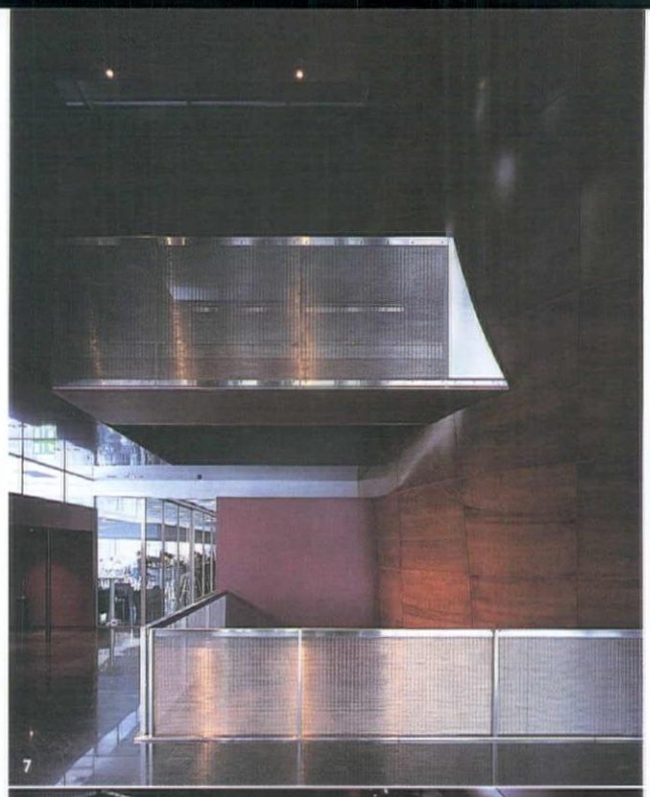
with plaster tiles (60mm deep and 200mm square) on hinged convex panels. Together, the architect and his acoustician experimented with these white indented blocks producing five versions subsequently arranged as a functional mathematical ornament.

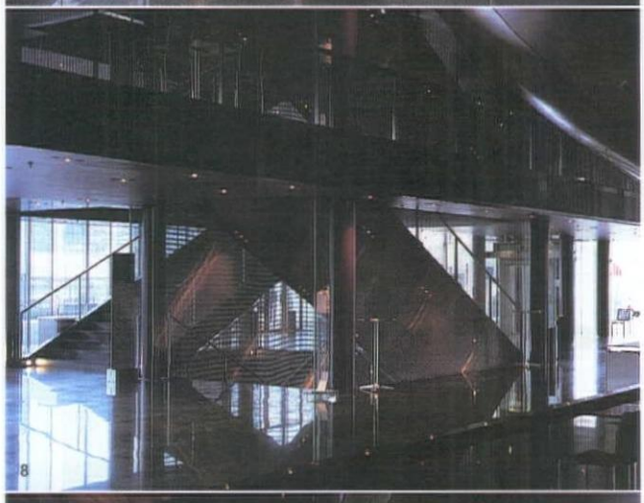
The team convinced the Lucerne authorities to reduce the Concert Hall's capacity from 2000 to 1840 places – the optimum figure for mass clarity – with each seat individually focused on the conductor. The convex wall panels open to a surrounding reverberation chamber which adds 7000 sq m to the Concert Hall's 18 000 sq m volume. Nouvel and Johnson also designed curtains that slide out from wall pockets and a circular floating canopy of timber strips which can be lowered or raised to effect the necessary difference in reverberation, for instance, a rousing romantic symphony and an intimate poetry reading. A memory of Nouvel's initial proposal to line the chamber in blue velvet survives in the dark ceiling plane studded with a constellation of tiny light sources.

Jean Nouvel has spoken for some time about his interest in film. At Lucerne, the magic of the copper roof is in part due to the lack of visibly supporting columns and walls. The various chambers do indeed hold up the roof which itself slopes back to a height of 3m. However, the experience of being within the KKL is to float cinematically between volumes and connecting views almost as if gravity no longer applies. The copper roof signals the KKL, but glass is its most important material. Without the horizontal and vertical transparency gained by layering and juxtaposing extensive planes of glass, Nouvel's architecture could not possibly be so changeable, so memorable and so inviting to passers-by. With a total expenditure of 205 million Swiss francs (almost half in direct funding from the city), Nouvel's KKL has met Lucerne's ambition to foster culture as a continuous public spectacle.

RAYMUND RYAN

Architect
Architectures Jean Nouvel, Paris
Project team
Jean Nouvel, Brigitte Métra, Marie-Hélène Baldran, Didier Brault, Sandro Carbone, Günther Domenig, Xavier Lagurgue, Denis Laurent, Philippe Mathieu, Eric Nespoulous, Julie Parmentier, Matthias Raasch, Markus Röthlisberger, Beth Weinstein, Stefan Zopp
Structural engineers
Electrowatt Engineering, Plüss + Meyer
Services engineers
Schudel + Schudel, Aicher, De Martin, Zweng, Balduin-Weisser
Electrical engineer
Scherler
Acoustic consultant
ARTEC
Theatre consultant
Jacques Le Marquet
Photographs
Paul Raftery







7
Clad in red maple veneer, the curved hull of the Concert Hall is a sensuous presence in the foyer spaces.
8, 9
A double stairway crisscrosses through the foyer.
10
Ground floor foyer space, with the intruding hull of the Concert Hall.
11,12
Dramatic volume of the Concert Hall can seat 1840 people. The traditional shoebox form can accommodate a wide range of musical and oral presentations.

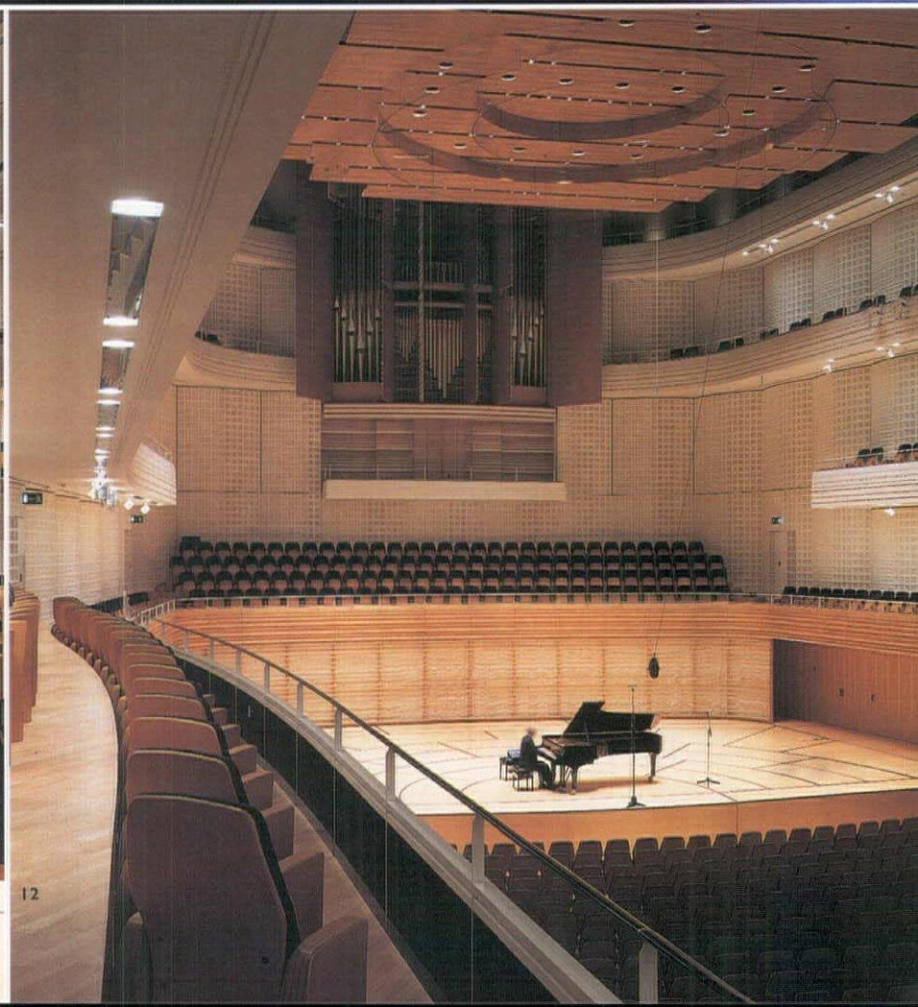
Cultural centre, Lucerne, Switzerland
Architect
Jean Nouvel



10



11



12

STEEL, STONE AND SKY

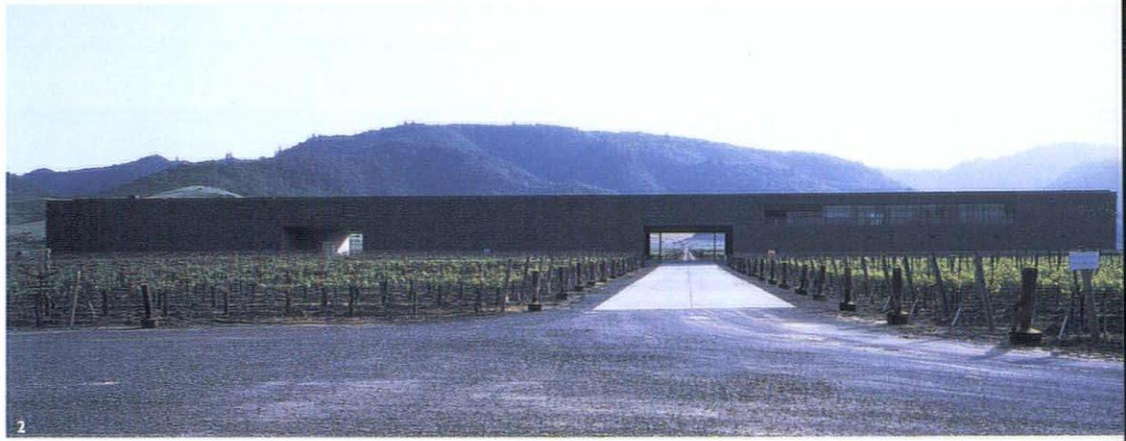
Elevating unassuming raw materials and basic industrial construction Herzog and de Meuron's winery in the Napa Valley elegantly fuses the rational with the sensuous to make poetry out of economy.

The Napanook Vineyard, located near Yountville, California, has been cultivated since 1866. The Dominus wine produced there since 1983 by new proprietor Christian Moueix of Bordeaux has attracted such international acclaim that it was decided to build a winery on the site. The Moueix family commissioned Herzog & de Meuron in 1995 and the first bottling of a Dominus vintage took place in the new building in May this year. While many California vineyards pander to the public with extravagant roadside buildings which try unconvincingly to evoke an 'olde worlde', Dominus assumes a different posture. Not open for public degustation, the winery is set back from the road in the heart of the vineyard. The architecture is reticent, even aloof, an understated complement to the very high quality of Dominus wine.

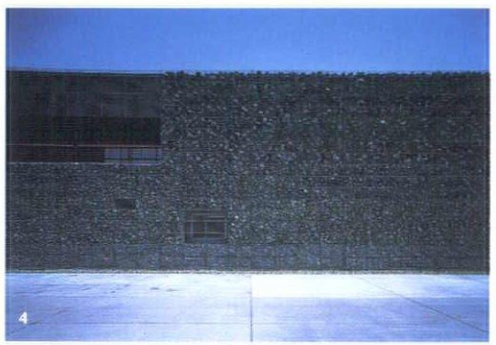
The building is a simple two-storey box 140m long by 25m wide with its long axis running north-south. The box is punctured by two covered passages which separate the functional components of the building. At the north end are the cask cellar and store at the ground level with administrative offices above; all other areas are double height, with the tank room in the central band, and the bottling facility, warehouse and electrical plant at the south end. The north portal aligns with the major east-west access road from the highway which passes through the building and continues on into the vineyard. The open-air portico so created houses entrances to each of the major spaces of the winery, including the tasting room and cask cellar, the offices and the tank room. The south portal provides a covered outdoor space between the tank room and warehouse which serves as a bottling and boxing area and as a loading bay. Parking for staff and invited visitors is unobtrusively provided in a single file along the entire length of the rear west facade.

The winery is of conventional economic warehouse construction with a concrete ground slab, site-cast concrete columns, beams and tilt-up walls, and a precast concrete plank roof. This solid, introverted construction gives way to a steel frame on the upper level at the north end of the building where the offices are





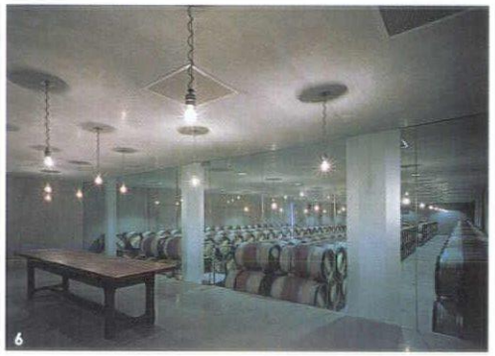




1
The rational, Miesian box in its Napa Valley setting.
2
The winery appears as an introverted, geometric slab.
3
Wall construction comprises steel gabions filled with basalt.
4
The mantle of basalt acts as a rainscreen and insulating layer.
5
Landscape framed by the north portal. Gabion construction uses different sizes of galvanized steel mesh and grades of stone.



Winery, Yountville, USA
Architect
Herzog & de Meuron



6

6
The industrially austere tasting room and cask cellar.
7
Light diffuses magically through the loosely packed stone.
8
Offices are set at first floor level, above the cellar.
9
A long, visor-like incision in the wall gives views out over the surrounding vineyard.
10
Sensuous fusion of light, glass and stone.

located. While the box is conventional, the cladding is not. Just as the sinuous copper cladding of the Signal Box 4 Auf dem Wolf in Basle also acts as a Faraday cage to protect the electronic equipment inside, so the skin of Dominus is both handsome and functional. Galvanized steel gabions, widely used in river and highway engineering as retaining structures, are filled with loose crushed basalt typically used as the sub-base for road construction. Here the caged stone takes on a new role as rainscreen and, through the modulation of both light and heat, tempers the interior environment of the building.

The gabions, imported flat-packed from Switzerland, were assembled and filled with local rock on site. They bear on a perimeter grade beam and are restrained by ties to stainless steel rods cast into the concrete wall panels and, in the areas which are framed, by brackets from the steelwork. Using a single module of 900 x 450 x 450mm for the entire building, enormous variety is achieved by very frugal means. Three sizes of mesh are used: the largest is the 75mm square grid of the gabion; an intermediate gauge of screen is added to the gabion at the base of the walls to prevent rattlesnakes from nesting among the rocks; and the finest 5mm mesh is used for balustrades and suspended ceilings.

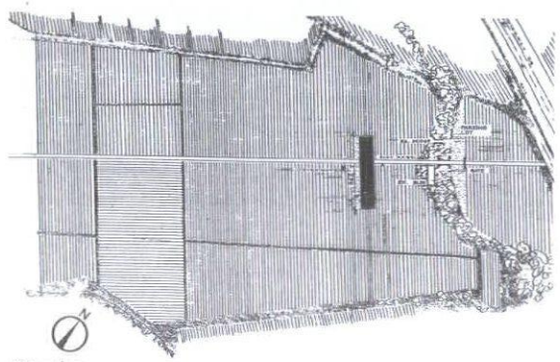
Likewise, three grades of stone are used. The largest and least densely packed, which is permeable to light and ventilation, is used for the walls of covered outdoor areas and the tank room. Because the fermentation tanks themselves are insulated and fitted with sophisticated temperature controls, the environment of the tank room is not critical. The space is permanently vented at high level by the coarse stone screen combined with a window screen in the back-up wall. By day, filtered sunlight is allowed into the tank room and by night, the facade glows like the embers of a dying fire. A closely packed smaller grade of stone which clads the cask cellar and warehouse is opaque to light and provides a stronger barrier against temperature changes in these sensitive areas. Within the cask cellar, in lieu of a slab, oak barrels rest on concrete sleepers on crushed basalt so that humidity from the earth can permeate the room to assist in maturing the wine. This same grade of fine basalt is used as loose ballast on the roof. The mantle of stone acts as a thermal buffer which insulates the building. Only the offices – a small area of this large structure – have mechanical heating and cooling. The environmental strategy of the building is thus dominantly passive rather than mechanical and, more importantly, in the realm of architecture rather than services – a radical approach in the land where air conditioning is king. Dominus is not about high-tech California winemaking, but about an intimate relationship with the site exemplified by both the wine and the building.

In stark contrast with the delicate filigree of the dense, rough and highly textured stone

WINERY, YOUNTVILLE, USA

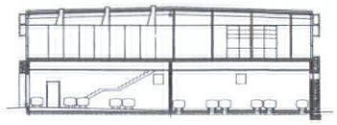
ARCHITECT

HERZOG & DE MEURON

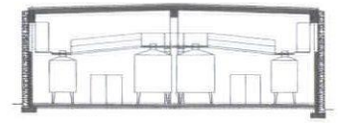


site plan

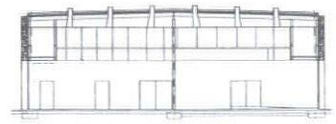
a storage
b tank room
c arch
d cask cellar (first year)
e cask cellar (second year)
f laboratory
g offices
h classroom/dining room
i plant room
j bottling room
k cellar master's room
l tasting room



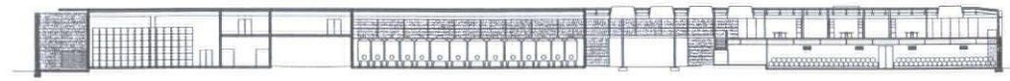
cross section through cellars



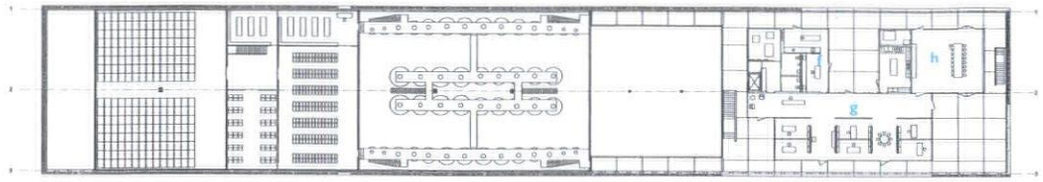
cross section through tank room



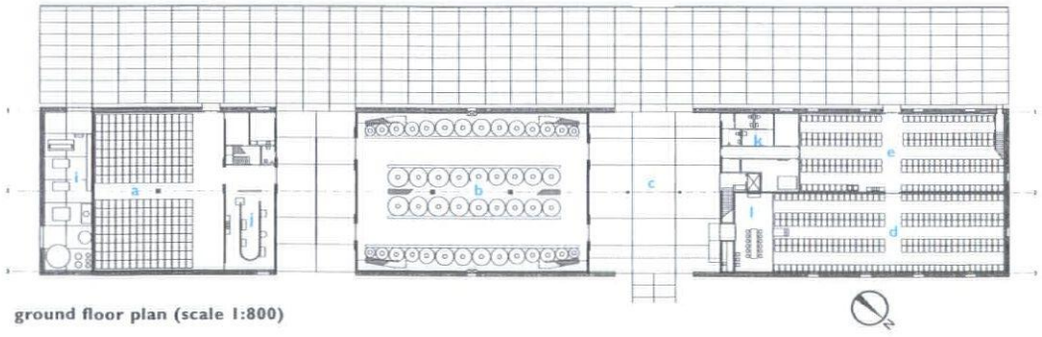
cross section through main arch



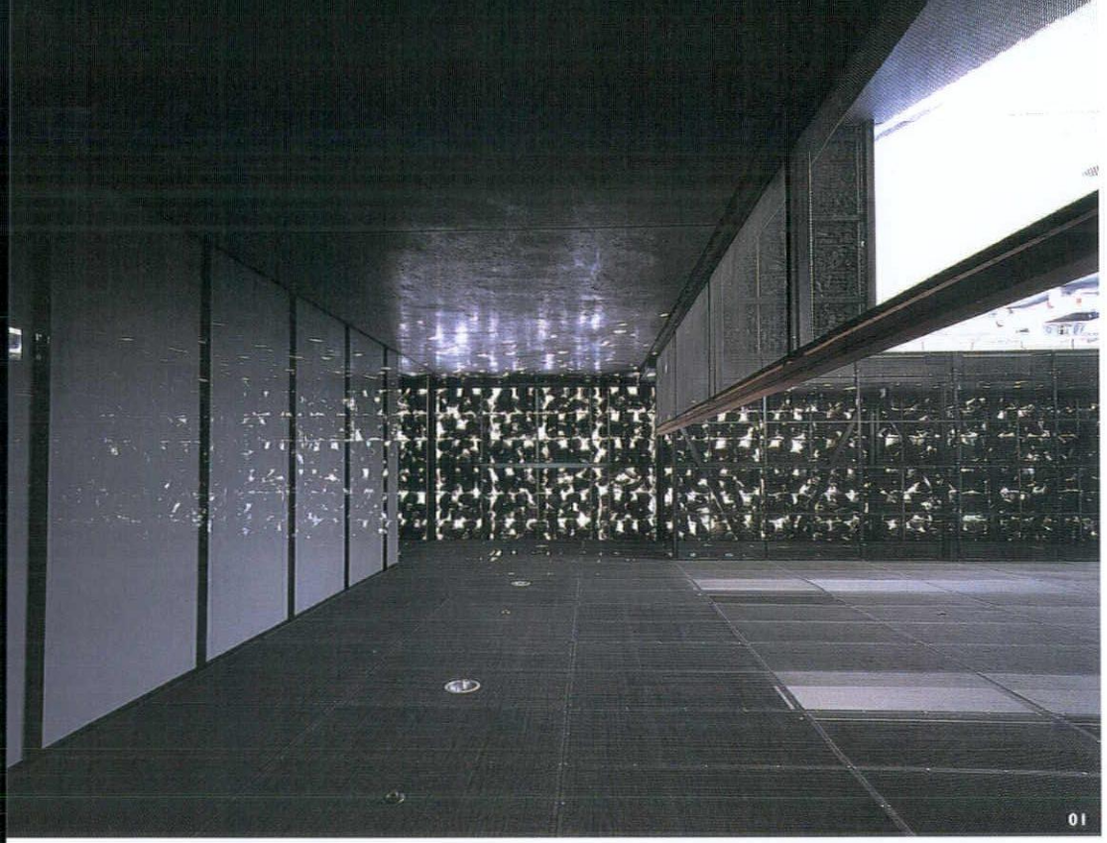
longitudinal section



first floor plan



ground floor plan (scale 1:800)


01


6


8



WINERY, YOUNTVILLE, USA

ARCHITECT

HERZOG & DE MEURON

Architect
Herzog & de Meuron, Basle, Switzerland
Project team
Jacques Herzog, Pierre de Meuron, Jean-Frédéric Lüscher, Uli Ackva, Ines Huber, Nathalie Kury
Structural engineer
Zucco Fagent Associates
Facade consultant
Mario Meier
Modelmaker
Bela Berec
Construction management
Valley Architects
Photographs
Margherita Spiluttini

cladding are the large panels of glazing enclosing the offices. Nothing is allowed to diminish the pure abstraction of the glass. Set back two metres from the facade to create outdoor terraces overlooking the vineyard, the glass produces complex and surprising collages of earth, sky and building – part real and part illusion. The frame is suppressed externally by silicone jointing, and detailing at the floor and ceiling is minimal. Interior partitions are held back from the perimeter, with sliding panels used to close the gap between room and external wall only when necessary. Uniformity of finishes inside and out – concrete floors and wire mesh ceilings – increases the purposeful Miesian ambiguity between interior and exterior space.

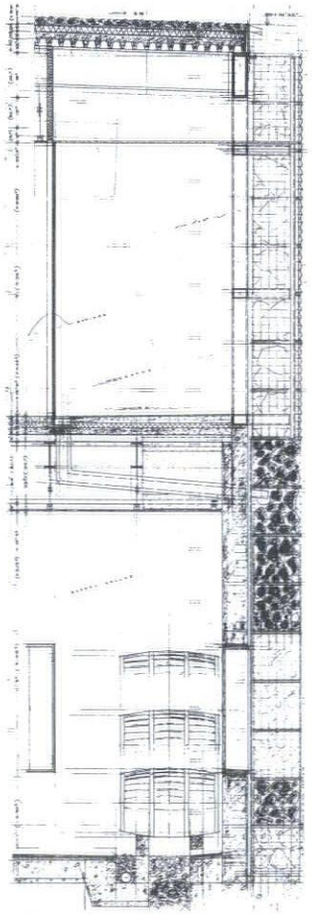
Within the giant entrance portico which is scaled to the measure of the landscape are a series of entrances at human scale, each carefully distinguished hierarchically. Lowest in this order are the doors to the tank room and the barrel store – sliding panels hung from standard industrial rails and painted grey to match the concrete walls. The administrative entrance is marked by a pair of hinged mesh shutters which give access to an open-air vestibule and stair up to the offices. The ascent towards a framed view of sky is transformed at the top of the stair into a view over the vineyard and back along the access road. Turning 180 degrees, passage into the interior of the building is through a discreet door in the glazed office enclosure. Alternatively, it is possible to move around the perimeter of the upper level on the exterior terraces and to cross over the entrance portico on open-air bridges which lead to the tank room catwalks.

Most important is the entrance to the tasting room and cask cellar. Raised on a slender plinth, abstract glazed doors reflect the vineyard and conceal the inner sanctum. The dark bottle-green glass keeps daylight out and glows when lighted from within. A small lobby with an oak inner door allows the eye to adjust from the bright California sun to the dark tasting room. A butt-jointed clear glazed screen makes an invisible boundary between tasting room and cask cellar. An austere grid of suspended 40-watt bare bulbs is softened by spiral vine-like tendrils of the same galvanized wire used to lace together the gabions.

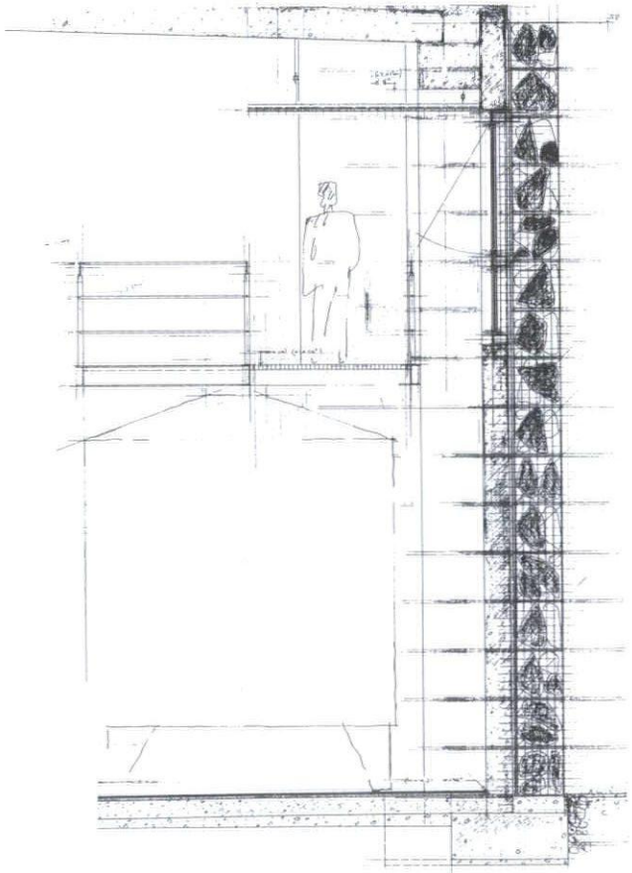
Christian Moueix believes that winemaking is led by nature; Herzog & de Meuron have adopted this principle. The building meets ground and sky simply. The stone appears to rise directly out of the bare earth of the vineyard. While the basalt walls are barely distinguishable from the mountains beyond, the pure horizontal line drawn by the roof of the building provides a subtle counterpoint to the jagged horizon provided by nature. Just as the vine is subjected to the geometric rigour of the vineyard, so is the rough and irregular basalt made to conform to a rational order.

Like the transformative process of winemaking, Herzog & de Meuron have elevated the most unassuming of raw materials into an architecture which is both functional and beautiful, robust and delicate, tactile and highly abstract. This building, like the wine it houses, is a refined blend of science and art. While highly rational, efficient and intelligent, Dominus Winery is also a sensuous fusion of nature and the man-made.

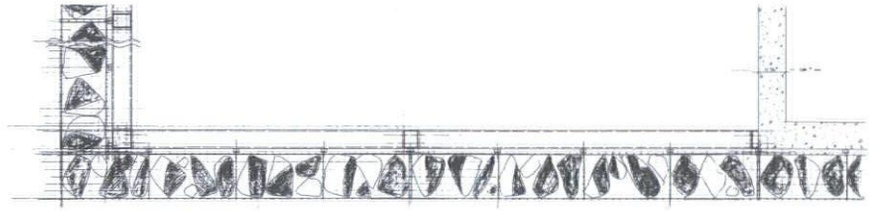
ANNETTE LECUYER



detailed wall section through office and cellar



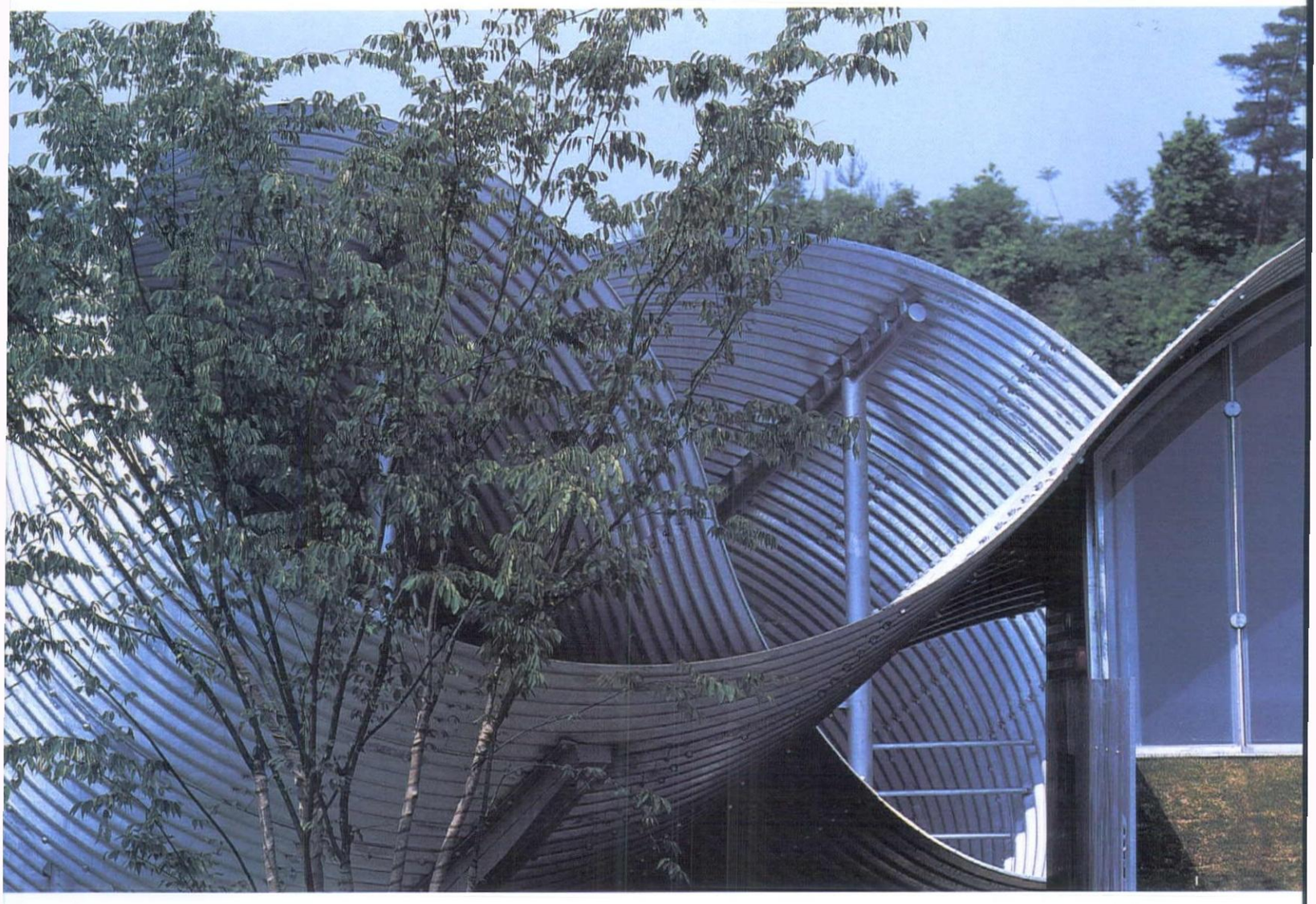
detailed wall section through tank room



typical horizontal wall section

METAL TURNINGS

A small public building in a Japanese park transforms utilitarian purpose into an abstract piece of sculpture poetic in form and substance.



PUBLIC LAVATORIES AND PARK-KEEPER'S FLAT, HYOGO PREFECTURE, JAPAN

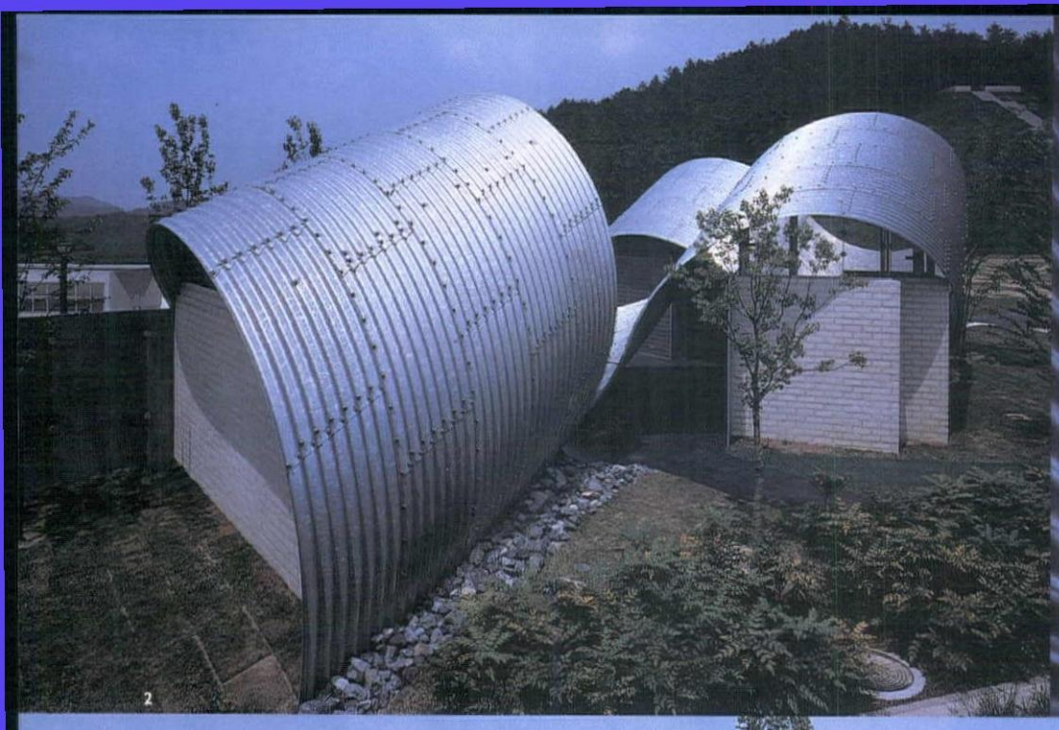
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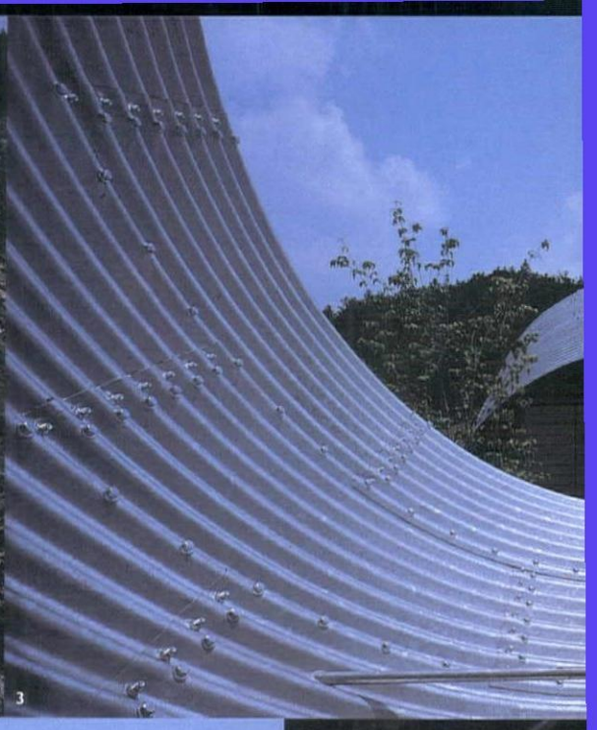
SHUHEI ENDO

1
North face of structure as metal coil begins reverse roll over men's lavatories. Women's lavatories in background.

Shuhei Endo's penchant for using curved sheets of corrugated metal to enclose space has surfaced again[1] in the form of a structure containing public lavatories and park-keeper's flat in a small park in the mountains of Hyogo Prefecture. Surrounded by anonymous elementary and secondary schools, the site was green but devoid of architectural character. In this setting the structure is an abstract adornment, a playful piece of sculpture in which poetry of form and material is sharpened by nostalgia for corrugated tin buildings.

The tradition of creating playful structures as a part of garden design goes back to ancient times. The repertoire of temples, follies, summer houses, gazebos, pavilions, ornamental bridges, so rich and varied, is always available for recasting. Public lavatories which are often assumed to be a product of the municipalizing tendencies of a more modern age have antecedents going back at least to Roman times (the Romans used to collect the urine so produced and use it for fulling cloth). Endo, like Piers Gough in London,[2] has picked up on the idea of a Temple of Convenience[3] but has given it a metaphysical spin. Public lavatories, he points out, are supposed to be conveniently open buildings; but also secure and therefore defensive. His structure is intended to be an abstract play upon this opposition.









PUBLIC LAVATORIES AND PARK-KEEPER'S FLAT, HYOGO PREFECTURE, JAPAN

ARCHITECT

SHUHEI ENDO

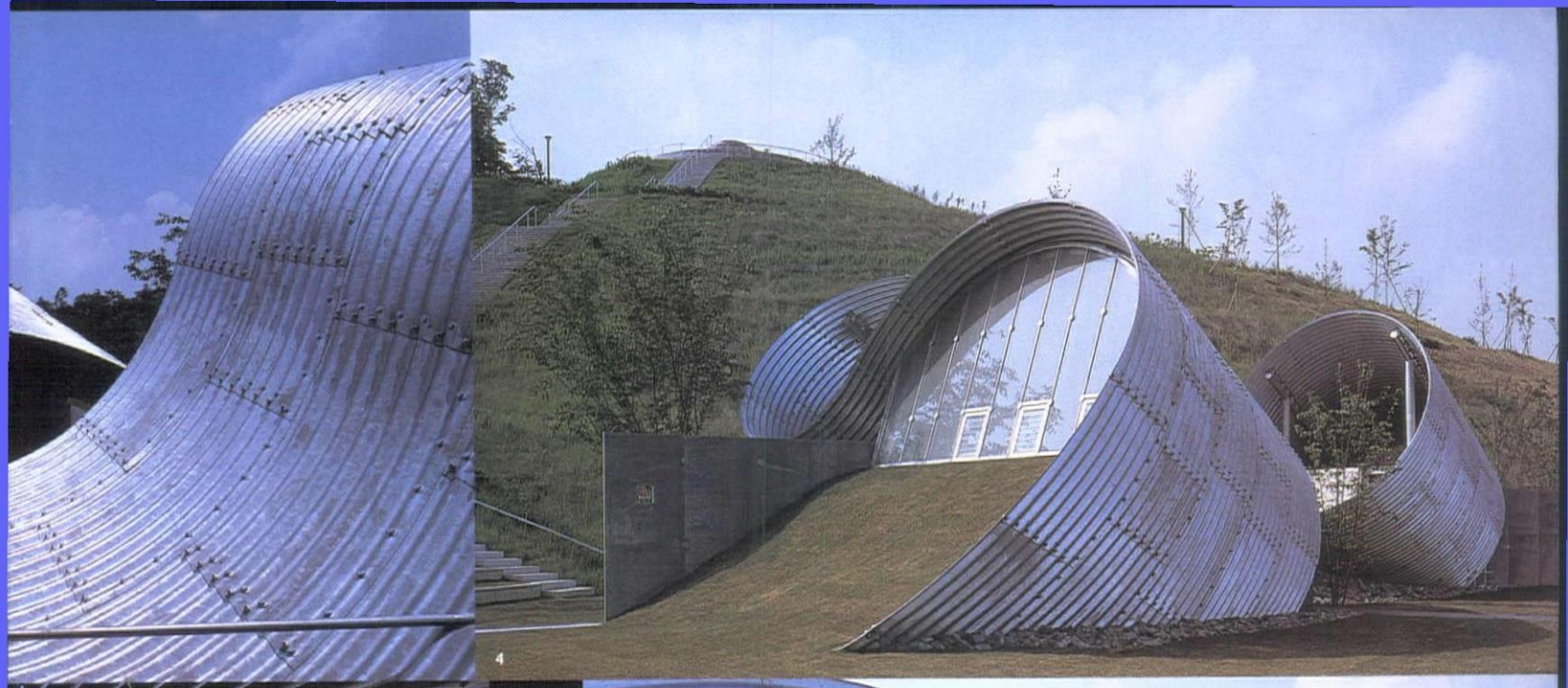
2
South face, women's lavatories to left, men's to right.
3
Continuous corrugated steel ribbon composed of riveted curved sheets, braced and anchored by steel tubes.
4
North wall of flat rises from earthwork into the vault.
5
Structure like a playful piece of sculpture beneath green hill at foot of flight of steps.
6
Looking west to women's lavatories.
7
Entrance to men's lavatories.

At the foot of a steep hill and flight of steps, the structure is a series of coils forming vaulted enclosures for the two lavatories and flat. As the coil is continuous there is no formal hierarchy or symmetry, the separate entrances indicated by paths leading to them from three directions. Seen from the bottom of the steps, the park-keeper's flat is at the head of the complex, its glazed front wall rising out of a small earthwork into the curve of the vault. Entrance to the flat is to the left beneath the metal sheet as it swoops down at the beginning of a reverse roll over the men's lavatories.

Whereas the flat is an enclosed volume, the lavatories are partly open but screened by metal panels and rails, pale brick walls, and glazing to the upper parts of rear walls. The tough industrial character of these insertions stands up well to the impact of the enclosing metal swarf, through the shining loops of which you get glimpses of what is beyond.

Construction is not unlike the Sakai bicycle shelters.[4] Junctions are fixed with standard nuts and bolts and the metal coil is braced, anchored by heavy steel tubes. The edges of the writhing sheets pierce the earth through rectangular pebble-set slots in the ground. P.M.

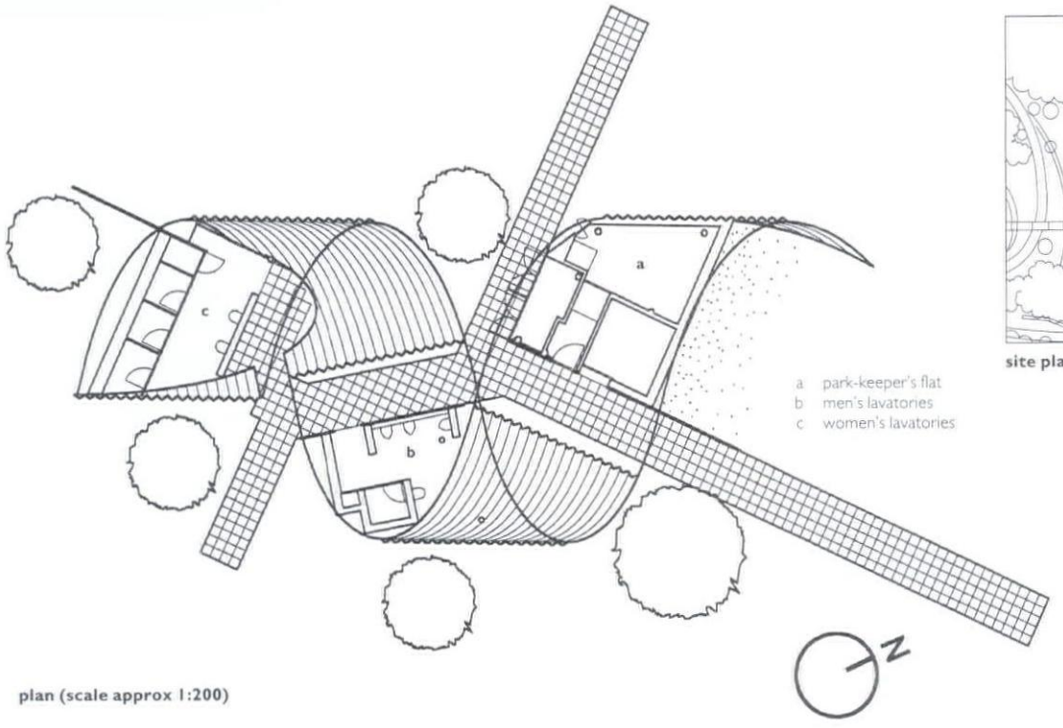
1 See April 1997, pp26-27.
2 AR August 1993.
3 From book of the same name, by Lucy Lambton, published by Pavilion.
4 April 1997, *op cit.*



4

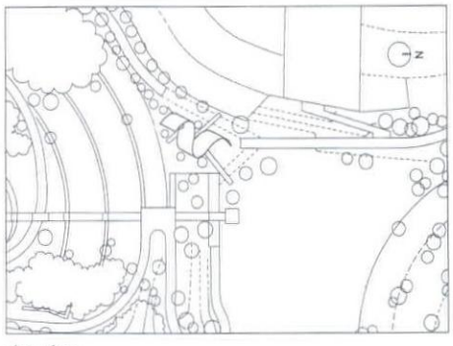


7



a park-keeper's flat
b men's lavatories
c women's lavatories

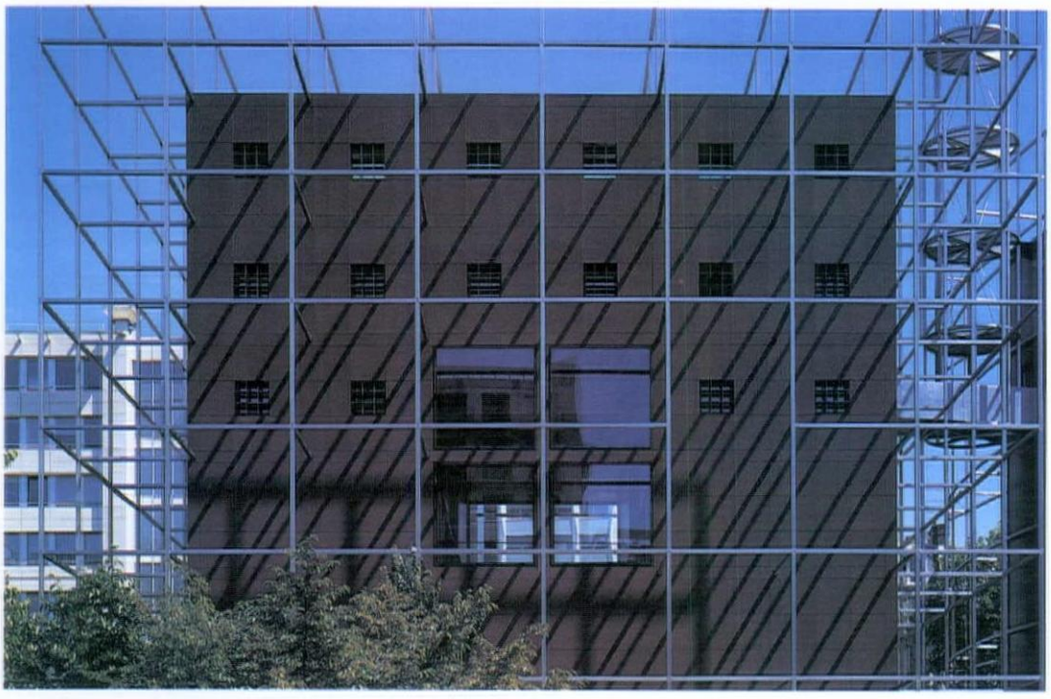
plan (scale approx 1:200)



site plan

Architect
Shuhei Endo Architect Institute
Project architects
Shuhei Endo, Aoi Fujioka, Toshinori Nagai, Wataru Horie, Atsuo Miyatake, Keisuke Fukuma
Structural engineers
TIS & Partners
Construction
Inoue Building Firm
Corrugated construction
Nakamitu Kenzai
Photographs
Yoshiharu Matsumura

CHURCH, PARIS, FRANCE
ARCHITECT
ARCHITECTURE STUDIO



1
The cuboid volume of the church is enclosed by a huge non-structural stainless steel frame.
2
The giant frame creates a transition between the secular surroundings and the sanctuary of the church.
3
The main volume of the church is elevated on pilotis, creating a cloister around its base. On the north-east side, a landscaped square leads to the street.
4
Detail of steel frame.
5
Detail of the specially developed cladding panels printed with the repeating text of 'Ave Maria'.

SACRED BOX

Informed by biblical and geometrical allusion and enclosed by a dramatic steel frame, this new local parish church in Paris explores the nature of modern sacred space and monumental architecture in an urban setting.

Architecture Studio's recently inaugurated new parish church in Paris' 15th *arrondissement* forms part of a regional programme of new church building. Reflecting the progress of Catholic liturgical convention towards a less rigidly formal spirit of worship, the new church explores the nature of modern sacred space and monumental architecture in an urban context. Churchgoing is declining in France and it was hoped that the new building would stimulate congregation numbers, especially among the young.

Set in a neighbourhood of rather soulless postwar tower blocks, the church of Our Lady of the Ark of the Covenant is an exercise in geometrical and biblical allusion. Based on the exact proportions of a cube, the main volume of the church is elevated on 12 cylindrical pilotis, representing both the Apostles and the Tribes of Israel. The pilotis and the overhanging volume form a cloister that connects with an austerely landscaped square or parvis located on the north-east side of the church.

Chosen for its archaic symbolic associations (equal sides reflecting the omnipresence of a singular divinity), the cubic form also alludes to the Ark of the Covenant. Both church and Ark embody the notion of a sacred vessel or box; according to the Old Testament, the gold-plated, acacia wood chest of the Ark represented the presence of God for the nomadic Jewish people. The cube is clad in finely jointed terracotta-coloured cladding panels, stencilled with the text of 'Ave Maria'. Printed in gold, the angelic salutation is repeated apparently infinitely, as a chant, poem, incantation and prayer, dematerializing the massive, inert volume of the cube. This sense of dematerialization is emphasized by a three-dimensional metal grid which encloses the cube, like a huge cage or climbing frame. The stainless steel structure creates a transition between the secular world and the sanctuary of the church. On the south-east face, a spindly steel framed cylinder hung with bells (an abstraction of a traditional campanile), soars above the surrounding jumble of roofs.

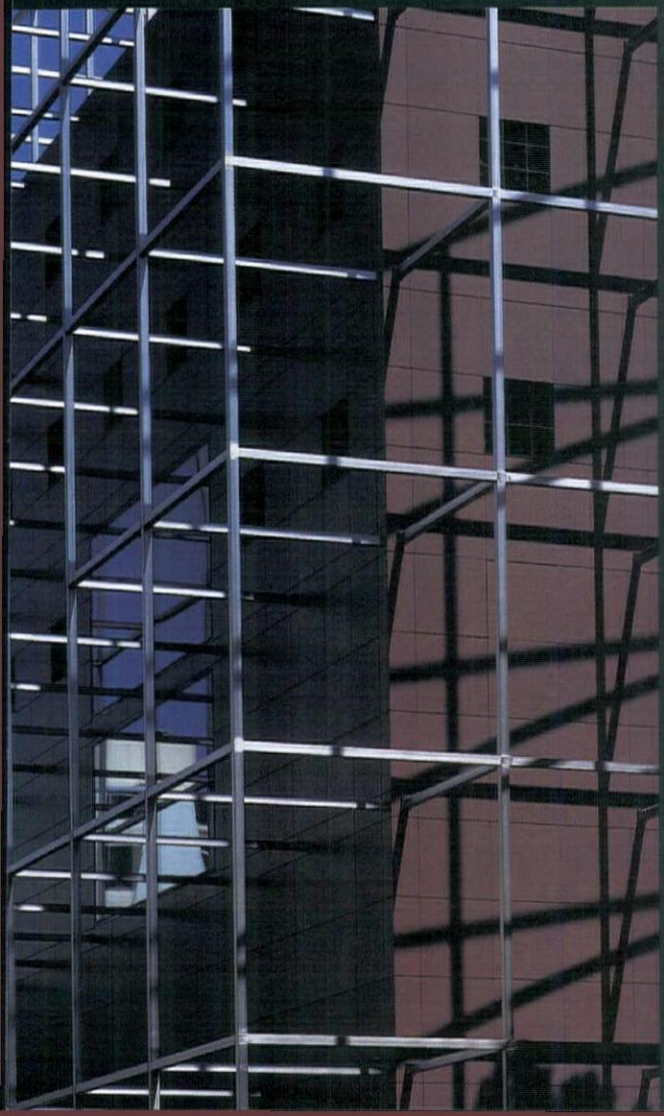
The skeletal campanile also marks the entrance to the church. The calm, intimate space of the baptistry is at ground level, fitfully illuminated by light diffusing from the church above through a partly glazed ceiling. Light falls on the heavy, marble font, the spiritual and functional focus of the space. A single set of steel and glass stairs at the east corner leads up to the main sanctuary. The symmetrical volume of the nave is lined with dark wood panels, like an exquisitely crafted cabinet. A black slate floor reinforces the building's austere materiality. Spiral staircases set at the corners of the cube wind up to galleries, parish rooms and priests' lodgings at upper levels.



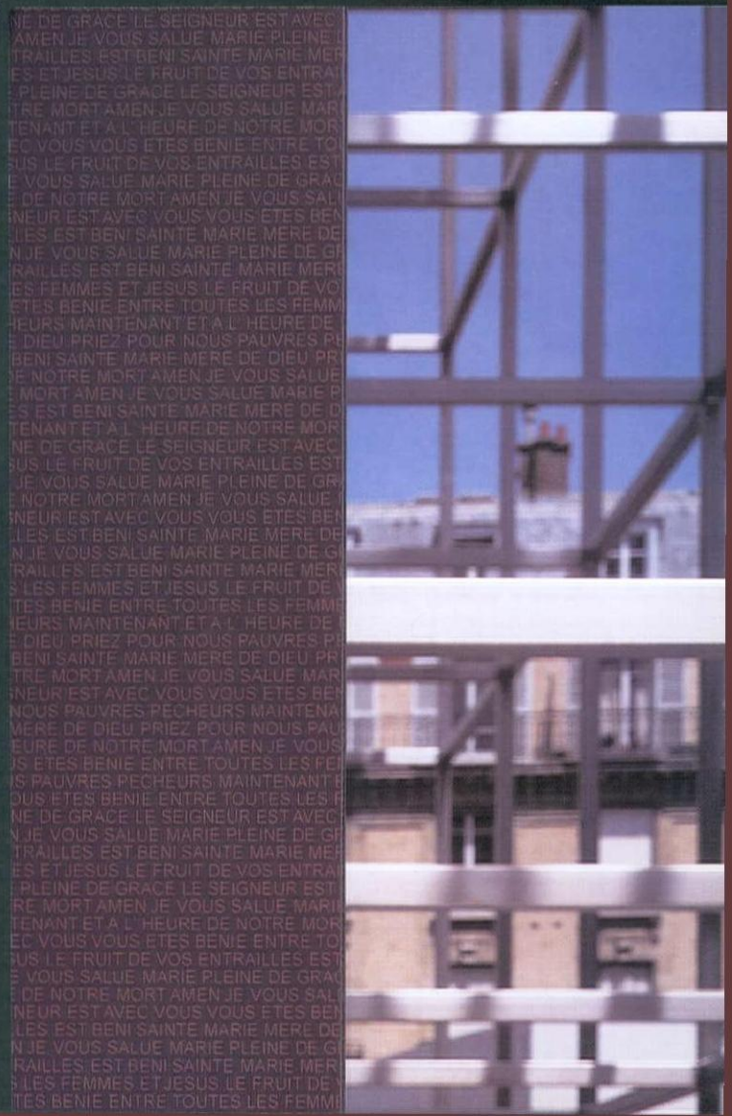
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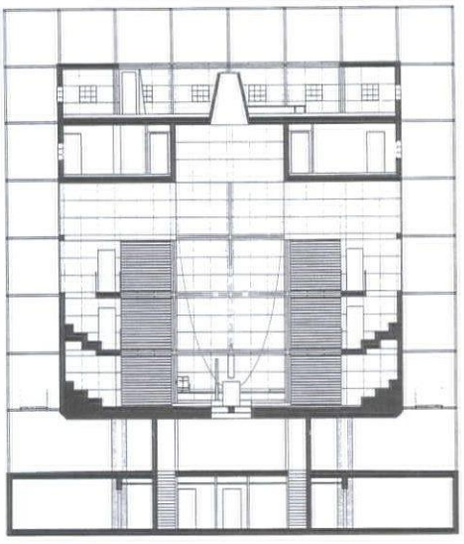
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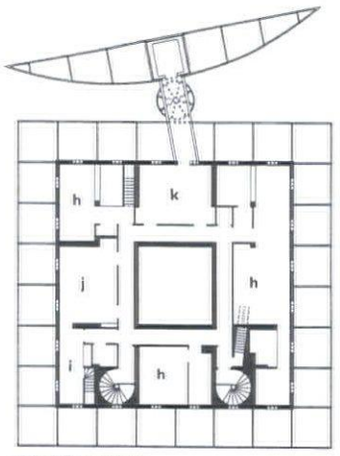
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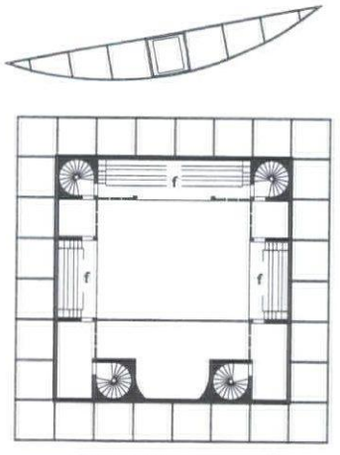
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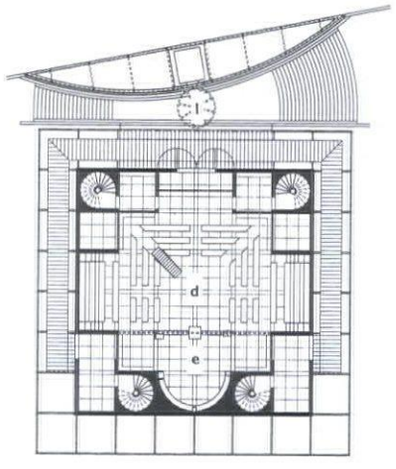
cross section



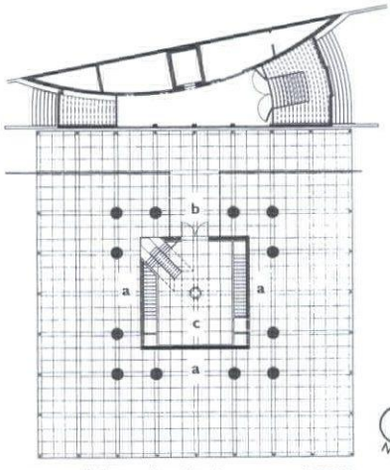
third floor plan



second floor plan



first floor plan



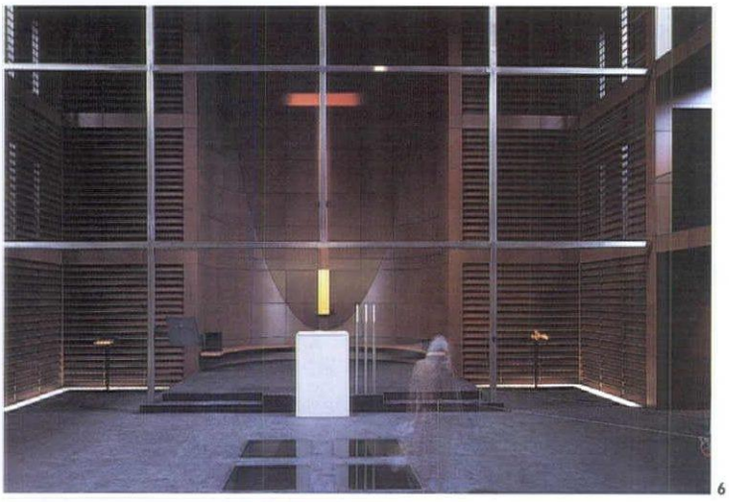
ground floor plan (scale approx 1:500)

a cloister
b entrance
c baptistry
d nave
e altar
f upper galleries
g campanile
h priests' lodgings
i communal kitchen
j dining room
k communal room
l campanile

CHURCH, PARIS, FRANCE

ARCHITECT

ARCHITECTURE STUDIO

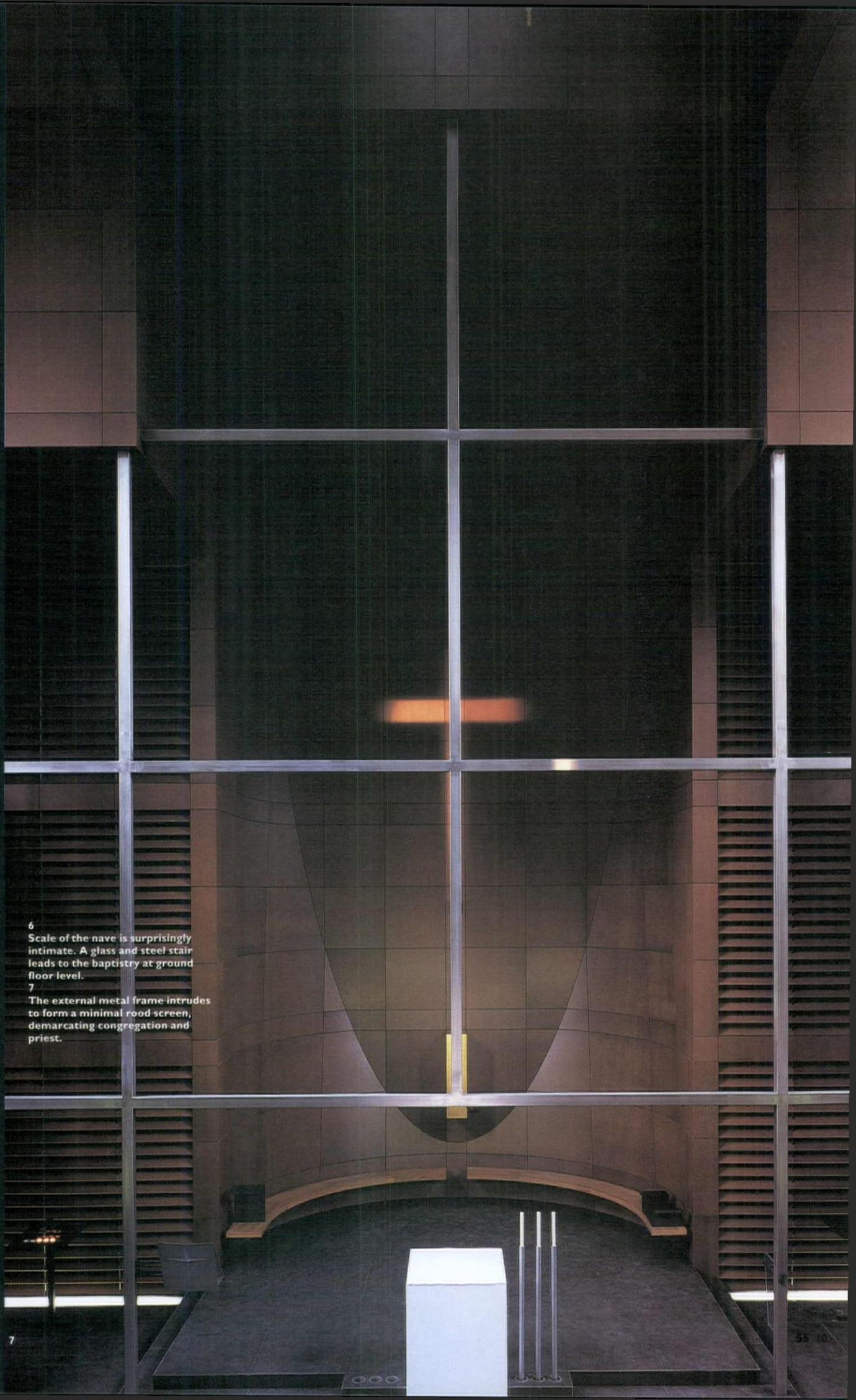


6

Although the church can seat 450 worshippers, its surprisingly intimate scale recalls a studio theatre. Ceiling recesses vertically reflect and amplify the cruciform plan. At the north-west end of the nave, the high altar occupies a central, dominant position. Here the external steel frame intrudes (slightly surreally) as a kind of reductionist rood screen marking the boundary between nave and presbytery, and between congregation and priest. A simple crucifix of light plays upon the curve of the plain wooden screen behind the altar. Light from a central oculus and stained glass clerestorys inscribed with biblical texts gently washes through the interior.

To evoke the unworldly often requires a rigour and intensity, and architects have long ceased to rely simply on historical precedent to generate a sense of the numinous. Although Architecture Studio's geometric tactics are highly Mannerist (in the best French tradition), the stark cube has a curious potency; a modern Ark for a modern parish, sheltering the sacred and symbolizing the meeting of God and humankind.

PAUL JOUBERT



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Architecture Studio, Paris
Project team
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Associate architect
R. Ayache
Structural engineer
Seca Structure
Services engineer
Noble
Facade engineer
CEEF
Acoustic consultant
Eric Vivié
Photographs
Paul Raftery

6
Scale of the nave is surprisingly intimate. A glass and steel stair leads to the baptistry at ground floor level.
7
The external metal frame intrudes to form a minimal rood screen, demarcating congregation and priest.

GUTHRIE PAVILION GOLF CLUB, SHAH ALAM, SELANGOR, MALAYSIA
ARCHITECT
T. R. HAMZAH & YEANG

GOLF UMBRELLA

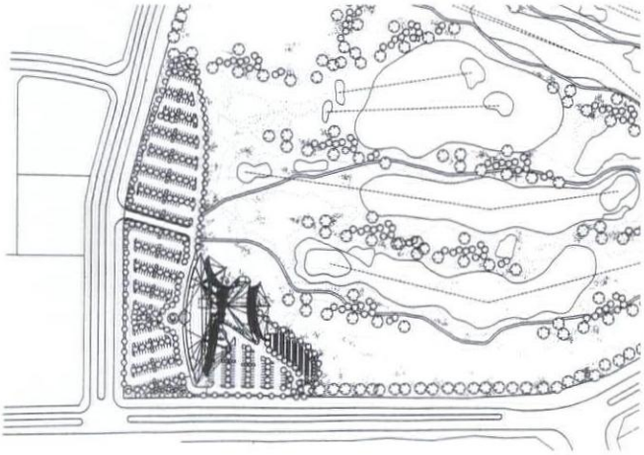
A tropical experiment in which a heavy inner building is shaded by a light steel and fabric structure with the aim of reducing expensive cooling loads.











site plan

Ken Yeang's best known work, which he has not been the last to celebrate himself,[1] has been largely tall buildings, where he has set standards and offered ideas about techniques which offer the whole tropical world models for generating towers that are far less energy consuming than the average dumb glass up-ended rectangles which bizarrely dominate so many would-be prosperous cities of South-East Asia, the Gulf and South America.

Yeang's buildings draw on both ancient experience (for instance making maximum use of prevailing winds to ensure cooling through-ventilation) and sophisticated modern technology to determine when the cooling systems should kick-in.[2]

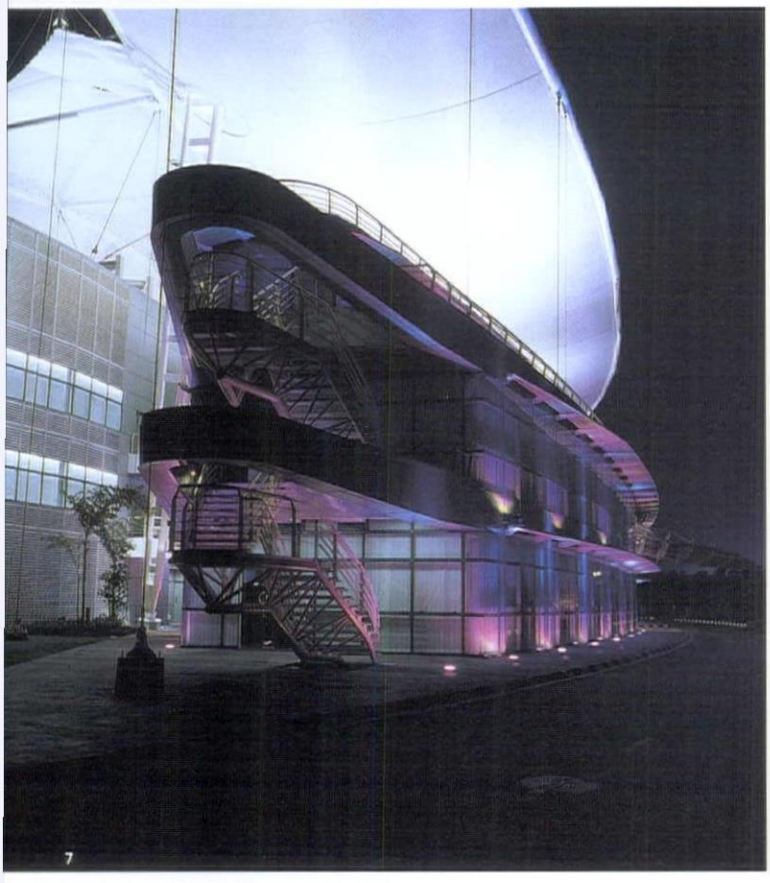
Yeang's structures have rarely covered much ground area, so it is interesting to see how he has coped with a wide, spreading building: the Guthrie Pavilion, a complex comprising a golf club house, and the offices of the entrepreneurs who developed the whole affair (and much else in the country). Yeang divided the two into a couple of clearly differentiated wings, with a central connection including vertical circulation and services. All this is enclosed in a commonplace reinforced concrete frame structure clad up with float glass and solid aluminium panels. Variety is given to this standard-anywhere-office approach by aluminium sun-shades on the east and west sides of the building.

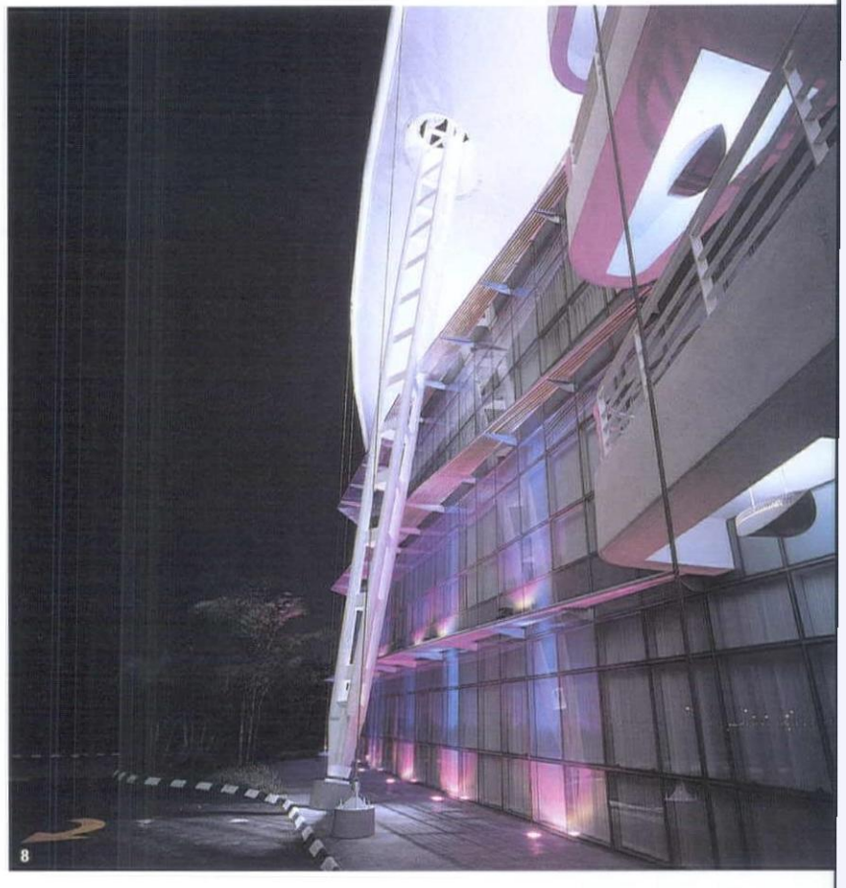
But the complex really makes its mark because all this rather mundane stuff is surmounted by a most extraordinary roof. A couple of squashed zeppelins hover over the solid structures. They are supported by zinc-dipped spiral strand steel cables

1
Heraldic outer building signals new complex.
2
From some viewpoints, outer roof has heraldic, almost bird-like quality.
3
From north-west, with blunt nose of circulation and services core to left and office escape stair in foreground.
4
Ground-fixed cables prevent roofs blowing off.







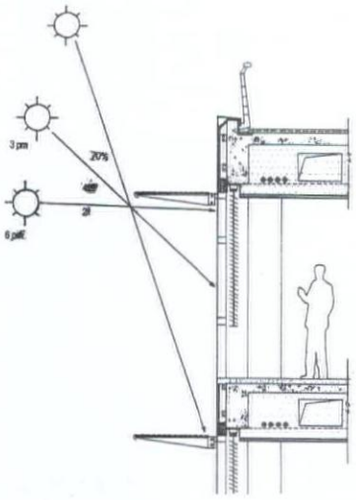


5
Three 40m masts support both roofs.
6
The bird is landing over the office side.
7
From below, and particularly at night, roofs resemble bellies of squashed zeppelins.
8
Clear contrast between heavy (and relatively straightforward) inner building and the great overhead shading and cooling devices.

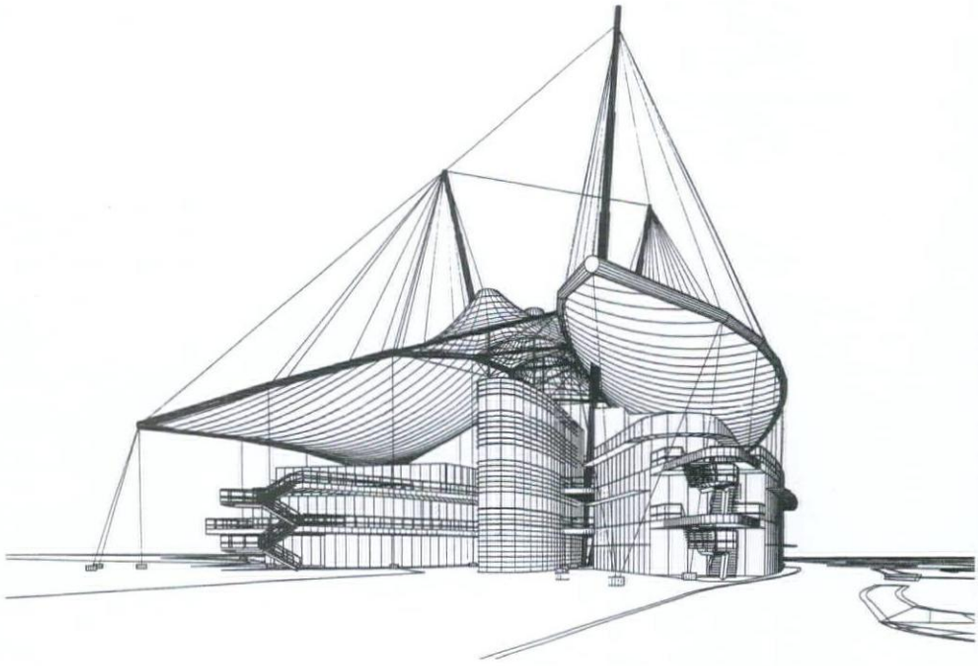
GUTHRIE PAVILION GOLF CLUB, SHAH ALAM, SELANGOR, MALAYSIA

ARCHITECT

T. R. HAMZAH & YEANG



principles of solar control in inner building



perspective from north-west: offices right, golf club left



9

stretching from three 40m high tubular steel masts, and are anchored by vertical cables to the ground. The flattened fabric balloons of this outer structure are inflated by a constantly maintained internal pressure of 1.5 Kn/m sq. They are edged with a border of tubular steel, supported by an indo-skeleton of light steel members.

The spiky, swooping drama of the outer building has two functions. First, in a country much addicted to signs, it draws attention to the presence of the place, its commercial operations, social suavety and so on. Second, and most importantly, it is an exemplar of bioclimatic principles brought down to earth. The hovering fabric offers both signal and shade. The inner concrete building with its slow but sure thermal flywheel is partly protected from diurnal changes in temperature by the inflated bags above. Because of careful honing of plan and section, breezes from almost any angle are deflected over the heavy building to maximize wind-chill. The top of the inner building acts as a platform from which the antics of the golfers can be observed by executives from precious shade under the tent – just as the Roman Emperors did in the Domus Augustana as they looked over the Circus. Yeang is perhaps beginning to find the assurance to call on archetypes as well as eco-technology.

HARRIET GRIND

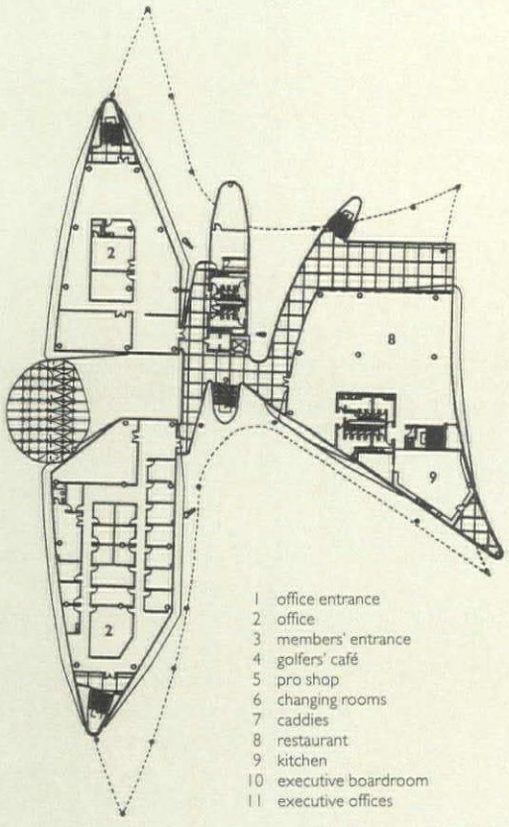
1 For instance in *The Skyscraper, Bioclimatically Considered: a Design Primer*, London: Academy Editions, 1997 (AR August 1997).

2 See for instance the MBF tower, Penang, Malaysia (AR September 1994).

9
Typical office space.
10
Interiors of inner building even, as here, at executive level, are basic and economically honed.

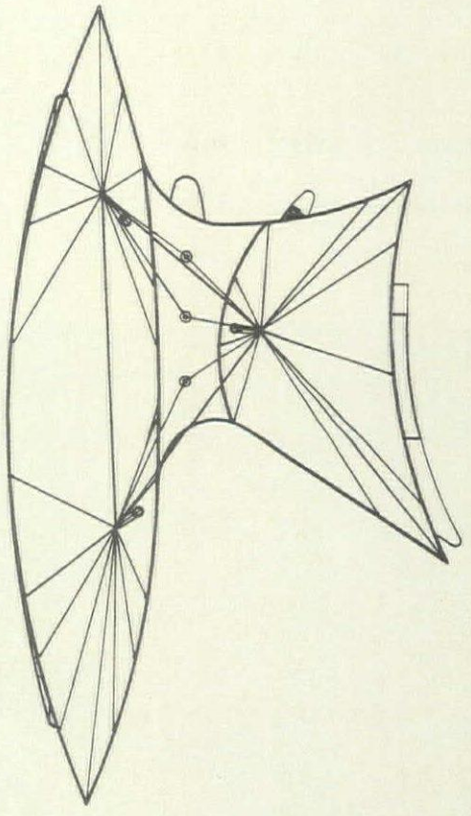


10

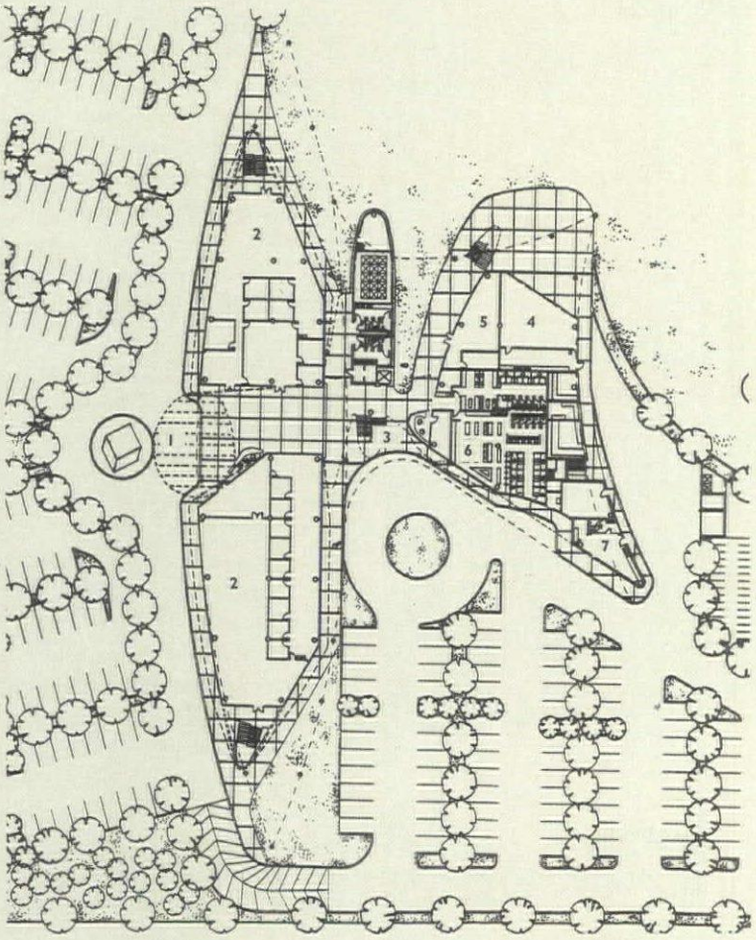


1 office entrance
2 office
3 members' entrance
4 golfers' café
5 pro shop
6 changing rooms
7 caddies
8 restaurant
9 kitchen
10 executive boardroom
11 executive offices

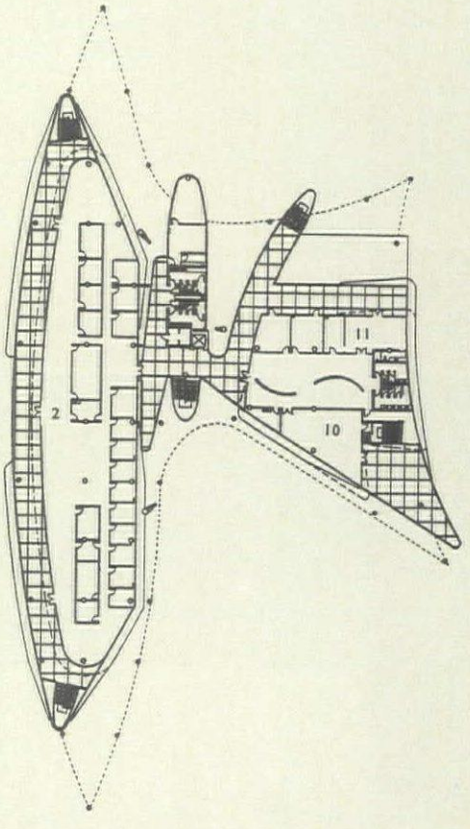
first floor plan



roof plan



ground floor plan (scale approx 1:850)



second floor plan

STRIKING CHORDS

Mastery of metal structural technology inherited from the nineteenth century enables what would be normally a mundane trade exhibition hall to acquire magic.

TRADE HALL, HANOVER, GERMANY
ARCHITECT
VON GERKAN, MARG & PARTNERS



1

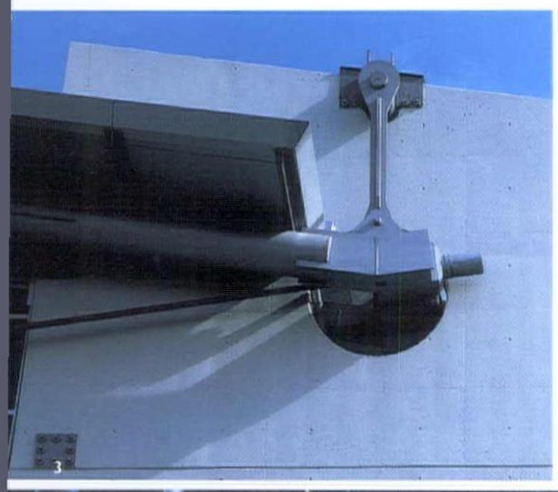


2

Hall number 4 at the mighty Deutsche Messe complex in Hanover used to be a rather grim and dim late '50s shed with no daylight. It has recently been rebuilt as a much more lively space enriched by light from the sky and sun. (Unlike an art gallery, the effect of sunshine on exhibits does not matter, for they are neither too fine nor permanent enough for the ends of the spectrum to have serious consequences).

The new hall by Volkwin Marg is an elegant reinterpretation of that most unfashionable building type: the endless shed with a squashed section. The dimensions of the place are startling, the span is 122m with no intermediate supports. Clear heights under the structure vary from 15 metres at the edges to 11 metres in the middle. The bald description of the geometry sounds like a recipe for a most depressing place. But in fact, it is rather uplifting (particularly when you compare it to what was there before, and the drear spaces offered by almost every other commercial exhibition complex – though not the practice's great glass hall in Leipzig – AR March 1996).

The fundamental structure is a product of a doubly convex bowstring truss. The upper compression chord is made of steel tubes, and the lower tensile one of steel rod. The two are connected by sturdy tubular struts and a lattice of diagonal rod ties. In cross-section, trusses are paired to create V-shaped three-dimensional tied arches. The whole structural parti is a homage by Marg to the early nineteenth-century Hanover



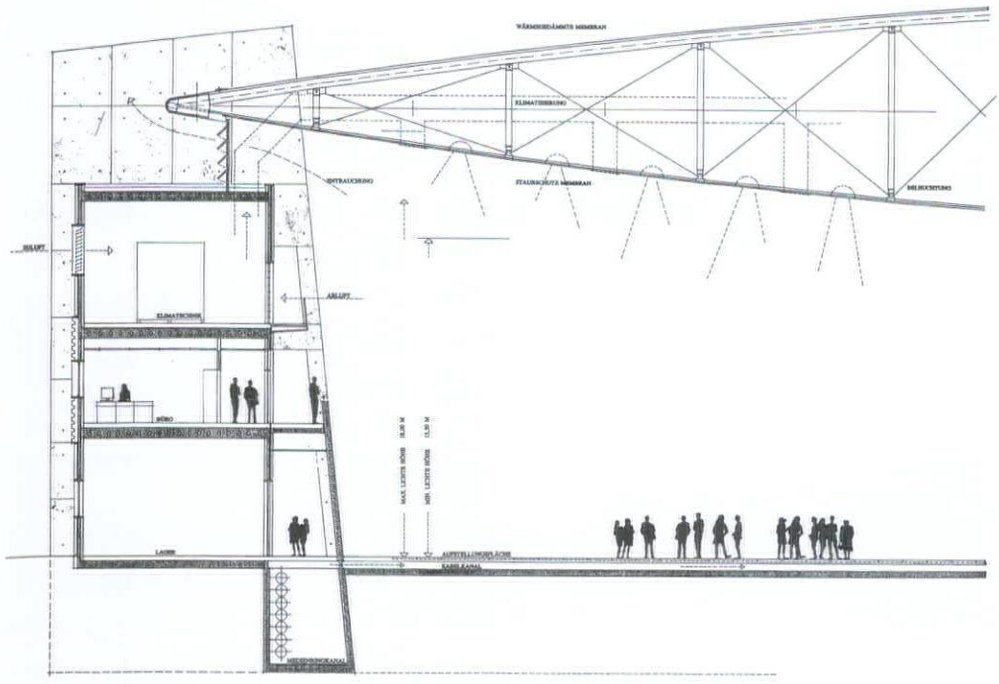




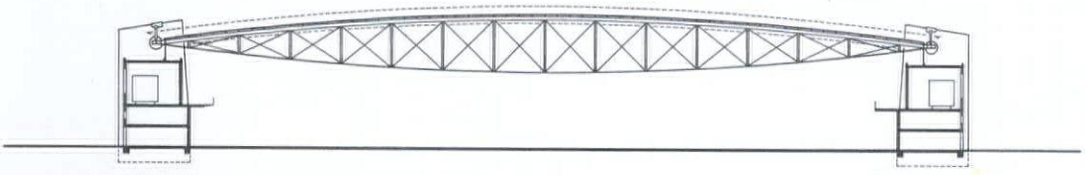


1
Flanks are standard dim Messe cladding. Only at ends ...
2
... does building show its real potential.
3
Pin joint in concrete flank buttresses.

4, 5
Coupled double bowstring trusses with struts and compression chords of tube, and tensile members in rod.
6
By reducing lower chords to thin rods, whole volume appears to be a cavern supported on stalagmites.



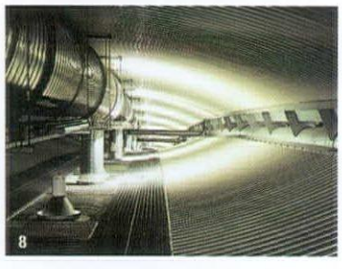
detailed section showing principles of interior climate control and stiffness against flexibility



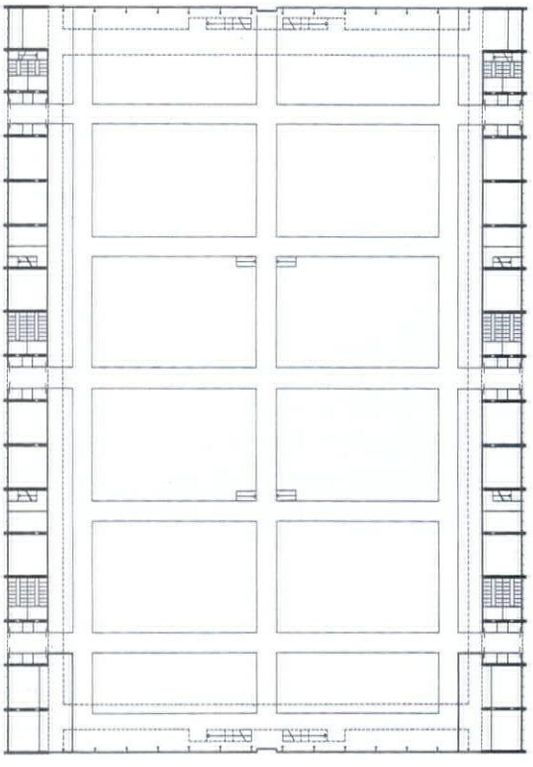
cross section showing Laves' cross-braced lenticular truss



long elevation

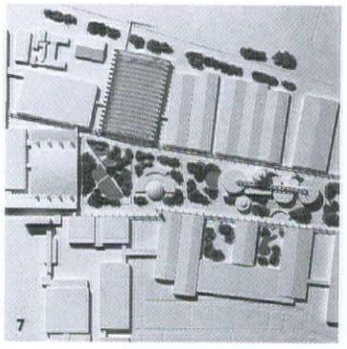


7
New hall in setting of the mighty Hanover Messe.
8
Services are carried in double convex lenticular ducts between trusses.



plan (scale approx 1:2000)

Architect
von Gerkan, Marg & Partners, Hamburg:
Volkwin Marg with Jörg Schlaich
Project team
Dirk Vollrath, Marc Ziemons, Reiner Schröder, Ulrich Heiwolt, Torsten Hinz, Hito Ueda, Karl-Heinz Behrendt, Uli Rösler, Maki Kato, Ian Pentland
Structural engineer
Schlaich, Bergermann & Partner
Photographs
Klaus Frahm



hero-architect Georg Ludwig Friedrich Laves, a fine Neo-Classicist, who was one of the first to experiment with steel construction (for instance, he submitted a proposal for the 1850 London Crystal Palace competition). More lastingly, his invention of the double convex lenticular section bowstring truss has proved to be a most economical means of creating very large spans between fixed supports.

In Hall 4, the supports are concrete fins or buttresses onto which the ends of the double steel trusses come down onto very clearly and elegantly articulated rocking bearings – pin joints which reduce lateral thrust and largely transfer loads vertically down. The whole affair is prevented from toppling over longitudinally by concrete walls which connect the fins and form the side surfaces of the great central volume (they are part of the two very stiff structural flanks which contain offices and stores).

Between these heavy elements, Marg has created an awesome space. The potentially endless shed arrives at a glass wall at each end, which of course floods the terminations of the volume with light, but luminance is carried through the whole place by skylights over the V of the trusses. Marg's interpretation of Laves' invention allows him to more or less obviate visually the tensile element of the structure from perception of the space, so the whole often seems to be a vast shallow vault supported on stalagmites – a metallic version of the caves in which we all began. Perhaps the space is too noble for the vulgar cacophony of trade-fair stands. HARRIET GRIND



1, 2
The glowing steel and glass volume of the Banham House hovers over its Fenlands site.

FENLANDS CASE STUDY

Jonathan Ellis-Miller's new studio for Mary Banham in the Cambridgeshire Fenlands demonstrates a sleek, tectonic honesty allied to an environmental responsiveness.

HOUSE, PRICKWILLOW, ENGLAND
ARCHITECT
JONATHAN ELLIS-MILLER



2

Mary Banham paints large canvases, six feet square, in bold acrylics. Her new studio house, designed by Jonathan Ellis-Miller and set beside his own earlier studio house (1991) in Prickwillow, Cambridgeshire, is bright and airy; a bold steel structure floating above the Fenlands with expansive views to Ely Cathedral and a large redundant sugar beet factory. Ellis-Miller's own studio house was a homage to the lightweight Case Study Houses of Raphael Soriano and Craig Ellwood and the new building alludes to the heavier houses of Pierre Koenig and the later, more mature Miesian work of Ellwood. These were the buildings which for Reyner Banham, writing in *Los Angeles, the Architecture of Four Ecologies* (1971), conjured up 'the style that nearly...'.

But to say that the Banham studio house is referential to the Californian tradition alone would be to misunderstand it. For in the last 50 years since the Eames House in California (1949), Mies' Farnsworth House in Illinois (1951), and Johnson's Glass House in Connecticut (1949), the domestic application of both light and heavyweight steelwork has been exploited by many British architects. The modern steel house has evolved into a particularly British tradition.

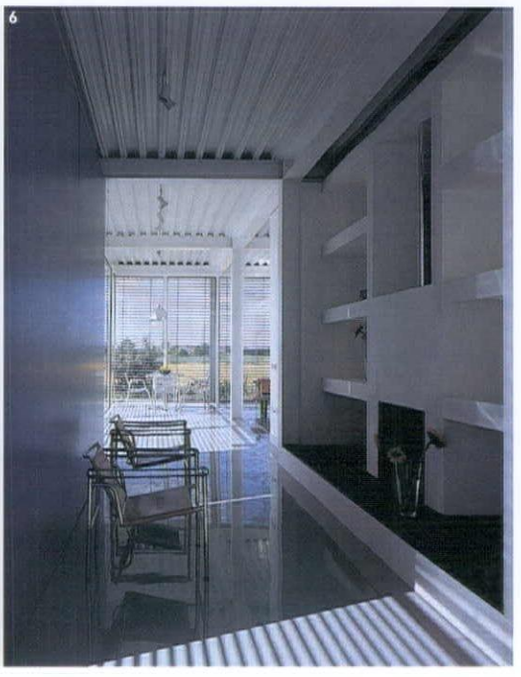
Mary Banham had been looking for a studio near Cambridge, where her daughter lived, but had not really considered building. However, the Fenlands were accessible to London, she loved the flat landscape and the light was excellent. And there was, as it happened, a vacant plot next to the Ellis-Miller house.

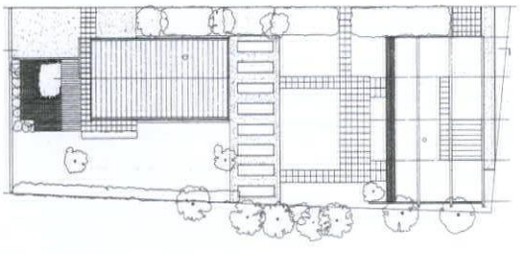
Yet Jonathan Ellis-Miller did not want to replicate his own house. It was a young man's house, designed soon after he left Liverpool University and while he was working with John Winter, and it was consequently cautious





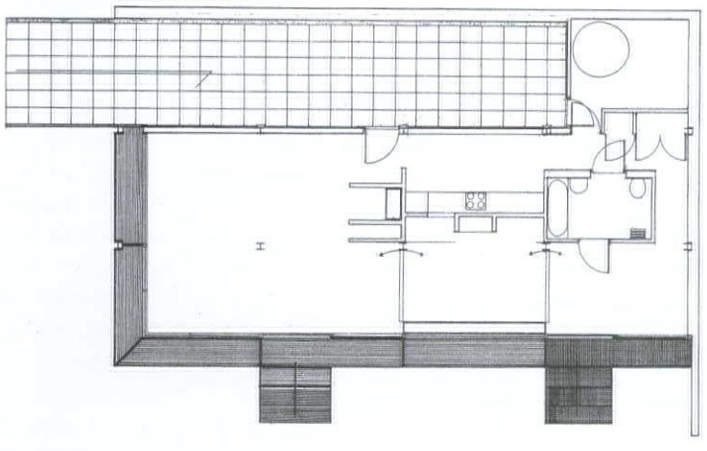


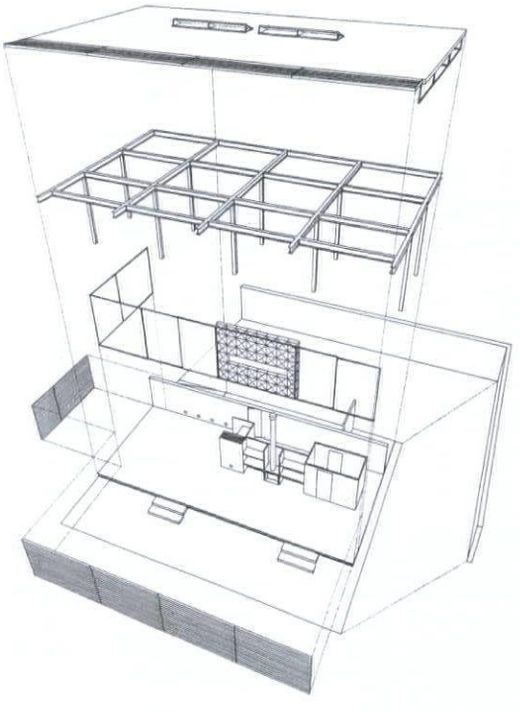




a car port
b kitchen
c bathroom
d living/studio
e snug

site plan





 ground floor plan (scale approx 1:200)

exploded projection



HOUSE, PRICKWILLOW, ENGLAND
ARCHITECT
JONATHAN ELLIS-MILLER

and also a little self-conscious. The Banham house demonstrates a maturity gained through 10 years of practice. It is set on a 4m square grid, and is raised off the ground to a roof height of 4m, with 3m ceilings internally. Compared with the 2.3m roof height of its neighbour, it appears very large. The bolted steelwork is bold, the cantilevers are deep and the scale is considerably inflated. But the houses are turned at right angles to each other and kept as far apart as the site will allow, thus reducing the contrast. Moreover, the application of a cantilevered steel access deck, overhead louvres and broad, Venetian blinds to the exterior of the Banham House serves to emphasize the horizontal and give the building the appearance of hovering, Farnsworth-like, over its site. At night, downlights set under the floor make this seem a reality.

The differences between the houses are not just in their scale and in how the materials are handled, but also in their respective programmes. Whereas the earlier house (arranged as small, cellular spaces), lacked thermal mass and employed external blinds to exclude the sun, the new building welcomes it. Passive solar gain is used to warm the broad concrete floor and a 12 sq m bank of Braithewaite tanks (a reference to the Smithsons at nearby Hunstanton), which serve as a Trombe wall. Although essentially open-plan around a kitchen/bathroom core, the internal space can be subdivided by full-height, insulated screen walls which swing open to form a snug around the fireplace and to release the heat from the tanked wall behind. Steel is now being recognized as a green material, but its use, especially in conjunction with walls of glass, needs to be informed if the environmental benefits of the material are not to be negated. With heating bills calculated at less than £50 per annum, and an eight-year capacity to the domestic oil tank, this is surely a responsible house.

For all its Miesian referencing, the Banham House displays its tectonics honestly. Of Mary Banham, Ellis-Miller observed that 'she brought an amazing sense of confidence', and this is apparent in the building.

NEIL JACKSON

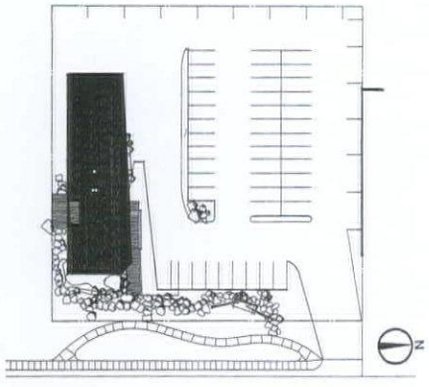
3
Modernism in Arcadia – the compact steel house in an English rural idyll.
4
Cantilevered steel access deck, Venetian blinds and overhanging louvres emphasize the horizontal.
5
Ellis-Miller's own house (left) built some seven years earlier is an immediate neighbour. Braithewaite tanks (which form a Trombe wall) are a reference to the Smithsons' school at nearby Hunstanton.
6
Interior is animated by generous amounts of daylight.
7
The single-storey house is essentially open plan, arranged around a kitchen/bathroom core.

Architect
Jonathan Ellis-Miller, Cambridge
Photographs
Peter Cook/VIEW

RAFTING CENTRE, JACKSON, WYOMING, USA
ARCHITECT
WILLIAM P. BRUDER

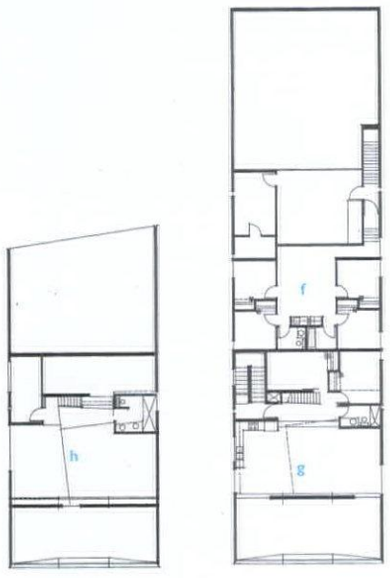
Drawing its inspiration from the vernacular ranch and services structures of Wyoming, Will Bruder's monolithic, rusting wedge houses facilities for a young company engaged in whitewater rafting trips.

BOAT HOUSE



a stoop
b entrance hall and reception
c shop and museum
d changing cubicles
e clothes and equipment storage
f staff bunkhouse
g living loft
h loft mezzanine

site plan

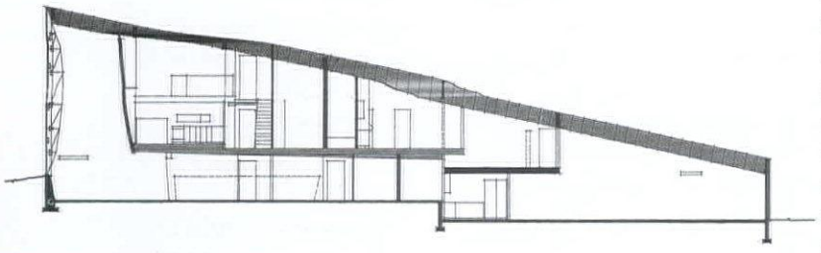


first floor mezzanine

first floor



ground floor
(scale approx 1:400)



10 longitudinal section

Wyoming's Snake River provides many sorts of diversions for outdoor types, including the thrillingly perilous activity of whitewater rafting. The fittingly named Mad River Boat Trips run rafting tours of the river and Will Bruder has designed a building to house the company and its associated activities. A brooding wedge-like form clad in rusted steel, the new building recalls the vernacular ranch and services structures of the Wyoming landscape and creates a totemic landmark in a nondescript commercial highway strip.

Arranged within the volume of the giant wedge are a warehouse for clothing and equipment storage, retail space, a small museum documenting the history of the river and a bunkhouse for the guides who supervise the expeditions. A low concrete and duckboard stoop marks the main public entrance, which is incised into the long north side of the building. The reception hall is dominated by a translucent blue fibreglass counter that curves through the space like a pulsating wave. Tucked into the low west end of the wedge are the equipment warehouse and adjoining changing facilities. The cellular staff bunkhouse occupies the first floor level above the changing area. The tall east end of the building is fully glazed, exposing the shop's wares and the museum's collection of coracles, rafts and canoes which are slung from the ceiling. Occupying the prow of the wedge, the owner's living quarters, office and library are contained in a loft space suspended above the shop and museum.

The building appropriates basic timber-frame technology and utilitarian materials to bold effect. The upper floor is suspended from glulam roof beams, avoiding internal structural columns and so increasing the flexibility of the ground floor layout. Crisply detailed timber and steel trusses support the tall glass wall on the east elevation. Walls and roof are wrapped in a taut skin of corrugated steel sheeting coated in a patina of rust, giving the building the monolithic, industrial quality of a Richard Serra sculpture. Windows are punched apparently at random into the great rusting flanks of the wedge. Visceral shots of colour – yellow fibreglass cubicles, a yellow wall in the entrance hall, purple and red wetsuits – also animate the stark composition. Bruder's rugged Wild West regionalism is underscored by a pragmatic concern for users and context. As in previous small projects (for instance the Teton County Library, AR June 1998), this latest building combines a poetic, elemental simplicity with tectonic inventiveness.

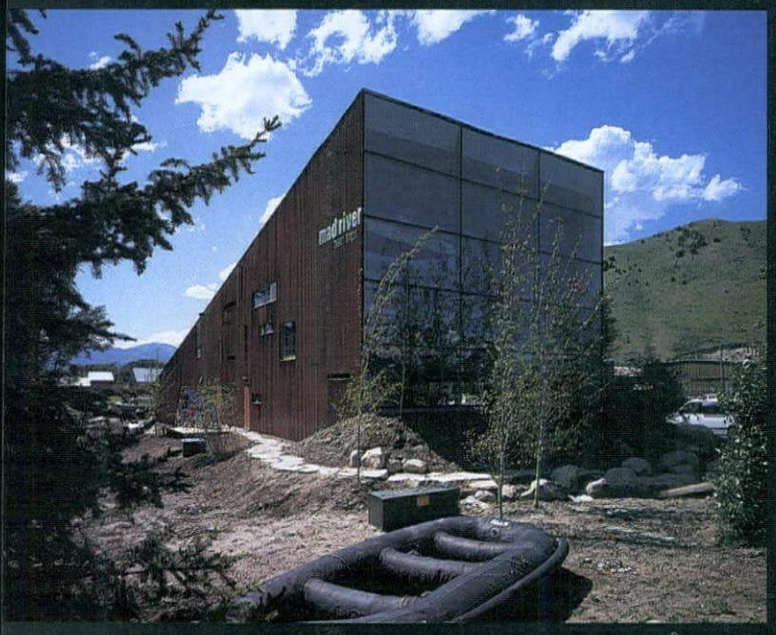
EFFIE C. MACDONALD

Architect
William P. Bruder, New River, USA
Photographs
Bill Timmerman

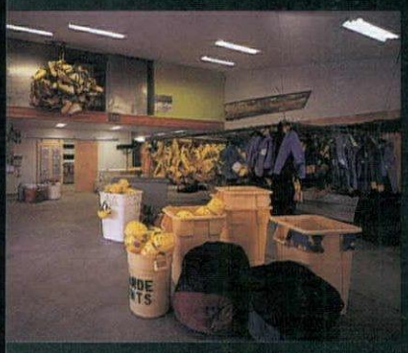




2









1
The rusty wedge appears to grow out of the landscape.
2
North elevation, with entrance stoop and randomly punched windows.
3
The tall glazed east end shows off the river museum's wares.
4
The rusting carapace recalls Wyoming's vernacular ranch and service structures.
5
A warehouse for clothes and equipment storage is tucked into the low west end of the wedge.
6
The owner's living loft occupies the prow of the wedge.
7
Museum and shop, with the museum's collection of rafts and canoes slung from the ceiling.


7

ZUMTHOR THE SHAMAN

Peter Zumthor is the winner of the 1998 Carlsberg Prize for Architecture. The two previous recipients were Tadao Ando and Juha Leiviskä. Like them, Zumthor explores the essence of architecture in buildings which celebrate place and engage all the human senses. Jury member Peter Davey explains why Zumthor was premiated.

Peter Zumthor's oeuvre is not large, but it is very diverse, because each of his buildings is a deeply considered particular response to site and programme. Each is clearly the product of a sensitivity concerned with place, materiality, space and light, and with human responses to these fundamental elements of architecture. And most of them have more in common than authorship, for until recently, almost all the work has been in Graubünden, the most easterly canton of Switzerland, and in some ways, its most complex. Here Latin and Teutonic culture intermingle; Romansch and German are spoken in adjacent settlements and, while Chur (the cantonal capital) could almost be in northern Italy, the nearby village in which Zumthor lives and works is a cousin of hamlets in Bavaria and Austria.

Zumthor knows intimately the piazzas and arcades of the towns, and the big gabled farm houses and barns of the countryside throughout Graubünden, as he served for 12 years in the canton's department for the preservation of monuments. He is (or has been up to now) a regionalist, for though he has learned about things like materials, climate and siting from old buildings, he understands the work of the past far too well to want to simply copy.

Yet the sources of his sensibility are much wider and deeper than his experiences in Graubünden. He arrived in the canton which now seems so much his natural place at the age of 24 in 1967. (The main reason for working in the historic monuments department for so long was that after the turbulent political and intellectual events of the late '60s, '*Gestaltung* was the last thing that could be done').[1] He was born near Basel, the son of a furniture manufacturer and master joiner. Though he rebelled against his father's plan to make his eldest son the next head of the firm, he clearly learned much. 'He was an incredible craftsman, not afraid of any problem. So I'm never afraid of anything.' And 'I was brought up in surroundings not devoted to buying and consuming but making things.'[2]

He was apprenticed as a cabinet maker, and then studied design (not architecture) at the Basel school of arts and crafts, followed by a spell at the Pratt Institute in New York. With his rigorous craft training coupled to a sophisticated understanding of Modern (and now post-Modern) thought and feeling, he is far from being the dreamy ruralist some have depicted.

The bastion of faith

The first of his works to achieve international acclaim a decade ago was indeed rustic: the little chapel at Sogn Benedetg, a tiny hamlet frighteningly high on the almost vertical meadows of the valley of the Voder Rhein (AR January 1991).[3] Seen from between the houses at the foot of the field, Zumthor's building at first seems to be a shaggy keep covered in shingles that have now weathered according to their exposure: light ruddy brown and almost black on the more exposed flank, grey on the side against the hill. A simple timber clerestory is topped by a very shallow copper roof. The chapel is proud, dignified and tower-like at the top of the flower-strewn grass slope, with its presence emphasized by the dark green of the forest behind. A very simple detached campanile, a tall slender wooden frame holding a single bell, announces the purpose of the place.

As you go up the little lane towards it, the building changes shape, revealing itself to have an almost perfectly streamlined plan, like a section through a bird's wing, in which the blunt front first meets the onrush of air. The chapel's round end faces the turbulent valley winds, and the taper is directed toward the hill. Here is the entrance, inflected gently away from the point to welcome the pilgrim with a wooden door always open in summer, and never locked in winter.

Inside, another reason for the plan becomes clear, for the roundness is an apse in which the altar stands, its presence emphasized by the widening volume. The place is filled with light from the strip of windows under the roof, which are detailed in a very strange way. Each mullion tapers back as a fin into the interior, almost like a very small version of the shape of the whole building. The fins are so arranged that, from wherever you look, you see a clearly framed section of sky, which seems to be a portion of the great vault selected just for you. To left and right of your piece of the firmament, the fins obscure other panes of the clerestory, which continue to pour light into the interior, while not diluting or obscuring with glare your particular experience. Clearly, people in the chapel during its weekly service[4] spend most of the time looking toward priest and altar, and above them to the framed heavens – a poignant commentary on the relationship of humanity to God. And in its modest way, and for our times, a reflection on the great Baroque tradition of dynamically engaging light in worship.

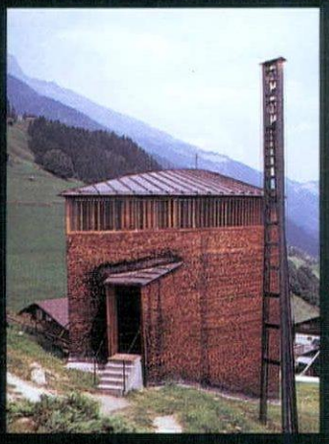
The drama of the heaven-view is enhanced by the luminous interior, in which daylight is diffused and partly reflected by the walls, which are silver painted, like the mullion fins. The silver surfaces, combined with the curve, tend to dissolve space, to make it wide and almost amorphous. But order is restored by the structure. Laminated timber uprights support the roof and, though they are carefully detached from it by thin metal brackets, they carry the surrounding silver skin. These tall wooden columns are an abstracted version of the groves in which worship began, here made more clear and poignant because of the height of the volume compared to its plan. The congregation sitting on plain whitewood pews is comfortingly contained as a community, yet at the same time is made aware by the space's verticality of the importance of, literally, higher values.

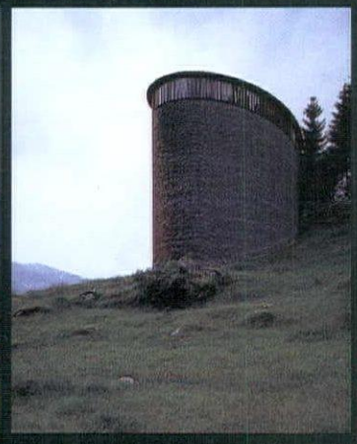
I suppose that Peter Zumthor will not necessarily agree with my analogies: the grove; the democratically modest interpretation of Baroque; or the natural form (incidentally, I am rather pleased with this one, and could go on for some while about shingles as feathers on the bird's wing and so on). And, of course, there is the obvious metaphor of the ship, the nave, the *Schiff*, in which Christians have set sail for two thousand years. Zumthor does not tell elaborate stories about the meanings of his forms and spaces, as many architects do. He is concerned with creating buildings that affect us at such a deep level that they make us all invent our own tales about them because they resonate with our physicality and psyche.

He believes that 'Architecture has its own realm. It has a special physical relationship with life. I do not think of it primarily as either a message or a symbol, but as an envelope and background for life which goes on in and around it, a sensitive container for the rhythm of footsteps on the floor, for the concentration of work, for the silence of sleep'.[5]

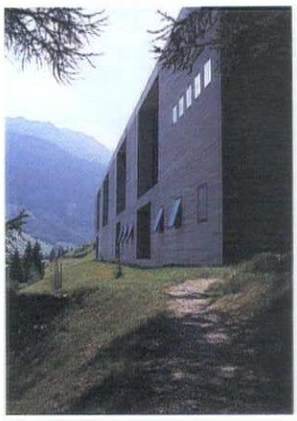
The chapel demonstrates two of the most important characteristics of Zumthor's work. First, his belief that 'Construction











is the art of making a meaningful whole out of many parts ... I believe that the real core of all architectural work lies in the act of construction ... I feel respect for the art of joining, the ability of craftsmen and engineers. I am impressed by the knowledge of how to join things, which lies at the bottom of human skill. I try to design buildings that are worthy of this knowledge.'[6]

The second aspect of Zumthor's architecture clearly shown at Sogn Benedetg is his belief in the importance of rooting buildings. 'When I concentrate on a specific site or place for which I am going to design a building, I try to plumb its depths, its form, its history and its sensuous qualities.'[7] But when trying to 'immerse myself in the place and try to inhabit it in my imagination ... I look beyond it at the world of my other places ... When an architectural design draws solely from tradition and only repeats the dictates of its site, I sense a lack of genuine concern with the world and ... contemporary life'.[8]

So the chapel stands there, a container for congregation and love of God, brave and dignified against the elements; a skylark sings far overhead, and alpine choughs cough throatily as they soar in the dizzy air over the valley. The bastion of faith grows out of the ground as nothing has ever grown before, but its shingle skirts are now blackened by time and weather, and jewelled by dark alpine pinks, yellow trefoil and buttercups, festoons of white cow parsley, indigo harebells and the tiny blue stars of forget-me-not. It is part of its place.

The pagan cave

A similar piercingly beautiful wild flower tapestry is beginning to cover the roof of Zumthor's thermal baths at Vals (AR August 1997). High in the valley of a tributary of the Voder Rhein, the village has the only hot springs in Graubünden and has until recently had a very modest reputation as a charming but remote ski-resort and spa. The community,[9] which owns the source, decided to find funds to rebuild its watering place, and after a competition chose Zumthor as architect. The site is not an easy one, for the community has not always been felicitous in its architects, and two dim 1960s tower blocks disfigure the approach to the village, which is itself still a cluster of old wooden alpine houses. The towers are in fact annexes of the thermal hotel, up the hill behind them. The baths are on the slope slightly below the hotel, so their view of the valley is partly masked by '60s mediocrity, and they can scarcely be glimpsed from the road.

This is a pity, for the new building has almost geological solidity and presence. A big rectangular block grows out of the hillside, faced in slabs of local bluish grey gneiss, laid strata-like, thin edges outwards. The great monolith is carved into with simple square openings, some of which are glazed. A concrete roof beam serves as cornice. From above, the grassy roof is dissected into a Mondrian-like pattern by smooth pale green strips of what on closer inspection turns out to be glass. Their purpose becomes clear later.

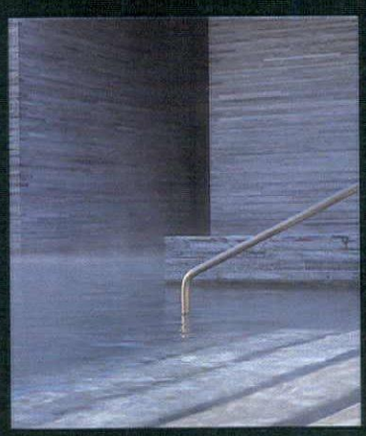
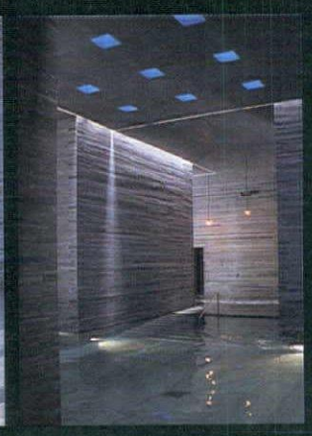
You enter the realm of water down a mysterious black tunnel which slopes into the earth. Openings in a stone wall are guarded by soft black leather curtains which conceal the changing rooms: small chambers lined with exquisitely made lockers of chestnut-coloured wood; they have the quality of finely polished musical instruments. Going through similar leather curtains on the other side of these intimate little rooms, scale changes dramatically. You are on a wide gallery that overlooks the main space of the baths.

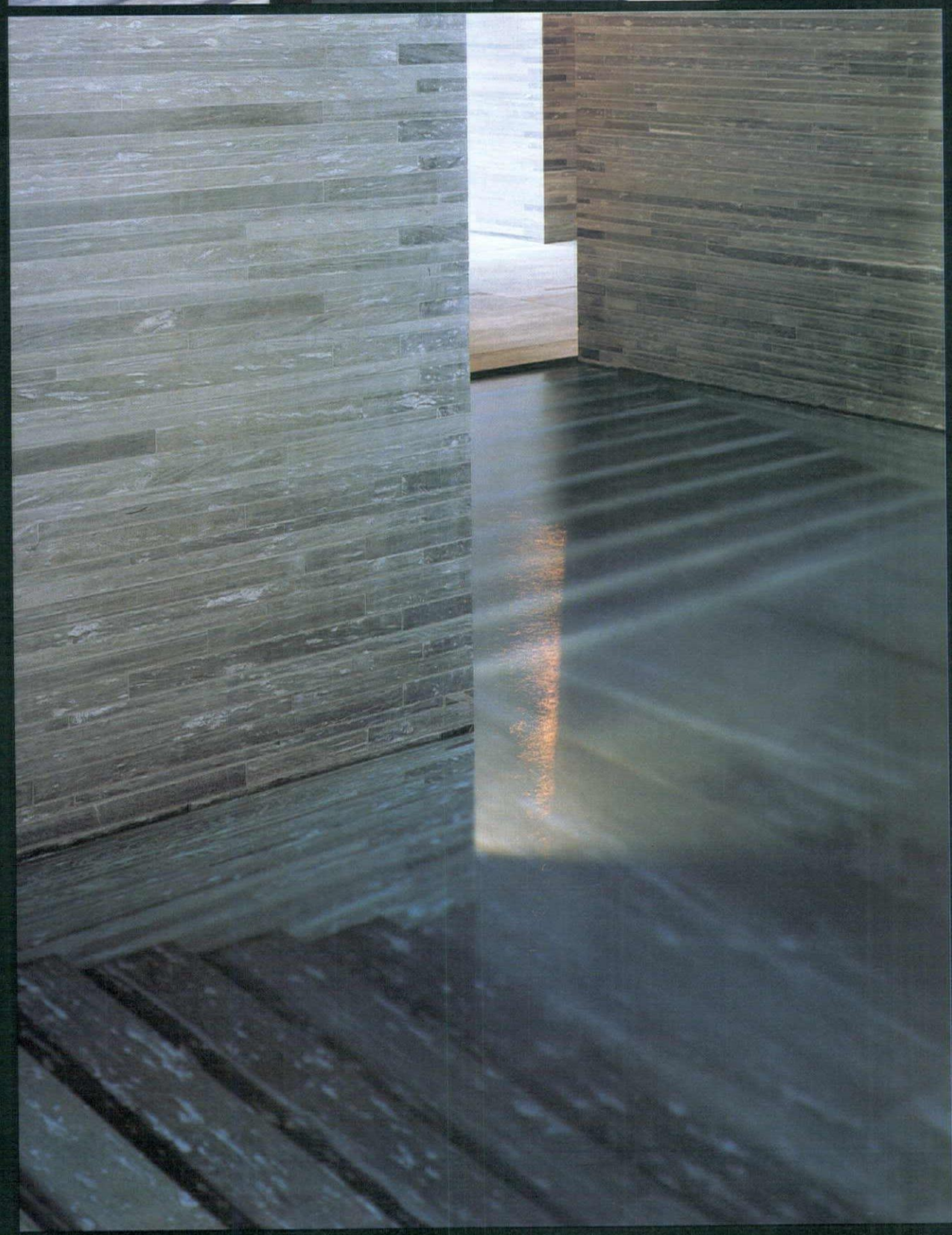
Astonishment, awe and delight are mixed in equal measure as you lean on the bronze balustrade to contemplate the scene below. Great stone masses define a central pool; streaks and slashes of daylight pierce the subterranean darkness; here, deep within the cave, are snatched glimpses of a tree and the beautiful green slope across the valley. Everywhere, the presence of water is emphasized: reflecting, rippling, shimmering, refracting; tinkling, splashing, trickling, dribbling, squirting, gurgling, spraying – even roaring sometimes as a wave overwhelms a sluice. In contrast to the febrile qualities of water is the solid, silent nature of stone, gently sparkling with tiny fragments of quartz and mica. The spaces that contain the water seem hewn out of the huge stratified block rather than built in a normal way.

Water and stone are mainly revealed in light which, from the gallery, seems largely to be introduced through slots in the smoothly cast concrete roof (hence the glass strips in the meadow on top). They offer the sense of drama and amazement that you get in a natural cavern where part of the shell has fallen and light streams in. A long slot pours a sheet of luminance over the balustrade at which you are standing: the result only becomes clear when you see Edward Hopper-like figures leaning on the bronze handrail. Other slots echo the plan of the big pool, sometimes meeting a stone mass at right angles, when they cast a thin bright slash down the wall. Elsewhere, slots are parallel to the stone, when its stratified nature is emphasized as light washes over the surface and brightly streaks the edges of slightly projecting courses. Though the slabs are cut perfectly, and laid on the thinnest of beds with great precision, like a work of nature, a hand-built wall cannot be absolutely perfect – nor would the architect wish it to be so.

The generous, sociable promenade round the central pool becomes a sort of loggia on the valley side. Parts of the wall are replaced by glass in openings positioned with great dexterity to avoid seeing the '60s tat, and to frame[10] views of the green or white meadows on the other side of the valley, meticulously maintained with traditional farming methods. The loggia continues outside to contain the big open-air pool over which the water, heated by subterranean forces, generates a cloud of steam in all but the hottest weather. You swim in a mist looking up at the jagged outline of the high Alps.

The promenade round the inner pool allows you to visit smaller spaces carved into the perimeter walls and into the mighty supports that define the pool's corners. Here are offered all the sensations enjoyed by the Romans and, I suspect, rather more. Modern equivalents of the tepidarium, caldarium and frigidarium are there, but so is a place in which water full of little bubbles fizzes upwards around you. In the steam baths, a hot cloud is carefully controlled at breast height, so that when you stand you are in a searing mist, and when you sit, it hovers above you, lit dramatically from above. In another space, specially commissioned music sometimes quietly



tintinnabulates. Another has water scented by jasmine petals. Each is treated in a different way: smooth concrete, grey or coloured, rough or polished stone; reverberant[11] or still; light or sometimes frighteningly dark; light up, sideways, down, or not at all. You feel the place through your feet and limbs as well as your eyes, ears and nose. Zumthor believes that 'all design work starts from this physical, objective sensuousness of architecture, of its materials. To experience architecture in a concrete way means to touch, see, hear and smell it'.[12] No architect can expect to get his users in a more receptive sensory state, for they are all as near naked as contemporary indoor decorum allows. And it is curious that, though few of the bathers are likely to get starring parts in the pornographic media, almost all, even the most wizened, obese or adolescently challenged, seem to have dignity and a degree of beauty – properties surely conveyed by the building.

The baths are so abundant in the variety of experiences they offer that only a visit can do justice to them – this essay can only hint at their richness. Their mysteries are very powerful. While the chapel is devoted to the Christian God of love and light and purity, the baths evoke more arcane (perhaps darker) deities and rituals. Awe and the everyday, sociability and sensuousness (and indeed sensuality) are mingled in a way rarely seen since the times of the Ancients.

The tower of light

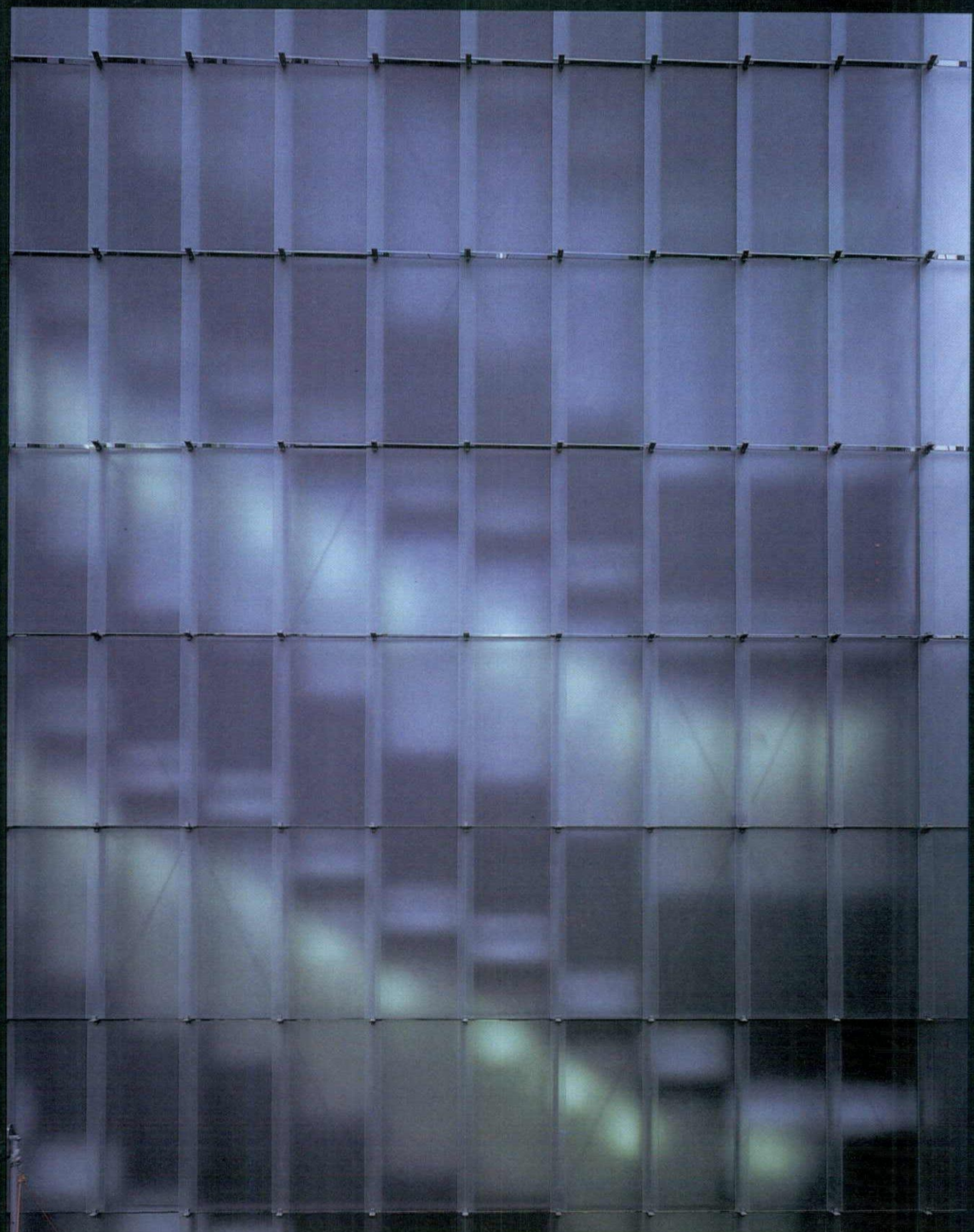
From darkness to light; complexity to apparent simplicity. Zumthor's most recently completed major work is the Kunsthaus at Bregenz, where Austria fleetingly touches the east end of Lake Constance, the Bodensee. Looking from the lake, a new misty-grey rectangle has been placed between the florid late-nineteenth century post building and the aggressively dumb fly-tower at the back of the Kornmarkt theatre.[13] From the town side, a new square has been created by setting the grey slab back to Seestrasse (the road along the lakeside park). A lower rectangular black building is set at right angles to the Kornmarkt and parallel to the side of the theatre making the third side of the space. This smaller three-storey block contains almost all the elements of a gallery not needed for exhibition: library, offices, shop and, most importantly, café. Elegant white umbrellas allow the café's life to spill through sliding glass walls into the square from the long, thin, black bar.[14] All this works very well but it is a pity that the budget did not run to a more noble paving material than asphalt. Though Zumthor has written touchingly about 'soft asphalt warmed by the sun',[15] surely the ubiquitous setts of the town's pedestrian areas would have been better, and best of all would be stone slabs, like the ones in the baths – and a couple of decent trees.

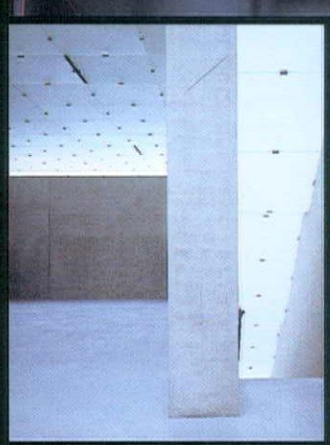
These can come. What we have now in the gallery building is a mysterious translucent grey monolith, with minimal openings on the ground and no changes at all in its skin above that level. At night, the skin of the building glows softly. By day, you can see traces of forms inside, and the taut slender diagonal steel bracing of the glass wall makes an understated inner visual order to the panels of etched glass. Zumthor describes the skin very precisely: 'It looks like slightly ruffled feathers or like a scaly structure[16] made up of largish glass panels ... which are all the same size ... neither perforated nor cut. They rest on metal consoles [brackets] held in place by large clamps. The edges of the glass are exposed. The wind wafts through the open joints of the scaly structure.'[17]

The galleries themselves, and the stair approaches to them are the wonder of the building. Each of the three upper floors has a ceiling of square glass panels etched on the underside, and linked by chromed connectors which themselves are hung from the bottom of the floor slab above. Slab and ceiling are over two metres apart, so above every floor is a void which acts as a plenum[18] for both air and light. Diffused light pours in through the frosted skin of the building and down via the translucent glass ceiling, where it is supplemented in the middle of each floor, and (according to time and external conditions) at the perimeter by automatically controlled artificial lighting. The result is quite extraordinary, for on each of the gallery floors, you feel that you are immediately under the sky, with only a glare-filtering device in a roof above you. Lighting is not uniform, being noticeably brighter and usually cooler at the perimeter. And it changes according to the weather and time of day, so that inside you are always aware of external conditions. The stairs on the east side are magnificent, with bright daylit ceilings hovering over generously landinged straight flights between concrete walls.

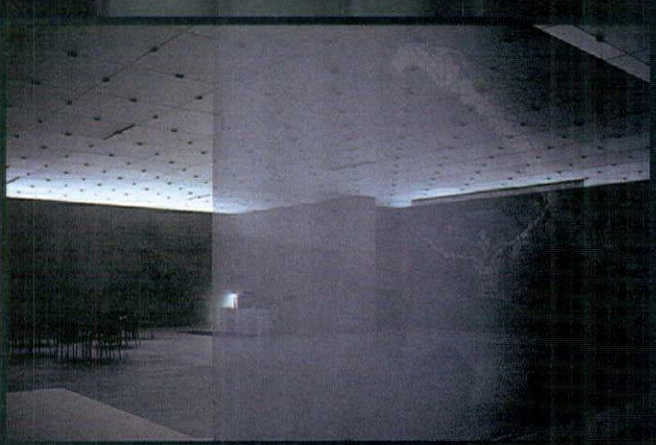
Light falls into galleries basically square in plan, though modulated (like the square within a square of the main pool at Vals) by planes brought forward from the perimeter. The walls are of what Friedrich Achleitner has called 'velvety grey' concrete,[19] cast against smooth shuttering with all evidence of daywork suppressed. The rooms are empty, waiting: space and surfaces gentle and subtle. Heavy pictures are hung on the walls by drilling holes in them and inserting fixings, then making good after the exhibition. The curators are extremely pleased with their efforts in concealing their work, 'Can you see the scars?' they ask. No. But I suspect that Zumthor would like traces of past exhibitions to be detectable. He believes that 'A good building must be capable of absorbing traces of human life, of taking on a specific richness ... I think of the patina of age on materials, of innumerable small scratches on surfaces'.[20]

The building's internal climate is controlled most ingeniously. The problem with most buildings which receive a large amount of daylight is that they overheat because of solar radiation. Most galleries are cooled by artificial means, a very expensive and environmentally destructive process. Cooling at Bregenz comes from a deep underground stream, the temperature of which is tapped by non structural walls 25m deep, through which water is pumped in pipes and then circulated through the tower's concrete walls and floors. Using electronic controls (which can inject heat from a boiler when necessary) the building mass can be held at an even temperature. The system will be less expensive to run, and has involved less than half the capital cost of a conventionally refrigerated air-conditioning system. It is the latest instance of Zumthor's determination to control internal climates in the most discreet and environmentally friendly ways.[21]











Versam.

The trouble with the galleries at Bregenz, which for all their hard materials are delicate and generous, is that they may be too fine for some of the art they show. When I visited the place, there was a particularly crass exhibition (there is no permanent collection) and the clumsy, unintentional coarseness of the artworks was made to look particularly gross and silly by the spaces.

The fleeting Gesamtkunstwerk

While the Kunsthaus predominantly addresses sight, Zumthor's project for the Swiss pavilion at the Hanover 2000 world fair will 'offer all the senses something'.[22] It will be a sort of maze created on a rectangular plan out of parallel walls of building timber 'made like a lumberyard. It is not a metaphor for a lumberyard, it really is one', for the planed spruce will be sold after the exhibition closes (an elaborate system of 'springs and tension wires' will allow for shrinkage in the wood and reduction of the height of the building during the course of the show). Metal roofs will make the pavilion a '*klangkörper*'[23] when it rains. The materials alone will speak to senses of sight, touch, hearing and smell. And sensations will be reinforced by the work of other artists. A poet will illuminate the walls with 500 neon words from all the Swiss languages. A playwright will arrange small performances by musicians and ballet dancers. A musician will project notes to 'make the building sound like a beating heart'. A film-maker will be involved. There will even be a 'gastronomic expert' who will choose food with great precision to enhance the overall effect. Zumthor will conduct the group who 'will tell nothing about Switzerland', but of course, in a sense, they may well tell much more about their country than most of the pavilions, which will be crammed with the strident messages of the PR industry.

The shaman for our times

I have chosen to concentrate on three buildings and a project in this appreciation because I believe that they most clearly demonstrate Zumthor's essence.[24] He is not an easy architect to write about, partly because he does not have a style. But there are common themes in his work: celebration of place, engagement of all the human senses, deep understanding of space, light and materiality. And certain recurrent approaches: total command of services to make them efficient but unobtrusive, moving glass walls, feathers and scales, the carved block, chinks and striations, and framing views to make more poignant the immensely important moment when the individual looks out from the safety of shelter to the wider world. He is a shaman for our times, giving magic and poetry to the everyday. Perhaps he is able to do this because his perceptions have been honed in Graubünden: he combines a Latin, almost Baroque, concern for wholeness and powerful parti with a more northern fascination for tectonics, construction, detailing and materials.

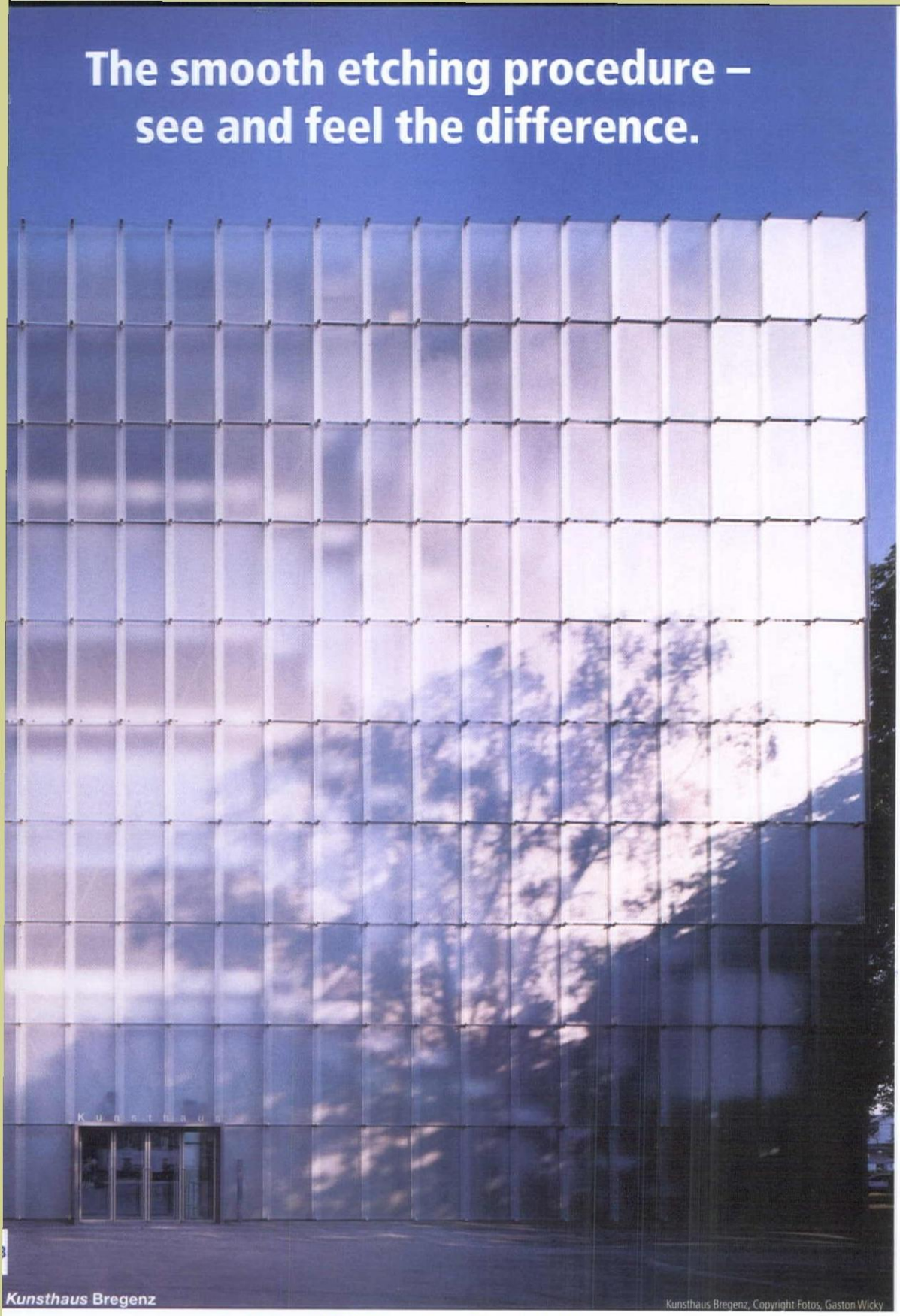
He should sum up: 'Why, I often wonder, is the obvious but difficult solution so rarely tried? Why do we have so little confidence in the basic things architecture is made from: material, structure, construction, bearing and being borne, earth and sky, and confidence in spaces that are really allowed to be spaces – spaces whose enclosing walls and constituent materials, concavity, emptiness, light, air, odour, receptivity and resonance are handled with respect and care?'[25]

Because he orchestrates these constituents of real architecture with such tenderness, invention and insight, he is an example to us all.

1 Conversation with the author on a beautiful sunny July morning in the orchard of his office near Chur. (*Gestaltung* means 'putting things together' or 'design').
2 *Ibid.*
3 One of the two rivers that come together further north-east to make the Rhine itself.
4 The place is so small that the parish priest can hold mass only on a weekday, being busy with bigger congregations further down the valley on Sundays. The chapel replaces an ancient one that was destroyed in a landslide. Zumthor got the commission after a competition.
5 Peter Zumthor, *Thinking Architecture*, Lars Müller, Baden/Switzerland, 1998, p13. The book is a compilation of Zumthor's lectures. This one was given in 1988 at SCI-ARC, California in 1988.
6 *Ibid*, pp11-12, same lecture.
7 *Ibid*, p36, lecture delivered to the Alvar Aalto Symposium, Jyväskylä, Finland, 1994.
8 *Idem*.
9 The community is only about a thousand strong, but it can give itself planning permissions – and when necessary raise large sums of money, in this case 250 million Swiss Franks.
10 Zumthor's brilliance in framing is at its most intense in two of the smaller rooms, where you lie on long curved chaises-longues, made of slats of the same mahogany-like wood as the lockers. You look beyond your feet to a small square window which has a view of the hillside selected precisely for you.
11 Here there is none of the whooping and shouting that cacophonize most public baths; in fact, in the smaller rooms, water noises, intensified by small tall spaces and hard surfaces, often seem to dominate those of people. The pools are never more than about four feet deep, so there is no diving, and little of the stupefying dreariness of health freaks doing their self-allotted number of lengths. In the happy omission of athletic approaches to the public bath, and the return to a semblance of the Roman habit of social bathing, the building itself interacts with the users.
12 Zumthor, *Thinking, op cit*, p58. The lecture was to his students at the Accademia di Architettura, Mendrisio, Switzerland in 1996.
13 The lakeside seems never to have had much coherence, and at present includes the station and a huge semi-permanent set for the town's annual drama festival built like a chunk of destroyed urban motorway in *Bladerunner*. The disparate scales and styles are related by a pretty waterfront park.
14 This is a favourite device used to great effect in, for instance, the old people's home at Chur where the public side can be opened to the sun and air of the hills by large sections of storey-height glass movable by even frail old ladies.
15 Zumthor, *Thinking, op cit*, p58.
16 I have only just found this quotation but, you see, I was right about the chapel's cladding: he is clearly fascinated by feathers. And you could think of the plan of the chapel as a streamlined longitudinal section through a fish, and the shingles as scales.
17 Zumthor, Peter, in *Kunsthaus Bregenz*, Hatje, Stuttgart, 1997, p13.
18 A plenum is a volume full of something (in this case air and light). As opposed to a vacuum.
19 Achleitner, Friedrich 'The Kunsthaus Bregenz as an Architecture of Art', *Kunsthaus Bregenz, op cit*, p35.
20 Zumthor, Thinking, *op cit*, p24.
21 Details of the Bregenz system are in AR December 1997, pp51-52. Zumthor's fascination with the potential of massive concrete as thermal flywheel can be seen as early as the little wooden farm extension at Versam (1990), where a wood-burning stove heats a massive internal concrete wall with hypocaust-like ducts. At Vals, the walls radiate heat from inbuilt pipes. The temperature is controlled by using subterranean warmth with a sophisticated heat exchange system, so artificial heating is needed only rarely on the coldest days. (Places on which you sit are kept warmer than surrounding walls.)
22 Conversation, see footnote 1. The following short quotations are from the same discussion.
23 Resonant body.
24 Though the total body of work is comparatively small, there is far more built than I can describe here, and there is much to come, notably the Cologne Diocesan Museum, and the troubled and terrifying documentation centre on the site of the focus of Nazi evil, the headquarters of the SS and Gestapo at the Prinz Albrecht Palais in Berlin. The most comprehensive review of buildings and projects is Zumthor, Peter, *Peter Zumthor Works*, Lars Müller, Baden, Switzerland, 1998. It has excellent photographs by Hélène Binet. More of his work (including early buildings) can be seen in *Birkhäuser Architectural Guide, Switzerland 20th Century*, Birkhäuser, Basel, Berlin, New York, 1997.
25 Zumthor, *Thinking, op cit*, p32. The lecture was to the Symposium Piran, Slovenia, 1991.

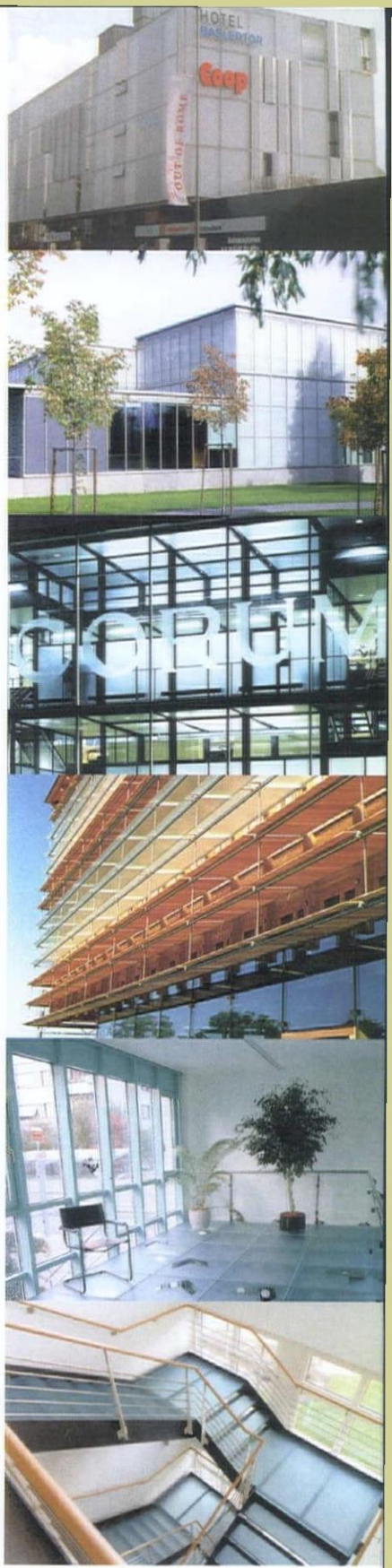
I am very grateful to the New Carlsberg Foundation (Ny Carlsberg Fondet), and particularly to Hans Edvard Nørregård-Nielsen, its Director and Chairman of the 1998 Carlsberg Architectural Prize jury, who kindly asked me to write this essay and enabled me to make a halcyon summer trip to Switzerland. The text is published as a booklet by the Foundation to commemorate the ceremony at which Zumthor received the Prize from the Queen of Denmark in Copenhagen. The format of that publication is very different from this, but it too is illustrated by Hélène Binet's powerful pictures. She took all the large pictures shown here, and of the small ones: middle p75, top left p77, bottom left p79. All others by Pelham Davey.

The smooth etching procedure – see and feel the difference.



Kunsthaus Bregenz

Kunsthaus Bregenz, Copyright Fotos, Gaston Wicky

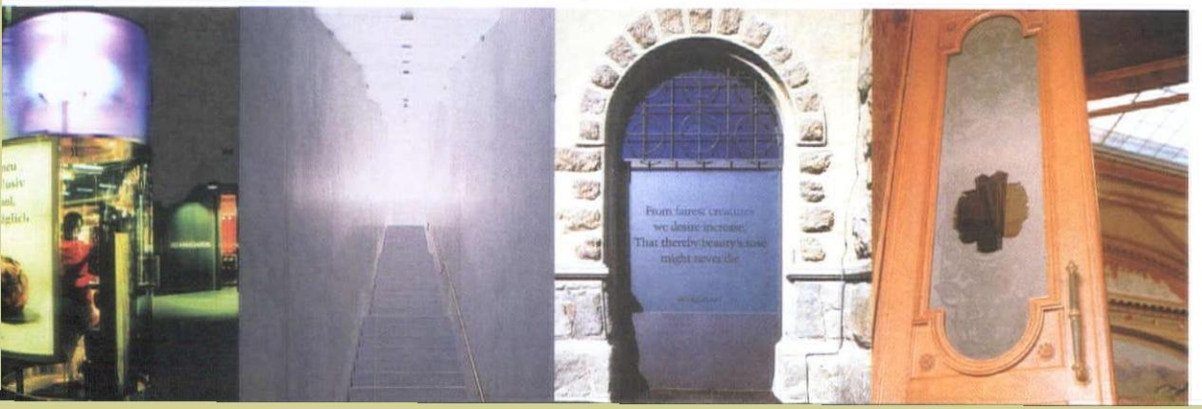


Above: CoopCenter Muttenz, Kirchner Museum Davos, School of Forestry Lyss, Corum Watches La Chaux-de-Fonds, Glass-floor and glassstairs, VITREX 120.

Original-FällanderGlas-Etching

The etching with the ideal light transmission values

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Left: TELECAB 2000, Kunsthaus Bregenz, Bibliothek St. Moritz, Swiss Parliament Building Berne.

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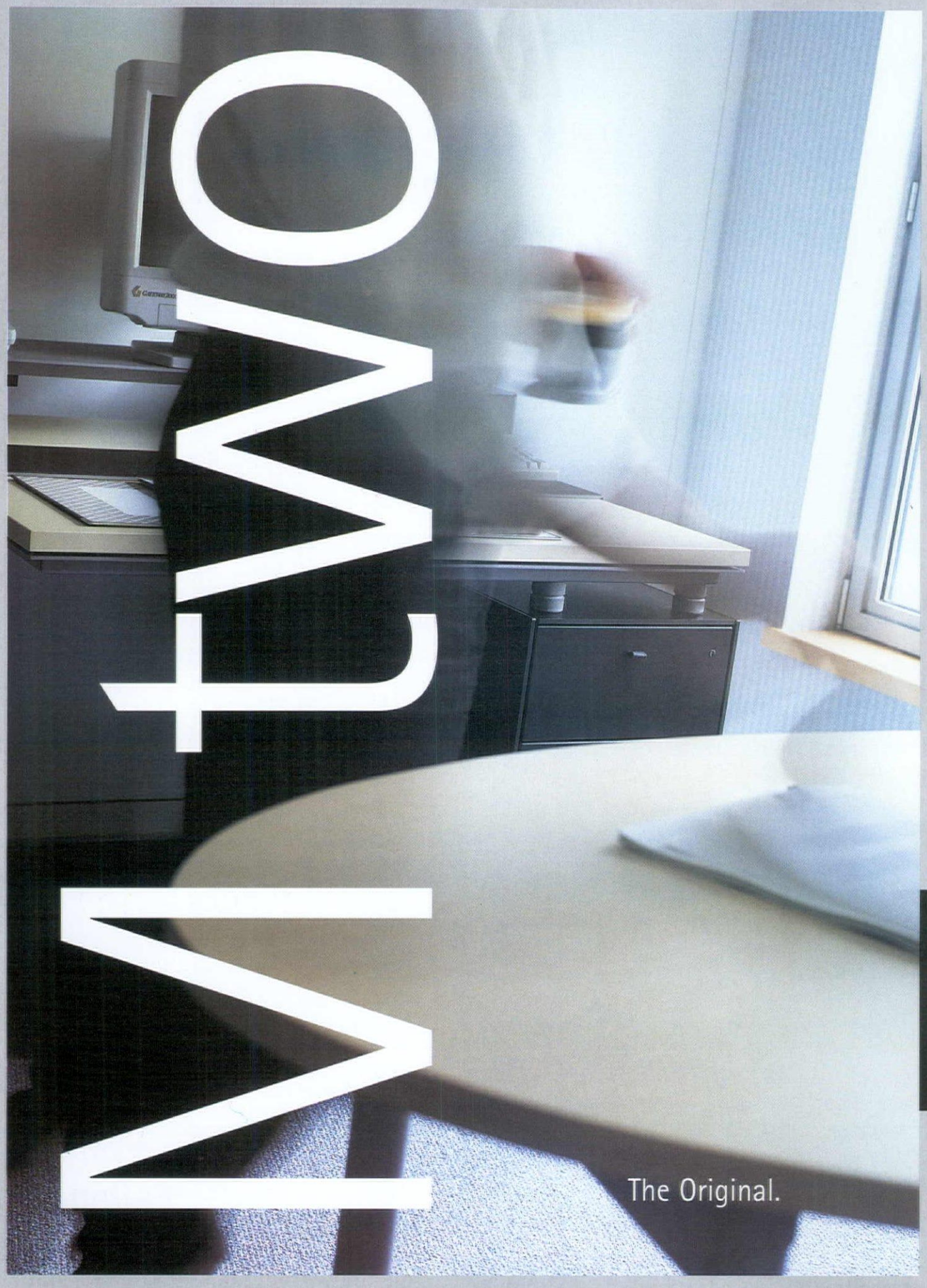


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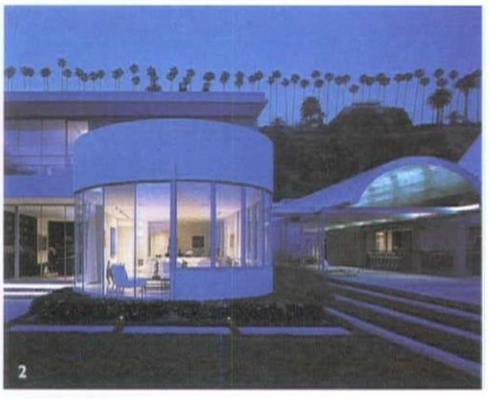
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HOUSE EXTENSION,
SANTA MONICA, USA
ARCHITECT
STEVEN EHRLICH



Zen Hedonism

An extension to a Neutra-designed house in Santa Monica draws on the elegant economy of Californian modernism.



1
New entertainment pavilion overlooks a courtyard on the south side of the Lewin Residence.
2
Curved bay of Lewin Residence inspired the barrel-vaulted roof of the pavilion.

The villa on the edge of the ocean has proved an enduring and seductive Californian archetype. The Lewin Residence nestles in an idyllic setting at the base of a Santa Monica bluff overlooking the Pacific Ocean. Behind runs the Pacific Coast Highway and high, crumbling cliffs dotted with palm trees. Designed by Richard Neutra in 1938, the house's lightweight steel structure and fluid interpenetration of space marked it out as an early example of the elegant, economical formalism of California's Modern Movement. The present owners sought to extend the original house by adding an entertainment area, pool, additional garage, new parking areas and staff quarters as well as renovating the outdoor spaces. Steven Ehrlich, who has a record of finely judged domestic commissions (for instance the Ehrman/Coombs beach house in

HOUSE EXTENSION, SANTA MONICA, USA
ARCHITECT
STEVEN EHRLICH

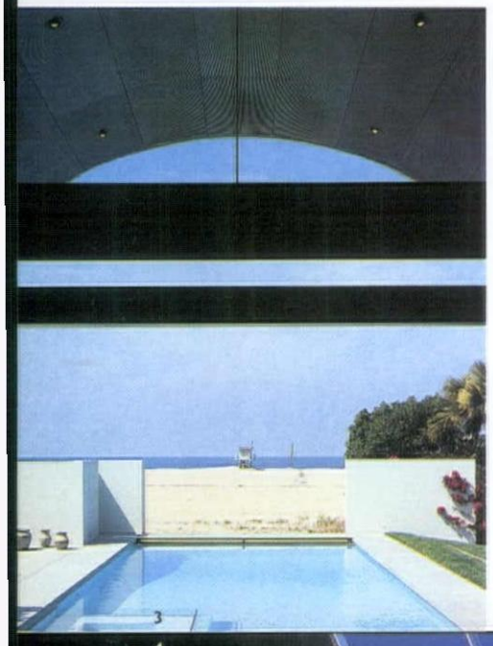
Santa Monica, AR July 1994) was asked to produce a proposal.

Ehrlich's predilection for simple forms and austere materials has made him a natural successor to the European *émigrés* of Californian modernism. Here he takes his cues from Neutra's material austerity and fusing of interior and exterior space. The new garage and staff quarters are placed to the rear of the existing house, forming a barrier against the Pacific Coast Highway. This arrangement creates a protected courtyard facing the ocean on the south side of the house. A barrel-vaulted pavilion houses the entertainment area and is linked to the white volume of the existing house by a glass corridor.

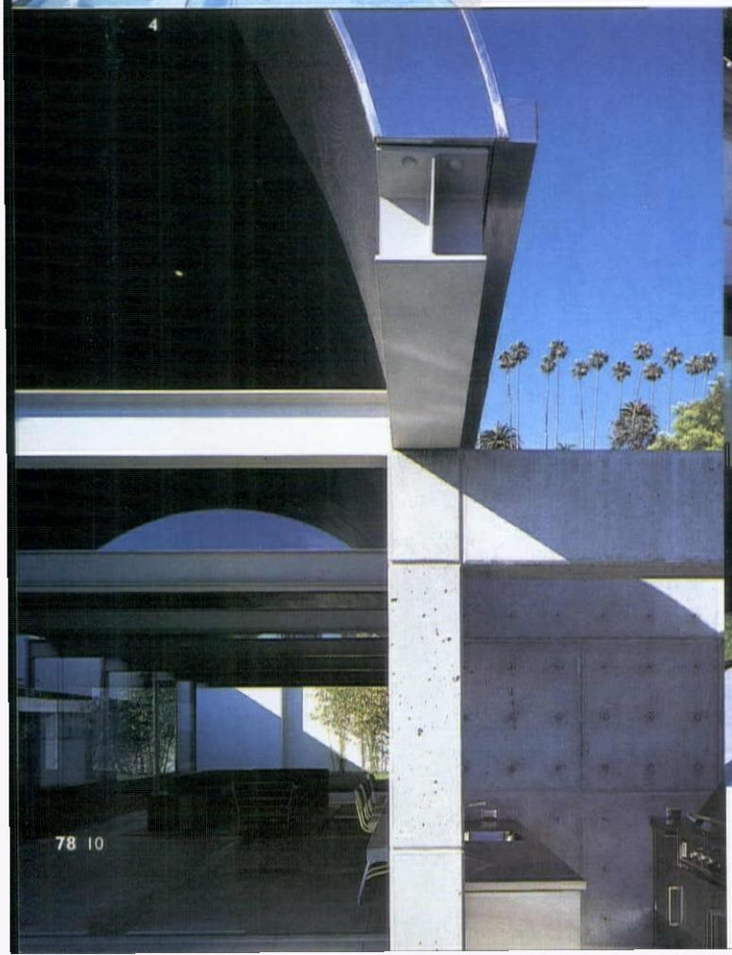
Reminiscent of Kahn's Kimbell Museum, the curve of the stainless-steel barrel vault is partly inspired by the adjacent curved window bay of the Lewin Residence. Aligned on an east-west axis facing the ocean, the pavilion is conceived as a minimal steel and glass structure that sits lightly and elegantly on the ground. Three of the walls are fully glazed, so it can be opened up to connect with a new swimming pool and the Pacific Ocean beyond. (The glass panels at each end of the vault simply slide away into a pocket between two concrete walls.)

Like spider's legs, the steel structure projects slightly beyond the roofline. Tacitly appropriated by Ehrlich, this constructional device was used by Neutra in his later work. The monochromatic palette of steel, glass and exquisitely cast concrete, acts as a foil to the luxuriance of the surrounding landscape and intense cobalt blues of sea and sky. Understatement was never part of the brash Californian idyll, but Ehrlich's subtle yet sensuous manipulation of space and materials – a kind of Zen hedonism – makes a historically fitting coda to Neutra's original pioneering design. C. S

Architect
Steven Ehrlich Architects, Culver City, USA
Project team
Steven Ehrlich, James Schmidt, Nick Seierup, Richard T. Lin, Markus Hinzten, Brent Eckerman, Todd Flournoy, Un-Ju Choi, Stefanie Hinsen, Supachi Kiatwankul
Photographer
John E. Linden

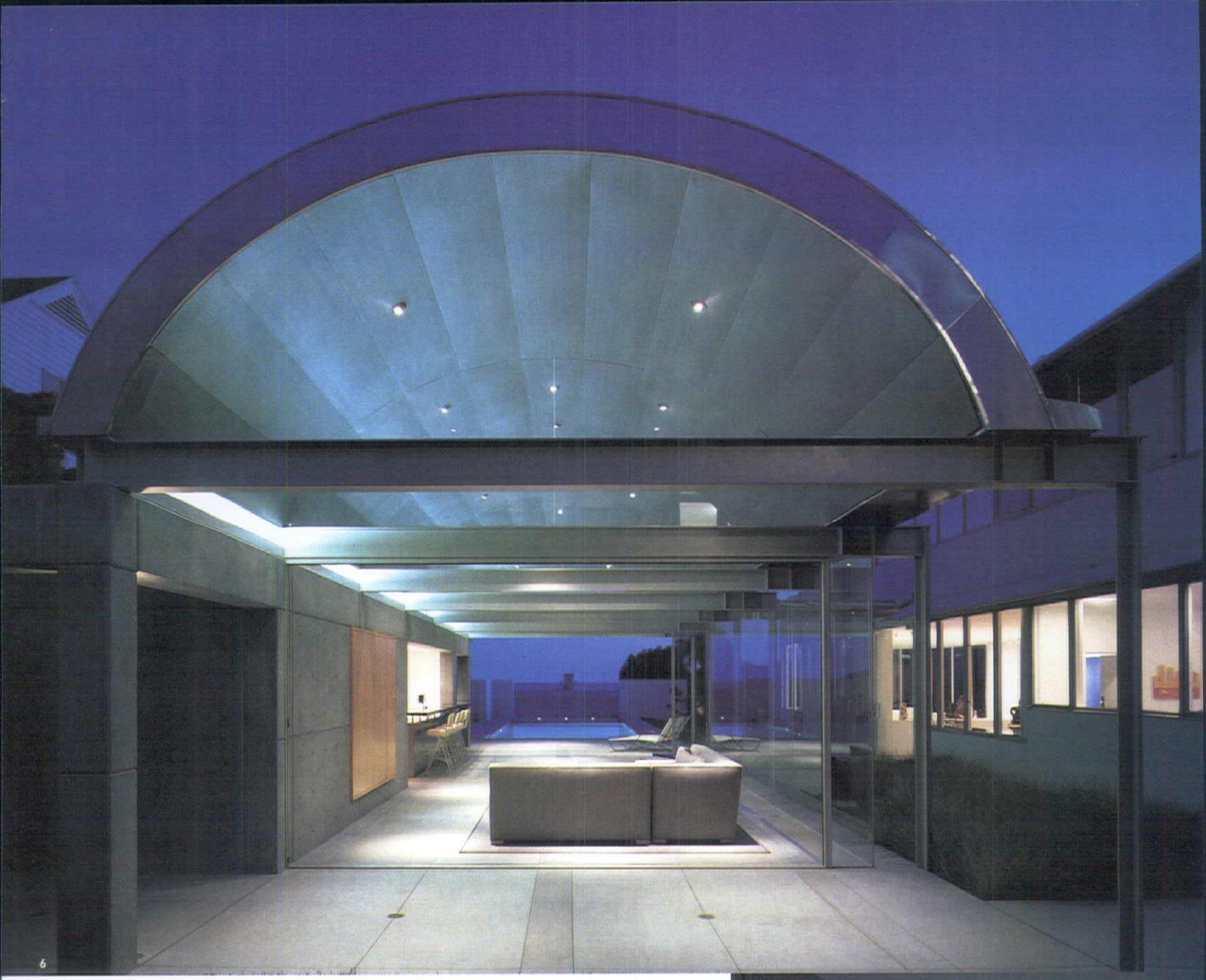


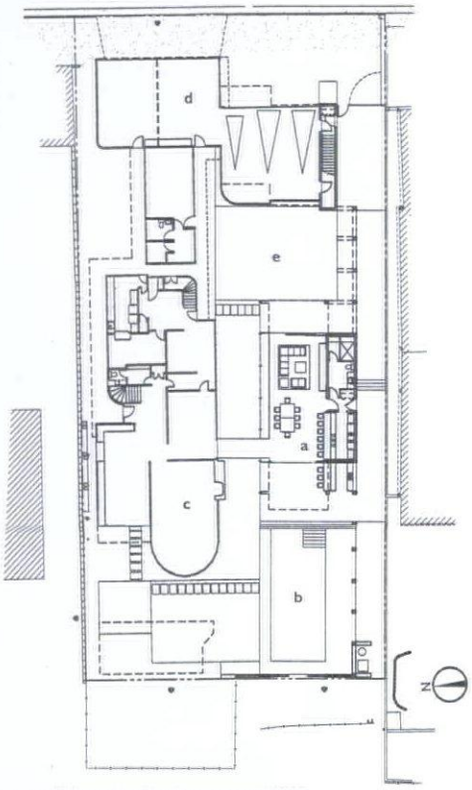




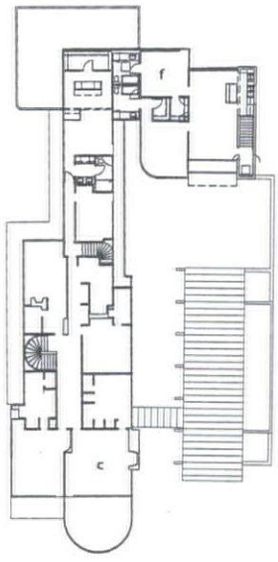


3
Beyond the enclosing wall of the swimming pool are breathtaking framed views of the Pacific Ocean.
4
Minimal detailing is combined with an austere palette of carefully chosen materials.
5
The glass walls of the pavilion slide away to extend the interior volume.





ground floor plan (scale approx 1:800)



first floor plan

a entertainment pavilion
b pool
c Lewin Residence
d garage
e courtyard
f new staff quarters



6
The lightness of the pavilion echoes the economy and elegance of Neutra's Californian modernism.
7
The pavilion is linked to the existing house by a glass corridor.

F.C.L. comunicazione

BolognaFiere

Bologna 14th - 18th October 1998

INTERNATIONAL BUILDING EXHIBITION

SAIE is one of the great international building fairs that few can afford to miss. Which is why last year no fewer than 170,000 visitors converged on Bologna from all over the world. This year SAIE is preparing to meet the requirements of its 1,900 exhibitors with 220,000 sq.m. of display space, where a comprehensive line-up of building materials and services will be arranged in sectors. Yet SAIE also stages over 50 conferences and meetings during the show, offering professionals an exceptional opportunity to examine and discuss technical, environmental and land policy issues which will continue to be closely connected to the growth of the market over the coming years.

EXHIBITORS SECTOR:

- *WATERPROOFING AND INSULATION.*
- *EXHIBITION OF TOOLS AND FASTENING SYSTEMS.*
- *BUILDING MATERIALS AND PRODUCTS.*
- *BUILDING SYSTEMS, COMPONENTS AND SUBSYSTEMS.*
- *MACHINERY AND EQUIPMENT FOR THE INDUSTRIAL PRODUCTION OF BUILDING COMPONENTS.*
- *BUILDING SITE MACHINERY, EQUIPMENT AND TECHNOLOGIES. SPECIAL MACHINERY AND EQUIPMENTS FOR CIVIL ENGINEERING WORKS.*
- *CONTROL AND MEASURING INSTRUMENTS AND EQUIPMENT FOR TESTING.*
- *PLUMBING, PIPING AND WATER TREATMENT.*
- *COMPUTERS SYSTEMS - SERVICE COMPANIES.*

SAIE98

Fiere Internazionali di Bologna - Ente Autonomo - Viale della Fiera, 20 - 40128 Bologna - Italy
Tel. 051-282111 fax 051-282332 - E-mail: dir.com@bolognafiere.it - Internet: www.bolognafiere.it/SAIE

For more details enter 29 on AR enquiry card

d line

Knud Holscher Design

d line's sanitary panel programme is a highly flexible modular sanitary concept, manufactured in satin stainless steel, and intended for wall recessing which incorporates a number of identified key factors; design, quality, flexibility, durability and hygiene, and thereby offering a real solution for every day living.

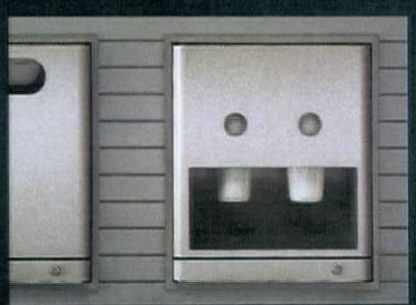
Designed and developed by **d line**™ *international as* and Knud Holscher Industriel Design, this innovative and complete sanitary panel programme has been conceived with the vision that the concept will be appropriate for a variety of applications, primarily toilet cubicles, washroom areas and kitchenettes.

With flexibility in mind, the individual sanitary modules have been designed in three alternative sizes, 1, 2 and 3, where the sizes are dependent upon the products' function. The series allows each individual sanitary panel to be constructed with the exact module combination as per desire and requirement.

Consistent with **d line**'s policy of marketing low maintenance and hygienic products, the modules are designed with curved surfaces and manufactured in AISI 316 acid resistant stainless steel.

d line's sanitary panel programme is manufactured in Denmark by **d line**™ *international as* which is a DS/EN ISO 9001 certified company.





For further information please contact:

Ireland
Architectural Hardware Limited
Head Office / Trade Counter
Unit 6C, Citylink Business Park
Old Nass Road
Dublin 12
Phone: 4 53 60 44
Fax: 4 53 61 99

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d line™ *international as*
Carl Jacobsens Vej 28, Valby
1790 Copenhagen V
Denmark
Phone: +45 3618 0400
Fax: +45 3618 0401
E-mail: dline@dline.com

For more details enter 5 on AR enquiry card

HOUSE, EALING, LONDON
ARCHITECT
MCLEAN QUINLAN

Conversion of an Edwardian house into a Modernist inspired dwelling reinvents family tradition and asserts delight in luminance, materials and detailing.

House proud

The London borough of Ealing, famous in the inter- and postwar years for the Ealing Film Studios, was earlier still considered the 'queen of the suburbs'.[1] In spite of some indifferent commercial development, it is still remarkable for open commons and leafy streets lined by large Victorian and Edwardian family houses.

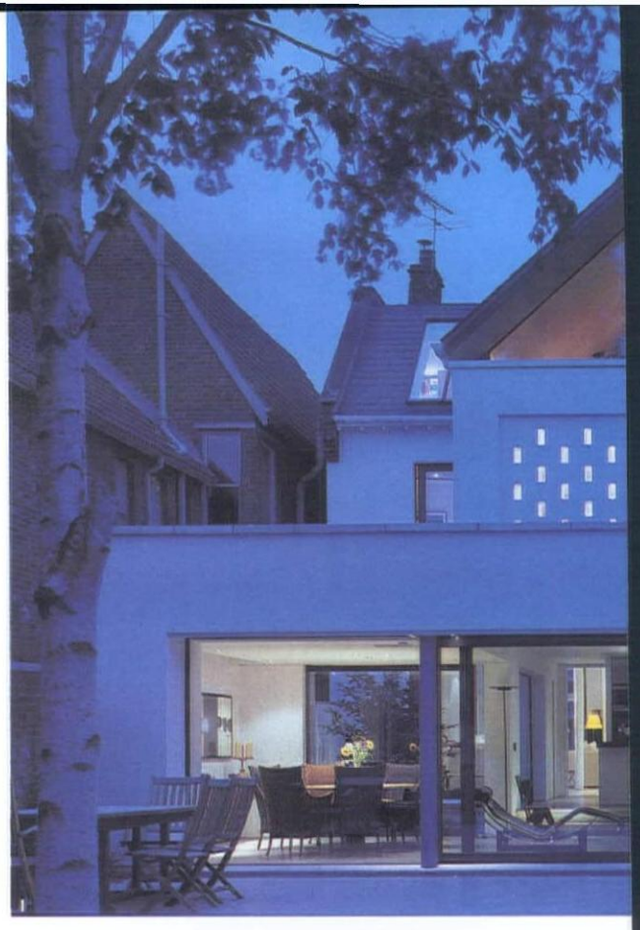
The domestic character of the area is defended by local residents as well as planning controls; and in converting an Edwardian house into a modern dwelling for a family of five, McLean Quinlan had to retain the double-fronted brick shell. The house faced east onto the street, was deep in plan and detached from, but close to, buildings on either side. In spite of this, Fiona McLean has created a new building. Within the shell the interior was almost entirely scooped out, except for first floor joists and a fragment of staircase, and a back extension was removed.

McLean's design reflects the conventions of family life that were implicit in the original, in which the formal is marked out from informal, the private from the general. In recreating this ordering her reference was the European villa, expressing hedonistic pleasure in calm fluid spaces, in the play of light on pure white planes and the occasional block of strong colour, and on natural materials – for floors, sumptuous grey and creamy-gold limestones and pale woods; limestones and mosaic in bathrooms.

The extension has been replaced by a gabled structure which, though integrated with the main building by a hall, curving staircase and landings, feels detached. This is partly because the accommodation at each level – an attic study, first floor guest quarters, and ground floor family room – is meant to be perceived as apart; but also because on each of the upper floors passage between the two parts of the house is an event. At the very top, the passage becomes a bridge between a void on one hand, the stairwell on the other; and this service core is also a lightwell with light being brought in through skylights and a translucent glass panel let into the side wall on the first floor.

You enter the house formally, through the original front door and new glazed lobby into the living room. This big clear space runs back to a small inner courtyard – in effect a lightwell covered with light reflective stones and glazed on three sides, (the remaining side being the party wall). The living room is divided from a similarly spare dining room by a short length of wall embracing a cupboard faced with 24 panels of Oriental delicacy, designed by McLean to hold hi-fi paraphernalia.

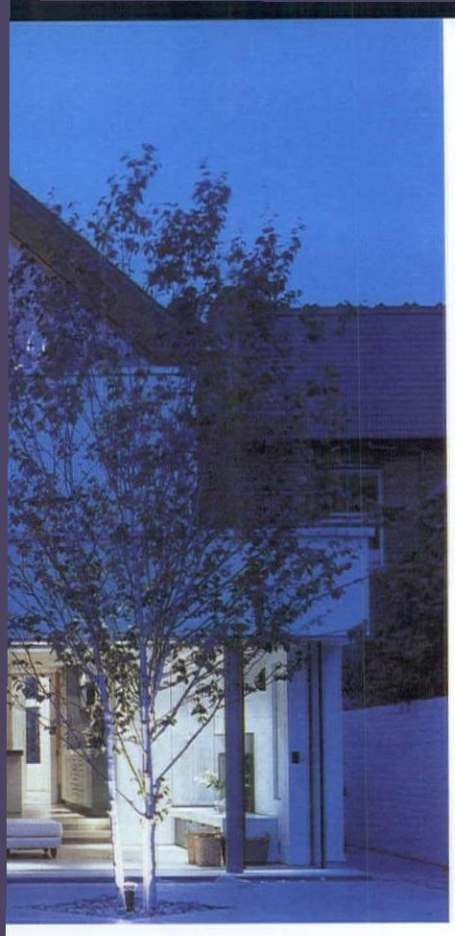
Otherwise entrance can be more informal, through a luminous aisle on the south side, like a lean-to, roofed with translucent polycarbonate and furnished with a line of Venetian red cupboards. This delivers you into the family centre, to the foot of the stairs where an elegant



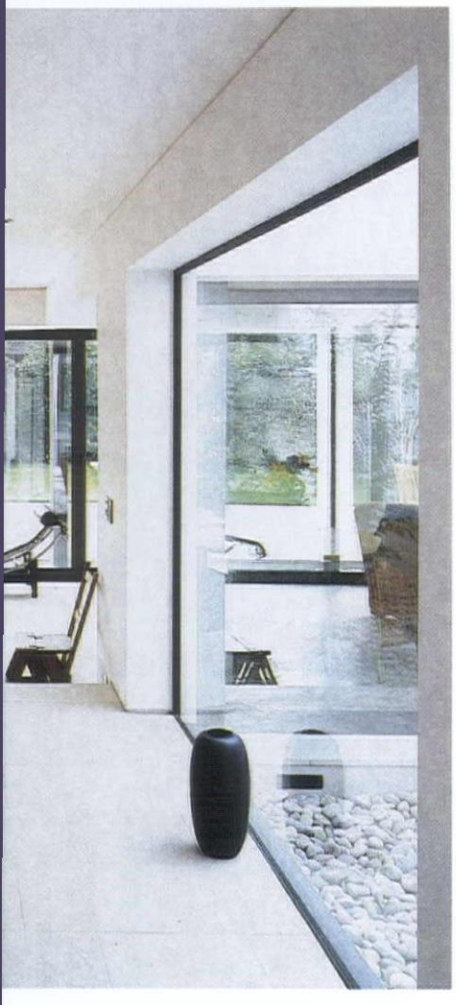
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3







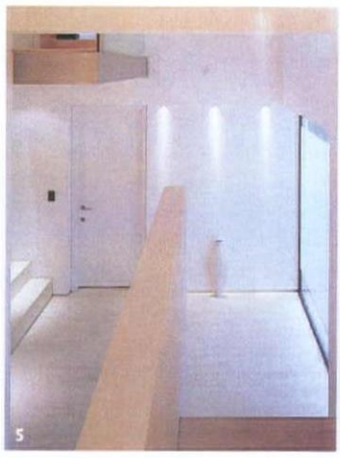


1
New extension with ground floor family room, guest room above and attic study.
2
Family room with sliding glass doors and limestone flags laid diagonally and continued across terrace.
3
Corridor through kitchen to family room. Right, internal courtyard covered with light reflective stones.
4
Guest bedroom and rear wall perforated with glass bricks.

HOUSE, EALING, LONDON

ARCHITECT

MCLEAN QUINLAN



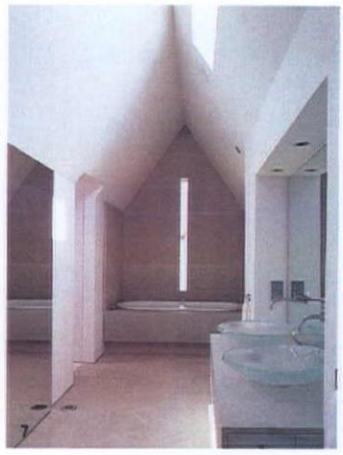
5

First floor landing. Right, translucent panel let into side wall. Above left, second floor landing giving onto void.



6

Second floor landing and attic study beyond, lined with birch ply.



7

Second floor bathroom under steep gable, part of original envelope.

little lavatory has been fitted into the curve of the wall, to the kitchen and glazed garden room. Big limestone flags laid diagonally continue through sliding glass doors across the terrace so that when the doors are open the inside really is a part of the outside.

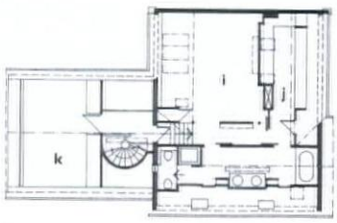
Ascending the stairs you find the children's rooms disposed around a landing and bathroom; but the most private, and desirable, retreat for parents is in the attic, fitted under the eaves and cutting into the ridge line. The bedroom, lined in birch ply and lit by a large attic window, has an austere chapel-like simplicity; behind it, a generous dressing room is lined with shelves and hanging rails. The same simplicity governs design of the adjoining bathroom. Clad in stone this is another chapel-like space, this time under the steep pitch of the original gable and illuminated by a rooflight and slots cut into the gable ends.

Behind its traditional facade this house is an exotic presence in the suburb. As you move through it you are continually made aware of light and surface, entertained by inventive details – the patterns of light cast by the perforated rear wall of the guest room, the seeming fragility of glass basins set on stone, the tiny clear squares set into translucent glass, each one representing a family member's height. P. M.

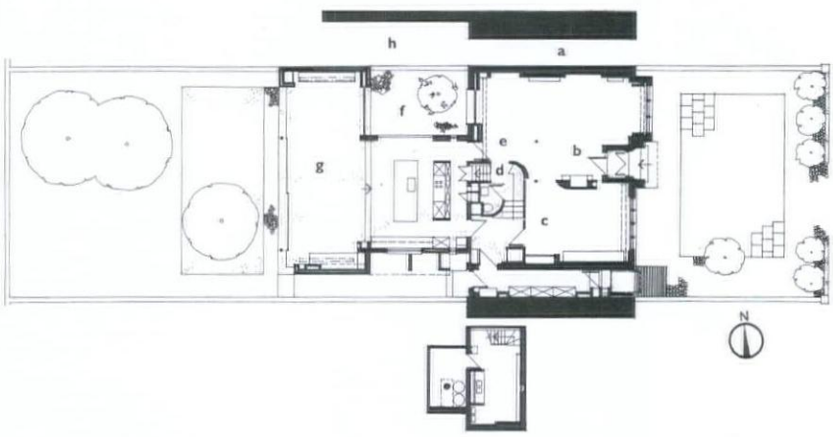
1 *The Buildings of England: London 3 North West* by Bridget Cherry and Nikolaus Pevsner, London: Penguin.



first floor plan



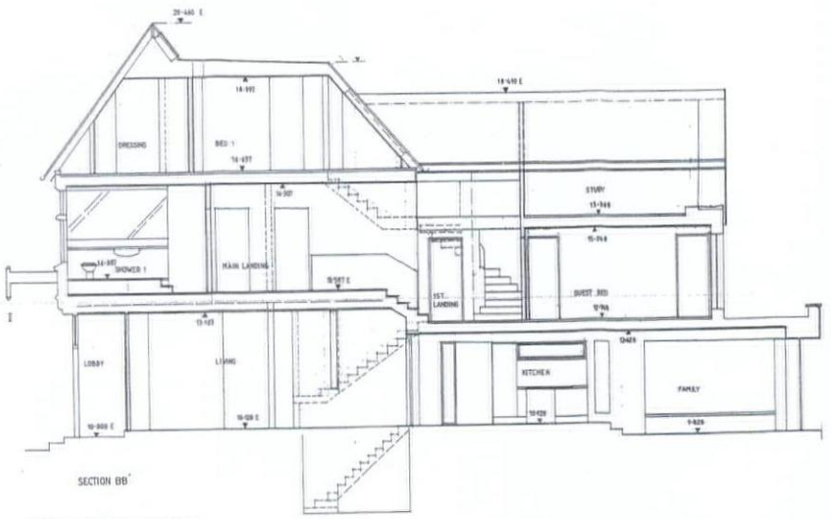
second floor plan



a living room
b dining room
c side porch
d hall
e wc
f kitchen
g living room
h internal courtyard
i bedroom
j dressing room
k study

ground floor plan (scale 1:400)

Architect
McLean Quinlan
Project architect
Fiona McLean
Structural engineer
Frank Van Loock Associates
Limestone flooring & cladding
Stone Age
Doors
The London Door Company
Windows & glazing
Cantifix
Window blinds
Silent Gliss
Photographs
Peter Cook/VIEW



east-west long section



nico - david grimshaw **nile** - fred scott

surf - peter christian **corpus** - steven smith **wafer** - peter christian **pharaoh** - fred scott

tubby - mark gabbertas **luna** - amos marchant and lyndon anderson



ALLERMUIR

allermuir limited branch road lower darwen lancashire bb3 0pr england **t** +44 (0) 1254 682421 **f** +44 (0) 1254 673793 **e** sales@allermuir.co.uk **w** www.allermuir.co.uk

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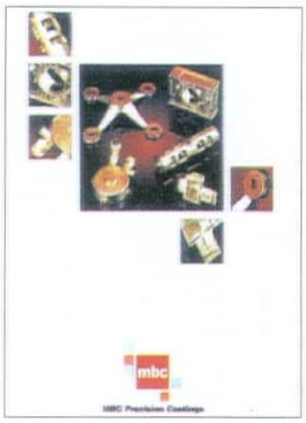
Specifier's information



Tensile fabric structures

Rubb Buildings Ltd offers a full turnkey facility for the design, production and erection of tensile fabric structures. An international company with production facilities in the UK, USA and Norway, and ISO 9001 certified, Rubb's expertise includes in-house design and a large engineering department. Rubb also manufacture structures with engineered frames in galvanized steel with high tenacity PVC coated polyester fabric; alternative types of fabric are also available.
For further information, contact: Rubb Buildings Ltd, Team Valley Trading Estate, Gateshead, Tyne & Wear NE11 0QE.
Tel: +44 (0)191 482 2211
Fax: +44 (0)191 482 2516
website: http://www.rubb.com

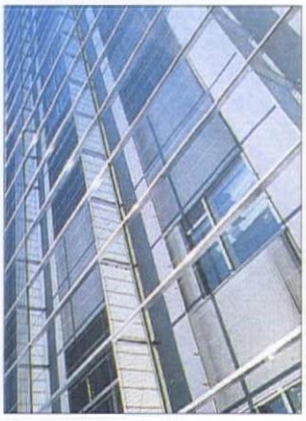
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MBC Precision Castings

MBC Precision Castings manufacture high integrity investment castings which have been individually designed with the aesthetic appeal of the architectural industry and which provide the opportunity for the wide scope of design required by the curtain wall and building industry.
Materials include stainless and aluminium/aluminium bronze with a maximum weight range of up to 40 kilogrammes and which can measure up to 1.5 metres long. Castings have been supplied to many prestigious contracts throughout the world.
For further information telephone Jim Welsh on +44 (0)1527 527501 or fax +44 (0)1527 502533.

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Stala Oy

Aesthetic, maintenance free, Stainless Steel Hollow Sections, for load bearing purposes, to be used in the Building Industry. Stala 350 Hollow Sections have a yield strength of 350 N/mm² which helps the designer to make lighter structures and therefore a more economic use of available materials. Standard Grades EN 1.4301, EN 1.4404 and EN 1.4751, with surface finishes either lightly brushed, pickled or polished to Grit 80 - 500 : Square Tubes are available from 25x25 to 150x150 and Rectangles from 30x20 to 200x100, with wall thicknesses from 1,2mm to 6mm.
For further information tel: +358 (0) 3 882110 or fax +358 (0) 3 8821114.

902 on AR enquiry card



Sovereign

Sovereign Stainless Fabrications have recently completed a challenging project at the new retail development, Kings Walk Mall, off Kings Road, London by architect Damond Lock Grabowski & Partners . The project involved three staircases with balustrading in the Virgin Megastore, commissioned by main contractors Durkan Pudelek. Sovereign designed the curved staircases, undertook structural calculations and installation. The design incorporates curved and spiralled channel stringers which are finished with an opaque opal metallic polyester powder coat, as is the support structure.
Tel: +44 (0)121 355 8838
Fax: +44 (0)121 35 8727
email ga@hdg.org.uk

903 on AR enquiry card



Hüppe Form

Hüppe Form has created a flexible, functional environment using its Variflex operable wall system. Burness Solicitors needed the facility to have a large area for major conferences which could easily be subdivided into a number of individual meeting rooms. To cater for meetings of different sizes, adjacent individual areas had to be capable of being combined. To meet these complex needs, including a through access corridor between some of the individual meeting rooms, Hüppe provided a solution using more than 50 linear metres of the semi-automatic version of its Variflex Top system. Its acoustic performance ensured privacy between divided areas.
For more information telephone +44 (0)1293 616666; fax +44 (0)1293 617777.

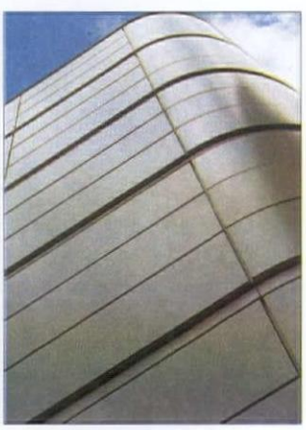
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FOREG 2000 mobile shelving

Scottish solicitors Burness have had FOREG 2000 mobile shelving from Forster Ecospace installed in their new Edinburgh offices. To cater for the litigation, property and corporate departments, three systems in separate office areas provide 900 linear metres of shelf storage and lateral filing. Using units 450mm deep and 2.59m high, the shelving occupies just 75 sq m of floor space. Shelving stacks run on tracks which have been fitted flush with the top of the raised computer flooring. Components are finished in a highly durable epoxy powder coated finish and shelves are complemented by various accessories for filing and storage. Tel: +44 (0)1869 278002; fax: +44 (0)1869 278003.

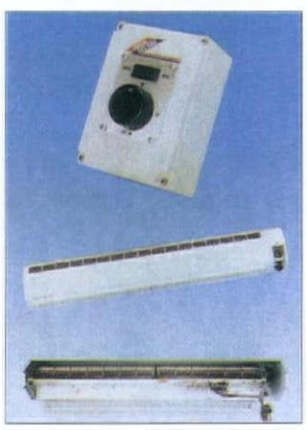
905 on AR enquiry card



ame-euro

Working closely with specialist cladding manufacturer ame-euro Ltd, architects O.R.M.S. used the Proteus modular cladding system for the new I.C.H. building at Great Ormond Street Hospital. The facade incorporated many specially developed design details including a recessed horizontal feature at all floor levels. ame-euro design and manufacture high quality, fully integrated, composite and rainscreen modular panel systems to suit a wide variety of aesthetic and performance criteria. All system elements (panels, windows, louvres) are modular to ensure high flexibility, maximum integration and consistent detailing. Telephone +44 (0)1695 50658; fax: +44 (0)1695 50652.

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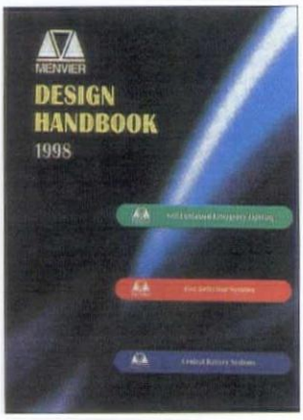


Bush Nelson

Bush Nelson have introduced two models to complement their range of 3kw and 4.5kw electric warm air curtains. The versatile LSK and LSD models are powerful in output yet quiet in operation and ideal for use in shops, offices, restaurants, factories and warehouses. Attractively packaged in neat white casing, the 12kw heaters are just 1.5m in length and can be wall or ceiling mounted. They come complete with sheathed elements, thermostatic control, dual overheat safety cut outs and many other refinements. Mounted directly over a doorway, the heaters emit warm air that forms a 'curtain', preventing cold air entering from outside.
For more information tel: +44 (0)1293 547361; fax: +44 (0)1293 531432.

907 on AR enquiry card

Specifier's information



1998 Menvier Design Handbook

Menvier has just produced a new 164 page Design Handbook for 1998/1999. As well as giving helpful guidelines on how to design and install emergency lighting and fire detection systems, together with notes on the latest legislation, including the Workplace Directive, the Handbook features the comprehensive range of Menvier's products and how they can help you meet your customer needs.
For further information or to obtain your free copy, telephone Menvier Marketing Services Department on +44 (0)1295 256363.
Fax: +44 (0)1295 273543.
E-mail: enquiries@menvier.co.uk

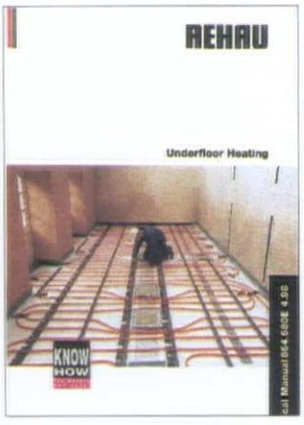
908 on AR enquiry card



Formica launch new CD-ROM

Formica Ltd, the leading designer and manufacturer of high-pressure laminates, has worked with Grant Westfield to introduce an innovative CAD drawing package. This is available on CD-ROM and features their top quality wall lining and cubicle systems. The new CD-ROM is extremely user-friendly and provides integrated CAD drafting facilities, with an introductory presentation to the product range. The CD-ROM will provide a time-saving tool for architects, interior designers, builders and specifiers, allowing them to design entire washroom, walling and partitioning systems, without recreating complicated drawing details.
Tel: +44 (0)191 259 3000. Fax: +44 (0)191 258 2719.

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REHAU manual

REHAU's comprehensive new technical manual covers every aspect of underfloor heating from design to commissioning, providing an unbiased, clear and comprehensive guide. Comfort, safety, economy, design freedom and maintenance are just some of the areas where underfloor heating scores highly against its rivals. Others include freedom in room layout, added comfort as a result of heating the floor area evenly, safety as there are no wall projections, energy savings with reductions in running costs of up to 30% dependent upon the type of building.
For further information please contact REHAU on: +44 (0)1989 762600; fax +44 (0)1989 762601.

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DORMA

DORMA Entrance Systems provide a comprehensive range of automatic door operators and complete door packages which are ideal for all applications, providing a safe, reliable and aesthetic means of entry and exit.
With an extensive range of sliding, swing, folding, telescopic, space-saving and revolving doors to choose from, DORMA can supply the perfect automatic door for your particular need.
To receive further information about the range of automatic doors offered by DORMA please telephone +44 (0)1462 480544 or fax: +44 (0)1462 480588.

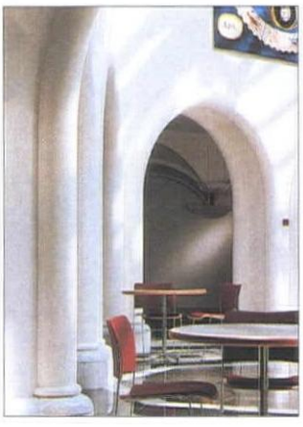
911 on AR enquiry card



WOHR parking systems

WOHR parking systems have created 10 parking spaces where only 3 existed at 'The Galleries', a Berkeley Homes conversion development in Chelsea. The automated Combilift system, which costs under £6000 per space fully installed, incorporates ground level platforms which move sideways and upper level platforms which only move in a vertical direction. The system, which is computer controlled and has individual coded access keys, always has one empty parking space at ground level so all cars can be accessed independently. This particular installation has 1 Combilift system immediately behind another providing optimum use of space. Tel: +44 (0)1993 851791; fax: +44 (0)1993 851793.

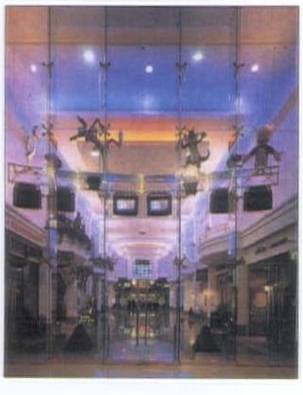
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Howe Projects

These 40/4 chairs and Tempest tables were installed by Howe Projects at Pearl Assurance's HQ in Peterborough.
If you would like to see more of our furniture, our new brochure 'Showroom at a Glance' will tell you about our company and shows examples of the best of European furniture design.
For a direct copy telephone Jane Pike on 0181 673 5334 or fax 0181 675 9111.

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Solaglas

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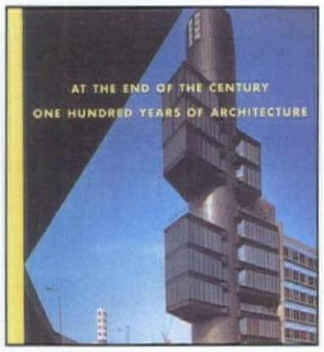


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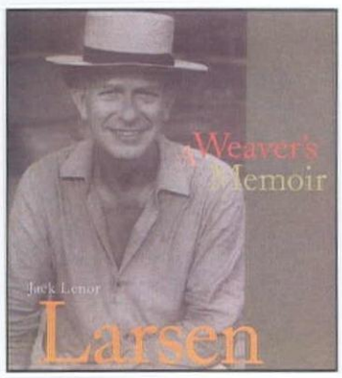
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Cities revealed

REPRESENTATION OF PLACE: REALITY AND REALISM IN CITY DESIGN

By Peter Bosselmann. Berkeley: University of California Press. 1998. £28

As Bosselmann says, the 'book is about the visual representation of city form'. It is concerned with how the experience of cities can be represented and it explores the influence of representation on city design. Bosselmann is clear that '... the richness and complexity of the real world cannot be completely represented...', so he is concerned with the goodness of images as surrogates of reality and the values and biases that representation encourages or discourages.

Divided into three parts, the first covers a history of professional representation in the West, starting with conceptual and experiential representation as developed by Italian architects of the Renaissance and continued to modern times – Brunelleschi, da Vinci, Nolli, Wren, Carmeno (the Ramblas), Haussmann's surveyors, Cerdá, Le Corbusier, Hilberseimer, Cullen, and Kevin Lynch are all here.

Part II presents case studies largely based at the famous Environmental Simulation Laboratory at the University of California, Berkeley, started by Donald Appleyard.

Part III, 'Reality and Realism', starts with a replay of Palladio's studies of proportions versus Goethe's studies of reality as concentrated on the Temple of Minerva at Assisi. Proportions, Bosselmann concludes., can be relative to where an object is viewed. The ensuing chapters launch into an excellent discussion of technical matters related to simulation and representation: viewing distances, focal lengths, people's reactions to simulation experiments, and the like. The section, and the book, ends with a much needed presentation of ethical considerations associated with simulation and who will watch the watchers.

This is a very good book. ALLAN B. JACOBS

Time and change

DESIGN FOR CHANGE: THE ARCHITECTURE OF DEGW

Edited by Jeremy Myerson. Haslemere: Watermark Publications (with Birkhäuser). 1998. £39

Books describing the work of a firm of architects tend to read like a sales brochure, and this one is no exception. Ken Powell is a good architectural critic, but there is little criticism here. This book reads as if DEGW have all the answers and the rest of us are nerds. I have great respect for the people at DEGW as talented and thoughtful mortals, but I do not believe that they have sewn up every situation from the workplace to the city, nor that their buildings are 'future proof'.

But this book is important because DEGW are important. They are correct in pointing out that architects are obsessed with the building as perfect object at handover and too little concerned about subsequent use and change. They are brilliant at breaking down commercial buildings into structure, shell, services, scenery and settings, each with their own life span. Best of all they share their findings, their research, their ideas with the rest of us in a continuing series of books. Jeremy Myerson in his introduction refers to them as a tug-boat nudging the super-tanker of architecture in a more constructive direction, and I find the analogy apt. As architects, we have undervalued time and change, but are, hopefully, responding to the tugboat.

Yet perhaps DEGW have overvalued time and change. Heraclitus, in deciding that everything is in a state of flux, finally had to accept that there are permanent things otherwise the flux could not exist. The devaluation of the long lasting leads to a cynicism about the art of architecture. We are told that the Arts and Crafts Movement is a 'generally malign influence' and the Modern Movement 'a passing architectural cult'. Guiltily, I found myself wanting to work in the bad examples. I can imagine joy working between the dendriform columns of Johnson Wax, even if the building does not conform to this year's thinking on office layout. JOHN WINTER

Plumbing architectural theory

PLUMBING: SOUNDING MODERN ARCHITECTURE

Edited by Nadir Lahiji and D. S. Friedman. New York: Princeton Architectural Press. 1998. £14.95

You won't learn anything about domestic hot water systems or anti-syphon traps from this book which is a collection of theoretical essays on modern architecture. The title is a strained multi-layered pun: plumbing as hygiene, plumbing in the sense of plumbing the depths, especially the psychological depths, and plumbing in the sense of levelling or straightening. Adolf Loos's 1898 article 'Plumbers' and Le Corbusier's and Amadee Ozenfant's article 'The Right Angle' from the 18th issue of *L'Esprit Nouveau* (both included here in new translations) are the dual starting point for an investigation of Modernism's obsession with purity and rectitude. These are rather slight pieces to serve as pretexts for a 232 page book.

The focus is narrow even within the limited field of post-modern architectural theory.

And yet these pieces are mostly well written and often illuminating. Helen Molesworth, for example, in her essay 'Cleaning House with Duchamp' finds in Duchamp's 'Fountain' (a urinal laid on its back) a vivid symbol of 'the intersection of art, hygiene, the body and the machine'; Victor Burgin, in his essay 'The City in Pieces' notes, tellingly, that modernism produced both the glass wall and the zoned city – both physical transparency and social isolation. This book is a product of the American architectural theory industry and this alone will put many readers off. It is not, however, as irritating as its title might suggest. COLIN DAVIES

Egyptian mythic landscape

THE GARDEN IN ANCIENT EGYPT

By Alix Wilkinson. London: The Rubicon Press. 1998. £45

The erudite Dr Wilkinson places the creation of a garden at the centre of Egyptian architectural design. She shows it was the aim of the architects to translate into buildings the mythological concepts and beliefs described in religious texts, and reorganize natural landscape features to create sacred landscapes. Unlike old history books which refer to columns as plainly advertising their vegetable origins or capitals seemingly derived from the lotus bud, the papyrus flower, or the ubiquitous palm, here we learn that the plants decorating the architecture are botanically accurate and can be identified with confidence. The Egyptians did not regard these illustrations as representations of a plant, they were the plant itself waiting to be brought to life by supernatural means.

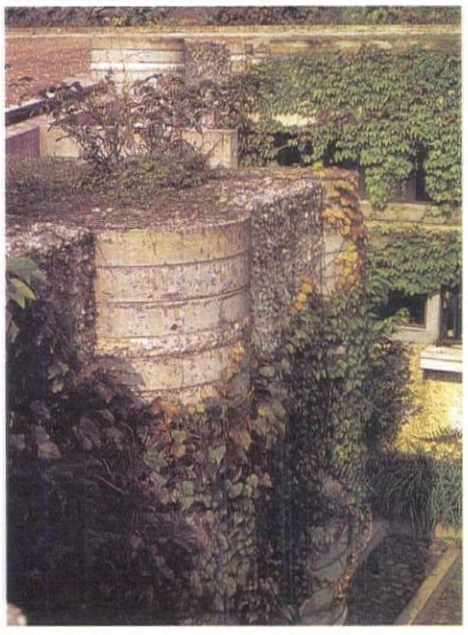
The layout of the book is friendly. The text is broken up by informative subheadings that make skimming and cross referencing a pleasure, and at the end of each chapter there is a summary. There are 90 pen drawings, the majority by Juanita Homan, all intriguing and well worth scrutiny. ARCHIE WALLS

Scarpa curiosity

VILLA OTTOLENGHI

By Francesco Dal Co. New York: The Monacelli Press. 1998. £17.50

The Villa Ottolenghi is a curiosity in Scarpa's work. Not quite finished at his death, it clearly represented a new departure in many ways: a free flowing single-storey plan under a blanket masonry roof on a hillside by Lake Garda. It is the absences of many of Scarpa's life-long preoccupations which first strike the visitor. No orthogonal planning, no syncopated rhythms



Scarpa's Villa Ottolenghi: a delicious curiosity.

of surface textures, no three-dimensional manipulation of light – and not much evidence of the manipulation of external landscape.

There are a lot of things missing that should be there: drawings; no site plan; no definitive plan showing the crucial relationships to immediate landscape; and remarkably for a building that steps down the hill, no sections. And no information on the constructional reality of the project. Instead Dal Co's essay meanders, comparing the house primarily with the Brion Tomb.

There are some excellent photographs (although in this building of episodes one longs for them to be arranged in a comprehensible journey), but whole rooms are missed out (the kitchen and the bedrooms for example).

A single book devoted to a single building of modest size should at least attempt a comprehensive description of the building from which a logical and ordered analysis can then unfold. Sadly, neither description nor analysis is on offer here. RICHARD MURPHY

Oriental identity

CONTEMPORARY VERNACULAR: EVOKING TRADITIONS IN ASIAN ARCHITECTURE

By William S. Lim and Tan Hock Beng. Singapore: Select Books. 1998. Singapore $55

This book examines how a wide range of work in South and South-East Asia is beginning to develop an aesthetic which emerges naturally from its background and surroundings. It is a timely discussion of the search for expression appropriate to Asian architecture.

Sumptuously photographed and produced, it relies heavily on visual appeal. This is not to say that the accompanying essays do not sustain it, but much architectural criticism these days, however well intended, finds difficulty in avoiding theoretical jargon, and the two authors have not solved this world-wide problem.

A wide net is cast for case studies from India, South-East Asia, China and Japan, producing both strength and weakness. The strength is that it underlines variety. The weakness, if there is one, is that lack of consensus could leave the lay patron bemused over which path to follow. On balance, however, a wide selection is probably right. It varies from a commercial development in Singapore basically reflecting a Western aesthetic but using Eastern materials, to a hotel in Thailand which so replicates traditional forms that it stops only a little short of a Disneyland (although it might be argued that that is just what the clients want).

JOHN WELLS-THORPE

Mute testimonies

THE CULTURE OF SILENCE: ARCHITECTURE'S FIFTH DIMENSION

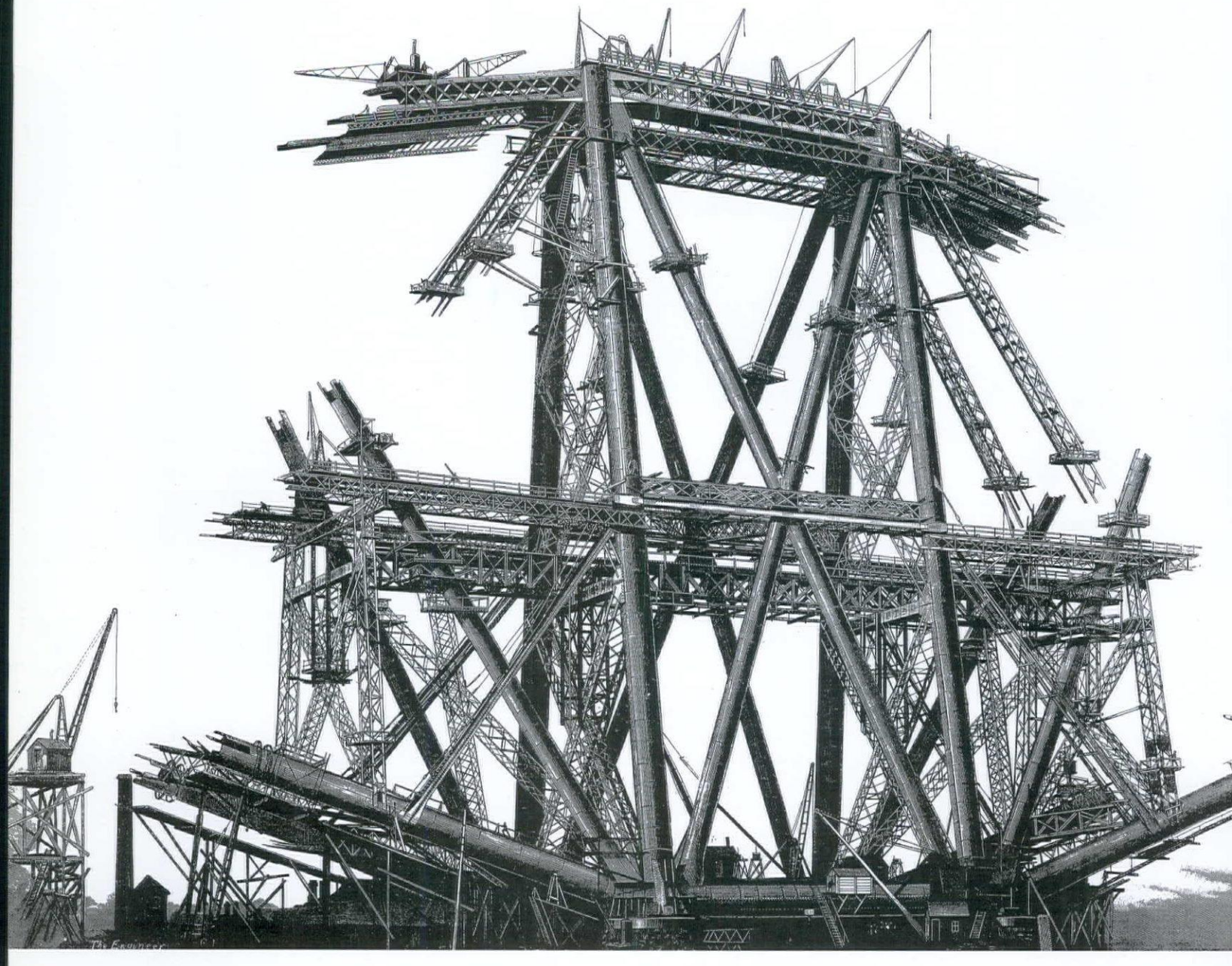
Edited by Malcolm Quantrill and Bruce Webb. Texas: Texas A & M University Press. 1998. $49.95

There is little here that is actually related to silence – beyond Scarpa's Brion graveyard and some Finnish churches, there is no reference to buildings that impose silence on those who pass through them; nor is there much to do with the silent imprint of memory, or on the suppression of visual disturbance; instead, the dominant theme of the book is the supposed taciturn disposition of the Finns, memorably summed up by Bertolt Brecht with the words *die Finnen schweigen zweisprachig* [silent in two languages: Finnish and Swedish] – a generalization not, in fact, born out by the architects Pietilä, Blomstedt, Ruusuvuori, Leiviskä, the poet Haavikko, and others quoted here.

It doesn't really work as a collection, although some of the contributions are well worthy of future development, in particular Claes Caldenby on Asplund's disciples, and Randall Ott on Aalto's use of distorted perspective. There are some irrelevant and badly written contributions. On the other hand, Marco Frascari's contribution is entirely delightful, beginning with the Venetian Carnival masks that distort the wearers' voices, and developing these into a metaphor for the ways in which architects present their work. From here he describes the separating processes between designing and drawing, and thence between silent dreaming and designing. Only here does this book make any special contribution to its chosen subject – and, one notes, from a chatterbox Italian and not from a silent Finn.

TIMOTHY BRITTAIN-CATLIN

DELIGHT



THIS ENGRAVING OF THE CONSTRUCTION OF THE FORTH BRIDGE RECORDS IN INTIMATE DETAIL THE COMPLEXITY AND INGENUITY OF ONE OF THE GREATEST STEEL ENGINEERING STRUCTURES.

Architects and engineers of the late nineteenth century delighted in comparisons. An encyclopaedic plate, showing famous structures from the Tower of the Winds, a somewhat higher inclined tower in Pisa, the structure of Gustave Eiffel and the regal dome of the Basilica of St Peter's, is one of many illuminating comparative illustrations kept in the Civil Engineering Department at Imperial College in London. All these structures are dwarfed by the superimposed elevation of the gigantic iron structure of the Forth Bridge. The horizontal iron truss topping the bridge above the support piers sits just above the crucifix of the dome of Rome's St Peter's.

When the Forth Bridge was opened on 4 March 1890 it was the longest railway bridge in the world and the first large-scale steel structure. Over one hundred years later, the imposing composition of the three gigantic cantilevers and their two connecting horizontal trusses – at some 150ft above the high-water mark of the Forth estuary – still creates open-mouthed wonder when seen from the spindly, cantilevered road bridge downstream.

In an Axel Menges 'Opus' edition on the Forth Bridge published in 1997, technical drawings vie with the many photographs. One of the most impressive is an aerial view taken directly above the bridge with the shadow of the vast cantilevers on the water's surface and the solid Scottish landscape beyond. In another classic photograph by Eric de Maré, the red steel structure with its gigantic tubular main struts reduces a passing steam train to a miniature toy. This is in no way surprising when you discover the minute human figures among the tubes and beams of the 300ft high main supports on this extraordinary drawing. STEFAN BUZAS