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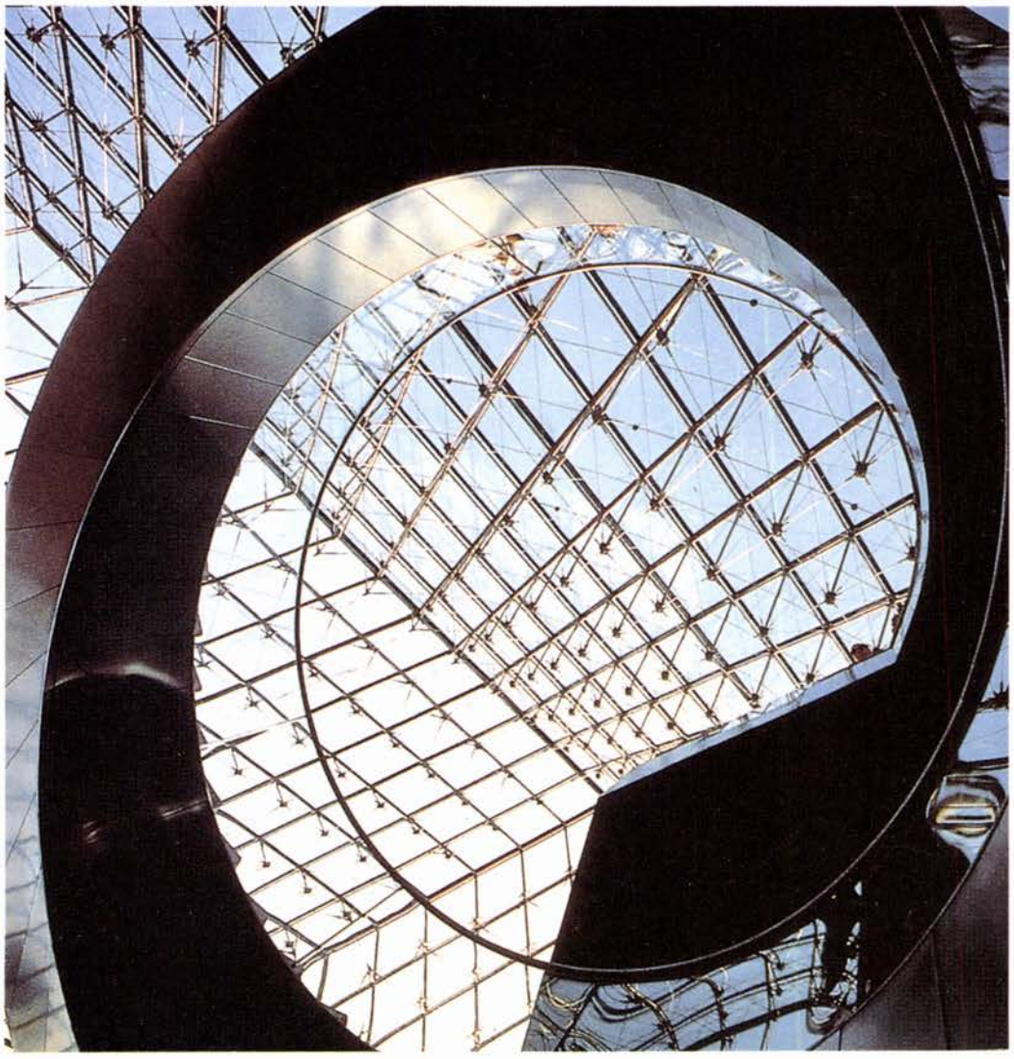

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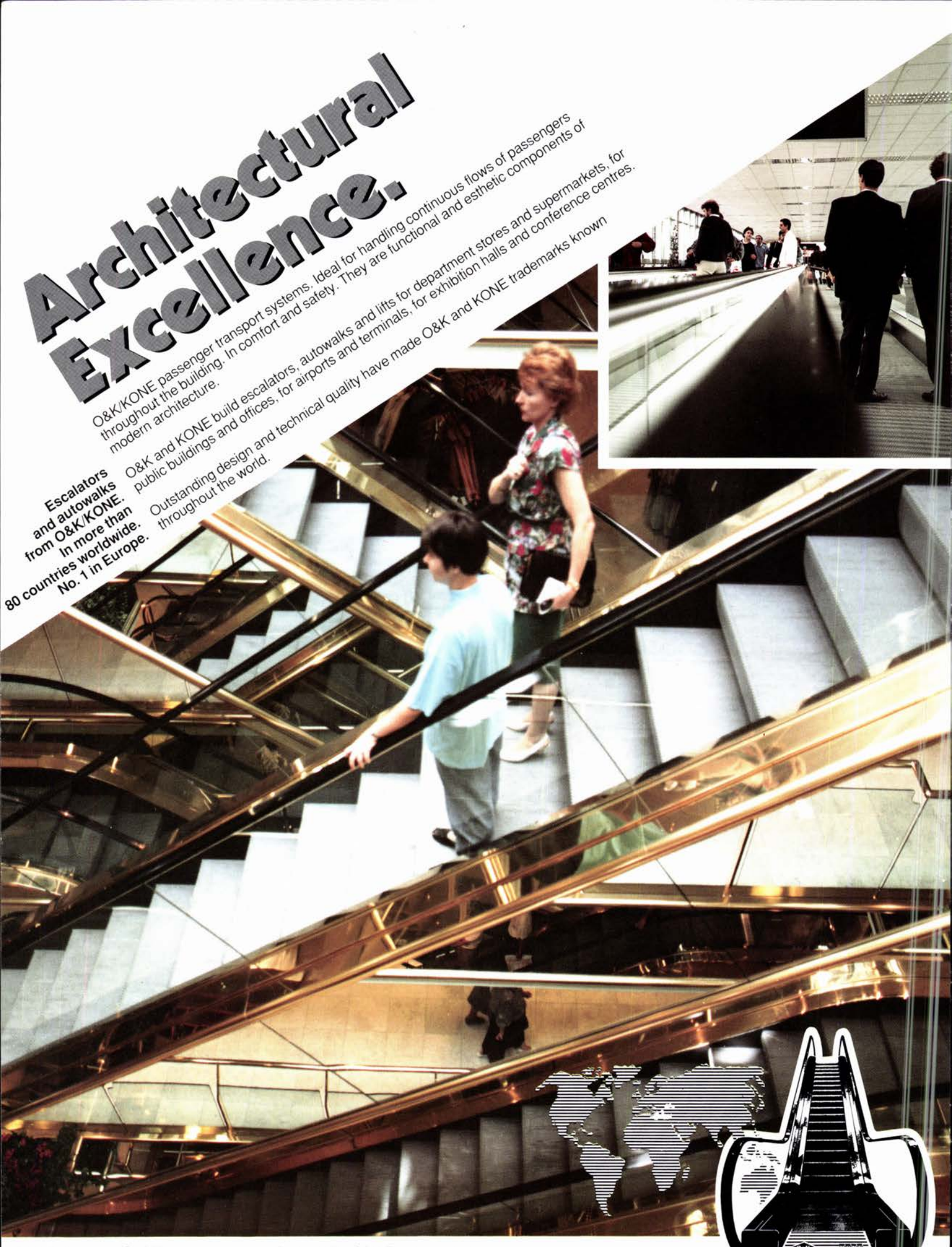

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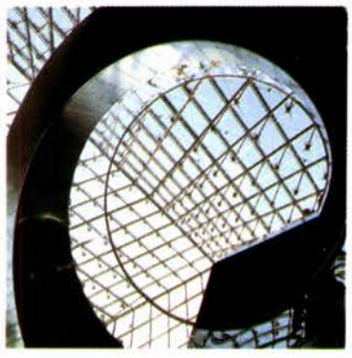
PROFILE

I M PEI

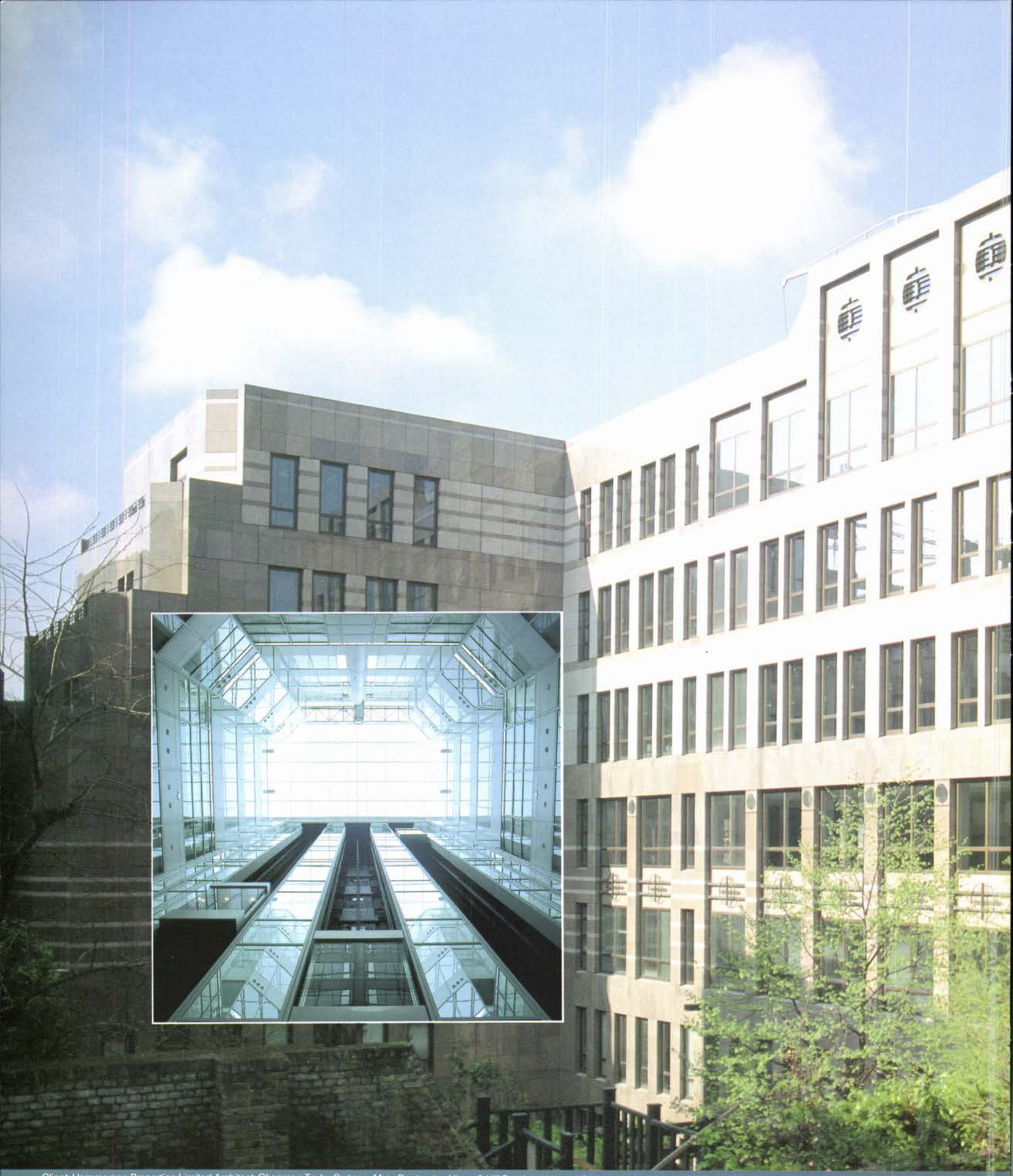
FEATURES

The College Elsa Triolet, Paris: Cuban expression.

DEPARTMENTS



Cover photograph: Detail from the Louvre extension, designed by I M Pei, the subject of the major profile in this issue.



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WORLD ARCHITECTURE

Bauhaus: no precedents

Louvre Pyramid: Gropius influence

"Sun, light and air" was one of the main credos of modern architecture. It was a slogan that underlined the reaction of innovative and socially-minded architects to the prevailing conditions in private and public housing when the revolutionary new movements in architecture in the 1920s were taking place. The slogan had propaganda value on both theoretical and practical levels.

It echoed Howard's Garden City ideas and gave rise to the new designs for new building types such as the hospitals and tuberculosis sanatoria with wide open sun terraces and huge glazed façades. It began to clear the path for light and fresh air to penetrate into the squalid, over-crowded inner tenements of the highly populated cities in Europe.

It is fascinating the way the ideas for such domestic improvements were gradually transferred to new public buildings. In the early years of Modernism, the building that stands out as the main icon of this development was the new Bauhaus in Dessau, completed to the design of Walter Gropius (with Ernst Neufert and Carl Fieger) in 1928.

There were no precedents for the Bauhaus. It showed the maturity of the new architecture. It was white, cubic, flat roofed, compact, complex and geometrically unified. Light and sun penetrated its deepest recesses through the enormous fully glazed workshop walls and the elegant steel slot windows. Inside was a clear, light feeling.

In 1976 the Bauhaus – as the Perspectives article in this issue of *World Architecture* indicates – was thoroughly renovated. Today it still looks good. It is once again the focus of international attention. Regrettably, the other buildings associated with it are in an appalling condition. In this issue we draw the attention of the world architectural community to the state of these buildings. At the end of 1992 the second DOCOMOMO exhibition will be held at the Bauhaus. By that time it hoped that work will have been started on a much wider programme of renovation and revitalisation of the associated structures. The Bauhaus is a tiny building by recent standards. Nevertheless it has had an impact quite beyond its scale.

I M Pei's dramatic extention to the Louvre in Paris is also a major icon that undoubtedly will have repercussions on future buildings. In our survey in this issue of his work, the longterm influence of Walter Gropius, his teacher at Harvard, can clearly be discerned; not so much perhaps in a pioneering sense – or in the blocky simplicity of the Bauhaus designs – but through his fascination with light, geometric organisation and the clarity of forms.

Pei is concerned with the representation of mass rather than external detail. His work at the Louvre represents an astonishing display of architectural virtuosity. The sun, light and air ethic is nowhere better displayed aesthetically surely than in its entrance pyramid and in the clean, white openness of its subterranean rooms.

Dennis Sharp

The assured lines and technological dexterity of I M Pei's buildings occupy a unique position right at heart of the architectural and political debate. Pei is responsible for some of America's most convincing and articulate examples of modern architecture. His influence has extended to Europe and the Far East, where his aesthetic roots can be traced. Yet he has always aroused controversy. In this major profile Stephanie Williams looks at the formative years of Pei's brilliant career, and provides a commentary on five of his most important buildings.

I M PEI
ADVENTURER IN GEOMETRY AND LIGHT

If you grew up, as I did, on the eastern seaboard of North America during the 1960s and early 1970s there was one architect, above all, who seemed to get all the major commissions. The John F Kennedy Library, the John Hancock Building, the east wing of the National Gallery of Art in Washington DC: where there was trouble, where there was brilliance, there was I M Pei. It was through the offices of Pei's firm that Montreal gained the Place Ville Marie and Kennedy Airport, the National Airlines Terminal. New York, MIT Cornell and Sarasota gained sophisticated university buildings; Syracuse a distinguished museum of art; Dallas, a municipal centre and a wonderful symphony hall; and Paris, one of the most audacious and successful adventures in late Modernism – the glass pyramids at the Louvre.

It is not easy to put a label on I M Pei. Certainly he is a Modernist. His buildings are famous for relying on the lines of simple, sculptural forms. They are technologically adventurous, aesthetically assured and rigorously purist.

He handles space and light with enormous dexterity. He is uncompromising yet charming, tough and enduring. The big question is: does he have integrity?

Sound commerical instincts

Pei's career has been nothing if not pragmatic. He started practising architecture working for a developer. An accomplished salesman with sound commercial instincts, he has been prepared to venture where most other architects with his talents would fear to tread. Among his buildings are many which have gone straight to the heart of architectural and political controversy. Yet at the core of these furious maelstroms critics have found a man of elegant charm and quiet dignity.

He has spent his life creating some of America's most articulate and convincing examples of modern architecture. Many are classics. Yet in his later work, especially in the designs for the Fragrant Hill Hotel near Beijing and the Shinji Shumeikai Bell Tower in Shiga, Japan, elements of poetry and movement

emerge. The Chinese heritage, so explicitly influencing his late work, has clearly never been forgotten. It is not easy to categorise I M Pei.

Pei was born in 1917 in Guangzhou, Canton, the son of a well-to-do family at a time when the nation, already wracked by fighting between warlords, was beginning to seethe with conflicting philosophies brought from the west and Russia. For more than 600 years Pei's family had been based in Suzhou, a prosperous and elegant city of canals, quiet charm and idyllic gardens. Of these, one of the two most famous that survives, the Shih Tzu Lin or Stone Lion Grove, belonged to a great uncle of Pei.

Exposed to western ideas

Pei's father, however, was of a new generation, exposed to and endorsing ideas from the west. Eschewing the arts and scholarship, he went to work for the Bank of China. Pei grew up in Hong Kong and Shanghai, in its heyday as a centre of western trade in China. By then it was seen not merely to be fashionable, but essential, for children of prominent Chinese families to be sent to the west to study, so that they could return with skills to modernise China. Thus in 1935, inspired by the recent construction of a sturdy high-rise hotel in Shanghai, Pei set sail for San Francisco. He then took a train across America to study architecture at the University of Pennsylvania in Philadelphia.

Pei wanted to go to America rather than to England (his father's choice) because he sensed its vitality. Enthusiasm, energy, an eye for the coming thing: these are the characteristics which were to shape Pei's education and his subsequent career.

Penn, however, was a mistake. It was seeped in the Beaux-Arts tradition, teaching drawing from plaster casts. Pei speedily transferred to MIT to read engineering, then, persuaded by the Dean of the architecture school, changed back to architecture. MIT was equally dominated by the Beaux-Arts, but Pei was technically well schooled. Freedom to experiment with new forms of design came with postgraduate work at Harvard, where Walter Gropius, former head of the Bauhaus, had recently arrived to chair the Graduate School of Design.

These were the heady days of Modernism. Pei became close friends with Marcel Breuer. But his was not a blind conversion to the gospel of "form follows function". His most important post-graduate project was for a Shanghai museum. The problem was to find some means of expressing regional or national character through modern architecture. Pei combined bare Chinese walls with a series of landscaped courtyards, setting up a play between glimpses of trees and objects in the museum. The issue of finding a modern aesthetic with clear Chinese overtones would later dominate his thinking in the design for the Fragrant Hill Hotel near Beijing.

As the second world war came to an end but the struggle between the Nationalists and Communists in China continued, Pei stayed on at Harvard to teach. By now, however, many of his colleagues were starting work on their own account, building small extensions and houses, on their way to setting up practises. In 1948 Pei met William Zeckendorf, the most powerful real estate developer in New York. Zeckendorf thought big: the developments he was interested in involved whole tracts of cities. Paradoxically he was also genuinely and passionately committed to fine buildings. He wanted someone in his office to produce architecture. Pei could not resist the job.

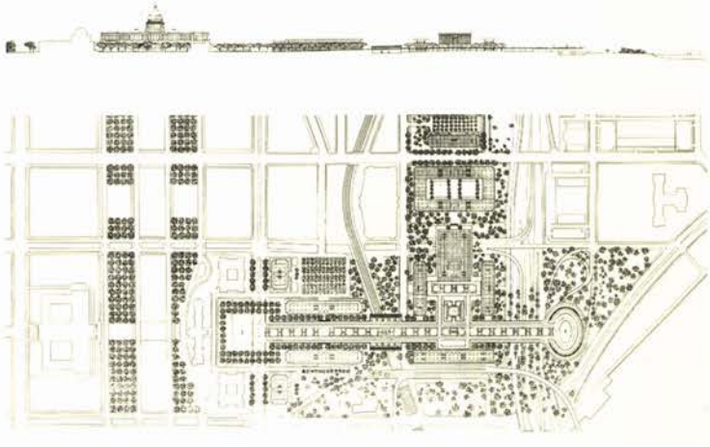
There followed a number of speculative, not very good, one-off buildings. But the scale which Zeckendorf preferred was vast: first, the huge site on the east river in Manhattan that became home to the UN. Then, a major city centre project (offices, shopping centre, hotel, plaza, skating rink, and parking) for Denver.

Attention considerable

By now Pei had recruited a small team of former cohorts from Harvard to join him. The first of the buildings completed in Denver was the Mile High Center. Today it looks like a conventional Modernist product: 20-storeys high, four-square and glassy, but in the mid-50s, it attracted considerable attention.

Next, in 1953: the redevelopment of a 500 hectare tract of rundown property to the south of the elevated tracks of the Pennsylvania Railroad in the centre of Washington. The overwhelming attraction of Pei's plan, enthusiastically endorsed by the community, was a mall, 100 metres in length, which bridged the railway tracks by means of a broad esplanade. The intention was to link the Smithsonian Institution and the Potomac River, driving the thriving businesses of the city centre before it. Even though the plan was to become compromised by bureaucracy, competition and delay, more than three-quarters of it was eventually built.

Simultaneously, Zeckendorf was operating on seven acres in the heart of Montreal. Pei delegated responsibility for what were to become the twin towers of Place Ville Marie to



Making a mark in America: I M Pei's ambitious plan in the early 1950s to redevelop a large rundown area near the centre of Washington DC, linking the Smithsonian Institution and the Potomac River.

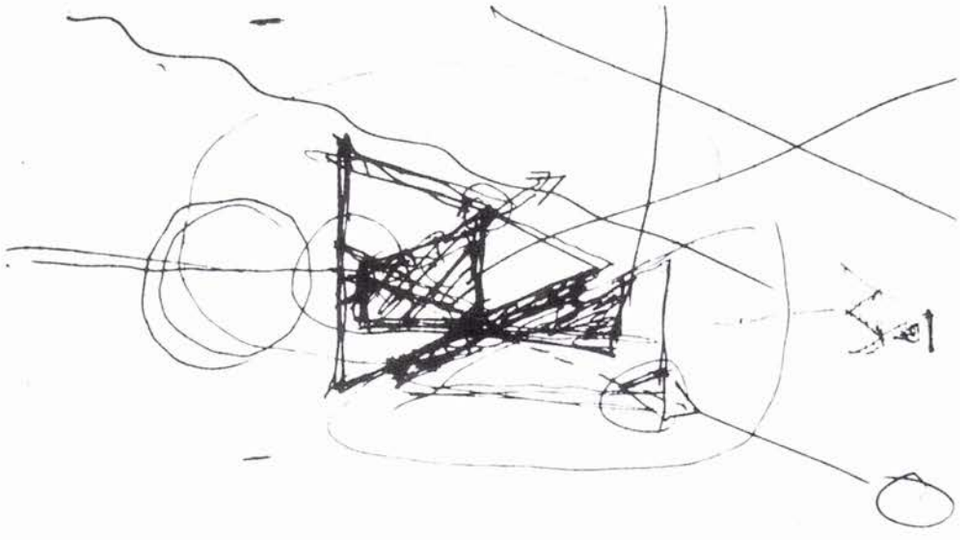
his former Harvard student, Henry Cobb. Forty-eight stories high, Place Ville Marie not only became the city's first significant tower, but one of the largest office complexes in the world. It was not the scale of the development, however, which impressed observers at the time. It was its quality, its materials and the close attention to detail.

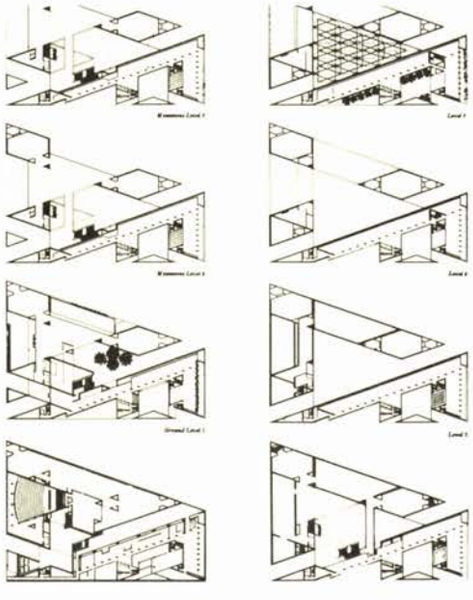
Entirely commonsense approach

Above all, there was a novel but entirely commonsense approach to the long and bitter Canadian winter. Beneath the cruciform of the tower was a large underground shopping centre, destined to become the model for many more in Canada to follow.

Pei learned much from Zeckendorf: about business and persuasion. By 1960, however, Zeckendorf was in financial trouble. For Pei, now 43, it was time to go it alone. Retaining a small contingent of architects, Pei went into business as I M Pei & Associates with one job on the drawing board and the Green Earth Sciences Building at MIT nearly complete.

The mature projects which followed later have now become part of modern architectural history. Pei's starting point has always lain in careful analysis of the site and its context. Mulling over the problem he will look to other sources for inspiration. But his work has no obvious precedents; it is never derivative. Geometry dominates, purity of line is all. His forms are entirely rational, his detailing draws its elegance from understatement. He is a master of great and abstract spaces, a virtuoso with light. □





The East Building of the National Gallery, Washington, USA 1968-78

In the East Building of the National Gallery, Pei's obsession with sculptural form and pure geometric line reaches its climax. The brief called for exhibition space that would not only allow for the growth of the gallery's collection, but be purpose designed for the large-scale display of modern art. There was also to be a centre for advanced research, with a library and photo archive.

Pei's handling of the building began with the site. Shaped like a trapezoid, it consisted of nearly nine acres on the corner of Constitution and Pennsylvania Avenues, just across the road from the National Gallery itself, a marble building in neo-classical style completed in 1941 by John Russell Pope.

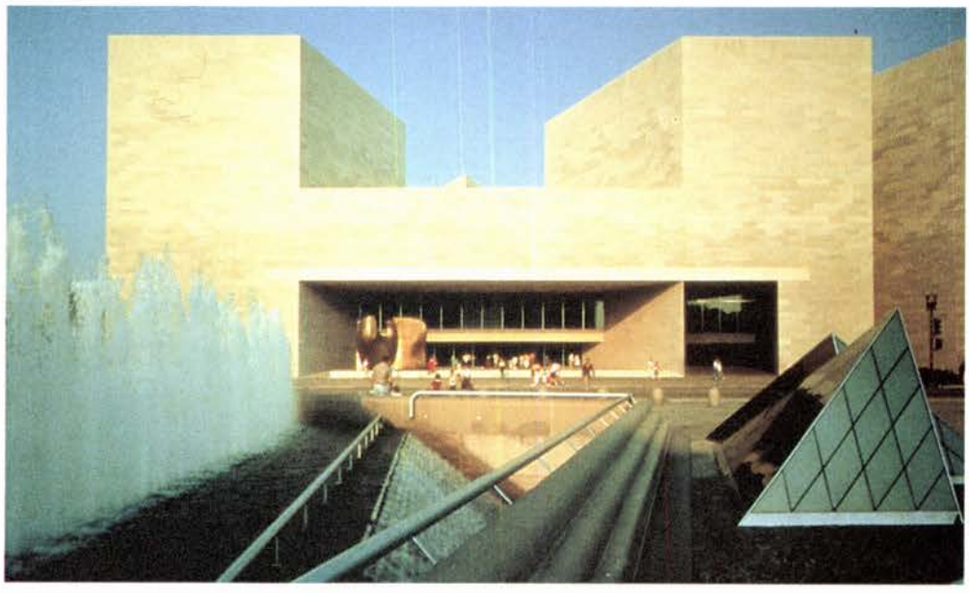
Given the odd shape of the site, the chief diffi-

culty seemed to lie in the problem of marrying the axis of the new building with the old. The answer was to shape the new building in the form of a trapazoid too, than split it on a diagonal to create a division between the new museum spaces and the study centre.

The building itself then became a complex play on the triangle. The floorplan of the gallery is a huge equilateral; that of the study centre, a steeply angled right angle. The focus of the gallery is a great central triangular space, ranged round on three sides by elongated parallelograms, and re-divided into smaller triangles.

But none of this discussion does justice to the majesty and marvellous simplicity of the spaces themselves, lined with veneers of the same pink Tennessee marble as the original, top lit by space framed skylights.

Today the East Building of the National Gallery stands as one of the finest, most articulate and convincing Modernist buildings in the world.



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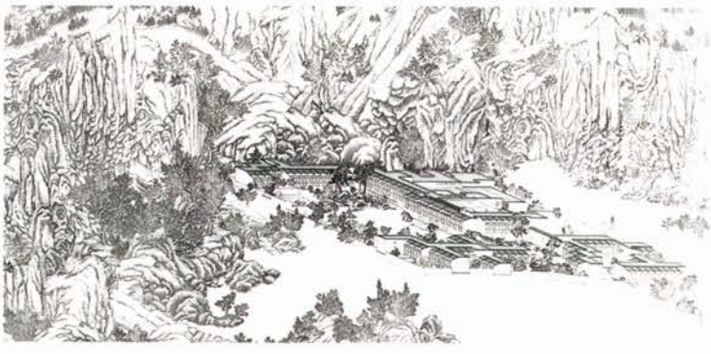


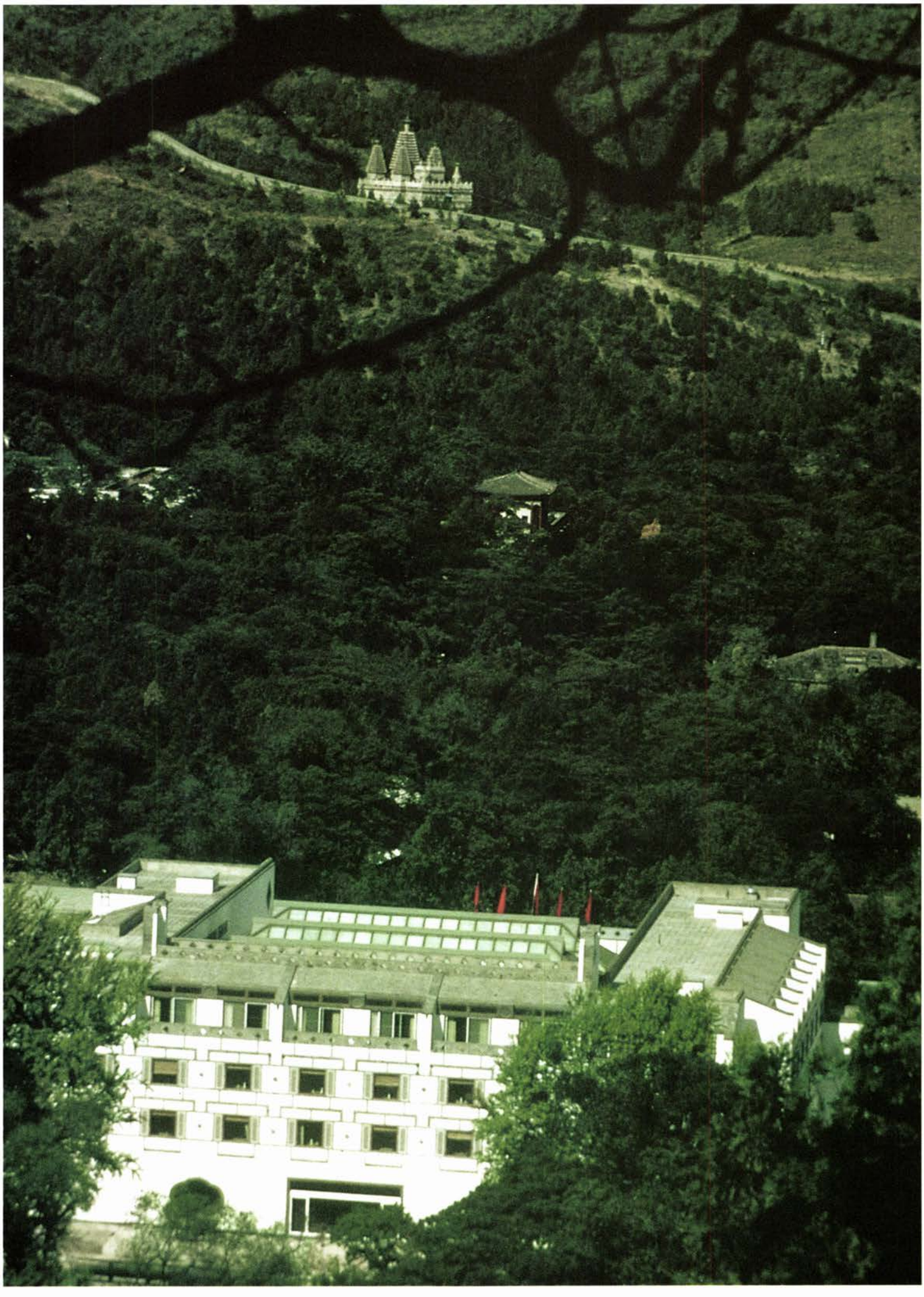
The Fragrant Hill Hotel, Beijing 1979-82

The success of the East Wing of the National Gallery brought Pei international recognition. In 1978 the Chinese Government invited him to Beijing. They wanted him to build a hotel: the site, 25 miles northwest of Beijing, was that of a small hotel in a wooded valley on a former Imperial hunting preserve.

Pei's first step was to commission an arboreal survey (the Chinese insisted that the site's mature trees be retained). His next was to revisit his uncle's garden in Suzhou. This was his opportunity, first attempted at Harvard, to find a modern aesthetic with clear Chinese overtones.

The resulting building (sadly marred by contemporary China's shoddy construction and sloppy maintenance) was hailed by Post-Modernists as a sign of Pei's renunciation of minimalism. In fact it is a distillation of what he saw as the finest elements of Chinese domestic architecture.

With its rambling floorplan, its series of indoor courts, sloping roofs, lattice work decoration and round moon doors, the Fragrant Hill Hotel reverberates with echoes of China. Wherever possible, views through windows and doors, have been formalised and framed in traditional Chinese manner. The water maze that was on the site has been restored. Yet Pei's treatment of off-white stucco walls as backdrops for trees, the space-framed glazing of the courtyards, the scale of the building and the formality of the lines of the swimming pool remain those of the western Modernist.



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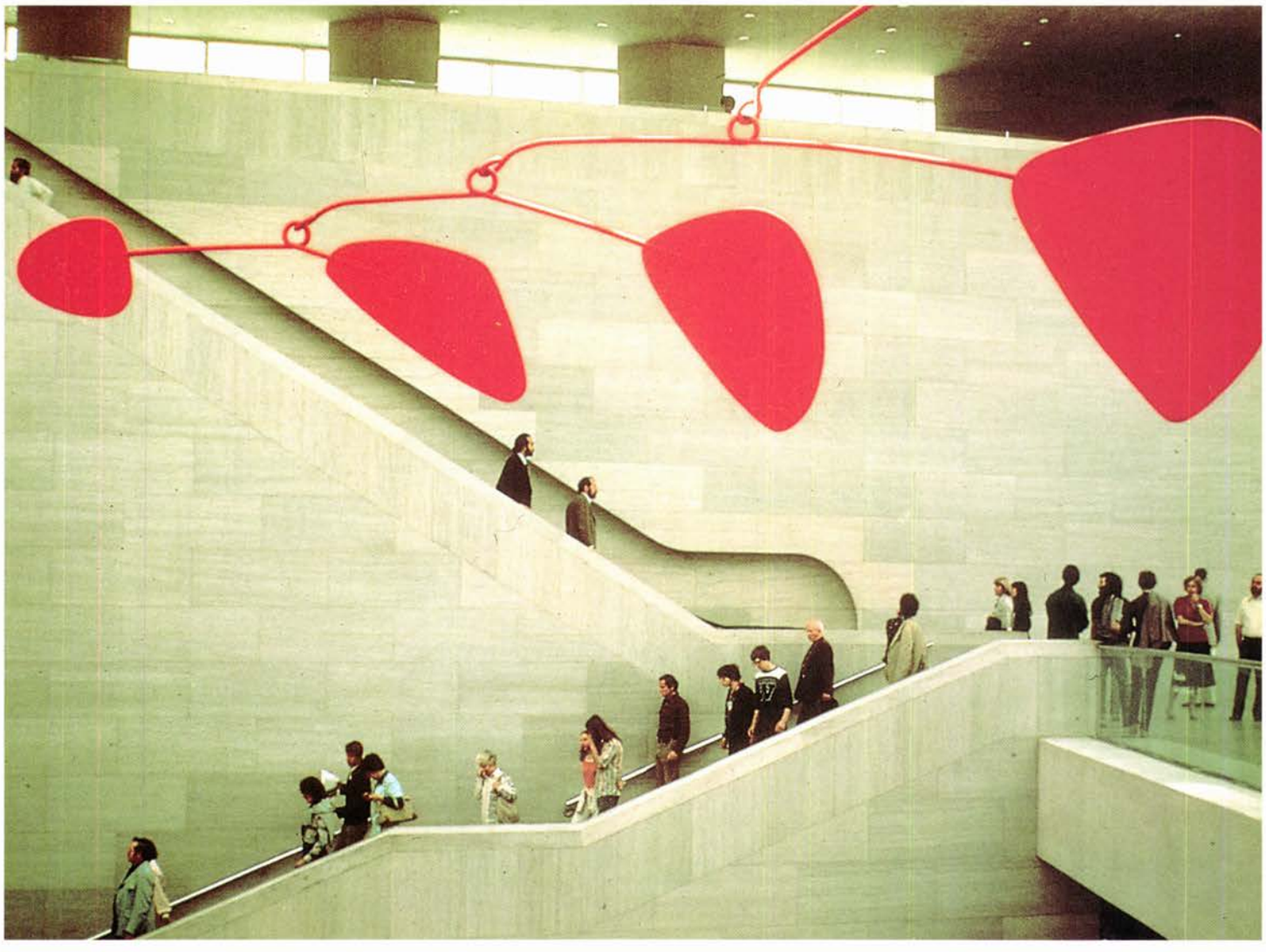


CLASSIC OUTSIDER

I M Pei's work stands outside the mainstream of American big league architecture when you examine the maelstrom of new Post-Modern and Deconstructivist styles which emerged in the 1980s. Janet Abrams sets Pei's unfashionable commitment to Modernist principles in the context of recent trends in public buildings in the US.

The measured continuity of I M Pei, demonstrated by the enduring strength of the East Building of the National Gallery in Washington: grand volumes, cool surfaces and quality of light have recently been outside the popular agenda of Post-Modern hi-jinks in US public buildings.

Looking back at the last decade in the United States, it is clear that I M Pei's work stood outside the mainstream. In a period when stylistic changes were rampant, his architecture – governed by pure, clear geometries and an abiding love of glass and cool creamy stone – remained unfashionably true to Modernist principles. It was as if, having settled on the triangle and its three-dimensional cousin, the pyramid, Pei was determined to wring every last variation from this theme, and was unswayed by the prevailing winds of Post-Modern Classicism which came and perhaps went during the 1980s.

No doubt if Pei's buildings are currently outside the mainstream architectural agenda, they certainly continue to enjoy high status among prestigious clients.

Compared to the racy hi-jinks of other architects, his buildings could seem a little dull, concerned as they were with perennial qualities of light and shadow, and grand volumes. Eschewing lavish displays of colour and the collaged forms of rediscovered Classicism, Pei's buildings may in due course come to be all more valued for their sobriety and measured continuity.

Reworking stylistic vocabulary

Pei's nearest equivalent, in terms of working and reworking a stylistic vocabulary, would be Richard Meier, whose Atlanta High Museum was just one of several public buildings which he designed in the 1980s in gleaming white porcelain enamel cladding.

Richard Meier was a member of the loose-knit "New York Five" group in the early 1970s, but while erstwhile colleagues in the Five, notably Michael Graves and Peter Eisenman, diverged markedly from these early common roots in Modernism, Meier remained true to the neo-Corbusian design tactics which had gained the group its alternative title of the "Whites".

Like Pei, Meier also successfully transplanted his aesthetic to Europe, where his portfolio of projects in development includes several museums, corporate headquarters and public buildings.

Michael Graves almost singlehandedly turned the tide towards Post-Modernism with the Portland Public Office building, the box that

NATHANIEL LIEBERMAN

The Javits Centre in New York, designed by Pei's firm and completed in 1986: a distinguished anomoly in a decade when even the most austere guardians of the Miesian flame softened their approach?

burst through the colour barrier. With the Humana Corporation headquarters in Louisville, Kentucky, completed in 1986, Graves confirmed his apostasy. Rejecting the flat-topped, curtain wall-glazed norms of Miesian corporate Modernism, he reintroduced tri-partite massing for the office tower, and articulated its surfaces with use of coloured stone.

A long-running controversy

However the greatest, and soap-operatic controversy has raged over Graves' proposed extension to the Marcel Breuer-designed Whitney Museum on Manhattan's Madison Avenue. Graves has designed and twice redesigned a scheme which would replace several historic brownstones, and would echo some elements of Breuer's tiered façade, though in a polychrome palette contrasting vividly with the grey of its brutalist siamese twin.

The Whitney saga is New York's answer to London's Mansion House Square affair, with its clash of preservationist and Post-Modernist values. The shared irony is that designs by acknowledged Modernist masters – Breuer's museum and the aborted Mies tower, respectively – have come to be regarded as period-pieces, almost worthy of the protection given older specimens.

Engaged on an increasing number of Japanese projects, Graves has recently enjoyed the limelight for his hotels and Burbank corporate office building for the Walt Disney Company. But he no longer holds the monopoly on architectural stardom that he did in the mid 1980s.

He has ceded some of that status to fellow New York Fiver Peter Eisenman, who beat him to the commission for the Wexner Center for the Visual Arts, in Columbus, Ohio.

Eisenman's design opened on the Ohio State University campus in 1989, and was hailed as a definitive example of Deconstructivist architecture – following the notorious exhibition of that title curated by Philip Johnson and Mark Wigley at the Museum of Modern Art in 1988.

With its medley of grids, reconstructed armoury tower, and uncompromising stance towards its ostensible display function, the Wexner Center is Eisenman's first major public building.

The Deconstructivist exhibition dragged a somewhat reluctant Frank Gehry out of his happy hunting ground of Santa Monica and into the international spotlight. Gehry has probably now overtaken Graves as the most discussed signature architect, thanks to a succession of schemes that could only have been designed by him: the LA Air and Space Museum (a Lockheed Lightning plane attached to its exterior); the Temporary Contemporary museum (a friendly, relaxed warehouse refurbishment in downtown LA); the Vitra Museum in Germany plus, several highly idiosyncratic houses.

Gehry has progressed from being That Quirky Californian to the Man Most Likely To. He is now working on the Disney Concert Hall for downtown LA, the American Center in Paris (see *World Architecture 9*), the Entertainment Center at Euro Disneyland, and numerous other schemes in the US and Europe. Like Antonio Gaudi, Gehry is a one-off whose unpredictable sculptural compositions draw more inspiration from Brancusi than from Brunelleschio.

Meanwhile, with museum additions slated (Isozaki due to extend the Brooklyn Museum's neo-classical pile), under construction (Gwathmey Siegel's slab-like backdrop to the Guggenheim spiral), or recently completed (Graves's Newark Museum, Venturi and Scott Brown's Seattle Art Museum), the catalogue of acceptable styles has grown.

Even the occasional example of lucid high-tech, such as Renzo Piano's De Menil Museum in Texas was still possible at the same time that city skylines were being transformed by Post-Modern skyscrapers, garnished with setbacks and ornamented pinnacles not seen since the 1930s.

In this latter sphere, Kohn Pedersen Fox rose to prominence with a spate of tall buildings in Chicago and a tower or two in New York and Seattle. Philip Johnson's AT&T headquarters in Manhattan, with its cutout "Chippendale" top, had set the tone in the early 1980s; by the end of the decade, even SOM – austere guardians of the Miesian flame – had softened a little.

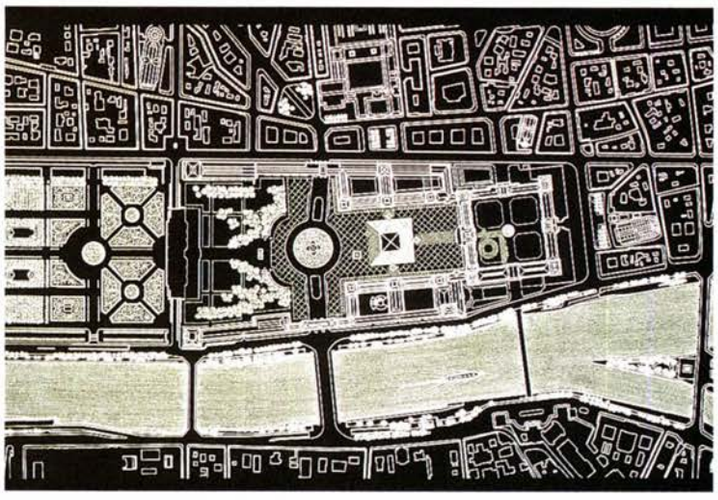
An era come to a close

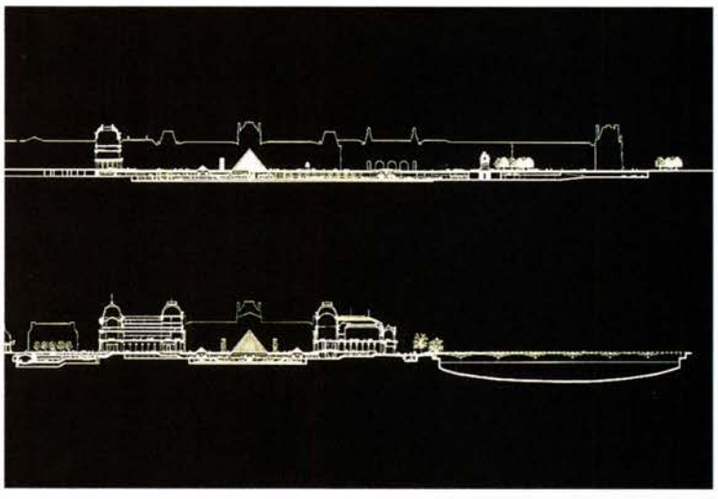
But with the construction boom now abruptly ended, and with general unease about the recent scale of urban development, there is already the sense of an era come to a close. By the time the next big development frenzy sets in, today's younger generation – architects like Stephen Holl, Walter Chatham, Tod Williams and Billie Tsien, Henry Smith-Miller and Laurie Hawkinson, Liz Diller and Rick Scofidio, Holt Hinshaw Pfau and Jones – may be the establishment names.

And perhaps by then, some of them will be able, at least proverbially, to look I M Pei in the eye. □

DIEDE VON SCHAVEN

DENNIS SHARP





The Louvre Pyramid, Paris 1983-89

The best view of the Louvre Pyramid is framed in the arch as you approach from the Grand Palais. Here is real drama: the true scale of the pyramid, two-thirds the height of the Louvre, is compelling, made more magnetic by the contrast between the crystalline of the pyramid and the soft honey of the baroque stone of the palace.

Once on the flat surface of the Coeur Napoleon, there is something faintly dry and sterile about the imposition of glass and steel on so much stone. Is it because of the neutrality of the pyramid form? Or because the courtyard itself is such a vast, neutral space?

The Louvre Pyramid is, inevitably, Pei's most important project. It is the ingeniously simple tip of a great new underground building: the solution to a large and complex planning problem. Pei's brief had been to sort out the Louvre: one-time palace of the kings of France, now home, in one of its wings, to the Ministry of Finance and, in the rest of the building, to the nation's most important museum. In 1980 the Louvre was visited by three million people a year. It had two lavatories. It was baffling to find your way in, and dauntingly huge once you had.

Shortly after his election in 1981, President Mitterand announced that the Ministry of Finance would be moving out of the Louvre, to give more space to the museum. For Pei the big question was how to enter the building. It was logical to start from the central Coeur Napoléon, but the existing entrances of the Louvre were too small and congested. To erect a new building would obscure the symmetry of the existing palace; digging deep to create a great underground entrance hall was out of the question because of the proximity of the Seine.

Searching for inspiration, Pei looked back to the geometrical layouts of the great French landscape architect Le Notre; the shape of a pyramid, classical and pure, could provide the height and the drama that was needed to create a sense of entrance in a shallow room below the Coeur. Built of glass, and virtually transparent, the pyramid would flood the room below with daylight. From here, passageways, illuminated by sunlight from three smaller pyramids, could lead to each of the three wings of the Louvre.

The scale and logic of Pei's complete solution has always been obscured by the public's outrage, and later, fascination at the audacity of the pyramids. People have been seduced by the quality of light and the sense of occasion as they stand in the stone entrance hall below ground. There is, in fact, more than 600,000 sq ft of new space on two levels underground. Surrounding the entrance passages to the wings of the Louvre are shops, restaurants, and an auditorium; below these are offices, laboratories for restoration, and storage facilities.

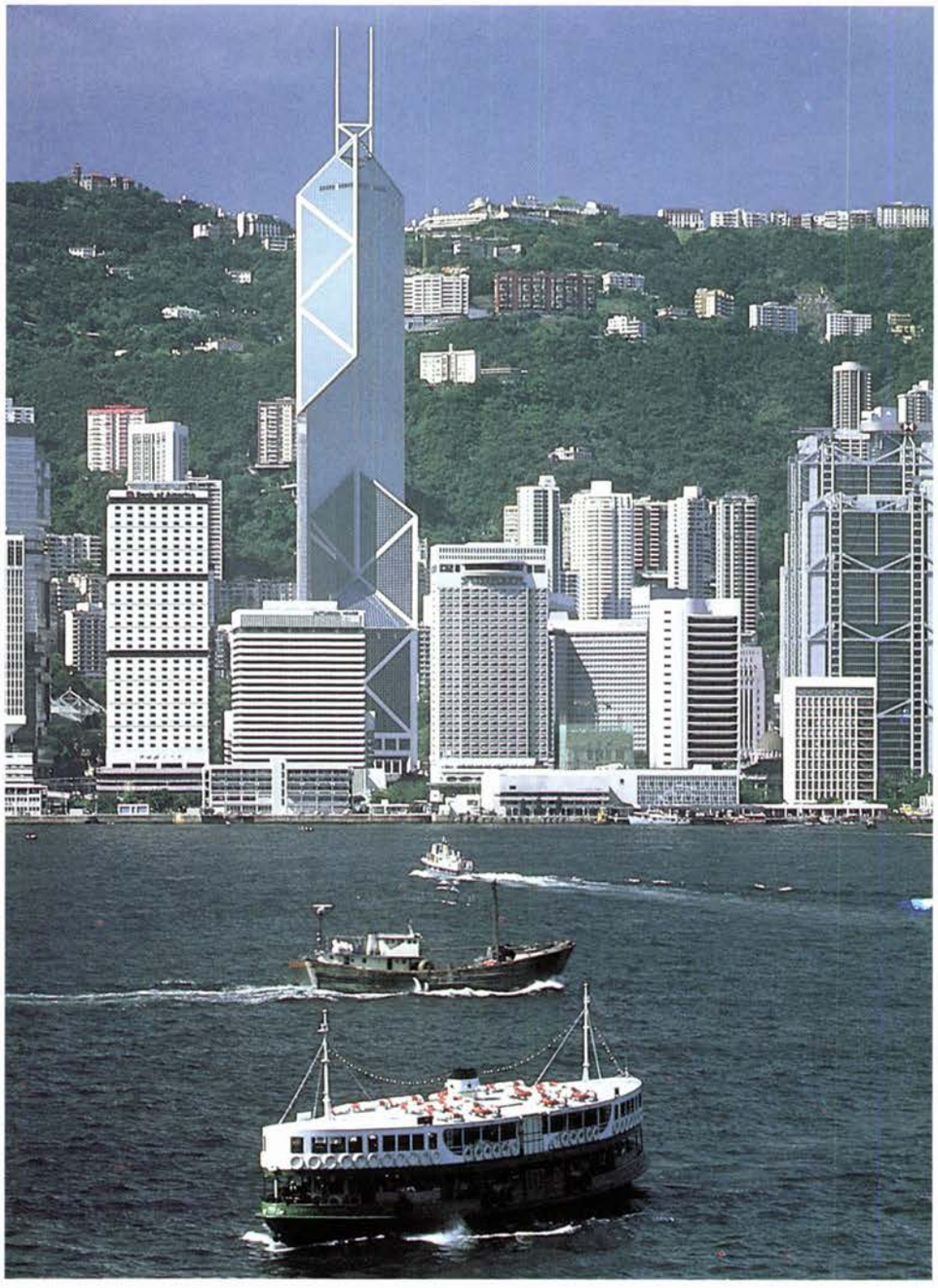
The Bank of China, Hong Kong 1982-90

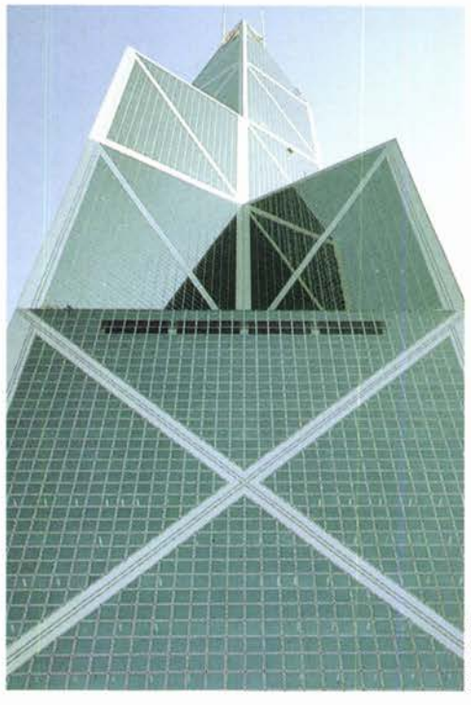
Pei's most recent major building is a new branch for the Bank of China in Hong Kong. Once the institution that employed his father, since 1949 the bank has provided cover for a major presence of party apparachiki *in Hong Kong.*

Rivalry between the Bank of China and the locally based British Hongkong and Shanghai Bank is legendary. Since the turn of the century it has been displayed in efforts to outdo one another by creating ever larger and more flamboyant buildings. When Pei was offered the commission, the latest and most extravagant phase of this architectural rivalry had just begun: the new headquarters for the Hongkong and Shanghai Bank, a glass and steel tour de force *by Sir Norman Foster was nearing completion.*

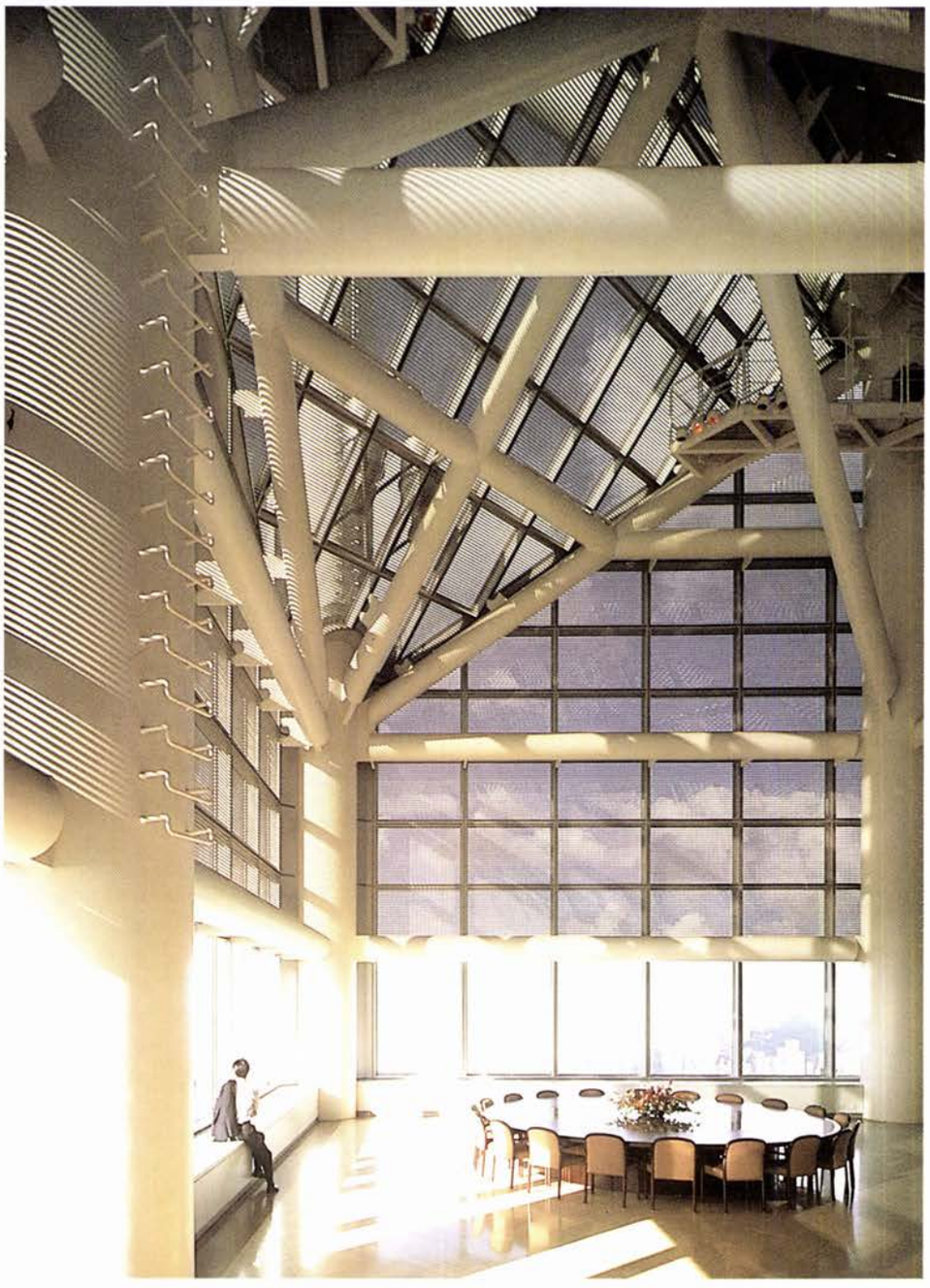
The site for the new Bank of China was minute. A tiny triangle of ground which had served as a Japanese torture site during the war, it was hemmed in on three sides by motorways. The only way to build was up. In order to do so, the Hong Kong Government was persuaded to alter its strict height regulations. Inspiration for the acutely angled 70 storeys of the Bank of China came as Pei fiddled with a bundle of sticks one weekend.

It is a hard building to grasp. Its scale is gargantuan. Its steeply angled, twisting profile relies on a three-dimensional space truss, running through the building and reinforcing its triangularity – a shape that is regarded as profoundly dangerous in superstition-riddled Hong Kong. All the same there is something curiously Chinese in its flashiness, in the neon blue of its reflecting glass.

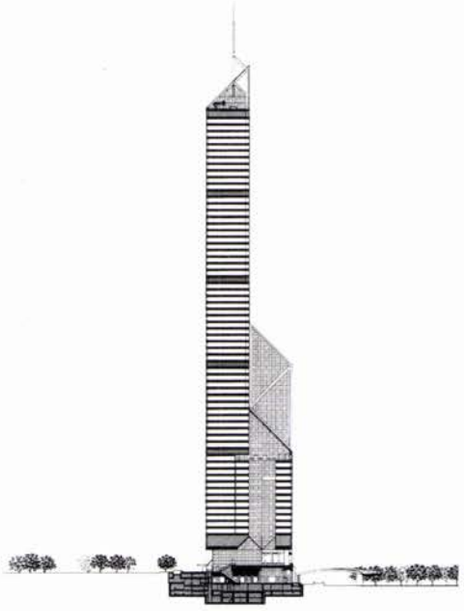




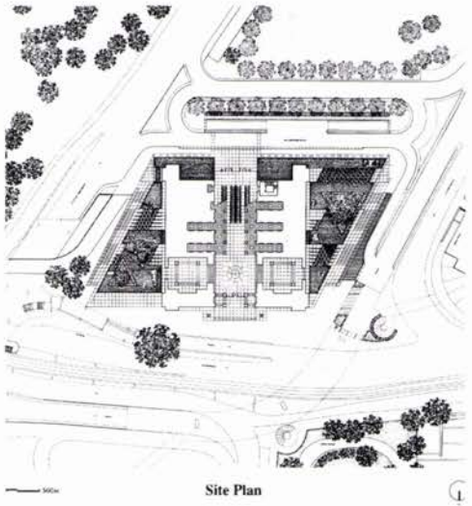
IAN LAMBOTT



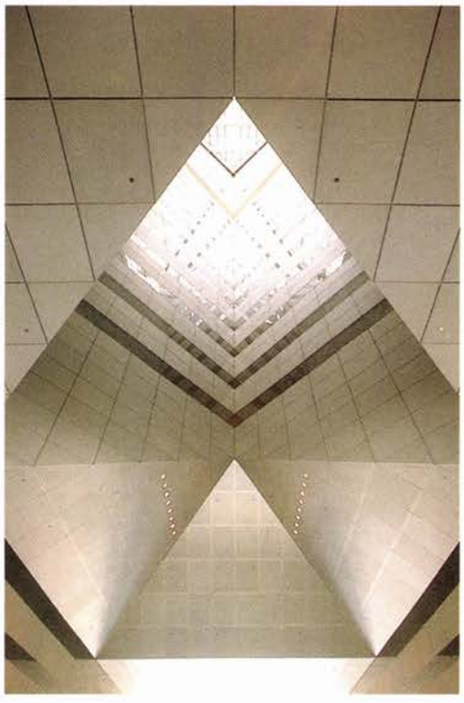
PHOTOGRAPHY BY PAUL WARCHOL

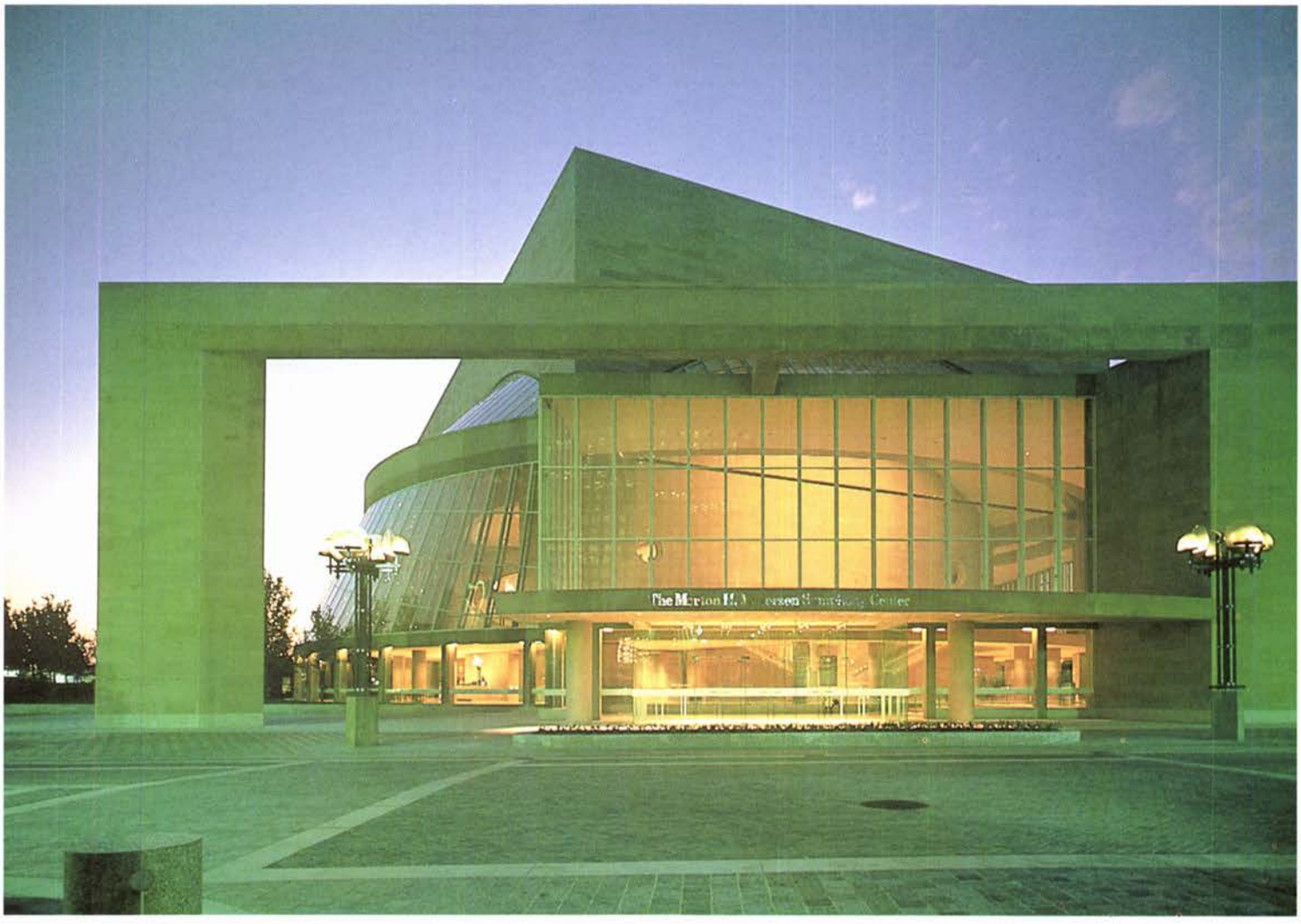


Building Section
North-South Section Looking West



Site Plan





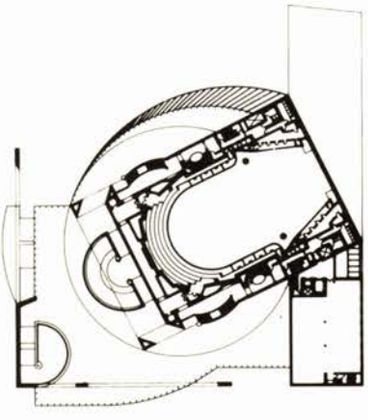
RICHARD PAYNE

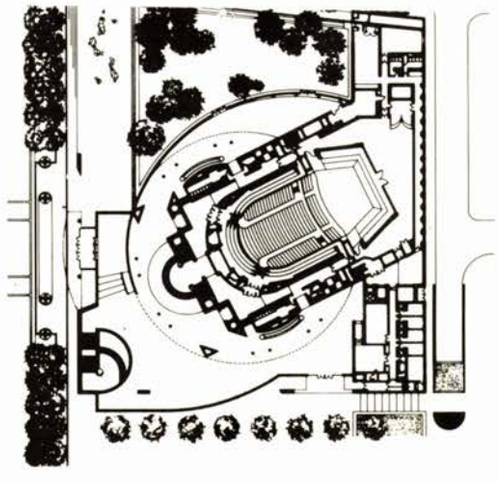
Morton Meyerson Symphony Center, Dallas 1981-89

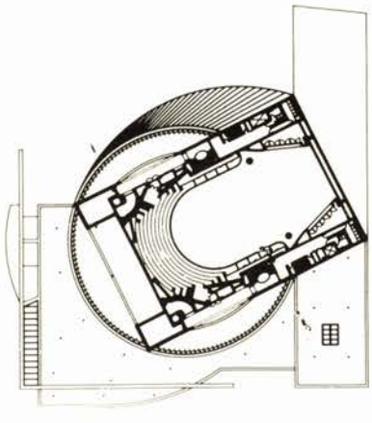
In this building Pei's cubed and angular forms of the East Wing of the National Gallery give way to extravagant curves. The brief for the symphony hall, drawn up after the Dallas symphony committee had visited 21 concert halls in North America, called for a classic shoebox auditorium with 2,065 seats based on the finest nineteenth century European examples: the Musikvereinssaal in Vienna and the Concertgebouw in Amsterdam.

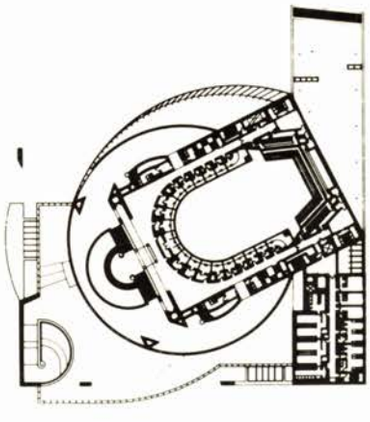
Pei took his inspiration from the sense of occasion provided by the Paris Opera and the almost infinite tricks with space produced by the arches, domes, balconies and vaults of the Late Baroque. Accordingly, the plan for the Morton Meyerson Symphony Hall wraps the rectangular "shoebox" in a pair of concentric circles. Three sweeping glass roofs (Pei calls them lenses) illuminate the interior.

Pei is very good at creating a sense of occasion: there is a splendid, sweeping curved staircase, overlooked by a long rounded balcony, which rises from a broad round entrance. Responsibility for the planning of the hall and the design of accoustics was given to specialist acoustician Russell Johnson of Artec: an arrangement that created considerable tension with Pei. Inevitably in the completed building there is a disparity between the drama, ceremony and power of Pei's elegant geometry, and the more florid appearance of the hall itself. Here, the restraint of limestone and concrete gives way to a much fussier atmosphere of the hall itself, dressed and baffled in fabrics and beautiful woods.









RICHARD PAYNE

SOUND WITH VISION

When the McDermott Concert Hall in I M Pei's Morton H Meyerson Symphony Center in Dallas was inaugurated on 6 September 1989, the San Francisco Chronicle *talked of entering 'another world'. Russell Johnson of Artec, sound and theatre consultants on the project, explains how the triumph of acoustics was technically achieved in this landmark American public building.*

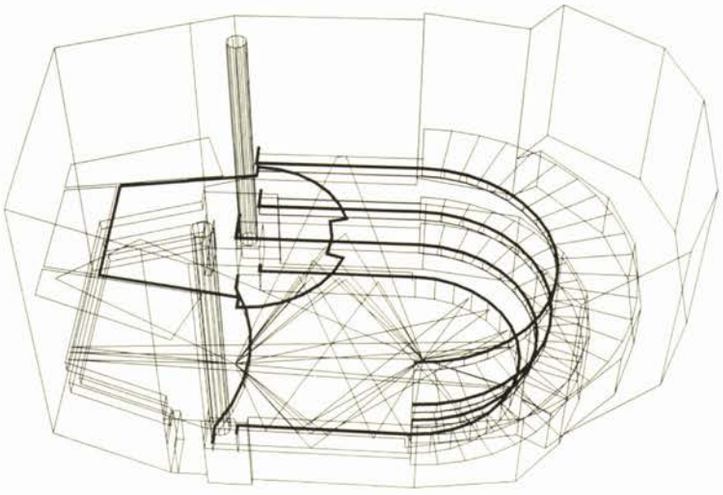
Artec was chosen in January 1981 by the building committee of the Dallas Symphony Association to be the theatre and acoustics consultants for the Meyerson-McDermott. It was agreed at that time that we should first devise the basic design of the concert room. This was to be submitted to the Association, and if this work met with their approval, the model and the accompanying drawings were to be turned over to I M Pei for study and development.

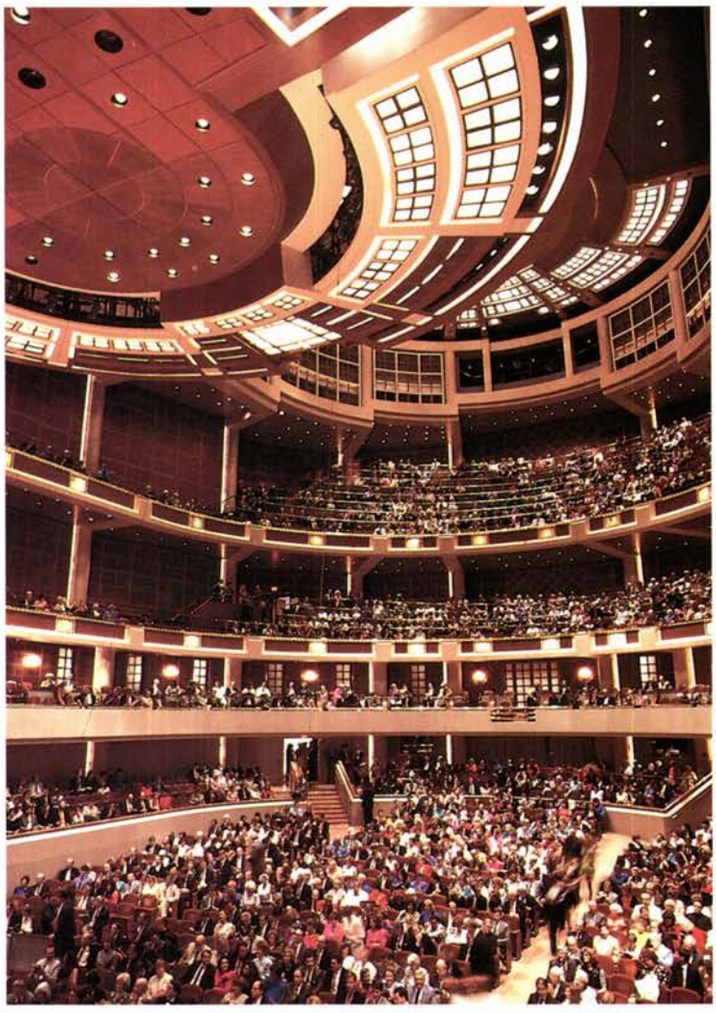
Goal of acoustic excellence

Now, less than two years after its inaugural concert, the Meyerson-McDermott is already judged by many of the soloists and conductors who have visited this new hall to be among the two or three best halls built since 1910.

Artec believes that there are various reasons why the Dallas Symphony Orchestra's design process achieved this degree of success. One important aspect was the way the owner's executive committee tenaciously clung to its goal of acoustic excellence. Its members were also the source of a large percentage of the construction funds. They never relaxed the core of their goal to construct, in downtown Dallas, one of the finest concert halls in the world.

Also essential was Artec's role in providing the basic design of the audience chamber, all of the acoustics and theatre consulting input. Artec delivered the basic design to the





PHOTOGRAPHY BY RUSSELL JOHNSON

(Above) Diagram showing how sound waves are reflected from walls, surfaces and other design elements within the meticulously planned architectural configuration of the Morton H Meyerson's auditorium. (Below) The Tonhalle, Zurich, Switzerland: an example of the fine old pre-1910 shoebox opera house to which theatre and acoustics consultants Artec turned in search of technical inspiration.

Association, and then I M Pei transformed Artec's design into a work of aesthetic significance, with an array of handsome, beautifully detailed materials including bronze, limestone, onyx, granite and various types of rare woods.

Olin Chism, writing in the January 1990 issue of *Musical America* , commented: "Pei's architecture is a hit. The asymmetrical exterior presents a series of shifting views – none repeated, as one walks around the building. partial circles interplay with a rectangle and irregular geometrics. The immediate interior is also complex – and asymmetrical – with a large lobby, sweeping stairways, and elevated walkways. The auditorium is a striking contrast: one passes from the rather cool contemporary environment of the lobby into a warm and intimate room strongly reminiscent of (concert) halls of times past. Here tradition reigns."

Artec looks to the past to guide the evolution of today's spaces to be used to house the performing arts. We turn for design inspiration for acoustics qualities and functional, operational excellence to the opera houses, theatres and concert halls designed and built between 1600 and 1910.

We ask: what are the most important pre-1910 design features that can be used to form the heart of good contemporary practice? They include the stacking up of the audience in tiers, many tiers; keeping the audience chamber extremely narrow; restricting the total area of floor devoted to audience seating; and employing the massive construction and finish materials that were used in almost all of the pre-1910 facilities.

These are the basics that Artec takes from the great halls built before 1910. Then we add innovative design features. Artec studies how the great old halls work, then develops these concepts within the restraints of today's building regulations and fire codes, utilising up-to-the-minute technology to improve upon the best old halls.

Some of what the visitors find as they explore the Morton H Meyerson Symphony Center was never seen prior to 1910. For example, the Center has about 300,000 cubic feet of partially coupled/partially uncoupled cubage around the perimeter of the top of the hall. This large, embracing U-shaped space is not visible to the audience, as it is concealed behind large panels of loudspeaker grille cloth.

Behind the loudspeaker grille cloth at the top of the room are 72 hinged four-inch-thick concrete panels. These hinged panels can be closed and opened by remote-controlled actuators. For organ recitals, choral concerts, and a limited number of symphonic works, these concrete panels are partially or fully opened. For most of the symphony repertoire, for popular music, and for rental activities such as conferences and meetings, the reverberance chamber is completely decoupled by shutting all

The interior of the Morton H Meyerson Symphony Centre looking towards the audience (left) and the stage (below): the acoustical combination of the reverberation of a cathedral with the clarity of a commercially released recording has impressed – and mystified – many leading musicians.

P.W. WOLFF

of the hinged concrete panels.

With the panels shut, the reverberance of the primary audience chamber is reduced. When the panels are opened, the reverberance is increased. There is one more basic mode of utilising the chamber at the top of the room – we open all of the panels and simultaneously extend all the sound-absorbing curtains in the chamber and in the audience chamber proper. This set-up is usually used for maximum articulation of sound.

Similar to small cathedral

In the Morton H Meyerson, the reverberance when these panels are open is similar to a large church or a small cathedral. However, the shaping in the lower portion of the hall, including the relatively narrow audience chamber, promotes articulation, definition and clarity, independent of the decay of the reverberant sound field. Thus the sound of the music, with all of the hinged panels open, has similar reverberance to what one hears in some large churches or modest cathedrals, yet simultaneously has the clarity one associates with commercially released recordings and well-designed opera houses.

This miracle of simultaneous clarity and reverberance has startled many of the musicians who have visited the Center, including Plato Karayanis, executive director of the Dallas Opera, who commented at the close of a concert in the McDermott: "This is the best symphony acoustics that I've ever run across in Europe or North America, but it is a mystery room to me. I'm having a lot of reverberation at the same instant that I hear superb clarity. I've always been told that that combination is an acoustical impossibility."

Comprehensive system of curtains

Another acoustics system not found in pre-1910 facilities is the comprehensive system of motor-operated, multi-layer cloth curtains that can be extended out of storage pockets to cover most of the wall surfaces.

In the Morton Meyerson there are two different types of curtains in each bay. One set is a single layer of thin muslin fabric; the second set is three layers of tightly woven velour. For popular music, cinema, meetings and other rental activity employing speech, all of the multi-layered velour curtains in the hall are usually extended, thus drastically reducing the reverberance and early reflected sound. For chamber orchestra, recitals, choral concerts, organ recitals and for most "classical" symphony concerts, almost all of the multi-layered curtains are retracted into their concealed storage pockets, thus allowing the hard, sound-reflective wood and masonry walls to function.

A third variable acoustics feature not to be found in pre-1910 facilities is a system of four vertically adjustable, moving, laminated wood sound-reflecting "ceilings" or canopies above the concert stage. These are five inches thick, of laminated wood with all layers securely bonded to each other. The total area of these four canopy units is about 4,000 sq ft. These four units affect many aspects of the acoustics of the hall, depending on the elevation at which they are set during any particular work.

A strong sound signal

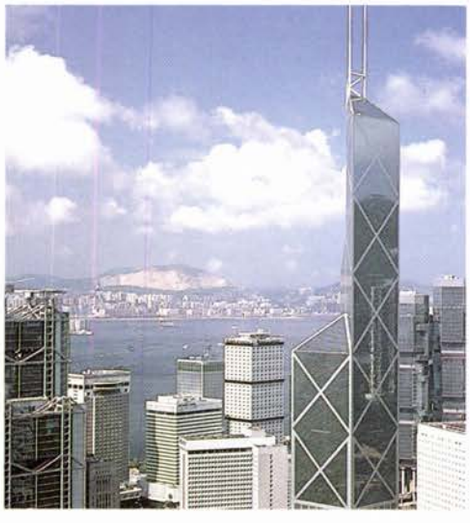
The canopy system sends a strong sound signal back to the musicians (when the main canopy is set about 40 feet high) that is adequately loud and arrives quickly enough to: first, make each player feel comfortable that he or she is playing at the appropriate loudness level; second, allow the musicians to hear each other (thus achieving good ensemble); and, third, provide each musician with an accurate sense of his or her own sound production so he or she can control the quality and nuances of music-making to a fine degree.

Depending on the elevation at which the canopy system is set, these four ceiling units either decrease or increase the access of sound energy into the portion of the reverberance chamber nearest the concert platform, thus decreasing or increasing the reverberance. The canopy system, when set adequately low, also restricts the access of sound energy up into the top portion of the concert room proper. The four units, when set quite high, increase the "openness", the spatial characteristics of the sound of music. When set quite low, they increase the clarity, the articulation, the definition of the sound of the music.

One of the most important achievements in the acoustics design of the McDermott Concert Hall is the extraordinary low level of intruding noise.

Almost all the various types of noises that are often the curse of concert halls – including sirens, heavy trucks, helicopters, thunderstorms, aircraft, elevator noise, transformer hum, ballast noise, noise from water closets, roof drainage pipes, water foundations, pumps, compressors, duct noise, grille noise, ice-makers, lobby noise, sound from rehearsal spaces, organ fans, and other equipment – have been completely eliminated.

Much of the miracle of top-rank symphony acoustics originates from a complete absence of extraneous noise leaking into the concert room. □



PAUL WARCHOL

Pei in focus: (top) redefining the Louvre in Paris; (above) dwarfing Foster's Hongkong and Shanghai Bank with the Bank of China in Hong Kong.

I M PEI: A Biography

A founding member of I M Pei & Partners, Ieoh Ming Pei was born in China in 1917, the son of a prominent banker and economist. His early years were spent in Shanghai, Hong Kong and Suzhou, his family's ancestral home. After attending St. John's middle school in Shanghai, Pei came to the United States to study architecture at the Massachusetts Institute of Technology from which he received a Batchelor of Architecture degree in 1940.

He was awarded the Alpha Rho Chi Medal, the MIT Travelling Fellowship and the AIA Gold Medal upon graduation. In 1942, Pei enrolled in the Harvard Graduate School of Design where he studied under Walter Gropius; six months later, he volunteered his services to the National Defence Research Committee at Princeton, New Jersey, Pei returned to Harvard in 1944 and completed his M Arch two years later, simultaneously teaching on the faculty as assistant professor (1945-48). Awarded the Wheelwright Travelling Fellowship by Harvard in 1951, he travelled extensively in England, France, Italy and Greece. He became a naturalized citizen of the US in 1954.

In 1948, William Zeckendorf, the head of Webb & Knapp Inc, a major American real estate development firm invited Pei to accept the newly created post of director of architecture. This association resulted in many large-scale architectural and planning projects in Boston, Chicago, Denver, Montreal, Philadelphia, Pittsburgh and Washington. In 1955 he formed the partnership of I M Pei & Associates which became I M Pei & Partners in 1966, and Pei Cobb Freed & Partners on September 1 1989.

PROJECTS

1952-56 US National Bank of Denver/Mile High Centre
Denver, Colarado

1953-68 Southwest Washington Redevelopment
Washington DC

1954-63 The Luce Chapel
Taichung, Taiwan

1957-62 Kips Bay Plaza
New York, NY

1957-64 Washington Square East/Society Hill
Philadelphia, Pennsylvania

1959-64 Green Centre for the Earth Sciences
Massachusetts Institute of Technology
Cambridge, Massachusetts

1960-61 Government Centre Plan/City of Boston
Boston, Massachusetts
Henry N Cobb, Partner-Collaborator

1960-70 National Airlines Terminal
(now TWA Domestic Terminal)
Kennedy International Airport, New York, NY

1961-64 School of Journalism/Newhouse Communications Centre, Syracuse University

1961-66 University Plazza/New York University
New York, NY

1961-67 National Centre for Atmospheric Research
Boulder, Colarado

1961-64 Everson Museum of Art
Syracuse, NY

1962-67 Air Traffic Control Towers
Federal Aviation Agency
Various Airports, USA

1963-64 Central Business District Plan
Oklaholma City, Oklaholma

1963-67 New College
Sarasota, Florida

1963-71 The Wilmington Tower
Wilmington, Delaware

1964-70 Camille Edouard Dreyfus Chemistry Building, Massachusetts Institute of Technology
Cambridge, Massachusetts

1965-79 The John Fitzgerald Kennedy Library
Boston, Massachusetts
Theodore J Musho, Associate Partner-in-charge

1966-68 Des Moines Art Centre Addition
Des Moines, Iowa

1966-69 Bedford-Stuyvesant Superblock
Brooklyn, NY

1966-71 Cleo Rogers Memorial Library
Columbus, Indiana

1966-77 Dallas City Hall
Dallas, Texas
Theodore J Musho, Associate Partner-in-charge

1967-73 Canadian Imperial Bank of Commerce
Toronto, Canada

1968-1970 Master Plan/Columbia University
New York, NY
Henry N Cobb, Partner-Collaborator

1968-72 Paul Mellon Centre for the Arts
The Choate School

Wallingford, Connecticut
1968-73 Herbert F Johnson Museum of Art
Cornell University
Ithaca, NY
1968-78 National Gallery of Art/East Building
Washington, D.C.
Leonard Jacobson Partner-in-charge of Project Management
1970-76 Oversea-Chinese Banking Corporation Centre, Singapore
1972-76 Ralph Landau Chemical Engineering Building, Massachusetts Institute of Technology
Cambridge, Massachusetts
1973-86 Raffles City
Singapore
1977-81 Museum of Fine Arts/West Wing
Boston, Massachusetts
1977-82 Sunning Plaza
Hong Kong
1977-84 IBM Office Building
Purchase, New York
1978-82 Texas Commerce Tower/
United Energy Plaza
Houston, Texas
Harold Fredenburgh, Associate Partner-in-charge
1978-84 The Wiesner Building
Massachusetts Institute of Technology
Cambridge, Massachusetts
1979-82 Fragrant Hill Hotel, Beijing, China
1979-86 The Jacob Jarvis Centre of New York
New York, NY
James Ingo Freed Patner-in-charge of Design
Werner Wandelmaier Partner-in-charge of Project Management
1980-87 Miami World Trade Centre
(Cen Trust Tower)
Miami, Florida
1981-89 Phase I **1989** Phase 2: The Mt. Sinai Medical Centre Modernization
New York, NY
1982-89 The Morton H Meyerson Symphony Centre Dallas, Texas
1982-89 Bank of China, Hong Kong
1983-89 IBM Office Building Complex, Somers, NY
1983-89 Phase I **1989** Phase 2: Le Grand Louvre
Paris France
Leonard Jacobson Partner-in-charge of Project Management
1986-89 Choate Rosemary Hall Science Centre
Wallingford, Connecticut
1986-89 Creative Artists Agency Headquarters
Beverly Hills, California
1987- Rock n' Roll Museum and Hall of Fame
Cleveland, Ohio
1988- Shinji Shumeikai Bell Tower
Shiga, Japan
1989- Regent Hotel, New York

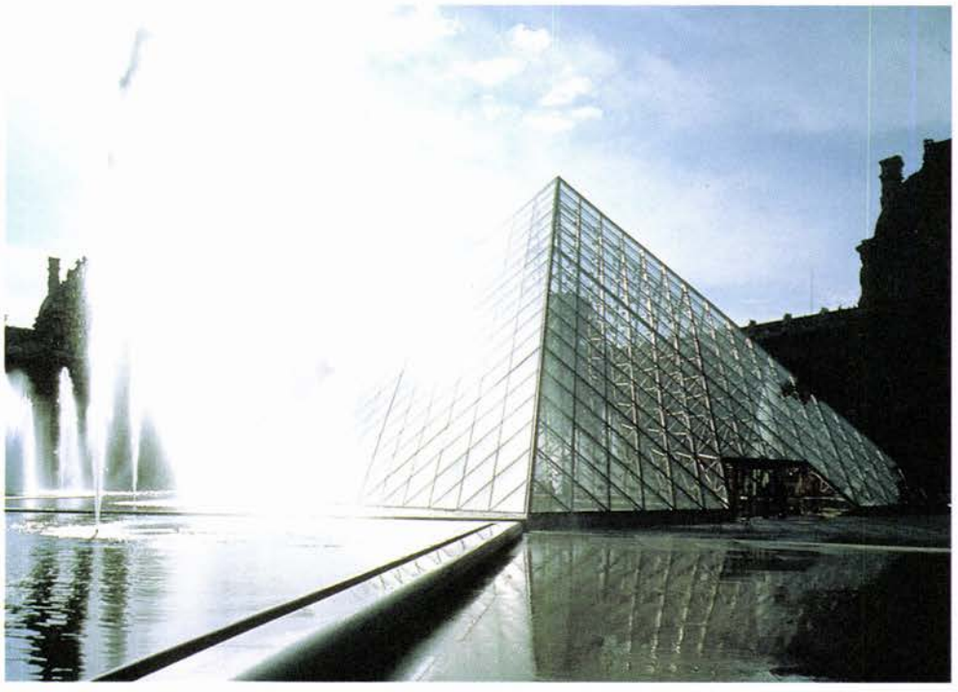
In Design:
Outpatient Clinic, University of Alabama
Health Services Foundation
Birmingham, Alabama
Bucks Centre for Research in Ageing
Marin County, California
Bilao Estuary Project - Phase I
Bilbao, Spain
Museum of Art of Luxembourg
Luxembourg
Shinji Shumeikai Art Museum
Shiga, Japan

AWARDS

1961 Arnold Brunner Award, National Institute of Arts and Letters
1963 New York Chapter of the American Institute of Architects Medal of Honor
1970 Golden Door Award for the International Institute of Boston
1973 For New York Award, The City Club of New York
1976 The Thomas Jefferson Memorial Award for Architecture
1978 Elsie de Wolfe Award, American Society of Interior Designers
1979 Presidents' Fellow, Rhode Island School of Design
1979 Gold Medal for Architecture, American Academy of Arts and Letters
1979 The Gold Medal, The American Institute of Architects
1981 Gold Medal of Honor, National Arts Club
1981 Mayor's Award of Honor for Art and Culture, City of New York
1981 La Grande Medaille d'Or of l'Academire d'Architecture (France)
1983 The Pritzker Architecture Prize
1984 Associe Ettranger, Institut de France - l'Academie des Beaux-Arts (France)
1985 Commandeur l'Orde des Arts des et des Lettres (France)
1986 The Medal of Liberty
1988 Chevalier de la Legion D'Honneur (France)
1988 National Medal of Art
1989 Praemium Imperiale for lifetime achievement in architecture (Japan)
1990 UCLA Gold Medal

NATHANIEL LIEBERMAN

Architecture as frozen music: the Morton H Meyerson Symphony Centre, Dallas.



I M Pei's Grand Louvre project: water used to great architectural effect as reflecting pools surround the glass pyramid. But too few modern architects explore this dimension.

ART OF AQUATECTURE

I M Pei is among the few modern architects to have used water effectively to enhance their buildings. His National Gallery in Washington and Louvre pyramid in Paris demonstrate the extent of its visual potential. But the green movement in architecture can go beyond visual quality to address the issues of purification. Yasmin Shariff traces examples of water in architecture from the Islamic world which combine beauty and function.

Zen Restaurant, Hampstead, designed by Rick Mather Architects, 1986. Project architect: Pascal Madoc Jones. This water feature within the handrail was inspired by the famous fourteenth century Islamic Spanish garden at the Generalife in Granada.

"It will be an excellent sign of the goodness of water, if, where it passes, one does not see moss or rushes grow; but the place is clean, beautiful, and has sand and gravel at the bottom, and is not foul or muddy."
Palladio: *Four Books,* Book 2, Ch. XII

Clean water, an essential element for life on this planet, is fast becoming a rare commodity. With burgeoning populations, changes in weather patterns and ever increasing pollution, it is predicted that the major global crisis in the year 2000 will not be nuclear war but the scarcity of usable water.

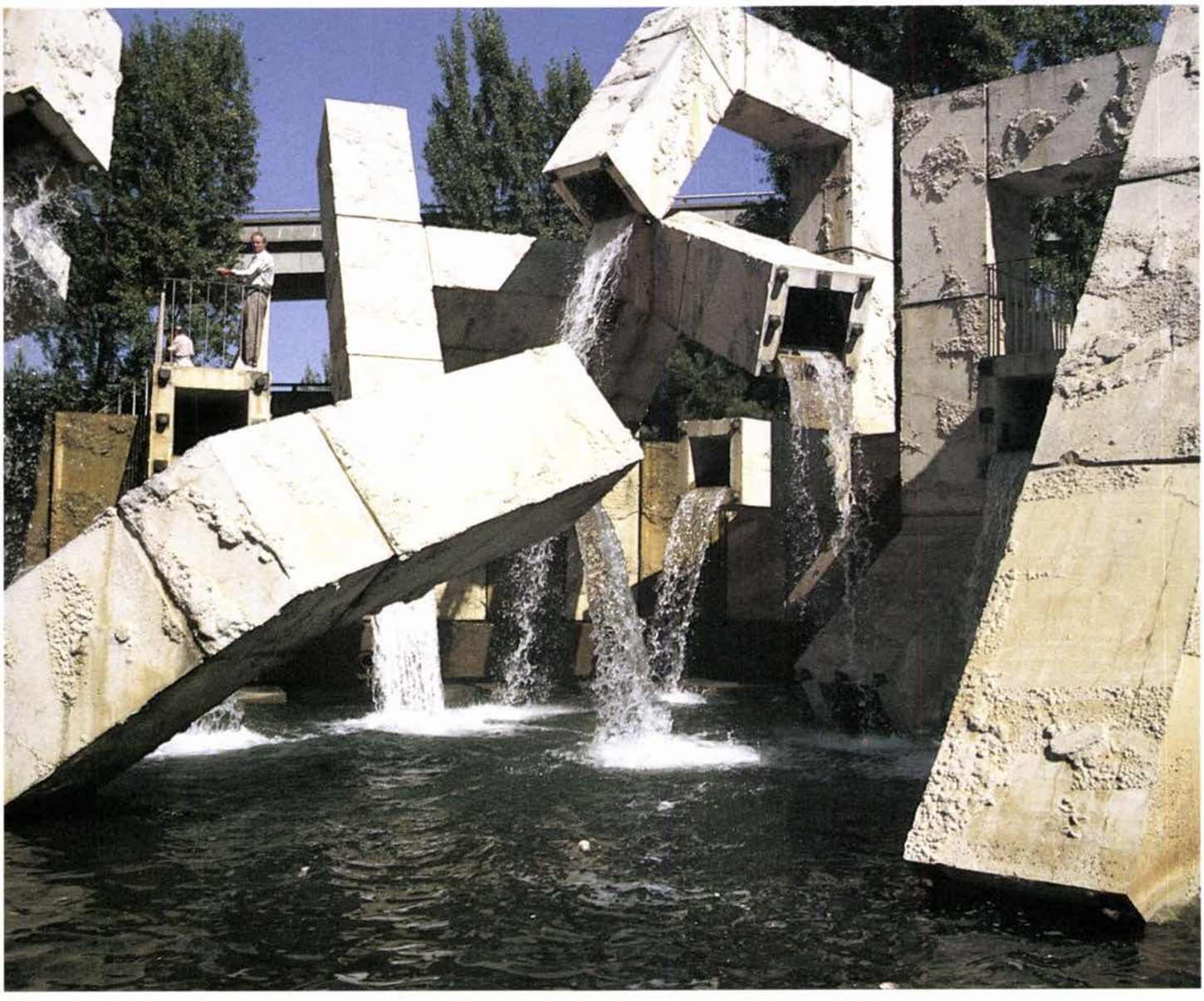
Over the last decade most parts of the world have experienced drought and water rationing, yet more clean water has literally gone down the drain than in any other period of history. Ancient systems of drying human faeces and evaporating urine are disdained as primitive practice and replaced with the water closet. Yet advances in microbiology make it possible to safely dispose of human waste in a clean, efficient manner without having to use water.

Rain water collection systems leading to underground storage reservoirs in the Mediterranean *(cisterna),* Iran *(amambars)* and India *(tankas)* are not maintained and have fallen into disrepair because municipal authorities prefer modern centralised technological alternatives of pumping water from the water table into a piped system. But using relatively simple technology, designers could make a much greater contribution to water and energy conservation. Governments need to be persuaded of the viability and economy of these schemes and current building codes reviewed.

Few explore the potential

Small initiatives are being taken and green architecture is rapidly becoming a fashionable trend. But most initiatives are concerned with green building materials and energy conservation. Few explore the potential of water.

Solar-powered water heating is an obvious energy-saving device which has been around for some years and cheap versions can be easily constructed, particularly in poorer regions of the world, to save some of



KEVIN BRADSHAW

M Justin Herman Plaza, formerly the Embarcadero Plaza and Fountain, San Francisco. Designed by Lawrence Halprin, 1962. Halprin's skilful use of water is renowned. Here, he uses elements from the building demolished on the site, describing the process as "not just to look good – it includes all the sensory perceptions".

the daily drudgery of collecting fire wood and preventing the rapid erosion of the landscape. Numerous water cooling systems are also being developed.

Some of the most spectacular evaporative cooling schemes can be found in the traditional Islamic world. Large artificial reservoirs were constructed with pavilions at the centre. Water generates its own breeze and the pavilions often had screens of fragrant grass kept moist with water running at high level. In some schemes walls of water enclosed spaces as well as cooling the air. Many Islamic monuments and domestic buildings take advantage of the lower temperatures in basement levels and have structures with associated water sources.

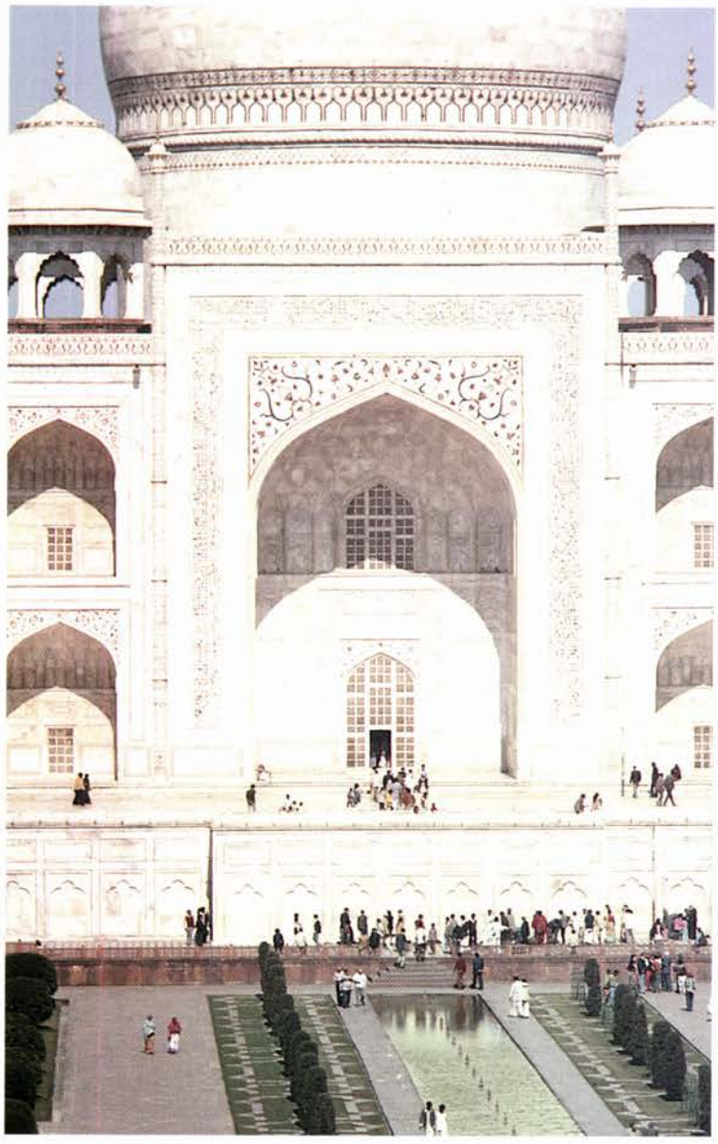
Most grand-scale designs with water imitate the natural landscape. Extensive theme parks have been designed in the past 50 years using water on a large scale. The discovery settings of Disneyland have provided a model for many examples. One of the largest water theme parks, the Moody Historical Gardens, is currently being developed by Geoffrey Jellicoe in Galveston, Texas on the Gulf of Mexico.

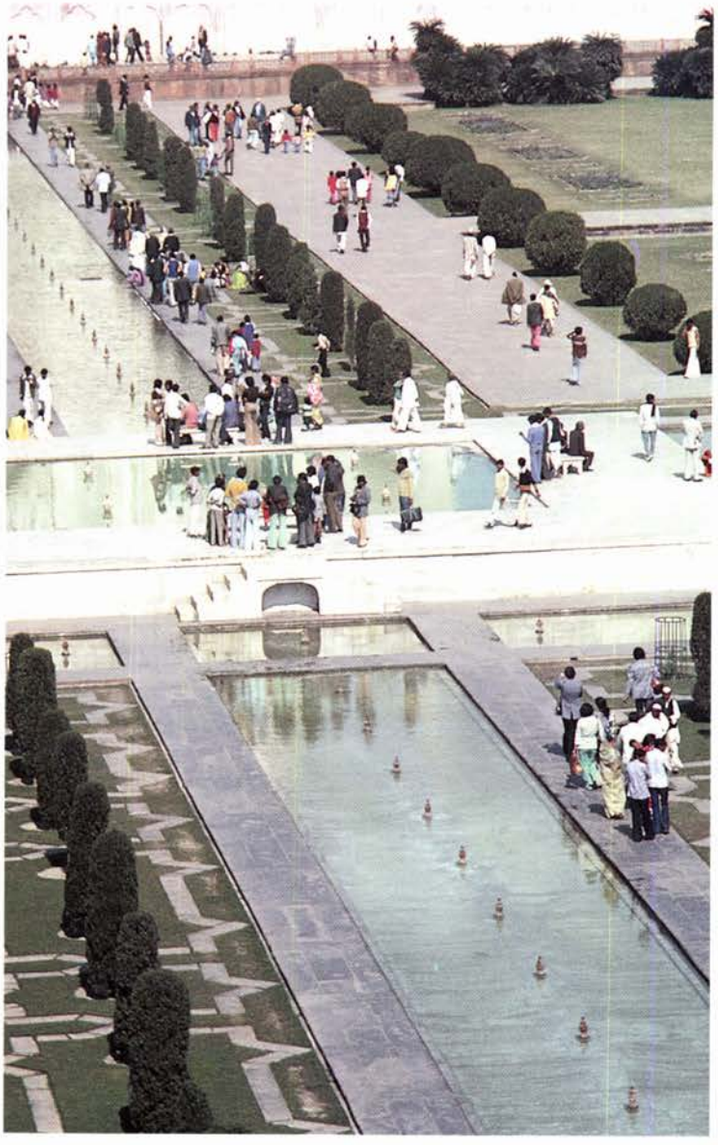
But examples of a skilful use of water in the urban environment are limited. In America, Lawrence Halprin's landscape schemes using water transforming areas of urban highway wasteland are an exception. Few modern architects use water effectively to enhance their buildings. I M Pei has demonstrated both in his Louvre extension in Paris and in the National Gallery in Washington how water can be used to great effect. Surrounding the glass pyramid with reflecting pools has created a spectacular crystal line image with a multitude of reflective planes.

Magnifying building design

The use of reflective pools to magnify buildings is quite a simple but effective means of aggrandisment. Le Corbusier at Chandigarh and Burle Marx in Brazillia successfully used reflective pools to increase the impact of the parliamentary buildings.

Elongated reflective pools can also be used to create a formal axis in the landscape drawing the focus of attention onto the building from an appreciable distance – the





water both magnifies and acts as a pointer. Luis Barragan's Plaza del Bebedero (Plaza of the Horse Trough) is a superb example of the use of reflective axial pools as is the Taj Mahal.

Islamic designers excelled in their manipulation of water. Surface, texture, light, reflection and most of all the *sound* of water was orchestrated to give life and vibrancy to space – both internally and externally. Their work is a rich source of inspiration: I M Pei's illuminated niches behind walls of water at the National Gallery, Washington, and Rick Mather's water handrails in the Zen Restaurants in London are two modern designs inspired by Muslim sources.

The recently completed water sculptures in the public park in Darling Harbour, Sydney, use many of the Mughal devices in their design. Long rills of water with their pulsating rhythm add life and give spatial direction to the linear park between the bay and the waterfront developments. The surface of the water is often broken up to create white frothy interludes between the dark glossy snaking streams rather like the scaly marble water slides (*chaddars:* white shawls) of the Mughal gardens.

DENNIS SHARP

(Above) Taj Mahal, Agra, attributed to Ustad Ahmad, 1643. Water is an integral part of the spatial design. The axial route has been skilfully designed using reflective pools to create places of contemplation and wide channels of water to draw the building nearer. (Right) St Mark's Church, Bjorkhagen, Sweden, by Sigurd Lewerentz, 1960. The adjacent pool creates a focal point.

Sound used to effect

Sound, a very important aspect of water design not often taken into consideration, was used to great effect gardens. In the Genaral life at the Alhambra in Spain, for example, the atmosphere in many parts of the garden was manipulated by the sound of the running streams of pulsating fountains. Many poets and musicians including Juan Ramon Jimenez and Raphael have been inspired by the sounds of the water running through the General life.

Swedish architect, Sigurd Lewerentz, is one of the few modern architects to use the sound of water to add an extra dimension to his buildings. In the Petri Church, Klippan, Lewerentz used a simple laboratory tap to create a sound of gently dripping water. The sound of the water dropping into a conch shell is echoed in the surrounding brick vaults, creating an acoustic image of early

morning dew dropping into a pond.

Externally, Lewerentz uses shallow ponds to give a focal point for gathering and meditating. His pools tend to be dark and mysterious, though not necessarily deep. The pool at St Mark's Church, Bjorkhagen, Sweden is very economically constructed by simply indenting the hard landscaping.

Fountains and water falls are the more obvious and commonly used water devices used to focus attention. The Hyatt Regency Hotels with expansive atria contain some impressive modern water sculptures and fountains. The San Francisco Hyatt uses such smooth edges that the dark waters look like plastic sheets suspended in thin air.

Overcoming noise problem

Most glazed atria are unsuitable for fountains or waterfalls of any appreciable height due to the noise generated. But this problem can easily be overcome as Pei demonstrated in the National Gallery by letting the water fall over sheets of glass.

Special attention has always been given to the source and purity of water for consumption by royalty and the aristocracy. Indian rulers carried Ganges water with them. The British Queen relies on the Malvern springs. Water purification kits are now becoming a common feature of wealthy households. As levels of pollution continue to rise, water purification will be essential for all households. Serious environmental issues need to be addressed if humanity is to avert a water crisis.

The purification and revitalization of water can be a process which celebrates the aesthetic qualities of water as well as contributing to energy conservation.

Utility excludes pleasure

Modern reservoirs are usually fenced off, no-go areas on the outskirts of urban settlements. Water for human consumption is turned on from the tap and quickly disposed of down the drain. Utility and pleasure it seems cannot be combined in the modern world.

There are many historical examples which show how pleasure and utility can be combined. The underground step wells in Gujarat are spectacular water structures which supply drinking water for humans and animals as well as providing a place to rest and shelter from the hot dusty road.

The step wells were often built by public subscription, as were the enormous and elaborate reservoirs in satellite suburbs around Gujarat's capital, Ahmadabad, which served as public parks as well as providing water for washing and for animals.

The purity of the water in the reservoirs is dependant on the ecosystem. Unfortunately, due to nitrates, piped sewage and other pollutants the waters of the reservoirs are more like septic tanks than places for pleasure. We have the technology to pollute these sources but we also have the know-how to restore them. □

(Above) Palace of the Assembly, Chandigarh, Le Corbusier, 1963. The artificial lake collects the monsoon water and magnifies the scale and splendour of the assembly buildings.

PETER KUHN

BAUHAUS AND BEYOND

BOOK ART

One of the most important icons of European Modernism, the Bauhaus design school at Dessau in Germany, is beginning a new chapter in its history after a long period of neglect. Here, Luise Schier and Wolfgang Thoner trace the development of the historically significant educational complex that Gropius built. Overleaf, Dennis Sharp introduces the aims and objectives of a new Bauhaus era which seeks to recapture the original spirit of experiment.

"Whereas the practice of building is a problem of construction and of material, the essence of architecture depends on mastering the problem of space."

Walter Gropius, Bauhaus founder, 1956

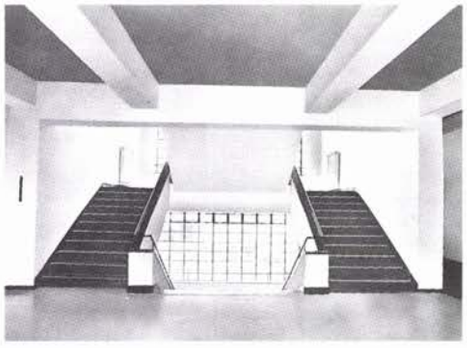
(Top) Main Bauhaus building in Dessau, 1990. (Right) Walter Gropius, founder and first head of the Bauhaus, pictured during his American years.

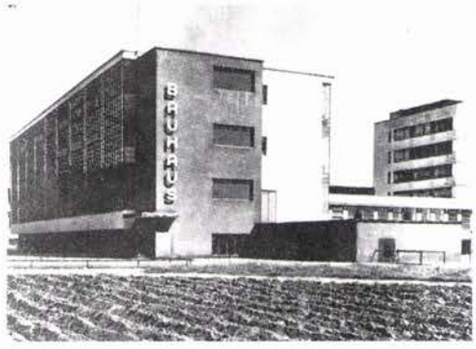
The Bauhaus at Weimar came into being in 1919, following the amalgamation of a handicraft and art school. Under the leadership of Walter Gropius it started to put into reality an idea which demonstrated new educational ways to shape the environment as well as the individual.

Basic training which began with the playful preliminary course run by Itten concentrated on the discovery and development of the creativity of the individual students. The workshops primarily concentrated on handwork. The work on which they collaborated was exhibited for the first time at the Somerfeld house.

In addition to expressionist details, elements from technological forms were creeping in at this stage. The Dutch De Stijl movement, which was represented by Theo van Doesburg in Weimar and especially Wassily Kandinsky's teaching, had the effect of a catalyst in the development towards Constructivism.

The great Bauhaus exhibition of late summer 1923 (with the *Haus am Horn* by Georg Muche) was internationally





(Left and below) Famous double staircase at the Bauhaus after refurbishment in 1976 and today. (Right) Archival pictures of the Bauhaus in 1926 and the Hannes Meyer balcony access flats, Dessau, circa 1930.

PETER KUHN

BAUHAUS ARCHIV

acclaimed. One year later, politics intervened in the fate of the Bauhaus. The school was constantly the subject of the most heated debates in the Thuringian Parliament. When the German National Party, the *Deutschnationalen,* won a majority in the 1924 elections, it tried to bring the unpopular Bauhaus to its knees by reducing its funds. Faced with this situation, the governing body of the Bauhaus took the first steps in leading the exodus: without permission from the Government, the Bauhaus offered itself to other towns and unleashed a "Dance of German towns around the golden Bauhaus", as it was described by Oskar Schlemmer.

One of the reasons which prompted the governing body to vote for Dessau was the promise that it would be allowed to erect a school building as well as accommodation for Bauhaus staff to its own designs. After the town of Dessau had declared itself willing to take over the Bauhaus on 23 March 1925, the finance committee of the Dessau Town Council handed over the responsibility for planning the new buildings necessary for the school to the director, Walter Gropius.

Ambitious architectural aim

What the city fathers had in mind was a combined community school comprising the Bauhaus and the Dessau Handicraft and Trade schools. The construction would be financed by a trust fund. In May 1925 the town bought a site with funds from the Prince Leopold Foundation to the east and west of the Friedrichsallee as it was known at that time.

On this site which had been open space until then, it was intended that an architecture would grow up uninfluenced by any existing development: this architecture in a developing area of a town with historic and royal associations would establish an internationally recognised example of the town's ambitious attitudes to industry and culture.

Plans were drawn up in Gropius' office evidently without agreement on precise departmental accommodation requirements. The fixed budget for the building seemed to be the only determining factor. On returning to Dessau, Adolf Ernst Neufert became the head of the office in the place of Adolf Meyer.

The preliminary sketch phases were implemented because of the existence of the sketches and drawings by Carl Fieger, a

(Right) Georg Muche's Steelhouse, Dessau-Torten, circa 1926, is empty and is in an appalling state.

(Below) Theatre workshop students in costumes and masks on the Atelier roof, 1927, and the Bauhaus theatre itself with renovated seating by Marcel Breuer, circa 1976.

colleague of many years in the private building workshop. The preliminary designs which have been preserved bear a strong resemblance to the project for the Faculty of Philosophy, Erlangen, 1924, Gropius' first attempt at creating structural prerequisites for a community in which working and living are closely interrelated.

Later, Frau Fieger said of the sketch stage of the work that her husband discussed the basic idea with Gropius then usually prepared a few sketches to which the latter would add his ideas and alterations.

The design was presented in two alternative versions to the Finance Committee on 22 June 1925 on the recommendation of the Mayor, F Hesse.

A combination of spaces

It showed in plans and by means of a plaster model the future arrangements of spaces: there was to be a combination of spaces, aiming, Gropius recalled in 1930, for "the correct use of solar aspects, an efficient, time-saving internal circulation, clear separation of the individual departments, adaptability and flexibility of room sequences for any necessary changes in organisation, with the aid of sensible delineation of axes". Both parts of the school were designed to suit different purposes and as contrasting blocks with entrances opposite each other, physically and symbolically connected by a link spanning the road.

The connection of a workshop block by means of the intervening building with the stage and canteen produced a building configuration with three equal wings.

The final plans were given unanimous approval and a budget of 950,000 Reichsmark was granted. Walter Gropius was commissioned to supervise the project and put it to tender among predominantly local building firms. The final date for tendering was August 31, 1925. To a large extent Gropius delegated the supervision of the construction of the Community School to his deputy since his time was taken up by the designs for the Master' Houses as well as the designs for the Torten residential area in Dessau.

The building work began in September 1925 under the supervision of Neufert. First of all the construction system of reinforced concrete, a monolithic framework of beams and supports, was covered with industrially tested reinforced concrete decking and with tile/brick cladding. The logical sequence of the rooms was illustrated by the articulation of the steel window frames. Only the basement floor of the workshop wing had mushroom-headed columns supporting the ceiling.

The ingenious, logical separation of loadbearing frame and its cladding went as far as total transparency of the vertical cladding, a curtain wall of glass over all three upper floors. By making the structural wall visible, the feeling of mathematical clarity and certainty which emanates from the building gave the impression of a "crystal of a future creed" (Gropius, 1919). It must have seemed to be related in essence to the cathedrals of the medieval masons.

The topping out took place on the accessible part of the roof of the workshop building on March 21, 1926. Neufert, who was due to go to the State School of Architecture in Weimar in March, stayed on until September to ensure the continuous progress of construction.

In autumn, the fitting out continued at a pace as the Bauhaus students moved in. The Handicraft and Trade Schools resisted a move into the new building so that instead, the industrial training school was accommodated as a technical academy in the North Wing which contained the staff and faculty offices, staffroom and library.

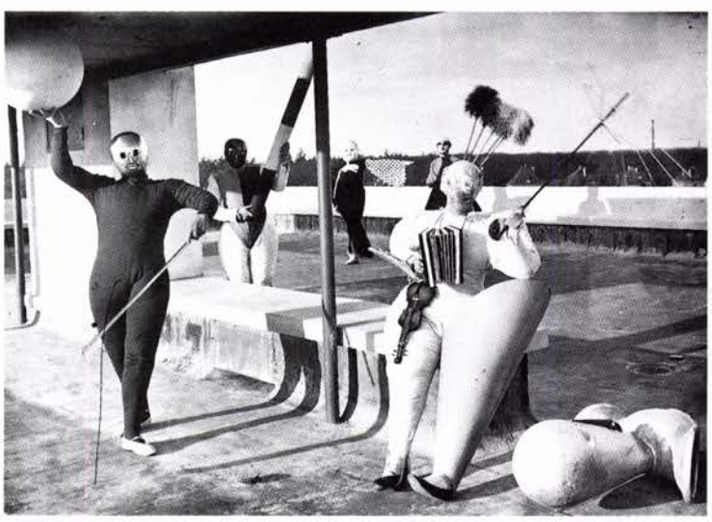
The bridge accommodated the Bauhaus administration in the lower floor and the architecture office in the upper floor. The workshop wing housed the sculpture, printing and dyeing workshops. The ground floor housed the carpentry department and exhibition space.

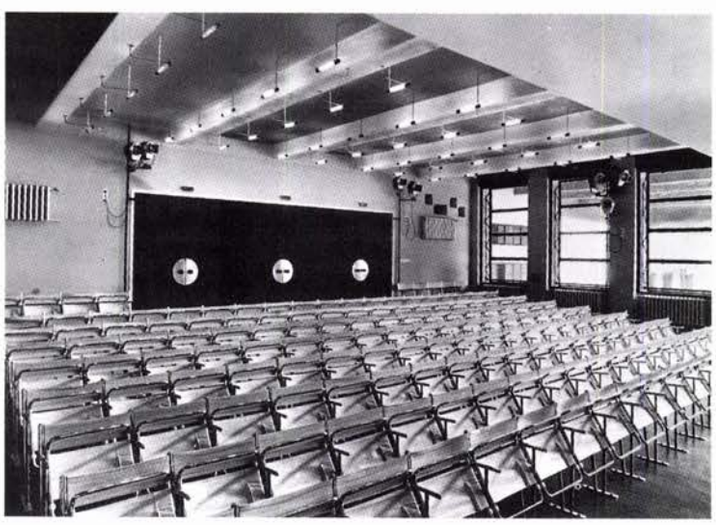
The first floor accommodated the weaving shop and preliminary course, the second floor was used by the mural department and metal workshop. The flat building between the main lecture theatre provided a stage which opened both sides, with a theatre workshop and the canteen in the cellar plus a gymnasium and baths.

The four areas of foyer, main lecture theatre, stage and canteen would all be combined to form one large social area.

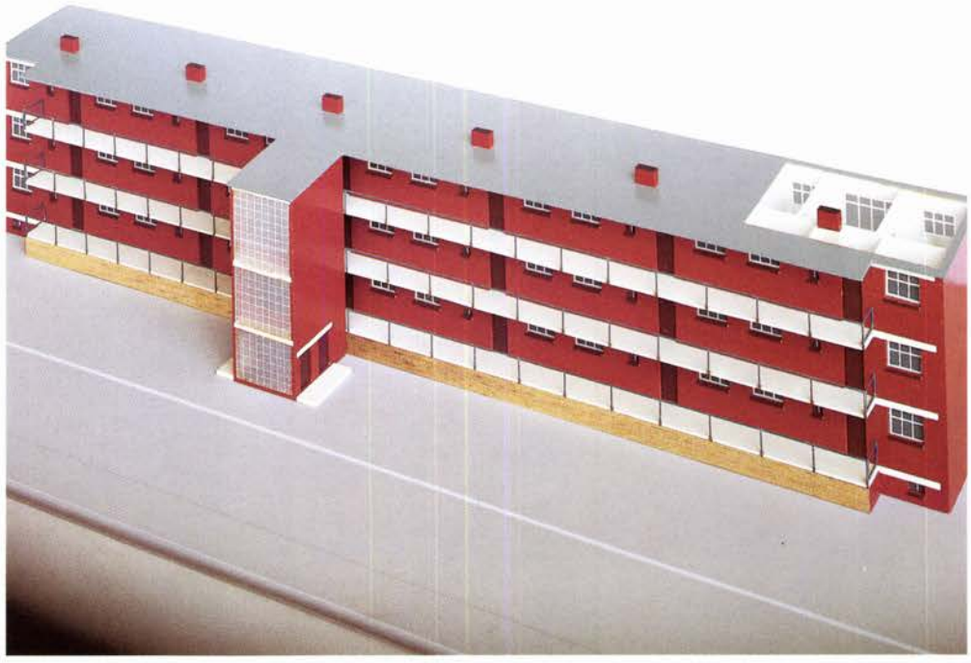
Showing internal function

The workshop building, which was named the *Prellerhaus* after its Weimar predecessor, contained a caretaker's flat in the basement. The ground floor had a kitchen adjacent to





Model of Hannes Meyer's apartment block, Dessau.



the canteen and on the five other floors were 28 atelier flats for students.

Each part of the building showed its internal function; the workshop wing with its glass façade embodied the "ideas factory"; the vocational school section with its bands of windows emphasised the stack up layers of classrooms; the workshop building showed its cellular structure with its small balconies.

The discovery of the use of white surfaces as a neutral factor (and ideal projection wall) was a determining factor for a painting scheme with mineral colours which enhanced the forms of the building and was carried out by the mural workshop under the leadership of a young teacher, H Scheper.

All the collaboration of the workshops culminated in the main social area. The accentuation of colour from the painting scheme; the raked seating in the main lecture theatre, designed by Marcel Breuer and constructed out of bent steel tubing spanned with steel wire; the lighting by Laszlo Moholy-Nagy. All these elements formed an appropriate setting for the stage work and for famous Bauhaus social events. The official opening of the College of Design on 4 December 1926 was an international event. The workshops in Dessau really became "Laboratories of Industry", to use Gropius' phrase.

Despite its achievement, petit bourgeois circles in particular opposed the College of Design and criticised it as "Bolshevist". Gropius himself was the main target of these attacks. For this reason he left the Bauhaus in 1928 and recommended Hannes Meyer as his successor. Meyer's motto was "people before luxury" but he was ground down by Dessau party politics and was dismissed without notice in summer 1930.

Under its third director, Mies van der Rohe, the Bauhaus came closer to the idea of a "normal" college. At the end of September 1930 the atelier accommodation was converted into classrooms for the Bauhaus. The efforts of Mies van der Rohe to keep the Institute politically neutral could not prevent the Bauhaus from being hated, especially by the increasingly powerful National Socialists.

As early as the beginning of 1932 Dessau Town Council foiled an attempt to demolish the building. In summer, the Bauhaus was forced to close and transferred to Berlin. Here it only functioned for a short time. A Fascist police raid closed the school on 11 April, 1933.

Only a few members of the Bauhaus remained in Germany, fostering typical Bauhaus methods in underground "design cells". Hannes Meyer had already gone to the Soviet Union with a group of graduates in 1930. In the 1930s many Bauhaus members emigrated to the USA. This was the start of international acceptance of Bauhaus philosophy which had varied and far-reaching consequences in the fields of architecture, design, painting, sculpture, theatre design and art education.

From 1932 the Bauhaus building was used by the town for public purposes after internal alterations and the construction of a new roof. During the 1930s the area around the building was developed with flats and the Bauhausplatz of today laid out.

Gutted by fire in air raid

In September 1941 the building was camouflaged with paint. But in March 1945 it was gutted by fire in an air raid and was only given emergency repairs after the war.

In 1946 there was a meeting of a few Bauhaus members under the leadership of Hubert Hoffmann in Dessau, with a view to re-instating the Bauhaus. But Stalinsist politics put a stop to this in 1947. Since the main frame of the building was undamaged, the building was reinstated as a school. The façade of the workshop wing was clad with tiles and wooden window frames were inserted.

In the 1950s the Bauhaus was taboo in the German Democratic Republic. It was not until the 1970s that the Bauhaus heritage was given new status, largely for political reasons. An external sign of this change of heart was the reconstruction of the Bauhaus building. After extensive preparatory work at the College of Architecture and Building Construction in Weimar with the help of former Bauhaus members, a start was made on the re-instatement of the workshop wing in 1976, 50 years after its foundation.

More reliable methods

The plans and working drawings had been lost in the war. The curtainwall façade (the original had been a victim of an incendiary bomb) was a successful copy completed according to the few pieces that were left intact.

The problem of flat roofs in the 1920s were solved by more reliable building methods. By referring to photographic documentation, the "social" area was restored and the seating and lighting in the lecture theatre reconstructed.

With the completion of the first phase of reconstruction at the Bauhaus building, a town museum and archive facility was set up. The most important tasks were to collate Bauhaus memorabilia and organise relevant exhibitions. In 1987 the Bauhaus in Dessau was newly founded as a Centre for Creative Art and work has been able to continue since on a higher plane.

BAUHAUS: A NEW FUTURE

DENNIS SHARP

Detail of the Bauhaus student block balconies, 1990

It really is like walking up to a familiar friend. This small, neat three-dimensional object called the Bauhaus is so well known. It now serves as art school, design atelier, research centre and exhibition gallery. It has become the major icon of European Modernism. Surprising perhaps is its present condition. After years of misuse and neglect, it was refurbished throughout in 1976 and looks to be in good condition. It is a pity that the same thing cannot be said about the other Bauhaus – inspired buildings nearby. They are in an appalling state.

The main Dessau building is now ready to start a new chapter in its history with money pledged by the new unified German government and local support. It is looking to mark out new networks. Much is under discussion.

In order to contribute to this debate, the following manifesto, a shortened Statement of Aims produced by the director and his colleagues, is included here in *World Architecture*. Your participation in this discussion is invited as the Bauhaus throws open its doors to a new international future by setting up as a trust and registered company.

Statement of Aims

The historical Bauhaus established standards in design, building, form and teaching. A new institution must not be allowed to retreat into the old Bauhaus shell. Once again standards are necessary given the division between rich and poor, the destruction of natural resources, and the increasing concentration of business, politics and the media. The world needs alternative ways of thinking, design and action for the generations after us as well as those living today.

The Bauhaus is a workshop for alternative models for civilisation, a place for international cooperation and a focus for the collaboration of disciplines.

"Design focuses on the problem, not the originality of the work". "Thought should concentrate on alternatives, not on conformity". "Action should concentrate on democratic initiatives, not negotiation". These objectives demand the collaboration of a stable, central group of Bauhaus workers with guest participants such as researchers, students, practitioners and lecturers joining workshops.

The Research Collection

The Bauhaus in Dessau has always been a focus of attention. It is historic but at the same time very much a building of the present, in a spatial, objective and functional sense. A common ideal becomes tangible when the historic Bauhaus and the present Bauhaus merge into one critical unit under the roof of the Bauhaus building.

Archival work at the Bauhaus has an historical basis in order to explore the uniqueness of the inter-relationship between doctrine, workshop work and exemplary spatial creations, and to reconstruct historic workshop work and create tangible examples of Bauhaus teaching.

As a logical consequence of this, there is a workshop combining all the arts and skills. Areas of work include various national and international exhibitions on architecture, design, creative arts and the life and work of former Bauhaus members. Dance, experimental theatre and music are being revived in the philosophy of the workshop concept of the Bauhaus. And there are also incentives for the conservation of historic Bauhaus buildings.

Experimental Workshops

The historical Bauhaus was a product and a promoter of the modern industrial society, which has created an ecological problem right outside its own front door. The problem is insoluble without a cultural reversal of values in society.

Universal remedies are not to be expected. Attempts at a solution can only be found at local level. The threatened world is crying out for models that will save it.

A Bauhaus which can think and act in a local and practical way as a laboratory and mirror of human civilisation can design prototypes to solve this problem. A way out of the crisis of the industrial age can be found if the Bauhaus of today not only makes the cultural break with the historical Bauhaus, but at the same time carries on developing.

The aim of the experimental workshop at the Bauhaus Dessau is to initiate and to support the social and cultural process of changing values specific to the region and to have an influence on the process of environmental planning and construction.

Interdisciplinary Academy

The Academy is open to students and graduates from all town planning, architectural, design, art and other schools. It is served by the functions of the research collection and the experimental workshop at the Bauhaus Dessau. Courses consist of practical work, a term of research, a diploma year, or post-graduate study. All those taking part work together and explore other disciplines. For 20 to 30 students there is the possibility of a study project under the guidance of visiting professors, Bauhaus colleagues and various experts. □

Interior of the College Elsa Triolet in a Paris suburb. Designed by Cuban architect Ricardo Porro, pictured below with his young partner Renard de la Noue, it relies on rich asymetric forms to create a series of inspiring interior spaces. The building marks an expressive departure from the French architectural mainsteam which wears modernity and technology brazenly on its sleeve.

SCHOOL OF ECSTASY

After years of unjustified neglect, Cuban-born architect Ricardo Porro is at last getting recognition. A retrospective of his work by the French Institute of Architects has just followed the recent completion of Porro's first commission in France, after living and working there for a quarter of a century. Carl Gardner visits the remarkable interior spaces of College Elsa Triolet just north of Paris and talks to Porro about his belated resurgence.

It is only relatively small – a college for 600 students, costing just £3 million. But the College Elsa Triolet in the Parisien suburb of Saint Denis is remarkable in many ways, not least because it could just mark a small but significant shift in French architectural taste.

This modest building, by Cuban-born architect Ricardo Porro, chosen in competition in 1987 and completed last year, openly cuts across the grain of France's glossy, technocratic, rationalist concerns which have dominated public architecture there for two decades or more.

A building that takes its central motif from Nature, with a capital 'N', is a rare thing indeed in the current French context.

The College Elsa Troilet is a return to an allusive, expressive, semi-figurative architecture, which has been out of fashion in Europe almost since the turn of the century. Perhaps the French public is tiring of the shiny, hard-edged, one-dimensional monoliths, epitomised by most of President Mitterand's *grand projets* – buildings which wear technology and modernity so brazenly on their sleeves.

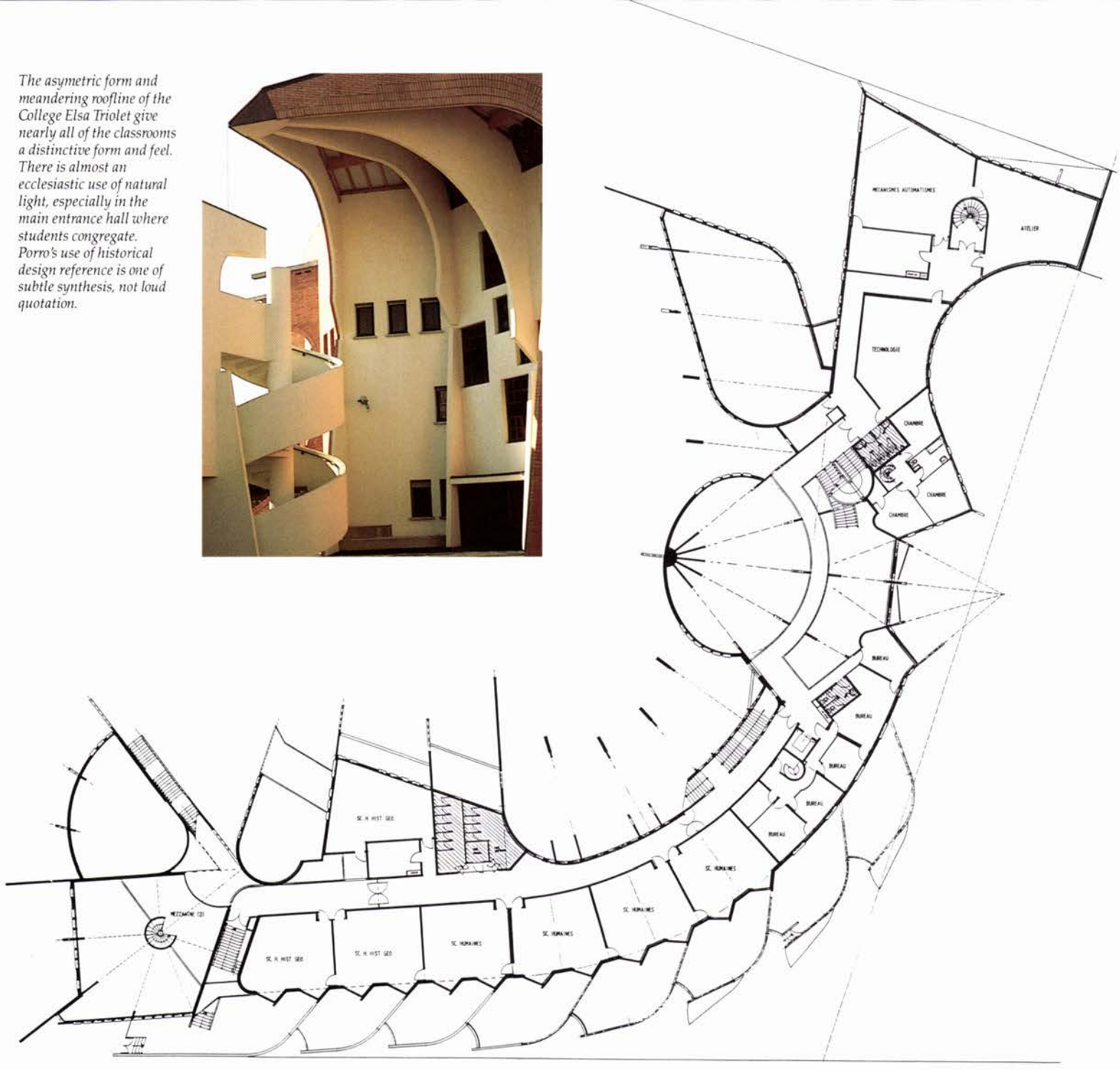
While Porro has undoubtedly benefitted from the "knock on" effect of Mitterand's *grand projets,* which have stimulated a renewed interest in architecture all over France, he is uncompromisingly critical of most of the results.

"Each project has been worse than the last," he laments. "The President has the taste of a *concièrge* . . . and some of the effects are criminal. The Louvre had one of the most beautiful spaces in Paris and it has been assassinated by the Pyramid." Porro describes contemporary French architecture as a major symptom of "the creeping Coca-Cola-isation of France . . . myself, I prefer wine."

By contrast, Porro's imagination refuses the obvious, the commonplace, the fashionable, the pursuit of technological form for its own sake. His buildings are sublime, poetic creations, full of organic images and subtle references to bodies, animals, mountains or forests. His uniquely individual style has graced no fewer than 24 international competitions in the last 20 years – until recently, all without success.

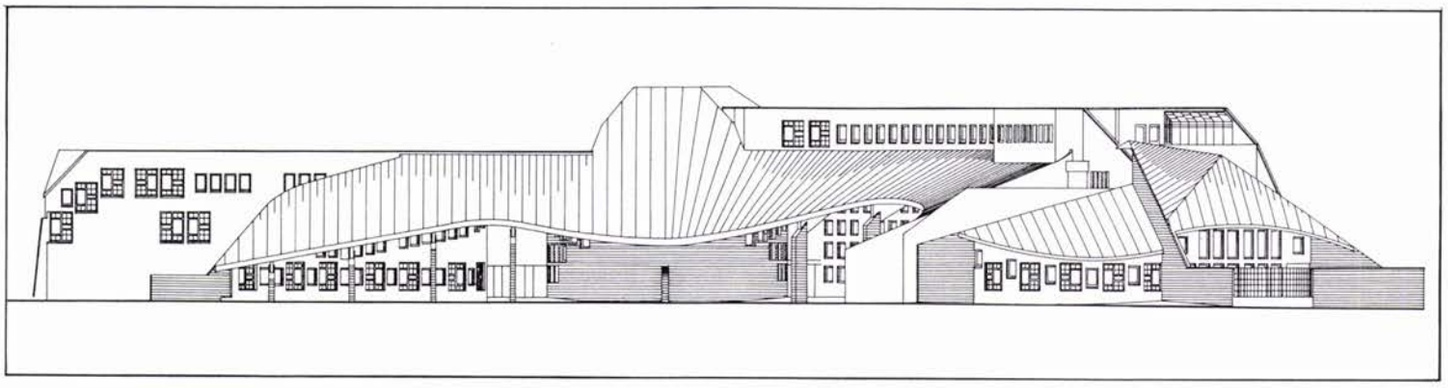
His early career was brief: four houses in pre-revolutionary Cuba were followed by two highly regarded college buildings in

The asymetric form and meandering roofline of the College Elsa Triolet give nearly all of the classrooms a distinctive form and feel. There is almost an ecclesiastic use of natural light, especially in the main entrance hall where students congregate. Porro's use of historical design reference is one of subtle synthesis, not loud quotation.



PHOTOGRAPHY BY RENAUD DE LA NOUE

RENAUD DE LA NOUE



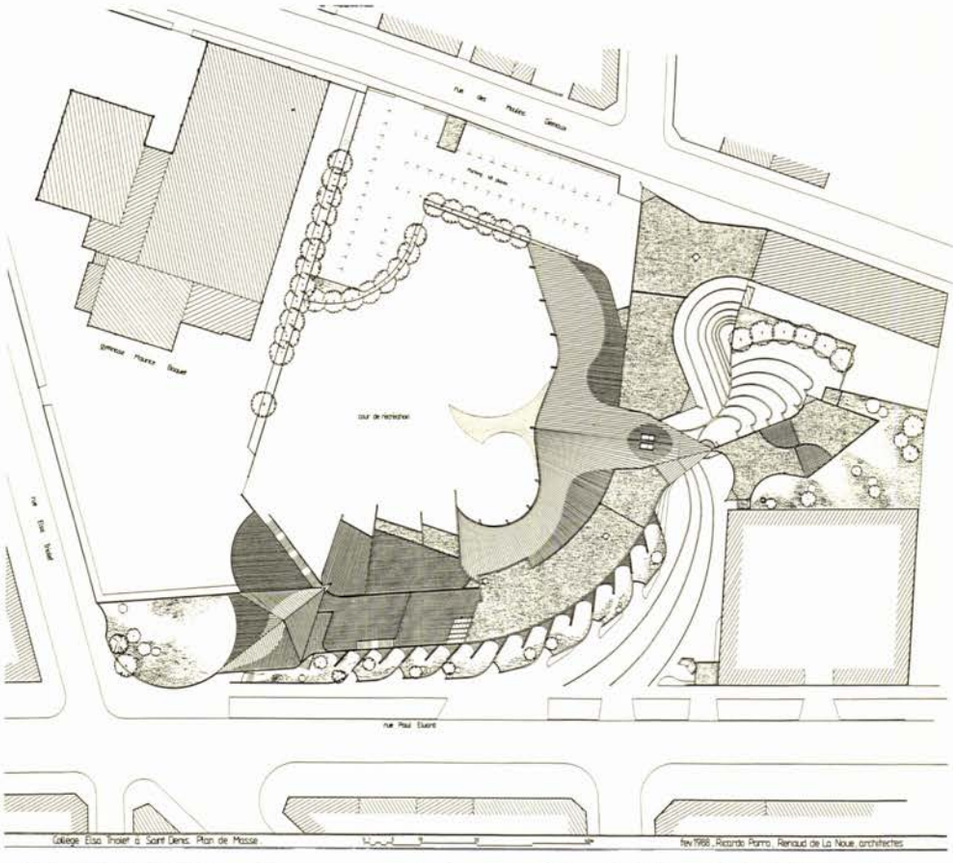
Havana for Castro, before his self-imposed exile in the mid-1960s. Apart from a cascade of visionary competition drawings and models, his only realised design has been a small arts centre in tiny Lichtenstein, dating back to 1974.

Unexpected competition win

But in 1987, when he was already in his early sixties, he and his young partner Renaud de la Noue unexpectedly won the competition to build the College Elsa Triolet (named after the French poetess) in Saint Denis just north of Paris. And he now has two more "live" projects under way – another college in Montreuil, scheduled for completion in 1992, and a leisure park in Neuilly-sur-Marne, due to open in the year 2000.

Tucked away on a side road, College Elsa Triolet comes as an astonishing surprise – an organic, almost animated structure in pinky orange brick, rising up amidst the grimy nineteenth century houses and factories of this working-class suburb. Nicknamed "la Colombe" (the Dove), its form alludes both explicitly and implicitly to that symbolic bird, with its two literal and metaphorical "wings" curving around the playground in a semi-circle.

There is even a "beak", the extraordinarily beautiful entrance canopy, arching out from the roof-line and ribbed in timber on the underside. A series of staggered window bays on the curved street façade form discrete segments of the school's "wing". These are topped by flying concrete rain-spouts on brick buttresses, incorporating a subtle semi-circular "feather" pattern, reminiscent of Aztec or Mayan design.



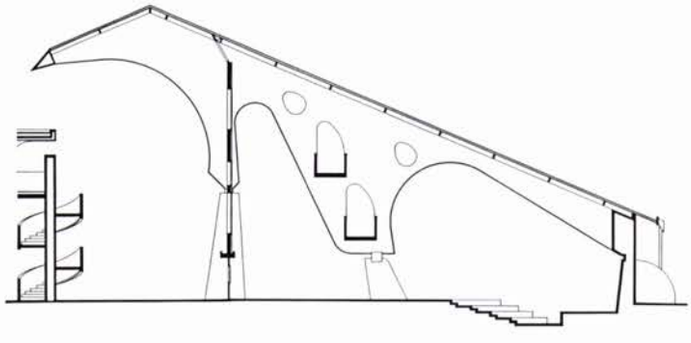
But the building makes more recent historical reference too – strong echoes of Le Corbusier's chapel at Ronchamp, Gaudi (inevitably), the mighty brick-built cathedral at Albi in south-west France, Josef Hoffmann's Stoclet House and even the colourful brickwork patterns on local Saint Denis houses.

But none of this is accomplished in the flip, cartoon style of most Post-Modernists. Porro's method is subtle synthesis, not loud quotation. The rich heritage displayed is something that Porro feels today's architects lack. "I make an architecture based in a culture. Most architects today have no culture, they only know about materials and technique," he claims.

An allusion to landscape

The rear of the building is even more complex, but perhaps less successful. Its allusion to landscape: with a "hillside" of an asphalt roof in green and brown, tumbling down from the white "cliffs" of the upper storey and terminating in an undulating, wave-like edge, is impressive but lacks total coherence. The "tree-stump" water-pipes on low flying buttresses, which support the roof, have the appearance of an afterthought.

The interior of the building, however, is truly remarkable, particularly the spectacular entrance hall, with its semi-circular, sunken "forum" in grey tiles, where pupils congregate during break-times. Behind this a white circular column on the back wall splinters into five slender, finger-like beams,



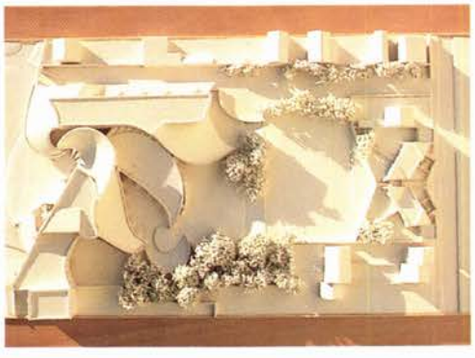
Façade (top), site plan (centre) and elevation (right) of the College Elsa Triolet: rising from a grimy suburb of nineteenth century homes and factories, this new building surprises in its pursuit of the poetic and sublime.

PHOTOGRAPHY BY RENAUD DE LA NOUE

in painted pre-cast concrete. These arch up and over, supporting the sloping roof, and then broaden out and dip down to carry the high, sculptured walkways on two levels.

Users walk through large, asymetric eye-like holes cut in the beams, while smaller holes allow glimpses of light from all directions. Walls on three sides are heavily pierced with banks of rectangular windows, whose geometricality contrasts tellingly with the curvaceous structural features.

Porro describes his approach as "anti-classical". He explains "classical architecture works to enclose and limit the space; here we are trying to create unlimited space, without evident boundaries." In its sculptural form, the moulded nature of its elements and the almost ecclesiastical use of natural light, the main hallway pays evident homage to Ronchamp – the one Corb building Porro admires.



Distinctive form and feel

Elsewhere the interior has other extraordinary features: the asymmetric form and meandering roof-line means that nearly all the classrooms have a distinctive form and feel. Several on the ground floor have direct glazed access doors onto small terrace-gardens – or the playground itself; others have high sloping ceilings, while those on the street side have deep bays which give a glimpse of the brick buttresses outside.

Two particularly notable rooms are the library and dining room. The former's double-height space has an unusual circular brick stairwell at its centre, leading to an upper gallery study area. At the higher level, the stairwell suddenly springs into a slender white column, radiating white beams, like spokes of a wheel, across the sloping ceiling.

In many of the rooms and corridors, rectangular windows, often staggered at irregular heights, make effective contrast of light and shade. But in the dining room – a single storey block on one "wing" – the diagonal massing of windows on two walls following the steep fall of the roof-line, floods the room with light.

Despite fairly modest, municipal materials, the overall effect of Porro's transformation of what could have been prosaic spaces in a humble building is uplifting in an almost spiritual sense. He describes it as an attempt to transcend function, to create something more grandiose, in the best sense of that word. "The problem with twentieth century architecture," he concludes, "is that it conveys no sense of ecstasy. That's what I want my buildings to do." □

In model and built realisation, Porro's vision at Saint Denis is redolent of culture: there are references to Aztec or Mayan design, but also Gaudi, Corbusier and Hoffmann.

Yoshida Fujio (left) and Takashi Namiki of Kajima UK: a belief in architects who combine original concepts with a clear understanding of client requirements and expertise in a specialist field.

In the latest in our series of face-to-face interviews with leading international developers and patrons, World Architecture *seeks the Japanese view of architectural expression from the Kajima Corporation, one of the world's largest, most significant and integrated design-and-build firms. Interview with Takashi Namiki and Yoshida Fujio of Kajima UK.*

PRACTICAL INTERPRETERS

What is the role of architect in Kajima's design philosophy?
We believe that design and build is the most attractive proposition for the client and within our organisation we have a large number of architects, engineers and designers. Of 15,000 staff worldwide, our design and engineering division has 2,000 people, many of whom are architects. Whether working in Europe, North America or South East Asia, our in-house architects will usually prepare basic concepts or preliminary designs and ask local architects to develop these designs and produce working drawings. But sometimes architectural consultants will prepare everything from conceptual design onwards in which case the role of our own architects will be to coordinate and supervise. So Kajima architects essentially have two roles: to prepare concepts and to supervise local architects and engineers.

Kajima is working all over the world but are your clients equally diverse in nationality?
Kajima works predominantly for Japanese clients in Europe, for instance, 99 per cent of our clients are Japanese and we see our role as *interpreters* of language and standards on behalf of our Japanese clients in overseas markets where construction techniques differ. Remember that our job is to provide the total end product for the client.

What qualities are you looking for in choosing architects to work with you?
We require three things: first, an ability to produce good, original design concepts; second, a clear understanding of client requirements; and third, a professional expertise in the chosen field of building. By that we mean that if an architect is a specialist in hospitals then we expect a good deal of knowledge and a high degree of previous experience and expertise. On this third point we are invariably disappointed. Architects can be quite lazy and, for example, they will not have visited new hospital buildings or studied how patients and doctors move about the environment.

Are you unnerved by the tendency of younger architects to steer towards more radical solutions which go beyond previous building models?
That is not a problem for us. We're quite happy to receive radical concepts but they should be thoroughly grounded in study of the practical way people relate to buildings and use them. Too many architects either don't study or don't understand this. Architects cannot rely on imagination alone.

Would it be fair to say, then, that Kajima places more emphasis on practicality than ideology in architecture?
Our architects are the same human beings as independent architects. They react to new trends in the same way and these influences rub off on their work in the same way. That is only natural. But our selling point is not extraordinary new design but a high standard of contemporary design. Our clients are big companies. Design approval comes not from one man who might accept a more adventurous concept but from the entire board of directors. The board is likely to be more conservative because it will comprise salarymen all dressed in grey who feel comfortable working in a group and who sees the company as their identity. However clients sometimes misunderstand our capabilities. Our architects don't try to challenge convention in many cases, but given a chance, they can certainly do it. We have recently gained a lot of confidence.

For all the technology and drive, would you say the Japanese approach to office environments still seems to be some way behind the west?
We're beginning to see Japanese office buildings offering everything like a mini town, including good retail facilities. But you'll find that new office concepts won't start in Japan: they will come in from the outside, from the UK or USA. Likewise, facilities management is quite new to the Japanese and we're still trying to learn the rules. But while the theory of the intelligent

DAVID BANKS

or smart building, which controls lighting, temperature and so on, may originate in America, the *application* of technology is what the Japanese are good at. We make ideas work and turn them into good business. We sell new technologies back to the countries which originated them. Kajima, for instance, will package components for a project which are not Kajima's original components, but the skill is in the way they are packaged. We do an enormous amount of work with manufacturers of building components and hold a lot of patents on new tiles and other products.

Why have maverick western architects such as Philippe Starck and Nigel Coates been so successful in Japan?

It is a basic Japanese characteristic that wherever there are good new ideas, we will buy them. We don't care where they come from – Britain, France, Korea, inside Japan itself. That is why when the US asked Japan to open up its home market, we explained that the market is already very open. If an idea or product or service is good and appeals then we will buy it. The Japanese are fair on that point. People also forget how much we are still influenced by American culture, perhaps too much so.

How long have you been working in the British market?

We entered the UK in January 1986. The refurbishment of the Japanese embassy with new additions was our first project in Britain. But we have a problem with British architectural firms which we don't have with collaborators in Japan. At the business promotion stage a very good senior British architect will visit us and we will appoint the firm. At every subsequent meeting a more junior architect will turn up and they don't know what is happening. This is disturbing. In Japan, senior architects check and supervise the work of junior staff and always present ideas.

Are you gloomy about international construction trends in the long term given the state of the world economy?

The Japanese people take a more optimistic view of the economy worldwide. We are diplomatically out of tune because of living in an isolated island country and we tend to look at the market from a different perspective. About ten years ago in Japan, Kajima was frustrated. We couldn't get good new contracts and we couldn't break through the £4 bn barrier in terms of turnover. We thought construction was in a wintry era. In the years that followed the building boom started all of a sudden. Now our turnover has doubled to £8 bn. Today we remain optimistic about the prospects for combining design and construction. □

INTERNATIONAL FORUM OF YOUNG ARCHITECTS PUBLICATION

The International Forum of Young Architects is a worldwide organisation for joint professional activities aiming at the stimulation and promotion of avant-garde trends, conceptions and projects in the field of architecture.

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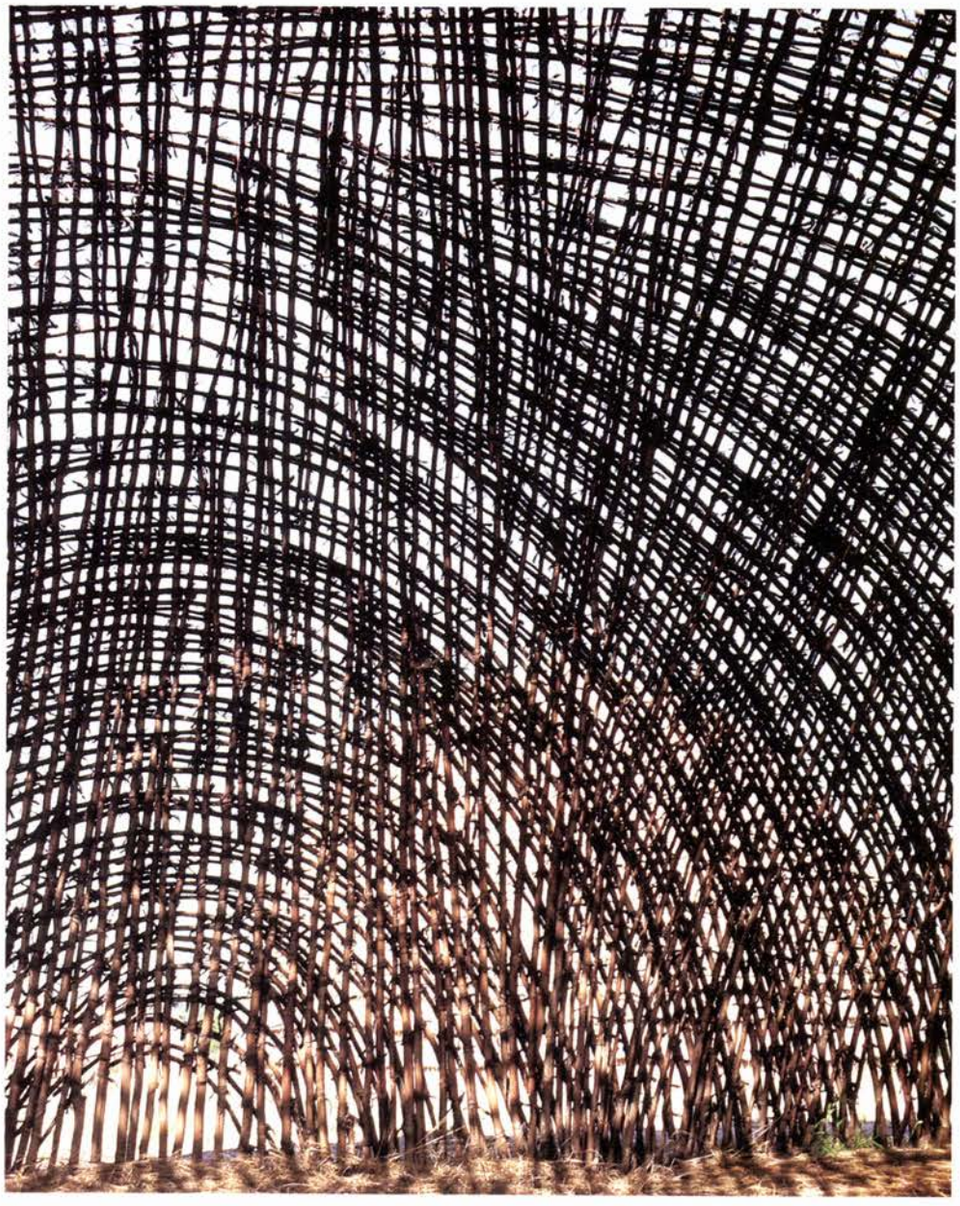


A network construction of a Zulu Beehive hut from inside.

AFRO-PEAN AXIS

REFLECTING ON SOUTH AFRICAN ARCHITECTURAL EXPRESSION

The Republic of South Africa was for decades almost exclusively known for its official policy of Apartheid, a product of the head-on collision between the European settlers and the indigenous African peoples of the land. The emotive response to the stubborn domination by the ruling European minority of the country's pluralist ethnicity is well known. This, however, sadly distracts from the artistic and architectural endeavours which celebrate an unique cross-cultural symbiosis. In this special feature, Ora Joubert, architect and lecturer at the University of Natal, Durban, argues that a true and fruitful interaction between African and European cultures can be successfully found in the work of the younger generation of South African architects.

When Robert Venturi wrote his *Complexities and Contradictions,* he probably did not realise how apt this title fits the South African experience. The major challenge exists within the dichotomy of different value systems, opposing socio-economic realities, conflicting political aspirations and ideological expectations. The role of the architect within such a multi-tiered economic and social set of circumstances is extremely delicate.

The Third World realities of the dire and desperate need for built structures due to inadequate and often improper facilities, are central to architectural debate, education and practice. Reconciling desperation with large scale and cost effective provision depends directly on a sound and sustained economical infrastructure.

Matching mass expectation with built structures of architectural merit according to perceived Western norms and standards is equally problematic. Moreover it is equally difficult to maintain a just balance between architectural exploration, aesthetic expression and intellectual pursuit versus the luxury of self-indulgence at the expense of others.

The irony is not lost on the South African to note that after decades of ideological brainwashing of an universal mankind with a *tabula rasa* mind, we are now made aware of our distinct cultural and ethnic differences. To quote the Japanese architect Kisho Kirokawa, who proclaimed in 1981: "I do believe that the time has come for the creation of a new internationalism in which the regional cultures, while preserving their identities, collide with value systems of different cultures and mutually influence each other for the production of new, distinctive individual cultures."

This notion seems to imply a legitimate culturally differentiated architectural expression and which can be ironically interpreted as the architectural realisation of the ideal of Dr H F Verwoerd, who devised the homeland policy for African ethnic groups. Are we now entitled to an artistic licence to indulge and enjoy what had always been inherent to the South African experience: truly a world in one country? Do we no longer discard our pluralist chaos as racist propaganda?

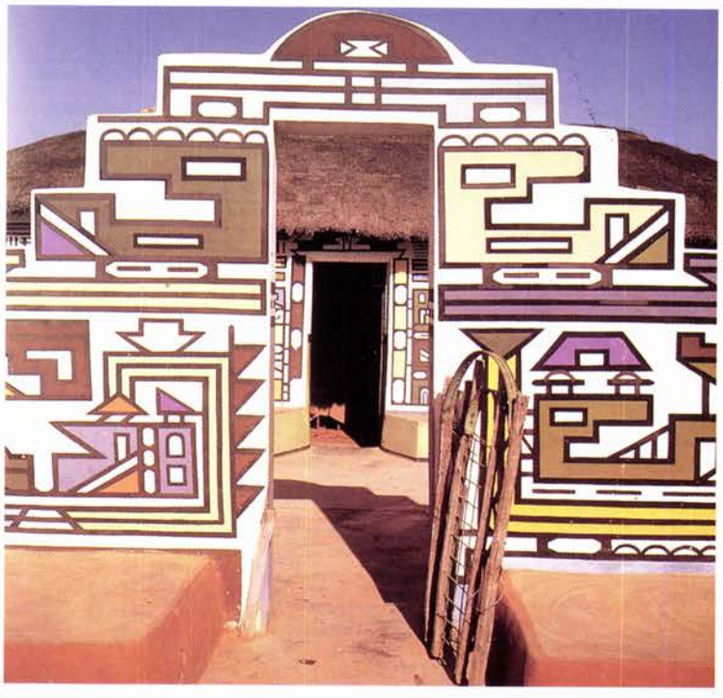
Yet, contrary to expectation and despite the tragedy of severe social and political polarisation, one can argue that South African art and architecture did not suffer from visual segregation. One can imprison the body but not the soul. Our architectural heritage has been a product of association, a synthesis of assimilation rather than one of isolation. The many fine examples of so-called interculturalism confirm this symbiotic phenomenon integrated with the powerful presence of the diversified African landscape.

One of the best examples would be the architectural interpretation by the Southern Ndebele people who borrowed the structural features from the Cape Dutch homestead vernacular of the early European settlers. Devoid of its intended function, the unselfconscious transformation of the gable end allows for tremendous symbolic interpretation, analogous to the intentions of the Pop artists of the 1960s.

A Johannesburg-based architect and academic, Peter Rich, intentionally creates in his works an architectural vocabulary of form and colour which reflects this *Afropean* symbiosis – and completes the cycle of cultural interaction spanning across three centuries.

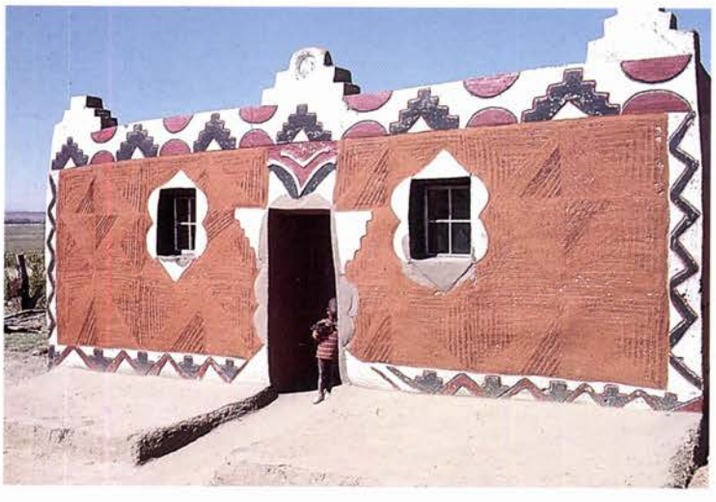
Shopping Centre, Elim, Gazankulu (1986). The building draws the spontaneous reaction from a passer-by to exclaim: "Man, this is truly African!" The Shangaan people are located in the Northern Eastern Transvaal. They are renowned for their bold and colourful dress, called machecas.

Cape Dutch facade, Stellenbosch district, circa 1750. Following the arrival of the Dutch contingency at the Cape of Good Hope in 1652; the first local architectural style known as Cape Dutch evolved. The latter featured the Baroque gable ends reminiscent of the seventeenth century Dutch urban house, yet with linear and centralised plan configurations which took advantage of excessive open space.



Ndebele homestead, Bronkhorstspruit district, circa 1940. The Southern Ndebele people are predominantly located in the Transvaal. They are well known for their remarkable murals which emerged around 1940 and which developed from fairly simple to colourful designs.

A traditional house in Sotho, Orange Free State.



In the Elim Shopping Centre, Rich pursues this path of investigation and draws formal inspiration from the "lean to" commercial vernacular in the region. He furthermore communicates his design intent to a predominantly illiterate community through the application of the outrageous psychedelic colours of the Shangaan dress and local craft motifs.

In keeping with the Post-Modern phenomenon of the 1980s, the younger generation of architects has entered a less convincing formalism with ethnic references. Kammeyer, Herman, Joubert and Crafford – to name but a few – do, however, attempt to respond in a personal manner to the universal search for architectural meaning within the African context and its *Afro-pean* heritage.

Political upheaval and subsequent insecurity have given rise to an abundance of creative energy and artistic integrity, to a degree which parallels interim-war Germany or civil war Spain. Politics aside, our *Afro-pean* existence – in a country where Europe meets Africa and Africa meets Europe – is subscribed to an all-encompassing love for a land. An infatuation which transcends colour and creed and which inspires poet, artist and architect alike.

South African architectural expression and endeavour are as diversified as the African landscape itself. □

FIVE HOUSES FOR FIVE ARCHITECTS

These five houses were designed – including two conversions – by five young architects for themselves. Even though the buildings vary stylistically with distinctly different formal precedents – Eisemann, Guedes and Gehry come to mind – these projects clearly signify an individual search for architectural meaning within the African context but with reference to an *Afro-pean* heritage.

The projects are autobiographical in their reflection of individualised lifestyles in terms of both location and accommodation. House Crafford comfortably combines work with day-to-day living. Both House Kammeyer and The Stables acknowledge the concept of space through open plan living within barn-like building envelopes. House Rich responds to a dynamic family nucleus and its corresponding and changing relationships in the manner of spatial organisation. House Harber turns low cost and recycling into an adventure of novelty and innovation.

The architectural merit throughout lies in the uncompromising nature of the five projects. Even though they may have been self-consciously arrived at, the design integrity and conceptual conviction are strikingly evident.

HOUSE IN THE VELD, Valley Farm, Pretoria (1989)
Architect: Abre Crafford

A multi-functional house to accommodate both living and working. The house draws inspiration from the site, its breathtaking setting, the climate and the timelessness of Africa.

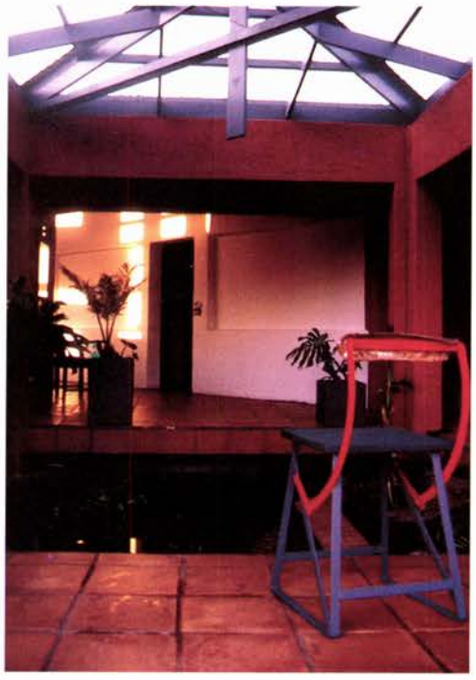
The context is a smallholding with the major part declared as a nature reserve. An existing stone wall – which could well date from the Stone Age – divides the stand diagonally from north to south and becomes the generating force from which the house pivots, revolves and finally evolves.

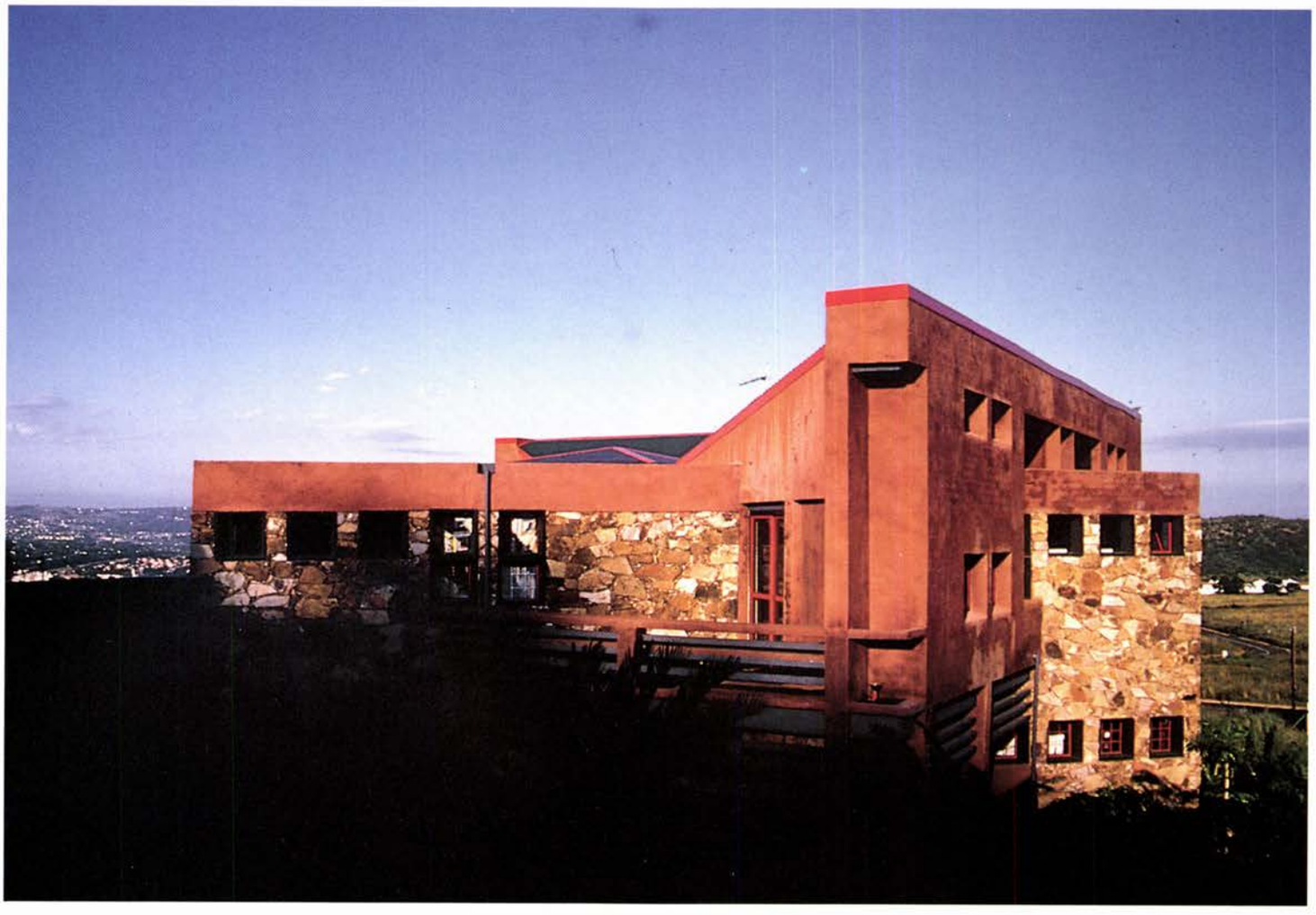
The dwelling must simultaneously operate as house, office and artist studio. Cost had to be limited to the minimum which necessitated a simple method of construction and which acknowledges an unskilled labour force. The relationship between the inside and the outside is of cardinal importance. Comfortable climatic conditions – natural light, ventilation and humidity – are equally important.

The internal swimming pool, for example, humidifies the created micro-cosmos. The use of curtains is intentionally limited, and openings and fenestration are carefully proportioned and focused to take advantage of the rising and setting sun and the gathered cloud mass before a thunderous Highveld rain storm.

Styles, *per se* is not a consideration. Proportions, detail, colour and texture are the overriding concerns.

A deliberate attempt to marry the Highveld regionalism with a modernistic minimalism within a Platonic formalism. Fortunately, perhaps, the powerful geometry cannot compete and disolves into the omni-presence of the African landscape.





HOUSE KAMMEYER: The Urban Farm House, Fourways, Johannesburg (1981)

Architect: Heinrich Kammeyer

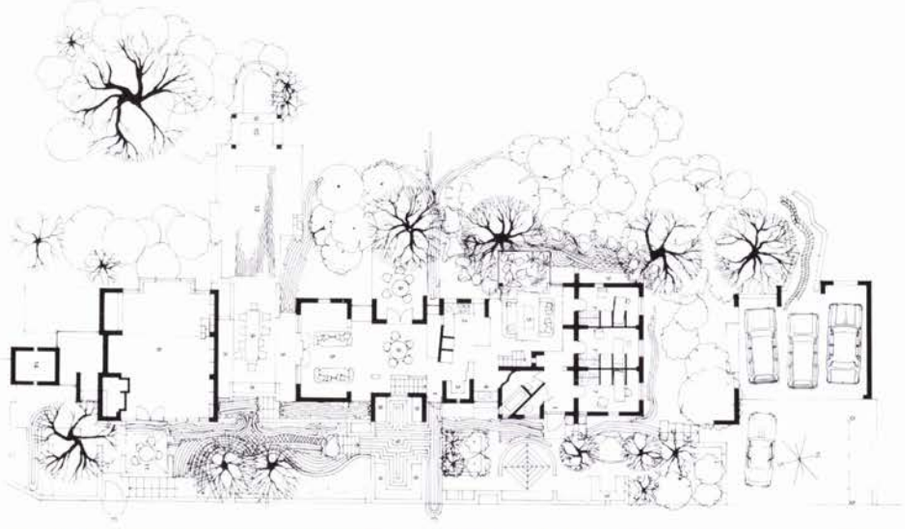
House Kammeyer consists essentially of a thatched roof barn within which the living spaces are arranged in a linear fashion. The open plan configuration allows for a flexibility as the family changes in size and personality.

The low key nature of both the building and the corresponding method of construction is in keeping with local craftsmanship and responds favourably to the hot Highveld summers and chilly winters.

The building draws formal and spatial inspiration from the migrant settler heritage as well as the African kraal vernacular, combining modern convenience and sophisticated detailing with the great ease.

Conceptual ideas were developed behind the drawing-board but owner building procedure allowed for improvisation to take place on site. This granted unexpected opportunities to be taken advantage of and resulted in an internalised process of design evolution. The site incidentally lies between a road and a river.

Even though the house appears to be modest, it is spatially and conceptually far more complex, acting as a filter between the street and the river, between the urban and rural, between the past and the future.



HOUSE RICH: Westridge House, Parktown, Johannesburg (1986)
Architect: Peter Rich

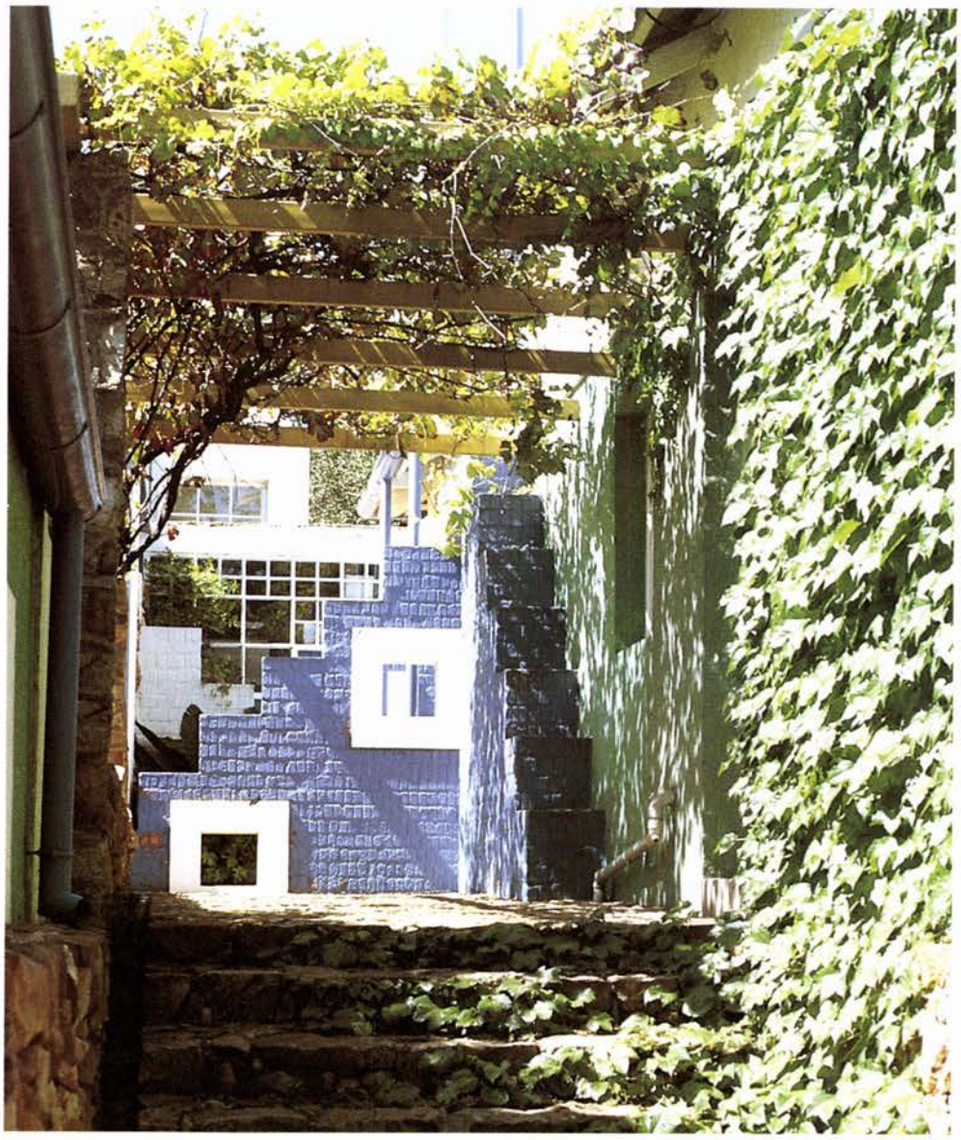
What is considered to be a striking example of *Afro-pean* symbiosis used to be a modest 1918 speculative colonial house, situated on a spectacular site on the same ridge as Herbert Baker's own Stone House. The architectural merit of the existing house was limited but allowed for ample opportunities to be transformed into an architectural event of space and place making.

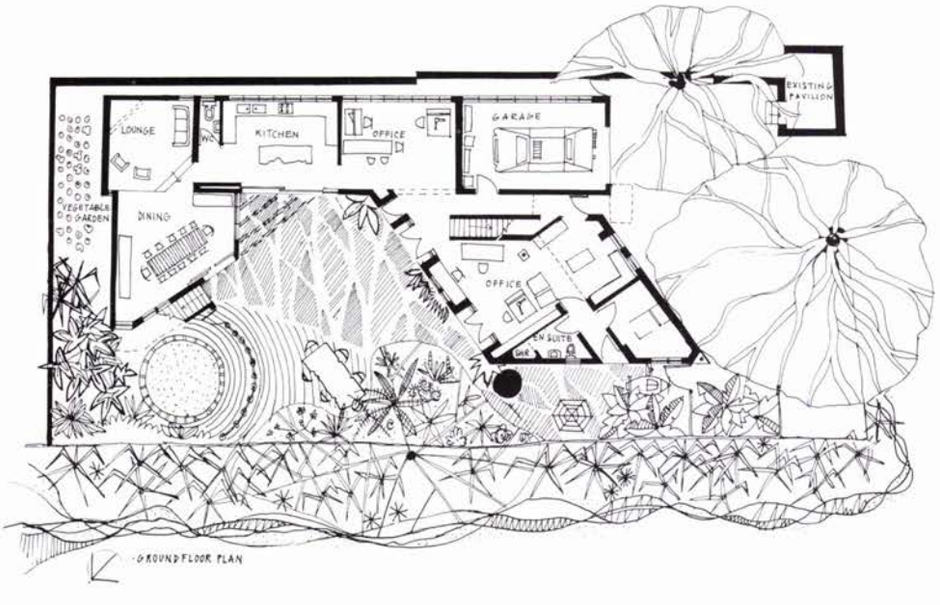
The physical context both within and beyond the site suggests man's former marks on the landscape. The large established trees and the mysterious remnants of Zimbabwe-type stone-packed walls, cairns and platformed enclosures, were the site's main appeal.

The intention was to partially demolish the existing house, retain the three front facing rooms, roof and entrance porch as well as the outbuildings, and the desire not to build on the amenity of the upper site.

Back to back under the extension of the same roof is grafted on the north facing house, which has grown two ears as side entrances. The children's house is visually detached from the main structure yet linked, riding piggy back on the former outbuildings. As an architect, the design of one's own house provides the pretext and the passage for those influences, memories, dreams or reflections which are most personal to one at a point in time. We learn from the past not by tracing or copying but through observation and understanding, reinterpreting what we want to see and investing images, notions and influences with our own symbolic meaning. We thereby make a design both personal and rich, in keeping with and in response to its place, time, culture and context.

In identifying with my African roots, my research over the last ten years into rural dwellings – notably of the Southern Ndebele and Bantwane – has proved to be an inspiration for my own built work.





HOUSE HARBER, Berea, Durban (1990)
Architect: Rodney Harber

Durban is a cosmopolitan city whose population has trebled in two decades and where two thirds of the population live in flimsy shacks. Durban faces an insecure future.

House Harber is a small urban retreat built on a tennis court within this setting. The house turns its high walled back onto the road to form a secure outdoor room, also protected by the original high tennis court wall and dense thorn trees. All rainwater is stored, water is solar heated with a solar lighting back-up system.

In retrospect the house is autobiographical. Rodney Harber is chairman of the Architectural Heritage Committee, the University of Natal Appropriate Housing Technology Unit, a director of the African Art Centre and an author of a book on Hindu temples in Southern Africa. Hints of these interests are layered in the house – a huge Victorian cast-iron column, reject marble floor tiles, ceilings of throw-away motor crates, discarded steam train shutters, African art and idols from demolished Hindu temples.

The house focuses onto a huge marble table in the enclosed courtyard space which is ideal for the sultry sub-tropical climate of Durban.

THE STABLES, Ivy Villa, Pretoria
Architect: Ora Joubert
Services and reticulation: Marnus Barnard

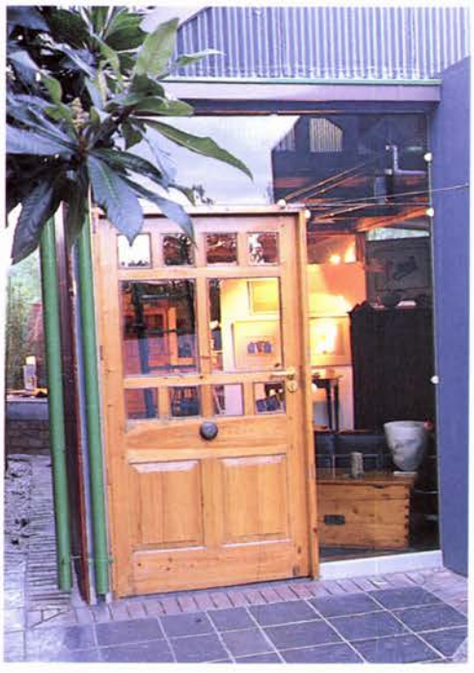
The Stables form part of a three-phase development of the Ivy Villa. The latter is an original Victorian farmstead presently incorporated into a high density suburb in Pretoria. The third phase – the upgrading and conversion of the outbuildings into a third dwelling unit – was the most challenging part of the development.

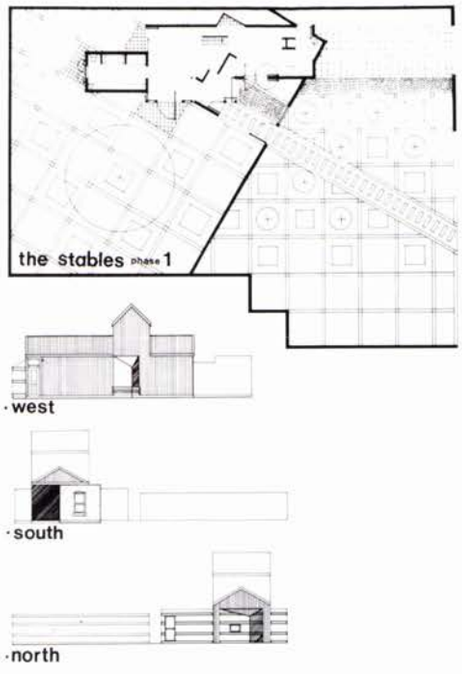
The shed, originally horse stables, consists of a timber frame covered with corrugated sheeting. Accommodation in more recent years included two service bedrooms, a double garage and a hay loft used for storage with an outdoor bathroom and toilet awkwardly added on. From the outset the designer was attracted to the property because of the "zinc" shed, a water well complete with a water storage tower and the unfired clay brick facades appearing on the original homestead.

The intent was to combine these three elements in the conversion of the outbuildings. This resulted in a trilogy: the water tower coincides with a checker board grid and subsequent axis which demarcates the access route and penetrates the newly built clay brick wall containing the shed.

Due to the compact size of the structure (a total of 72 square metres) considerable care was taken to create illusions of space, extending internal space externally. Internal walls, for example, were ergonomically determined to house a collection of Walter Batiss paintings but also to act as space definers.

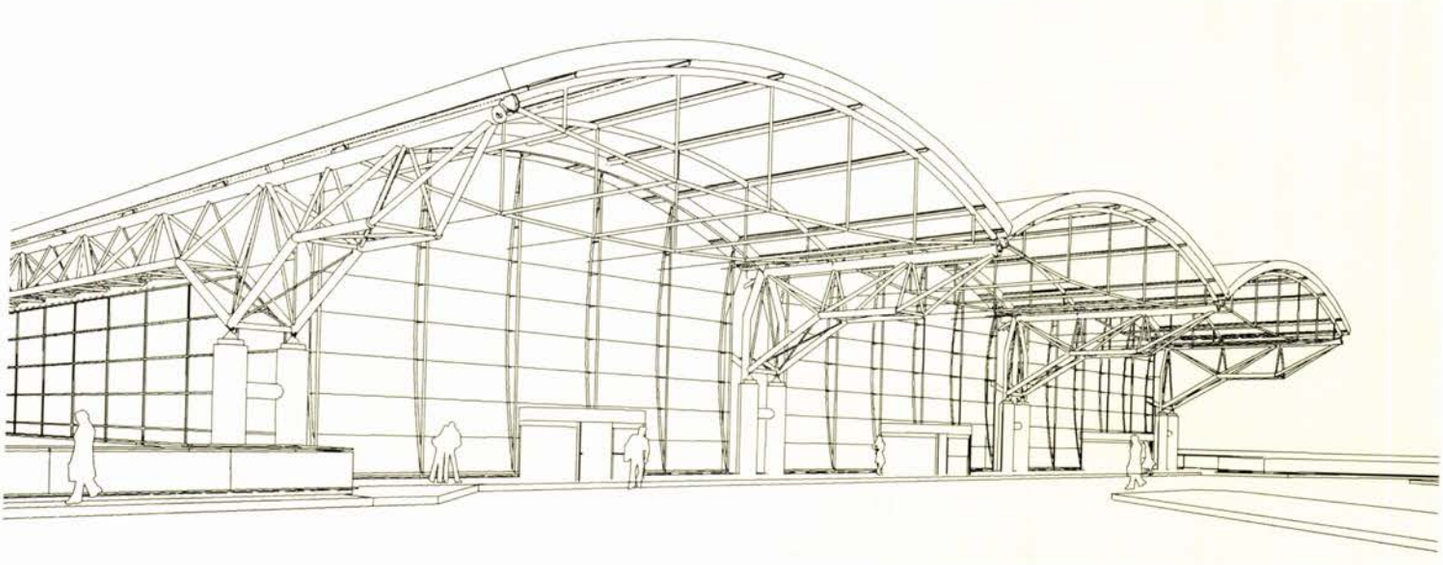
A lack of time made improvisation on site essential. This proved to obliterate any preconceived ideas. Building procedure, in fact, dictated method and stimulated innovation. Strongly influenced by a Miesian minimalist approach and elemental architectural expression, the design talks about space, defined and contained by the building envelope: walls, roof, ceiling, floor, reticulation, and circulation. Every element is celebrated as an independent entity yet within a three-dimensional coherence of isotropic space.





The professional ideal of having architects work cheek by jowl alongside structural engineers in a design practice has been put into effect in Britain following the acquisition of Anthony Hunt Associates by YRM. In the latest in World Architecture's *practice management series, Graham Vickers looks at the potential of the partnership – and also at the problems such a union can encounter.*

QUESTIONS OF CONVERGENCE



(Above and opposite page, centre) Views of the entrance of the proposed British Rail international passenger station at Ashford, Kent: one of the earliest tangible results of the alliance between architects YRM and structural engineers Anthony Hunt Associates. A fresh of exchange of ideas has been of immediate benefit as the two professional disciplines have begun to explore the built environment together in one design office.

When British multi-disciplinary architectural practice YRM Partnership incorporated structural engineering firm Anthony Hunt Associates into its panoply of building design services two years ago, the proposed alliance looked to some observers to be an unlikely one.

This was in no way to do with the quality or type of work involved, but rather because of a perceived contrast between the potential bedfellows: one, a large, stable London firm with a sound reputation and a slightly faceless corporate image (it was among the first consultancies to distil its original principals' names into initials); the other, a small provincially-based office with a recognisable personality at the helm and a rather more informal style.

Hunt Associates' international reputation in lightweight structures had developed through collaborating with such leading architects as Foster and Rogers. Meanwhile YRM's corporate philosophy was grounded in a gradual and considered expansion from the original architectural practice (founded in 1944 by Yorke, Rosenberg and Mardall) into a large building design consultancy composed of various divisions.

YRM chairman Brian Henderson explains the broad thinking which has shaped the consultancy and which led to the acquisition of Anthony Hunt Associates. "Those original partners – one English, one Czech and one Finnish – all made a significant contribution to the Modern Movement" he says. "They determined the early direction of the practice, but when they came to retire, I was part of a second generation that – rightly or wrongly – decided on a new direction to make the firm more corporate."

Initiating interiors division

The process involved the development of new divisions, starting with the obvious choice of interior design. "I initiated that division 25 years ago," says Henderson. "Time passed and I became very disappointed by the poor service we were

(Left) Anthony Hunt Associates made its reputation as an innovative structural engineer working on such projects as Norman Foster's 1975 Willis Faber Dumas building at Ipswich. (Below) A more recent example of Hunt's work at the Don Valley Athletics Stadium, Sheffield, 1990.

getting from mechanical and electrical consultants. We could do no worse by having a go ourselves. So, 18 years ago, we started YRM Engineers".

Today YRM Engineers co-exists with YRM Anthony Hunt Associates alongside the architecture, interiors and international divisions. Henderson remains committed to offering the services of these various divisions both separately and in logical pairings.

"Our approach to design is very rational" he maintains. "We want to make a building a totality – and a single point of contact is something that some clients want. But unlike some consultancies – where you still have to buy the complete package of services – we do make a point of offering the divisions individually."

A powerful selling point for YRM has been computer-aided design. Its investment in an Intergraph CAD system is clearly part of its policy of strengthening and broadening the services of its divisions.

Anthony Hunt's addition to the ranks must count as one of YRM's most significant corporate moves in recent times. But although the two offices came together in 1988, there are as yet few visible results of the partnership. This is due in part to the natural timescale of projects and a settling-in period which perhaps took longer than everyone involved could have expected.

Anthony Hunt recalls the circumstances which led to the acquisition. "We did have to think long and hard about it," he says. "As a medium-sized firm we had got to the point where we either had to get bigger, or become smaller and very specialised. We didn't really want to do either, so when the opportunity to join a much bigger organisation came along, we thought that it was probably a very good idea."

Hunt, the brilliant structural engineer whose contributions to Foster's Willis Faber and Sainsbury Centre buildings were so significant, also admits: "There's no question that we're now better off in terms of management. We have a better structure than we had before. I suppose we used to drive a bit too much by the seat of our pants."

Feared loss of identity

The obvious sticking point – and one which cost Hunt some resignations – was a feared loss of identity. "Some people saw the new organisation as Big Brother," Hunt says. "I think they were mistaken. What they should have seen was an umbrella beneath which you operate more or less as you operated before, with the same board of directors and two new YRM directors brought in."

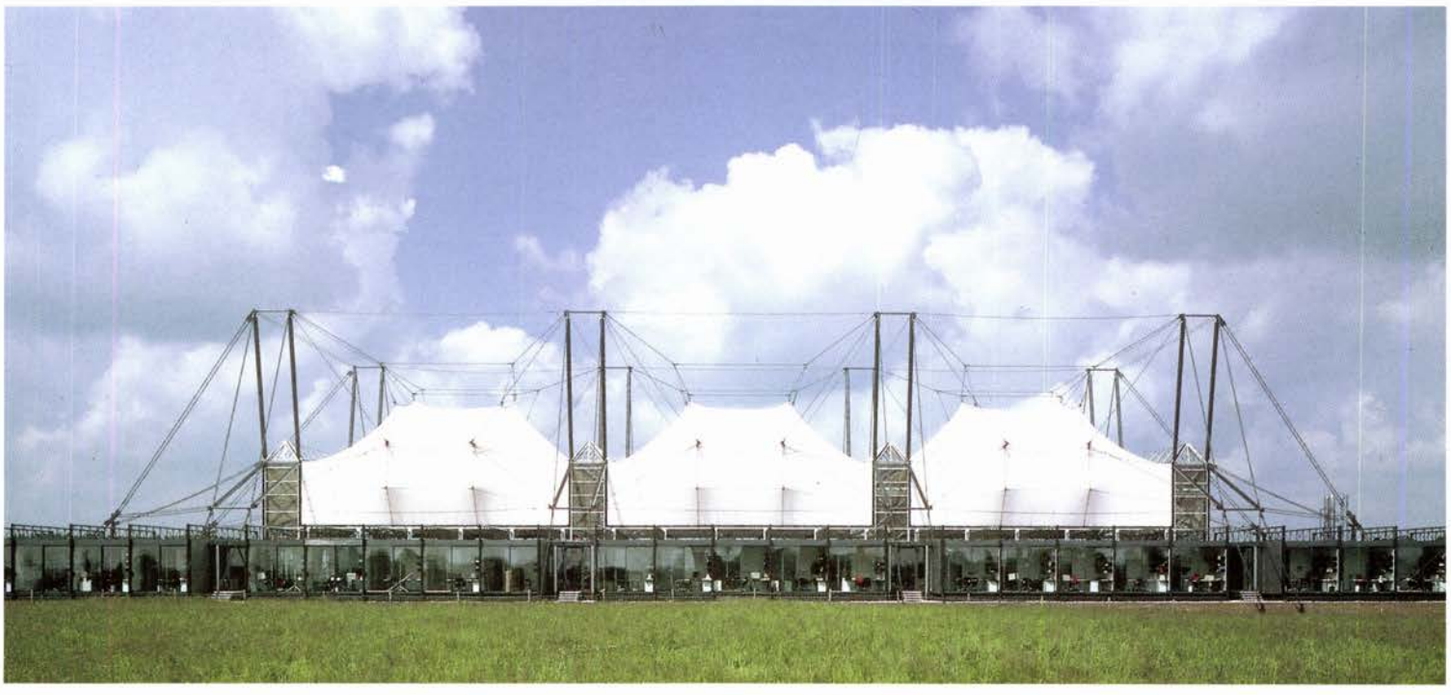
In practical terms there were two major advantages to Hunt. "One was the opportunity to do multi-disciplinary work," he says. "The other was access to the Intergraph system which we simply couldn't have afforded. I have tremendous respect for what Intergraph can let you do."

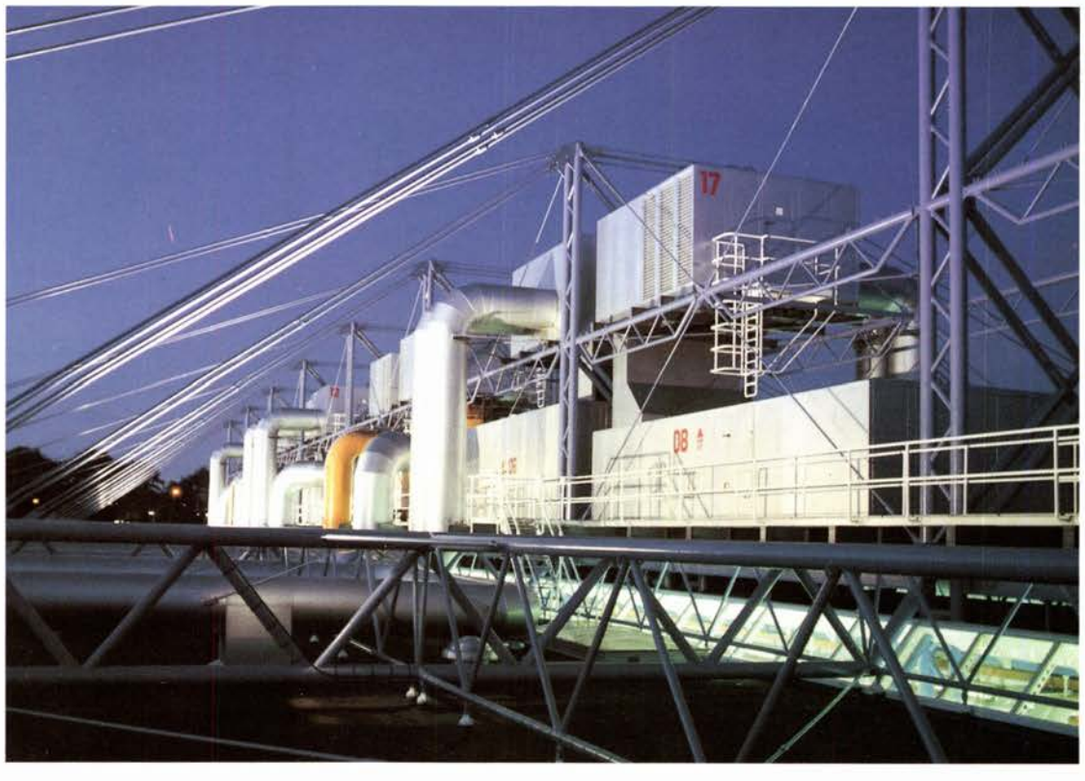
Once the merger had taken place, Hunt's existing relationship with British Rail meant that YRM stood to gain a tangible benefit at once. Indeed one of the earliest results of the alliance has been designs for the International Passenger Station at Ashford, which YRM is working on with British Rail. The proposed building will represent a major community facility as well as serving purpose-built, high-speed trains linking the new terminus at Waterloo with Paris and Brussels.

Worries that Hunt might be disqualified from working for other architects as a structural engineer reflect, Hunt says, a lack of understanding about how his firm has always worked.

"People tend to get the wrong end of the stick," he says. "Some potential architect clients say: 'If I use you as structural engineer, how do I know that YRM architects aren't going to be looking over your shoulder?' But we just set up these Chinese walls. It's not dissimilar to when we work with Foster, Grimshaw or Cullinan – they don't object on those grounds, and it's really no different."

The multi-disciplinary spin-offs of the merger have, however, been slower in coming than many people





The creative contribution of the structural engineer in architectural thinking is demonstrated by two milestone Anthony Hunt projects: (top) the Schlumberger Laboratories at Cambridge, designed by Michael Hopkins; (above) Inmos microelectronics factory at Gwent, designed by Richard Rogers.

imagined. "But that's nothing to do with either party," says Hunt. "It's a function of the jobs that are going on already. YRM clients don't always want to use us – maybe they have their own engineers. But it is beginning to work quite well now. There are not too many multi-disciplinary jobs coming in, but they are fairly major ones."

Even so, in conversation with Henderson, Hunt and Howard Copping, joint managing director of YRM Architects and Planners, it becomes clear that the major advantage of the acquisition to date has been an internal one. The benefits are to do with atmosphere, exchange of ideas and the kind of revitalisation which only comes from putting creative professions to work side by side.

Howard Copping argues that the key at YRM is to blend skills without homogenising them. "Fifteen years ago, very few M & E engineers took an architectural point of view," he says. "But we've been able to apply to them an architectural overview. This is because all aspects of a building are part of the same thought process. Any modern building is an amalgamation of different expertises."

Copping continues: "On the other hand, the arrival of Anthony Hunt Associates in the office was extremely healthy for us. There was immediate interest in what they were doing. Simply as a result of working cheek by jowl, we start to look at the world through other eyes as well. This is reflected in the project teams: we now have a lot of engineers and, for that reason alone, I hope that as architects we would now never propose anything foolish".

New arrangements underway

Hunt says that his past experiences of working on a one-off basis with other architects were frequently stimulating, but not the same as being part of a large organisation on a day-by-day basis. If there is still a hint that he rather liked the independence of his old firm and has yet to adjust fully to the scale of the new parent organisation, Hunt has clearly profited from the new arrangement.

In the end, though, the best endorsement of the venture is not to be found in the incessant self-examinations which tend to accompany such an exercise, but in the past achievements of these two temperamentally rather different firms.

Seen simply as participants in the design of good modern buildings, both Hunt and YRM's various divisions can be viewed, through their work over the past 20 years, as travelling very much in the same direction. Convergence, if not inevitable, was perhaps after all unsurprising. □

World Architecture *is the official magazine of the International Academy of Architecture. This summer the Academy will host a major architectural event, Interarch 91, with a special focus on education and ecology.*

INTERACTION AT INTERARCH

The International Academy of Architecture, Union of Bulgarian Architects and Sofia University of Architecture, Civil Engineering and Geodesy are jointly staging Interarch 91, the Sixth World Biennale of Architecture, in Sofia this summer.

Running 2-6 July, the event will focus on a broad range of philosophical themes and practical activities in contemporary architecture, and is set to attract professional practitioners and theoreticians from all over the world.

The official language of the Biennale will be English, but French, Bulgarian, German, Russian and Spanish will also be working languages. An International Forum of Young Architects exhibition will be included in the proceedings and two other events of special interest are forums on architectural education and ecology.

Architectural Education Forum

This event will provide the first opportunity to discuss the future programme of the IAA's Free University, which was set up by the Academy and now has 123 members. Discussions will revolve around ways to improve the standard of education; cultural, socio-economic and historical prerequisites; selection criteria for architectural students; syllabus development, postgraduate specialisations and the role of architecture in primary and secondary schools.

Ecopolis Forum

This forum will examine ways to counter modern environmental pollution caused by traffic chaos and unhealthy technologies. The challenge will be to generate ideas to develop the open twenty-first century city which does not destroy the environment. The forum will be staged in two phases: first, a forum of ideas, and second, an exhibition of designs. Ecopolis designs, which will vary from proposals for small towns to large cities, will be presented as a master plan with written explanation.

Work from the Ecopolis Forum at Interarch 91 will go on show in 1992 at the United Nations Conference on Environment and Development at Rio De Janeiro in Brazil.

Interarch 91 Programme

Tuesday 2 July: Official opening of Interarch 91 plus announcement of prizes in exhibition-competition of designs and built projects.
Wednesday 3 July: Discussion on the theme "Architecture and the Market Economy", authors' conferences, and opening of the exhibition "Constructivism and Deconstructivism".
Thursday 4 July: Includes opening of exhibition of diploma designs and Forum on Architectural Education.
Friday 5 July: CICA meeting and discussion on the theme "Architecture and Democracy".
Saturday 6 July: Presentation of awards "Interarch 91 Laureate" and closing ceremony.

Other IAA Events

15-28 July: UNCH (HABITAT) training seminar for Chinese specialists. "Preservation and Rehabilitation of Historical Cities, Inner Cities and Monuments with Focus on Pingyao and Yibin Cities, China". At Santo Kiriko, Bulgaria.
3-18 August IAA Workshop – "Hydroparks" Santo Kiriko, Creativity Centre, Bulgaria.
9-20 September: International competition for young architects – "The University and the City" – School of Architecture, Paris Conflans, France.

Objectives of the IAA

The International Academy of Architecture was set up in 1987 to stimulate development of architectural theory, criticism and creativity, and to initiate advanced studies of postgraduate qualification training of talented young architects. It is a non-governmental organisation, recognised as an international consultative body with the United Nations Economic and Social Council. Its members have been selected from internationally recognised professionals in architecture: 44 of them are honoured with the academic rank of IAA Academicians and 38 have the title of IAA Professors.

The Academy engages in a wide range of research, design and training activities.

More about the IAA

If you would like to learn more about the activities of the Academy, please contact: Edith Kraichkova, International Academy of Architecture, 2 Rouski Boulevard, 1000 Sofia, Bulgaria. Tel: +2-873863. Fax + 2-871313. □

Santo Kiriko Creativity Centre, Bulgaria: hosting Academy's Chinese seminar.

World Architecture presents a guide to forthcoming international architectural and design events:

EVENTS

BUENOS AIRES

Architecture Biennale
September-October 1991
Details: CAYC Elpidio Gonzales, Buenos Aires, Argentina

HOBART TASMANIA

1991 Hobart Design Triennale
Includes Australian furniture design symposia.
26-29 September 1991
Details: Tel + 002 384329

LJUBLJINA

17th ICSID Congress
"At The Crossroads" is the theme of the congress of the International Council of Societies of Industrial Design, held this year in Yugoslavia.
9-12 September 1991
Details: Tel + 3861 224 704

LONDON

Festival of Britain 40 Years On
Major UK design and architectural event revisited in new exhibition at London's Royal Festival Hall on South Bank.
Mid September-mid October
Details: McColl Arts Foundation + 71 935 4788

SOFIA

Sixth World of Biennale of Architecture
2-3 July 1991
Details: Union of Bulgarian Architects, Tel + 2 463109, or International Academy of Architecture, Tel + 2 890561.

TOULON

International Design and Industry Show
French showcase for product innovation and materials technology.
5-8 September 1991
Details from Promo Design: 15 Rue Pecheret-La-Visitation, 83000 Toulon France, Tel + 94 22 52 48

If you would like to include details of your events in this column, please write to: Forthcoming Events, *World Architecture*, c/o Design Intermedia, 32-34 Great Marlborough Street, London W1V 1HA. Or Fax: + 71 287 2571.

SPOKEN IN ADMIRATION

Gio Ponti: The Complete Work 1923-78

By Lisa Licitra Ponti. Thames and Hudson UK. £45.

Review by Richard England.

Gio Ponti's career spans 55 years of activity as architect, furniture-designer, poet, painter, ceramist and editor of *Domus* (one of the most influential design magazines of its time). So he is no easy subject for any author to tackle. To successfully evaluate his varied work becomes even more difficult. The task, if it is taken up by a person who is emotionally involved with the subject concerned, must be all the more arduous.

Lisa Licitra Ponti's book on the work of her father is, let it be said at the start, an obviously over-indulgent and biased one. However, to borrow a phrase from Gio Ponti himself, in turn borrowed from Carlo Mollino: "Let this be said in admiration!"

While a more stringent selection from his vast canvas of work and a more profound critical evaluation of his creations would have done Ponti more justice, it must be said that it is difficult to restrain oneself in front of such sheer exuberant creativity. This publication is indeed a "Pontian Book", as the author tells us at the beginning of her text, and I have no doubt that the "Maestro" himself would have loved it.

If only for his beautifully faceted diamond 1956 Pirelli Building in Milan (still the finest tall building this side of the Atlantic) and his timeless "Superleggera" chair of the same year, Ponti deserves a prominent place in the annals of modern architectural history.

His work developed from an initial pre-war academic and classical period, and ranged in production from the superb ceramic designs for Richard Ginori and the remarkably restrained "industrialised" first Montecatini building of 1936, to the highly personalised, over-designed, "applied-façade" motifs for the Hong Kong and Singapore store fronts in the 1970s.

In between these extremities his Mannerist exuberance, in direct contrast to the rigid dogmatic sterility of the Modern Movement of that time, produced expressions which must today be considered most welcome individualistic and humanistic contributions to the much needed emotional and artistic aspects of architecture.

Always Ponti stood for tradition, yet he never renounced progressive ideas and thought. His was a pursuit of a philosophy which encompassed an enthusiastic, rhapsodic, total love-affair with life and architecture, which were completely inseparable in his understanding. His designs were strengthened by his commitment to the individual, particular and unique, and love and joy transcended them into the magic realm of the spiritual in art.

In many ways he was ahead of his time. In his admiration for some of his contemporaries in the art world, he certainly was. Carra, Sironi, Fontana and many others were frequently in the pages of *Domus* long before many of them became well known.

From 1928 to 1941, and later from 1948 to his death, he steered the publication as editor to the high international status which it still retains to this day. Inevitably its pages were filled with a multi-disciplinarian approach to art and architecture, and were always pointers to future personalities and trends in both fields.

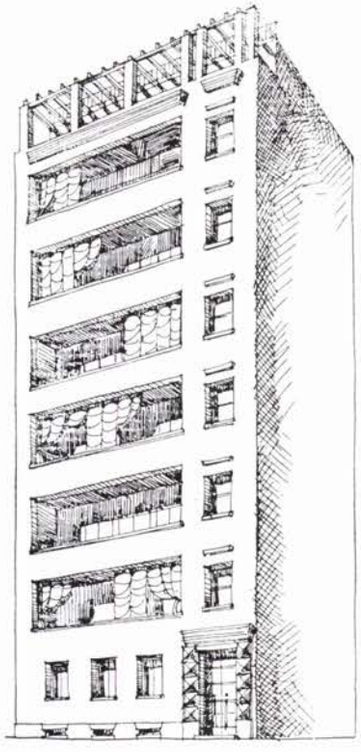
As a student-architect in his Via Dezza Studio in Milan in 1960-61, I well remember Ponti introducing me in phrases of euphoric praise to the work of Luis Barragan. It was only 16 years later in 1976 through the organisation by Emilio Ambasz of an exhibition of Barragan's work at the MOMA in New York that this architect's work was to become better internationally.

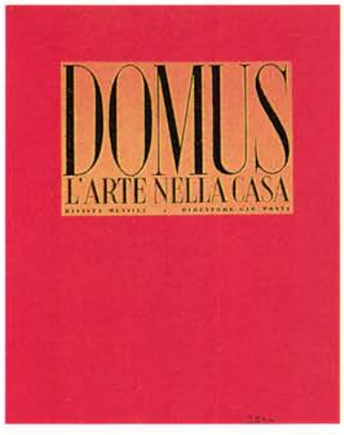
This form of prophetic vision was typical of Ponti's perceptive qualities. In the Modern Movement days of stark whites and greys, he correctly foretold that soon "everything will be full of colour again".

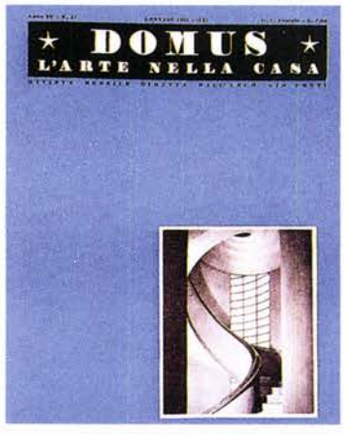
His deep spiritual and religious conviction produced both the disarmingly monastic simplicity of his Camolite Convent at San Remo and also the impassioned bubbling lace-like façade of the cathedral at Taranto. His belief was that "religious architecture is not a matter of architecture but a matter of religion".

These two religious structures, together with many others, are fervent manifestations of the work of this man of great faith. Here indeed was an artist who demonstrated uninhibited joy and freedom in all of his activities. He was perhaps the last Italian Renaissance man.

The book is well produced and most of the photographs are excellent, although one could have done with more colour reproductions. The complete works at the end of the book fails to list Ponti's 1959 tourist scheme for Malta's Comino Island. It is, however, a fascinating publication despite its lack of selectivity, an English text which suffers in translation from the original Italians, and the author's inability to pass any form of critical judgement on her father's work. Above all, it remains a most welcome tribute to one of the most versatile and creative "total art" personalities of this century. □







Ponti the maestro: *(above) as architect with a 1931 project for an apartment block; (below) as editor of the internationally renowned* Domus *in the 1930s.*

ESSENCE OF SCARPA

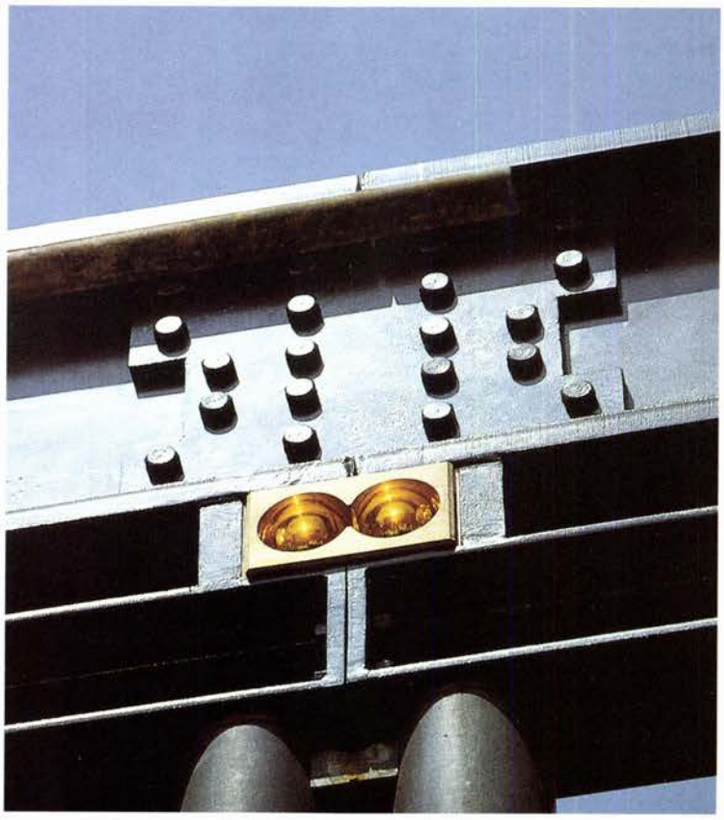
Carlo Scarpa and Castelvecchio

by Richard Murphy
Butterworth Architecture, UK, £45.

Scarpa: Architecture In Details

by Bianca Albertini and Sandro Bagnoli ADT Press, UK, £45.

Review by John McKean.



Scarpa works outwards, generating architecture from inventive, controlled details: shown here, connector detail at the Banca Popolare di Verona.

Carlo Scarpa achieved almost mythical status in Italy years ago. He became (or so it seemed to my off-shore viewpoint) a touchstone of quality whose place on the pedestal could not be questioned, at least not in Venice.

There is now a new myth in Britain that Richard Murphy invented Scarpa. "We've never heard of Scarpa," he told a packed audience at the Royal Institute of British Architects recently. Well, maybe he missed the exhibition at the RIBA's own Heinz Gallery in 1974, but how did he miss the pilgrimages by students of interiors? How did he avoid those conversations where everybody recounted their favourite, personally nourished, Scarpa detail? (Mine, at the time, was the glass door closing onto leather at Querini Stampaglia.)

That mood produced the lavishly illustrated study *Scarpa: Architecture in Details* by Albertini and Bagnoli, recently published in English with its hushed tones and reverential photographs of detail. Yet it is Murphy's touch of naive discovery, alongside his architect's eye for process and construction, which brings his new volume *Carlo Scarpa and Castelvecchio* alive.

Any theory of interior design (that is, interior architecture) must have near its core an attitude to layering, to clarifying the layers of fabric which make up a building – those which allow it to stand up, to be enclosed, to be pleasant to the senses to perform new roles within old shells, and so on.

Fine design demands a dynamic equilibrium between these differently scaled, differently formed layers from door hinge to town plan, from spatial organisation to floor finishing.

Scarpa, with his unique understanding of layers, is a figure of central importance in interior design. And at a time when half a century of amnesiac architecture has been followed by decades of fancy-dress party, his interior design method has much to offer all architects.

First, Scarpa works centrifugally as much as centripetally, a dynamic process almost unknown among architects; he works outwards, generating architecture from inventive, controlled details, often using mock-ups on site. His skill is also (to quote his client in Verona) "the ability to find a comprehenisve solution".

Always moving in and out at widely different scales, a sheet of drawings can – like Aalto's – show a mind working away at a tiny detail and also sketching ideas for a complete space.

Second, Scarpa's design *method* is equally immersed in layers: he sketches on photographs of his context (often an existing building); he develops ideas in coloured pencils on prints of the context (often dyelines of yesterday's plans); he sketches on Bristol board rather than tracing, overlaying on the one drawing, erasing without entirely losing the earlier image. His confidence is inspiring – sketching the Cangrande space at Verona, the climax of the work, on photographs of the corner he has already dared to demolish!

Third, Scarpa clarifies the layers of history; at Castelvecchio (as Murphy shows well) he both erodes the surfaces and adds layers of sediment onto the built strata. But he never confuses them, linking a comprehended past to an authentic, indentified present.

How can we best study Scarpa's work from a distance? Albertini and Bagnoli begin: "The chief aim of this book is to attempt to describe the working method of Carlo Scarpa." Murphy starts off: "This book offer itself as a method through which all his work can be studied."

Albertini and Bagnoli follow a short, wide-ranging and episodic essay with photos and Scarpa drawings arranged thematically – support, link, joint, aperture, solid/void, profile, surface, transparency. Murphy offers two narratives (one a continuous caption) which walk round Castelvecchio, looking very closely at what Scarpa did there and unravelling the design development behind it. The book is illustrated very fully with Scarpa's sketches, measured drawings by Murphy and his students, and rather perfunctory photographs.

The two books, of similar size, weight and price, are oddly complementary in their coverage.

Murphy at times offers a very clear description of Scarpa's design development, revealing layer after layer of developing intention through the author's intelligent reading of the designer's (previously unclassified) sketches – just as Scarpa's built work reveals layer after layer of fabric, or of historical occupation. But in the end Murphy's "delamination" (as he calls it) leaves us only with the bits. We might forget how Scarpa could synthesise elements into a wholeness. Each of these books, in its own way concentrating so exclusively on closely observing tree details, makes a vision of the whole wood more difficult.

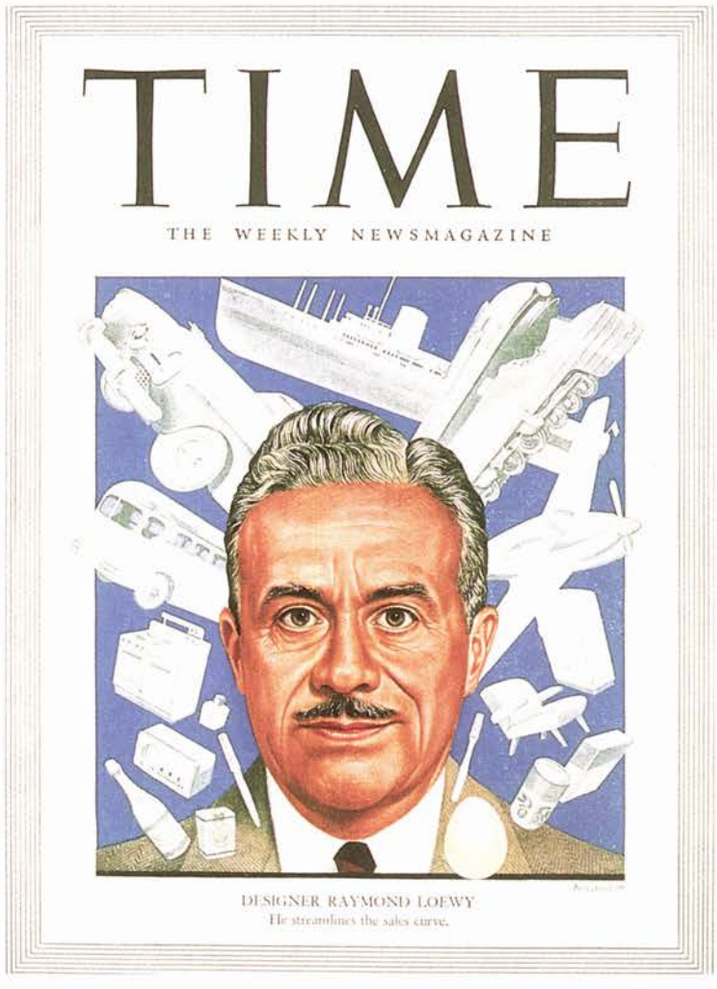
Without measuring every inch of Castelvecchio's surface, Murphy couldn't have been so clear, confident and understanding; so loving, in fact. But he should then have had the nerve not to publish the drawings which resulted from his survey. They are not only cold, lifeless and unlovely, but often infuriating and bewildering. Time and again Scarpa's drawings, overscribbled and coloured as they are, are not only richer but much clearer than Murphy's.

Even with careful reading, and with the benefit of having heard Murphy lucidly talk it through, it isn't easy to comprehend what is actually going on. A hidden and oddly uncaptioned plan is the only guide to the whole, while the reader's confidence is shaken by tiny mistakes in plan, drawings and text, only as irritating as mosquitoes, but the book's demand of close attention doesn't allow them to be pleased.

It is to Murphy's great credit that his book invites such close attention. Here is intimated the *real* coffee table book – the architectural equivalent of that great British tradition of armchair travel, of topographical writing. But to achieve that, we need more than the lovingly touched close-focus surface after surface; we need also to hold the broader view, the longer focus in our mind's eye.

Louis Kahn characterised Scarpa marvelously, speaking of "the sense of wholeness of inseparable elements." Neither of these fine new books really grasps that sense. □

The first industrial designer to make the cover of Time *(right), Loewy claimed he designed the 1937 S1 locomotive for the Pennsylvania Railroad Company (below) on the back of an envelope.*



SHOWMAN WITH A SURE TOUCH

Genius or charlatan? Peter Dormer ponders on an exhibition which celebrates the achievements of the legendary twentieth century designer Raymond Loewy.

Raymond Loewy is the twentieth century's most famous product and graphic designer. But following the re-evaluation of his life and works by a major European touring exhibition we are left with the impression that Loewy's particular genius was as a showman. At times he was a charlatan.

Born in France in 1893, Loewy emigrated to the USA in 1919. Like his father, he was in love with American culture and set out promptly to try to re-style it. More than 400 major companies had passed through the Loewy studios before he died in 1986.

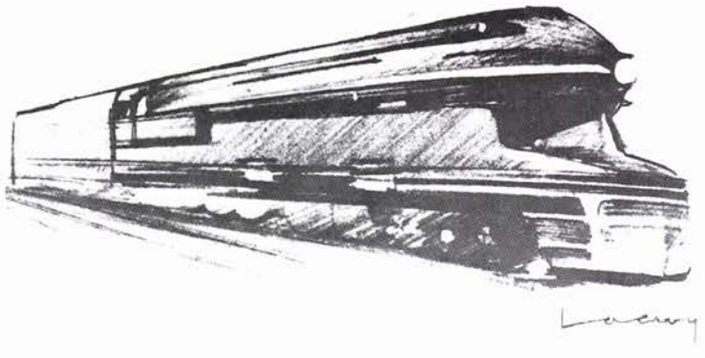
The exhibition (seen in London at the Design Museum this spring) contains examples or references to the key icons of the Loewy story – photographs of the steam locomotives he designed, examples of the famous Lucky Strike cigarette packs and the Coldspot refridgerators.

Considering how much fuss has been made (and not only by Loewy) of the war-time redesign of the Luck Strike pack, it seemed an oddly inconsequential item placed in a showcase – it was, after all, only a cigarette pack.

Loewy adored speed, glamour and material success. He loved hype and hated jargon; he let others write manifestos and develop design philosophies whilst he described design in pithy terms that manufacturers could understand. He said products were bedevilled by four parasites which the designer had always to eliminate – "noise, vibration, air or water resistance and villainous smells".

He liked to encourage the idea that a designer was an artist. He said he designed the S1 steam locomotive in 1937 on the back of an envelope; he claimed that his Avanti Studebaker car of 1962, described (he says) by the chief engineer of Porsche as almost perfect in its streamlining, was the result of "design intuition". But surely someone had to do the maths?

His first success was in 1929 with UK company Gestetner. The Gestetner duplicating machine is one of the touchstones of design history – for two reasons. First, it is a good example of extending a product's life and expanding its market penetration by restyling rather than the more expensive means of technical innovation.



Second, Loewy never tired of telling the world that Gestetner was a landmark in industrial design. He was never backward in coming forward about his own importance. And, with the help of many design historians, he played up the importance of the Coldspot fridge.

The Sears Coldspot refrigerator is to the history of industrial design what Cazanne's *Bathers* are to modern art: an icon of modern form. In 1929 a process of stamping and bending metal panels was developed which rationalised the construction of a refrigerator, reducing its unit cost and hastening its production.

Loewy, as he was obliged to, made full use of the technology. The famous streamlined form of the refrigerator was not (as he seemed to suggest) his unique innovation – the form resulted from a technology which could deliver shallow curves but not sharp ones.

But his detailing of the design and the general assumption that the form of the thing was his rather than a manufacturing necessity made his name in the 1930s.

Loewy was, however, out of place in the post-war world of design. Most of his good work was done before the mid-1950s and he had no inkling of how design was being professionalised and institutionalised by the major corporations, many of whom established their own design studios and set them on quasi-scientific principles with rigid management structures and an emphasis upon data collection and testing. Back-of-the envelope stuff was out of place in corporate design.

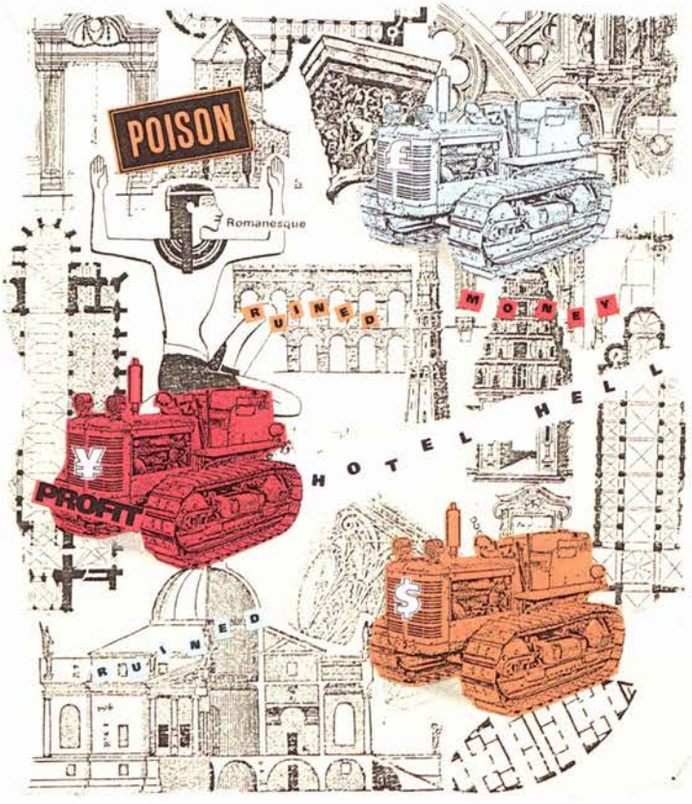
And Loewy's last major job, as consultant designer for the interior of the Skylab space station, was pathetic; the exhibition contains drawings and a small model of his design – it resembles a works canteen for a minor manufacturing company. It lacks even the *elan* that Stanley Kubrick in his space film *2001* was able to bring to prospective design for "living in space". Yet, at his best, Loewy captured the public imagination with his populist designs. For several decades this showman felt the pulse of the consumer, a knack which enabled him to come up with winning designs. He helped many companies to make small and large fortunes. He did not do so badly himself. □

CULTURE UNDER THE BULLDOZERS

Pierre Vago hits out at the handing out of sensitive commissions in historic cities to financial conglomerates whose prime pursuit is profit.

Some architects have spoken out against the proliferation of international competitions. Myself, I feel they're useful, even necessary. This is provided, of course, that organisers observe the few fundamental rules contained in the Regulations for Architectural Competitions adopted by the Unesco New Delhi Conference. It is the UIA (Union Internationale des Architectes) which bears the burden of responsibility for ensuring the observation of the rules, too often forgotten by competition organisers.

Others are shocked, and justifiably so, by the number of competitions, consultancies and prizes reserved for a very small group of architects with high media profiles. They are overwhelmed by commissions and rewards for which they, precisely, have no need.



In the pages of this journal, we have already spoken out against the distortions resulting from the importance taken on by the media at the end of the twentieth century. Architectural critics worthy of the name could have an important role to play. Instead of making their contribution to the flattery showered upon the celebrities of the day, whose architectural worth is clearly variable, they could undertake the useful and necessary tasks of clarification, demystification and information. They could search for the valid criteria of worth which we do not have today.

But there are other dangers which threaten us, more serious than the award of the most important commissions for public buildings or urban developments to some local or imported star or starlet of the day.

It happens, in fact, that for purely economic or financial reasons, very important commissions are awarded not to architects, but directly to commercial concerns or financial conglomerates whose main interest is clearly to make the greatest possible profit. This is becoming more and more common.

With 50 or so enthusiastic young architects from different countries, we were recently examining how to provide new content for the marvellous old city of Bokhara, whose historic buildings, proportions, silhouette and "style" (in the best sense of the word) were still untouched. We were shaken to discover that the local authorities had signed agreements with hotel chains for the construction of several of these monstrous 500-bed hotels that one sees springing up like mushrooms more or less everywhere. These hotels often spoil the beauty of places which deserve to be treated with more care and respect.

We were staggered to read in the press that the council of one of the most beautiful cities in the world had given a (French) company a 99-year lease on an eight-hectare site in a area of outstanding historical interest, to build a business centre with offices, retail premises and hotels.

This, alas, is only one example among many others. And so, at its meeting in February, the International Academy of Architecture issued an anxious appeal:

"The International Academy of Architecture is alarmed to observe that in many countries local authorities more and more often directly entrust important projects of construction or urban development, particularly in historic locations, to financial conglomerates or commercial concerns, in cases where prior consultation with architects of the greatest standing should have been considered indispensable.

"It should be remembered that things of cultural, historical and social worth constitute an irreplaceable resource, which society has an imperative duty to safeguard and to pass on to future generations. Satisfaction of urgent needs should not be detrimental to permanent values which ought to be respected by those in political authority.

"In any case, these requirements are not contradictory, provided that the correct priorities are observed. There is no reason, need, nor justification for leaving these matters, unconditionally and without any possibility of control, in the hands of organisations whose chief or only aim is profit, so risking lasting damage and even destruction of irreplaceable cultural values.

"The International Academy of Architecture calls upon all the national and international organisations concerned, as well as intergovernmental organisations such as Unesco, whose task is to support them, to make vigorous representations to governments and other relevant authorities, to draw their attention to this exceptionally grave problem, and to alert public opinion before it is too late."

Let us hope that this appeal will be heard. □

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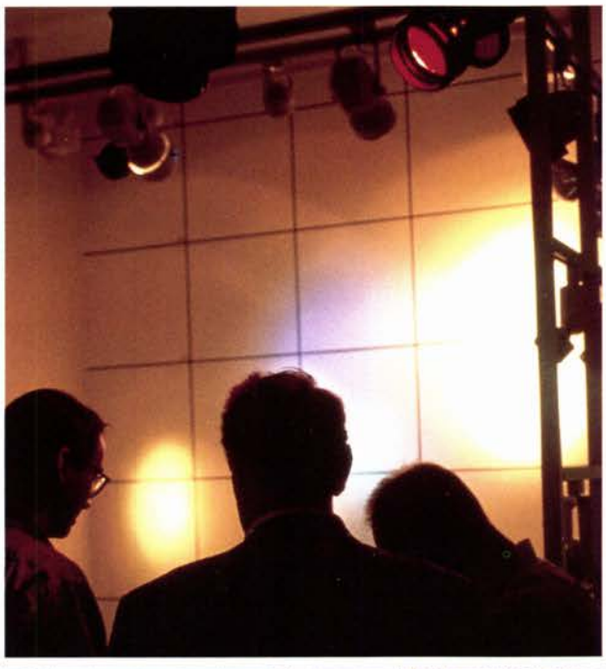

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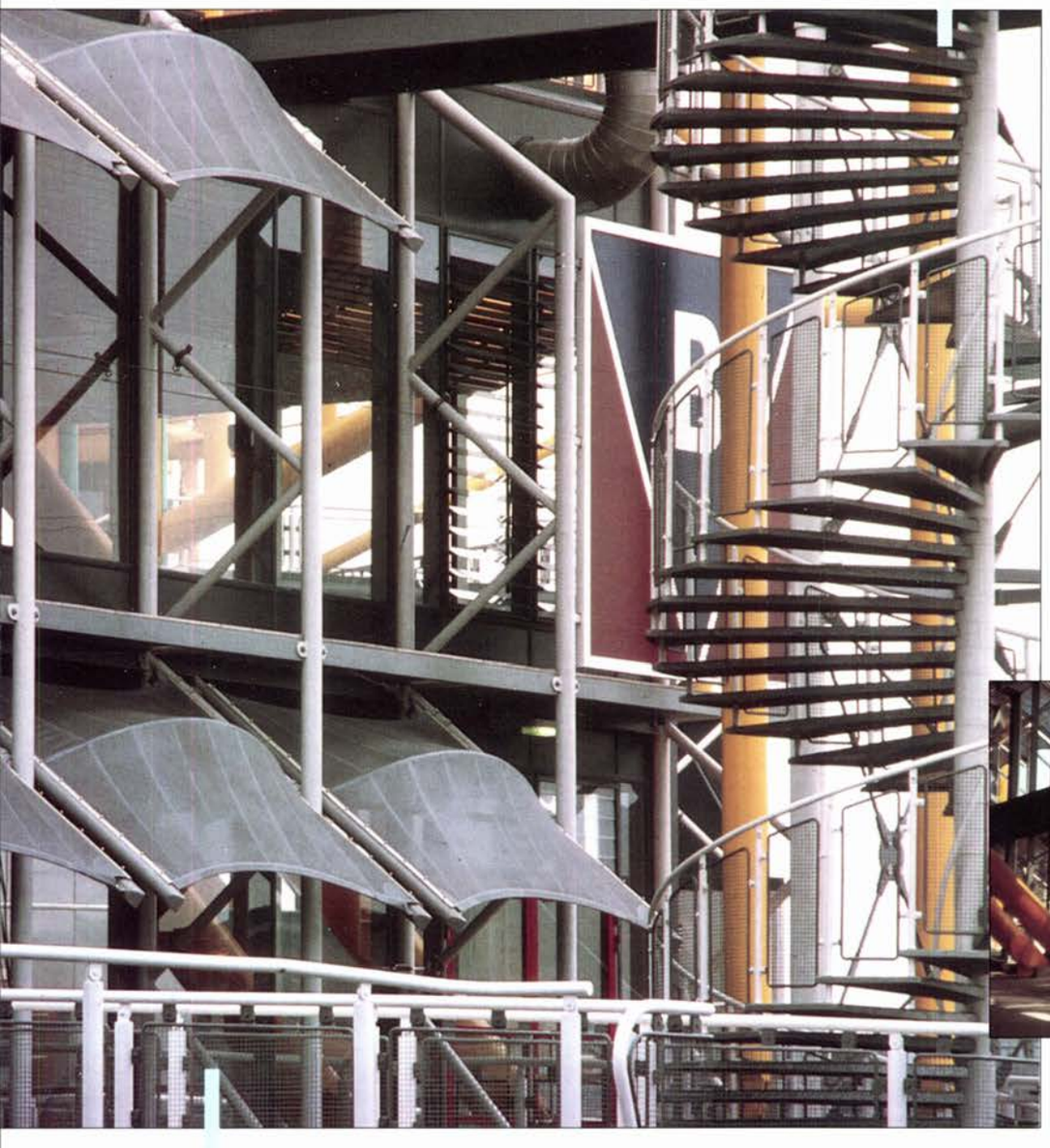

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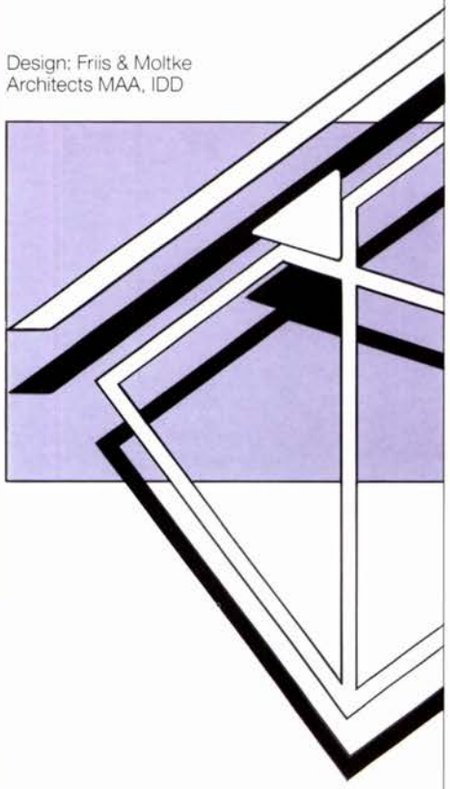

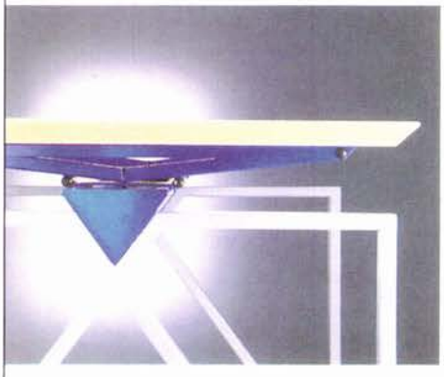

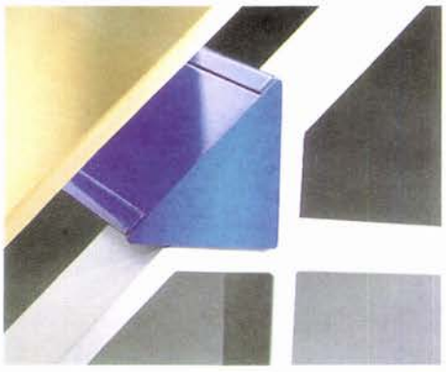

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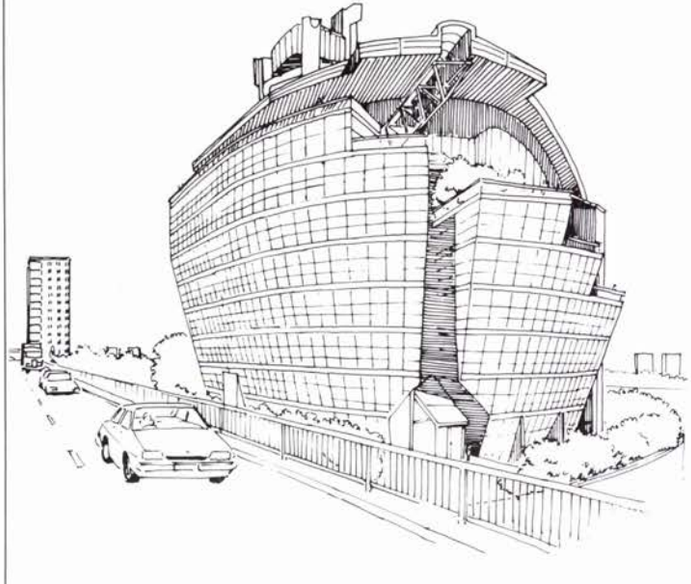

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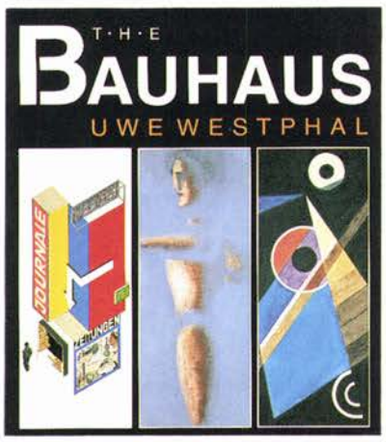

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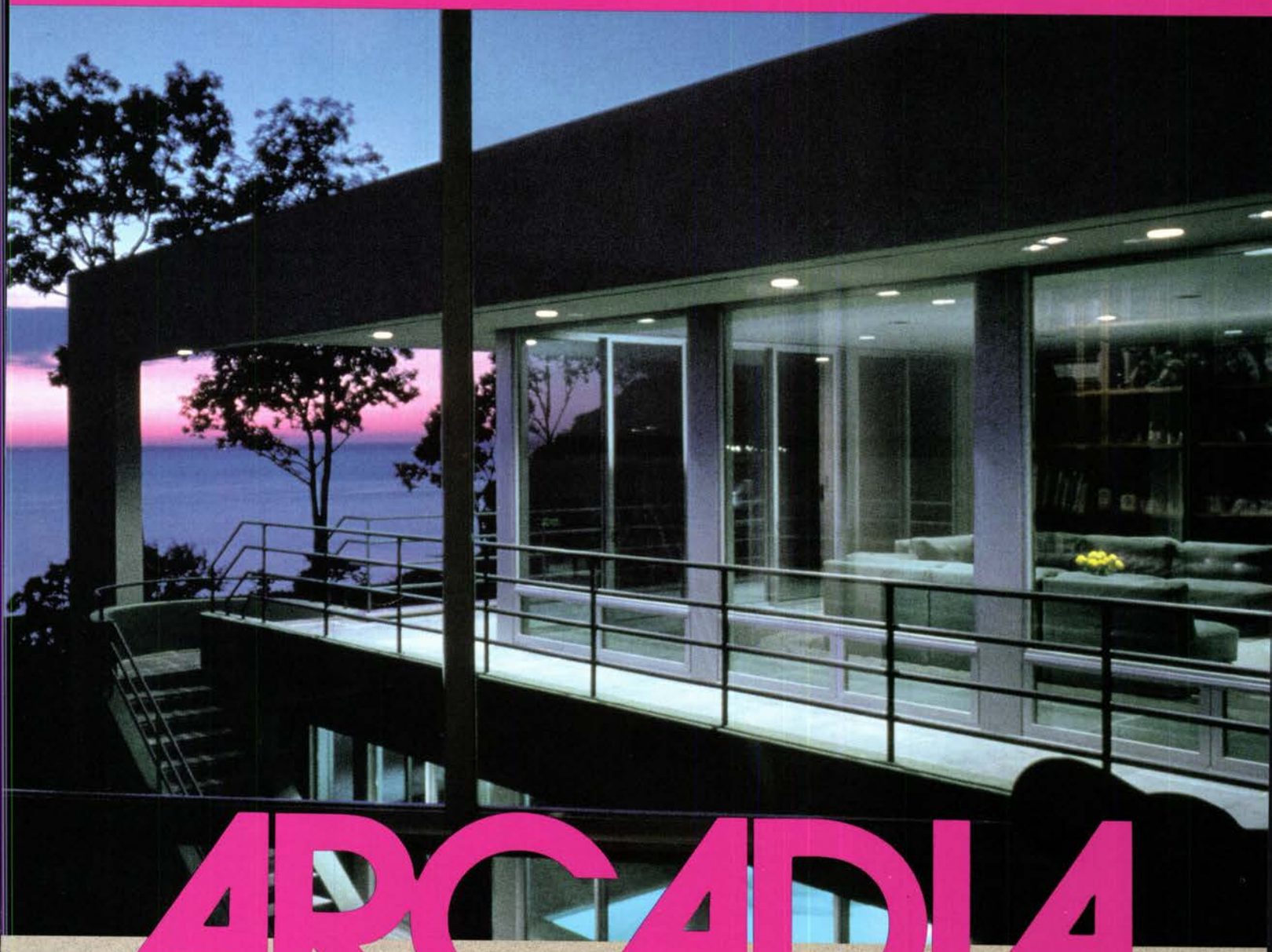

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Roofing with lead coated stainless steel. 5 good reasons

In designing a building, an architect has the difficult task of assembling a number of conflicting issues: cost, environment, aesthetics, durability, etc . . .

Ones library does not give all the answers, and sales representatives are queuing up in hope of the magic word "specification" for their particular product.

Modern technology has increased the number of products available in exponential numbers. The task of sorting them is daunting, the architect sometimes feels that he is facing a random pick
situation.

One product, however deserves to be better known for its qualities: Terne coated stainless steel: an exceptionally resilient metal, coated with a lead/tin alloy which gives the warm grey appearance of the traditional lead covering. Its name: Uginox – made in France – used throughout the world.

Among the reasons to consider using uginox we can definitely mention:

Architectural value

The appearance of the material is most traditional: lead grey. The thin lead/tin coating (applied by hot dip) will weather in a few weeks – up to 18 months – to reach the distinctive appearance of lead. Afterwards the roofing sheets will slowly mature together with its surroundings.

In the vernacular architecture, or listed buildings, Uginox finds a natural place: A grey roof will always blend with stone and bricks as our forefathers have wanted it.

In the post modern school of design, some stunning applications have been developed by uninhibited architects: vaulted roofs and dormers – cladding with all sorts of polygonal shapes, helical roof elevations!!! There is no limit to drawing board creativity: The skyline is as important as the landscape.

Environmental impact

The Masai proverb "We do not inherit of our world, we borrow it from our children" is sometimes quoted when the issue of environment is raised.

Although some progress has been achieved in areas such as the use of CFC free insulants, or asbestos contamination, it seems that the building trade has not followed the path of the motor trade in its efforts to limit the consumption – and ultimately dissemination of lead particles.

As a natural resource, lead is in limited supply: It is therefore our responsibility to ensure it is wisely used – a code 4 lead sheet weighs over 19kgs per square metre: is it really necessary?

The answer is no – 30 grams is enough to achieve the same surface aspect.

As for the other end of the chain: water and soil pollution by lead particles: Logic dictates that 2 microns of heavy metal (the coating thickness of Uginox) is all that will eventually be washed away.

The stainless steel below will always retain the matt grey appearance of the first years. This is the virtue of the bi-metallic surface layer, which creates itself during the coating process.

Vandalism. A solution

There is another aspect of life which becomes increasingly expensive: Vandalism: Lead flashings, or indeed the whole roofs have disappeared overnight.

Using Uginox terne coated stainless steel solves the problem at once, it does not have any scrap value – furthermore it is extremely difficult to remove, the metal is stiff, with torn sharp edges.

This is why it is so much used on prisons and public buildings where a security break-down is to be envisaged at design stage.

Technical performances

A challenge is met: among the performances a roof have to meet, weight and acoustic performance are contradictory: not with Uginox, the long strip (up to 20 metres for the FE grade) provides a continuous barrier. The subelements, plywood and a dedicated structural lining will give a 32 Db sound reduction, thus enabling its use in noisy environments.

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The Uginox AME is a 316 grade; in other words it is the only full austhenitic stainless steel sheet roofing: your cladding could have both feet in sea water.

The durability of the stainless steel is unmatched: uncoated Uginox sheets fixed some 30 years ago are still now in mint condition. In fact the manufacturer is so confident in its performance that the product is covered by a liability unlimited in time: i.e. the life of the building.

What about cost?

The bottom line in many a case is money. The cost of a Uginox roof is equivalent to most of the good traditional British materials, such as natural slate or clay tile. Much less than lead of course.

If you want to know more about Uginox terne coated stainless steel the nearest contact is Eurocom Enterprise Limited, PO Box 922, Slough, Berks. Tel: 0753 811387. Fax: 0753 811332.

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LIGHTING
THE SPECIAL DIMENSION

The way that lighting defines and reveals buildings is making architects think hard about integrating lighting design into architectural decision-making. As an introduction to Product Update, World Architecture *talks to leading lighting consultant Andre Tammes (left).*

Despite the importance of light in shaping perceptions of the built environment, too many architects have failed to grasp the relationship between architecture and lighting design and remain insensitive to the effects of light on their building forms and interior spaces, believes Andre Tammes.

As senior partner of the world's largest lighting design consultancy and executive secretary of the US-based International Association of Lighting Designers, Tammes has emerged as a powerful voice on behalf of lighting consultancy in world architecture.

His firm, Lighting Design Partnership (LDP), which has offices in Edinburgh and London, has collaborated with some of the leading architects on the international scene. "More architects are excited by light," says Tammes, "but they aren't prepared to invest the time and money to fully integrate lighting design into architectural decision-making."

The role of the lighting designer in relation to the architect is akin to the position of the lighting designer *vis à vis* the stage director in a theatre production, explains Tammes, whose own background is in stage lighting. The work is not simply a question of selecting and positioning luminaires. It involves harnessing light in a functional and expressive way to enhance architectural intent, in the way stage lighting will seek to underpin the psychological themes of a dramatic text.

It is this creative dimension which elevates the lighting designer above the role of buffer between architect and electrical engineer in the building design process, although this function is in itself much-needed. The way that architects, obsessively concerned with the effect of daylight on their buildings, have tamely handed over the design of artificial lighting to electrical engineers untrained in visual perception has infuriated Tammes for years.

This "abdication of responsibility" by architects has resulted, he suggests, in many bland, poorly lit environments. But things are changing and now has never been a better time for architects to show renewed interest in lighting, declares Tammes. Environmental issues have brought the issue to the fore, and a more sophisticated technological palette has created more options to "paint" with light.

Soul-searching on energy

Of course the greening of the lighting industry has provoked much soul-searching about the sheer amount of energy expended in developing expressive lighting schemes, especially on externally-lit buildings. But Tammes answers his critics by arguing that good lighting design is not necessarily about always using a lot of light: the maxim "less is more" is applicable in a design discipline which is based on the relationship between light and shade.

Luminaire manufacturers are also playing their part by developing new, energy-efficient fittings which allow people, especially in the workplace, to individually control the amount of light they need. More sophisticated control, in which electronics and optics are combined effectively, are now a feature of many new products. Tammes sees the careful programming of light in relation to user tasks and levels of natural light as one of the major roles of the lighting designer in the future.

He makes a plea, though, for luminaire manufacturers to strive harder to marry up the aesthetic qualities of light fittings to their functional role as tools to distribute and diffuse light effectively.

Tammes suggests that many architects can still become confused between the image of the fitting as a piece of stylish industrial sculpture and the role of light in an environment.

Some lighting manufacturers get this elusive balance absolutely right, he believes. Erco's long-standing emphasis on "form follows function" has enabled the German company to achieve a synthesis of appearance and performance. Staff and Hoffmeister are getting close to it. The abundance of techno-wizardry now evident on the lighting scene, however, has its pitfalls and Tammes is careful to sift the more useful innovations from the science-for-its-own-sake ideas.

Three technical developments in particular interest him. First is the lightweight, low power principle of electroluminescence. This innovation involves running an electric charge down a couple of wires through a thin, flat, rolled glass sheet coated with chemicals. The material will then glow, creating a new medium for information signage, safety and emergency lighting. The concept is still producing only a low level of brightness but it has futuristic potential for lighting vast surfaces and planes, believes Tammes.

Linear light technology

The second innovation is the "light pipe". This is a linear lighting technology based on an original Canadian concept of total internal reflection (TIR). It works as follows:

Oslo rail station: designed by LDP.

a parallel beam of high-pressure sodium or high-intensity discharge light is passed through parabolic reflectors along a shallow-angled, wedge-shaped reflector tube up to ten metres long.

As the light passes, prismatic panels direct it downwards: the principle has been demonstrated in contexts in which it is better to avoid suspended a light source – such as above swimming pools and chemical stores. TIR can solve large-scale problems but the technology to date remains inflexible.

The third technical innovation is perhaps closes to Tammes' heart because it derives from theatre lighting. This is the architectural light fitting which can change colour, beam width, pattern and intensity, and can pan and tilt. Movement has been the one missing dimension in lighting design, says Tammes. Now it is being widely addressed.

The Motorised Robotic Lighting of 1988 designed by London-based lighting innovator Shiu Kay Kan has been followed in mainstream manufacturing by new robotic low voltage systems produced by Phillips and Hoffmeister. Tammes also points to architect Roy Fleetwood's new Emanon light for Erco as an example of a fusion of theatre and architectural principles in luminaire design.

What will the future hold? For Andre Tammes and his team, there are a number of major challenges ahead: the Ark office building at Hammersmith to light for Ralph Erskine; the Channel Tunnel terminal, with architect Nicholas Grimshaw; the Euro-Disney hotels outside Paris, with Michael Graves; and the new Edinburgh business park, with Richard Meier.

This is an encouraging list, but Tammes wonders why it has taken architectural profession so long to see the light: "Remember what Le Corbusier said – 'Architecture is the masterly, correct and magnificent play of masses brought together in light'." □

FITTING FOR PURPOSE

A survey of new lighting products on the international architectural design scene.

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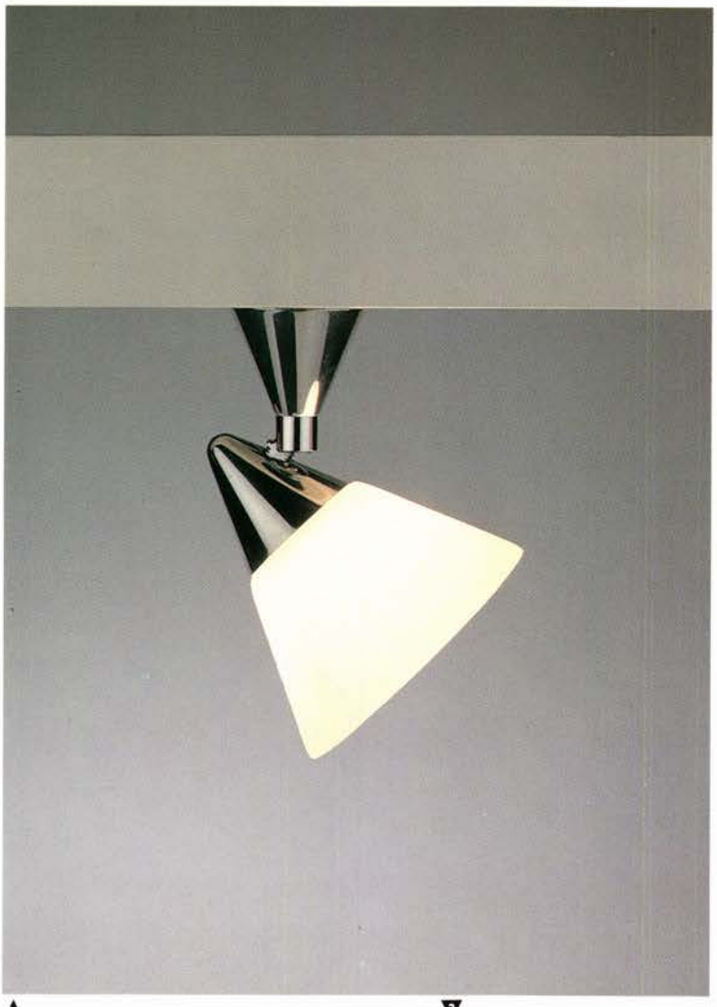
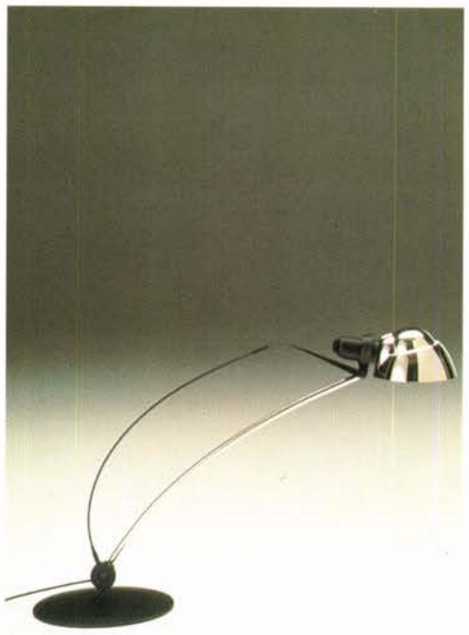
Chevrolite halogen light fitting retro-styled in solid aluminium, designed by Egbert Keen and inspired by classic designs of the Thirties and Fifties. Introduced at the 1991 Hanover Fair by Artilite International, PO Box 165, 9200 AddRacheten, The Netherlands. Tel: 05120-31100.

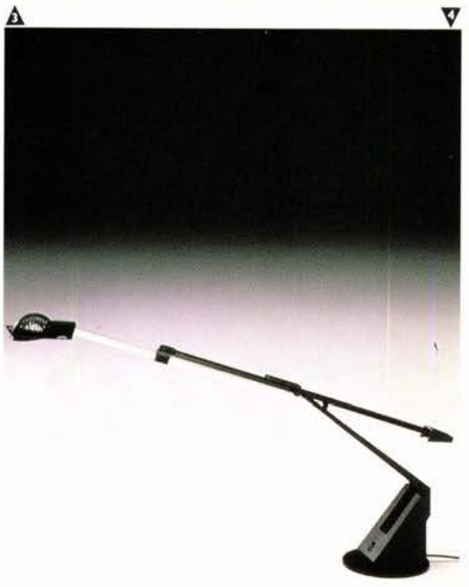
2
The Memory light designed by Kurt Norregaard based on Poul Henningsen's original sketches is suitable for very large rooms. Manufactured by Louis Poulsen, Nyhaun 11, Postbox 7, 1001 Copenhagen K, Denmark. Tel: 33 14 14 14.

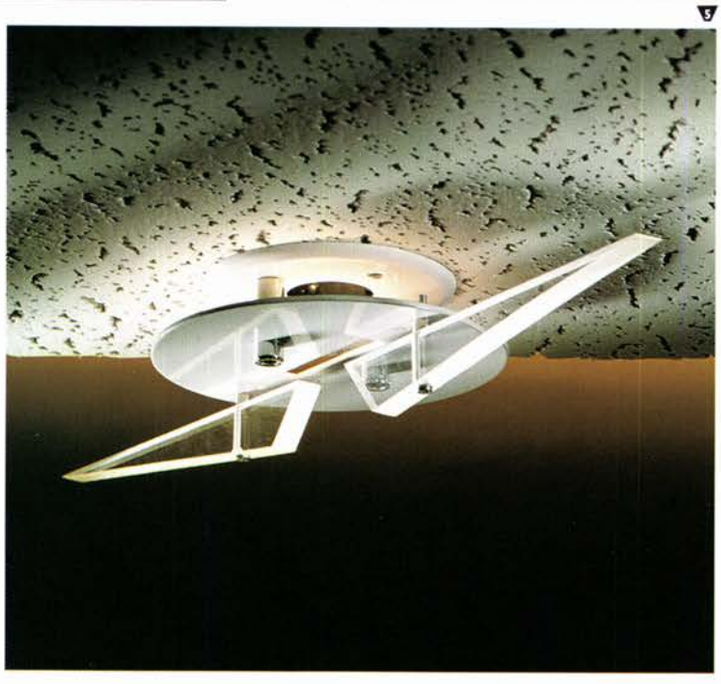
3, 4
Table lamps from Italian manufacturer Sirrah. Sini (3) reutilises the incandescent lamp in a stylish marriage of form and function; Fila (4) is a halogen task lamp made of aluminium with a moving counterweight mechanism which allows adjustment up to a range of one metre. Sirrah, Via Molino Rosso 8, 40026 Imola, Italy. Tel: 0542 640302.

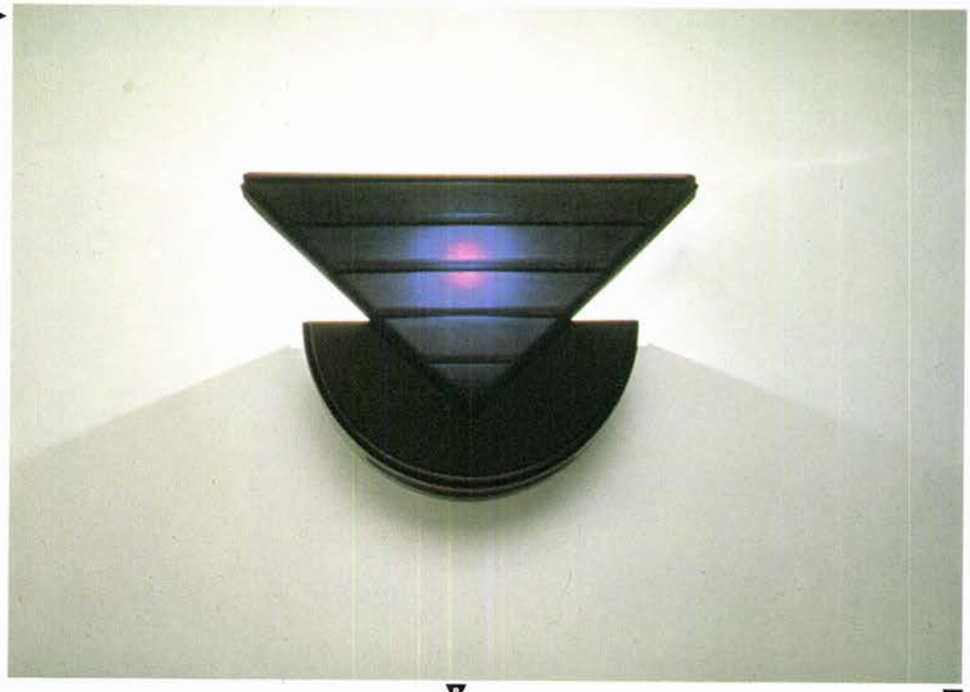
5
Flight low voltage downlighter from Light FX, which disperses light from a dichroic source through perspex wings. Light FX, 29 Harper Road, London SE1 6AW, Great Britain. Tel: 071-403 6305.

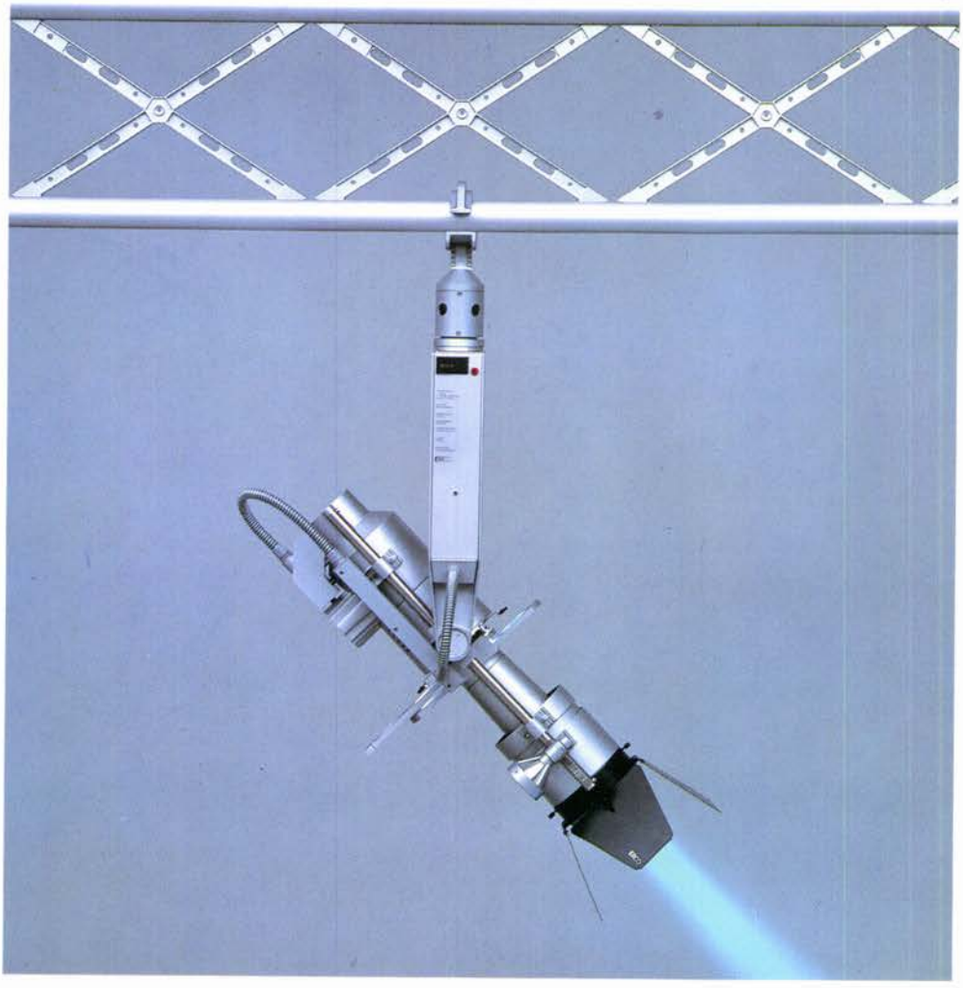












6
Scudo wall light manufactured by Ladue of Florence. This Italian company specialises in classic modern aluminium-casting fittings with glass diffusers. Scudo is available from Forma Lighting, Unit 310, Business Design Centre, Islington Green, Upper Street, London N1, Great Britain. Tel: 071-288 6025.

7
The Tria wall light designed by Erio Bosi for Martini Fratelli combines the primary geometric forms of circle and triangle in a wall light with moulded glass diffuser to provide diffused, indirect light. Martini Fratelli, Via Provinciale 24, 41033 Concordia Moderna, Italy. Tel: 05 3555008.

8
Emanon, an anagram of No Name, is a high performance projector from Erco which combines architectural and stage lighting principles. It has been developed by architect and industrial designer Roy Fleetwood with Erco Lighting. 32 Dover Street, London W1X 3RB. Tel: 071-408 0320.

9
The Mano wall light designed by A Brux and P Gourdon for Luxo Italiana is an exercise in simple, clean lines and diffused light using Murano glass. Luxo Italiana, 24030 Presezzo (Bergamo), Via delle More 1, Italy. Tel: 035 613319.

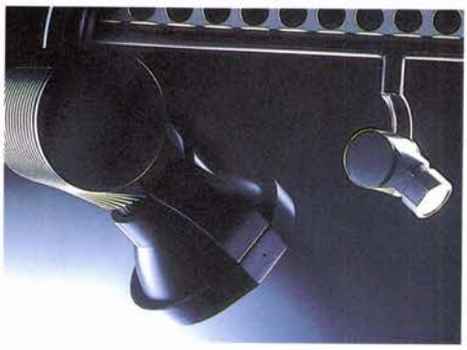
10
Cricket table lamp designed by Riccardo Blumer, with cable-supported cantilevered arms in grey metallic-painted aluminium and an adjustable anodised aluminium diffuser. From the Sidecar Collection produced by Artemide, 17-19 Neal Street, London WC2H 9PU. Tel: 071-240 2552.

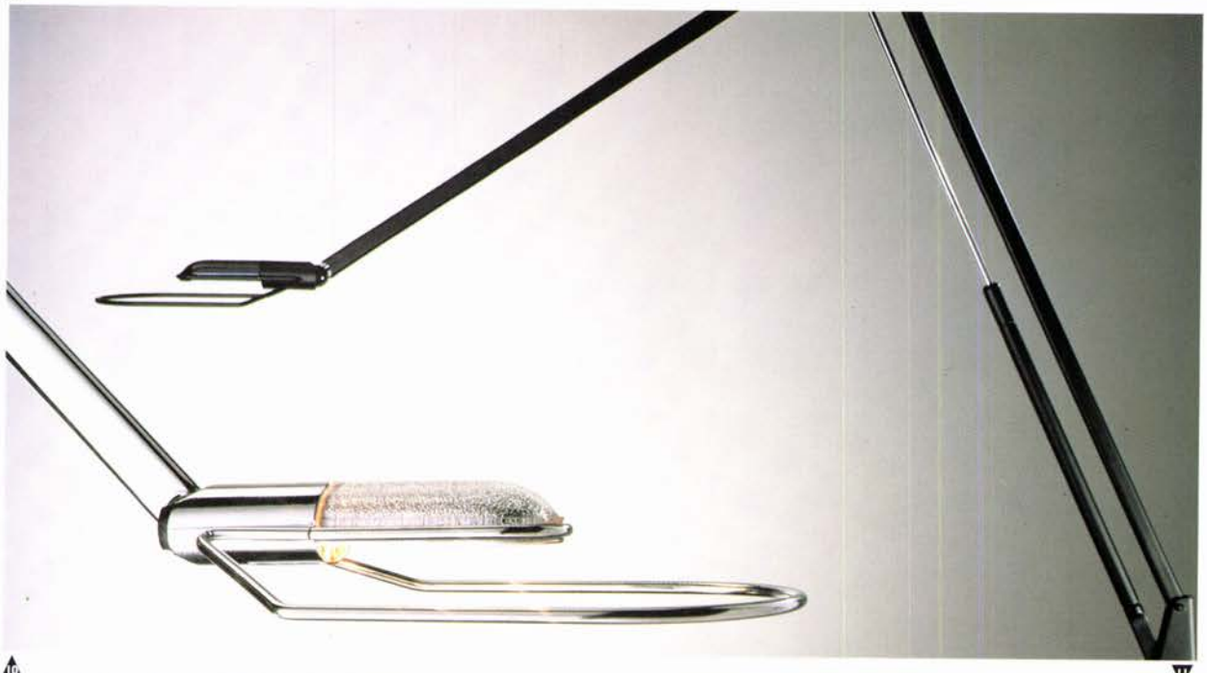
1
Suspended fluorescent fittings for industrial and commercial use from Spectrum, 8 Thomas Street, Cirencester GL7 2AX, Great Britain. Tel: 0285 641313.

2, 3, 4
High-style new products from Lumina of Italy. Zeta (2), designed by G Linardi, is a halogen floor lamp in painted metal with rotating reflector and dimmer. Flip (3), designed by H Wiederhold, is an adjustable swivel pendant with diffuser available in either aluminium or polycarbonate. Artu (4), designed by B Negretti, is a table lamp in shaped, sanded glass with rotating reflector. Lumina Italia, 20010 Arluno, Italy. Tel: 02 9015498.

5
The Primostar Sphero by Lumiance gives a wide distribution of light and is suitable for illuminating larger objects. Available in uplight and downlight mode. Lumiance, PO Box 6310, 2001 HH Haarlem, The Netherlands. Tel: 023319121.

6
One of the Carolina range of outdoor light fittings produced by American manufacturer LSI Lighting Systems. Kiawah aims to complement to crisp, sharp lines of façades, corners and balconies. LSI Lighting Systems, 10000 Alliance Road, PO Box 42728, Cincinnati, Ohio 45242, USA. Tel: 513 793 3200.





7
Sensa is a modular fluorescent luminaire with major energy saving and installation benefits from Thorn. Electronic sophistication enables Sensa to detect the presence of people and adjust its output according to ambient light levels.
Thorn Lighting, Elstree Way, Borehamwood, Herts WD6 1HZ.
Tel: 081-366 1166.

8
Galaxy spotlights from Targetti are highly versatile tools of light. Available in black or white moulded polycarbonate, the range uses different types of mains and low voltage halogen light sources with associated high performance reflectors.
Targetti UK, PO Box 74, Doncaster DN2 4ND, South Yorks, Great Britain.
Tel: 0302 323941.

9
One of a range of new luminaires which prevent glare in office environments from Trilux Lighting, Trilux House, 1 Churchfield Road, Walton on Thames, Surrey KT12 2TJ, Great Britain.
Tel: 0932 254330.

10
The Lifto lamp from Belux of Switzerland has an articulated arm and can be attached to work surfaces in various ways. Designed by Bejamin Thut, it comes in black or chrome with silver or blue glass. Belux, Bremgarterstrasse 109, CH-5610 Wohlen, Switzerland.
Tel 057 222091.

11
Fiberstars is a second generation fibre optic lighting system suitable for numerous internal and external applications. The fibres come in lengths of up to 60 metres and can be twisted into virtually any shape. UK distributor: Marlin. Fiberstars Inc, 47338 Fremont Boulevard, Fremont, California, USA.
Tel: 415 490 0719.

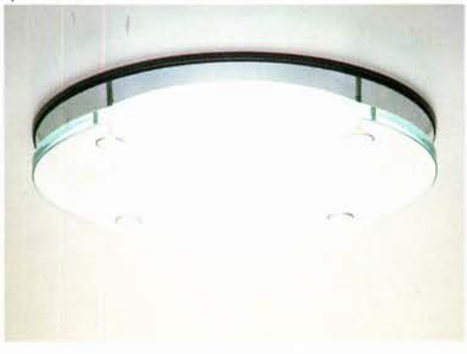
1
Architect Roberto Pamio designed the All wall light for Leucos of Italy with a satin finish glass diffuser available in white or blue. The fitting has two lamps for independent or simultaneous switching. Leucos is represented by Forma Lighting, Business Design Centre, Units 310-311, 52 Upper Street, London N1 0QH, Great Britain. Tel: 071-288 6025.

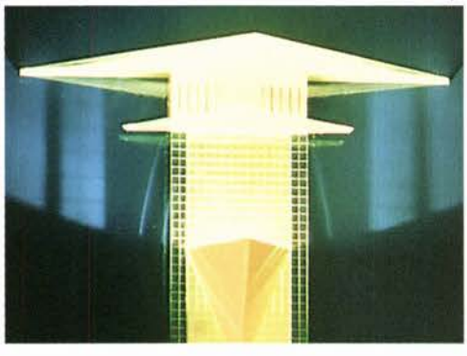
2, 3
New products available from Lumino. Volo (2) is a suspension fitting designed by Roberto Cardin for Candle of Italy, part of a modular halogen range. Volare (3) is a low voltage system from the Italian Lamberti range which can be adjusted to provide task downlighting and ambient uplighting at the same time. Lumino, Lumino House, Lovet Road, The Pinnacles. Harlow, Essex CM19 5TB. Tel: 0279 635411.

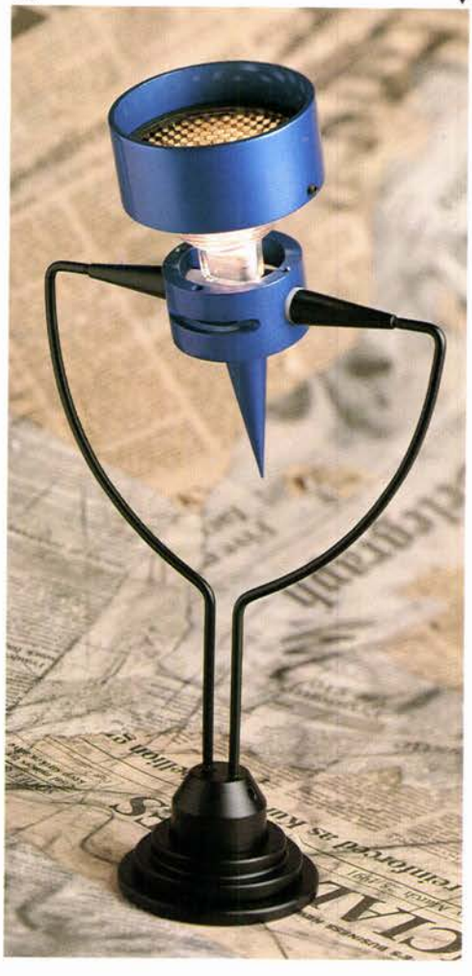
4
The Optos Compactlite was designed for Zumtobel Lighting by Sottsass Associates of Milan. A recessed, compact downlight, it is available in three different industrial finishes. Zumtobel Lighting, Richard-Neutra-Gasse 6, A-1210 Vienna, Austria.

5
Trigonis is a versatile wall-mounted luminaire designed on geometrical lines by Barbara Zabel for Staff Lighting, Hampshire International Business Park, Crockford Lane, Chineham, Basingstoke, Hampshire RG24 0WH, Great Britain. Tel: 0256 707007.

6
VDU downlight for workplace environments from Hoffmeister Lighting, Postfach 1820, D-5880 Ludenscheid, Germany. Tel: 02351 159-1.







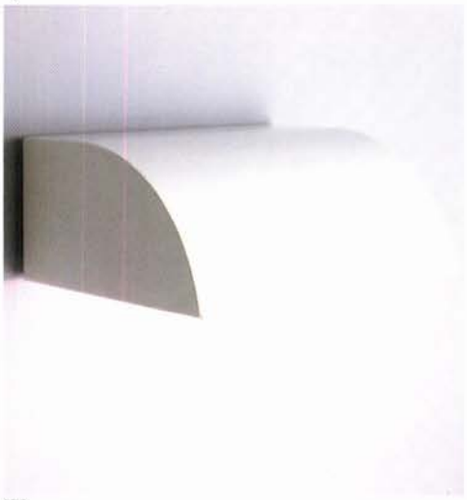
7
The National Cathode Corp manufactured the architectural cold cathode lighting for the Sea World Main Entrance, San Antonio, Texas, designed by Mike O'Shea and Glen Krueger. A winner of the 1990 International Illumination Design Awards. National Cathode Corp, 252 West 29 Street, New York, NY 10001, USA.
Tel: 212 594 1960.

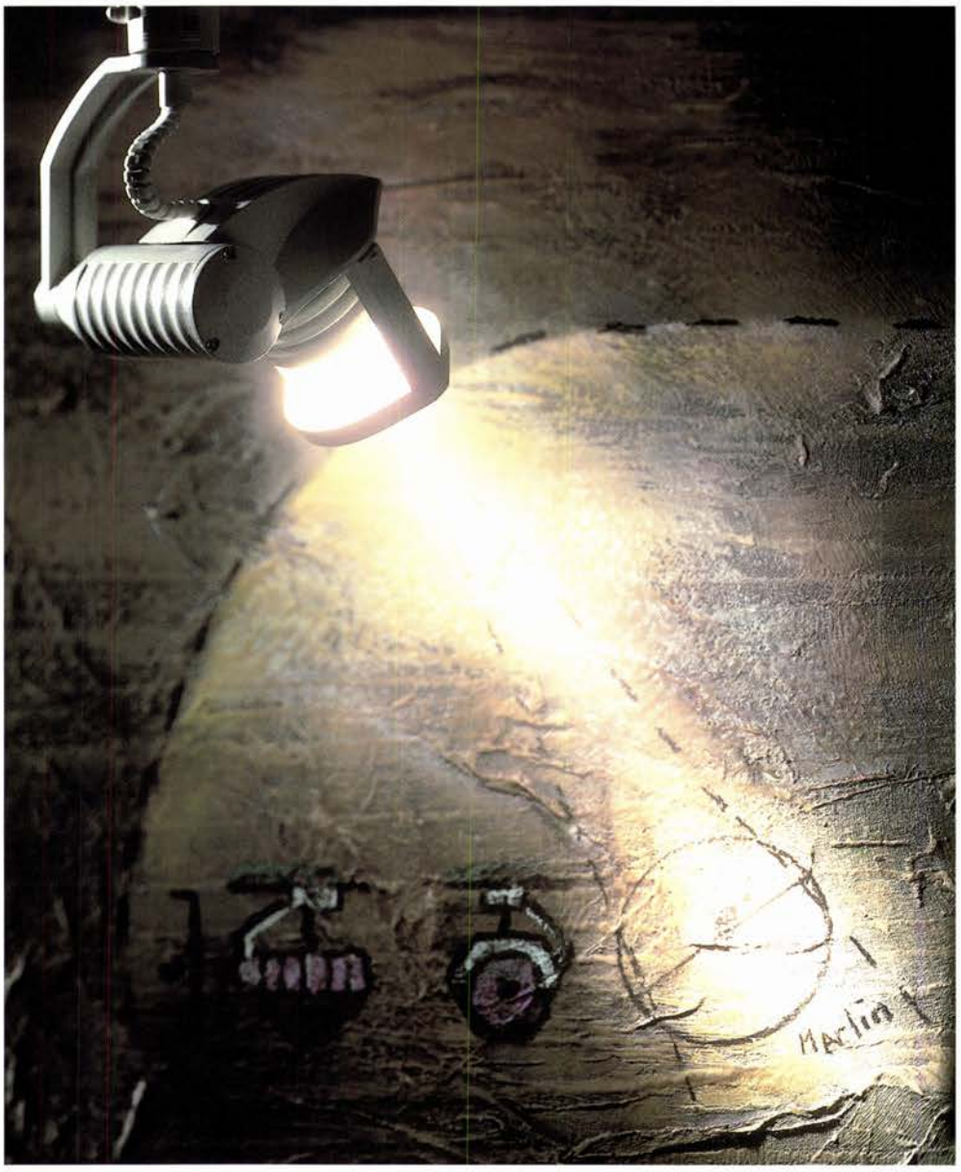
8
The Collesque mini low voltage spotlight has been produced for interior highlighting or display cabinet applications by Lee Environmental Lighting, Manchester Road, Kearsley, Bolton BL4 8RL, Great Britain. Tel: 0204 77114.

9
Heads and Tails is a low voltage spotlight range designed for Waco of Belgium by Johan Lemaitre. It aims to give architects and specifiers the choice of whether it should look soft or hard, gentle or aggressive. Waco Lighting Products, Stapleplein 53, B-9000 Gent, Belgium.
Tel 3291 258689.

10
An exercise in style and technology, the Pierrot table light designed by Afra and Tobia Scarpa for Flos provides a mixture of direct and diffused light. The base and head are made of coloured polymers. Flos, 25073 Bovezzo Brescia, Via Angelo Faini 2, Italy.
Tel: 030 2712161 or 2713121.

11
The Delta lighting system from Troll Lighting offers full rotational and positioning capacity for low voltage halogen light sources. Available in black or white. Troll Lighting UK, Unit 1, Abbotsford Farm, Blackberry Lane, Four Marks, Alton, Hampshire GU34 5BN, Great Britain.
Tel: 0420 62000.





1, 2
Elliptipar uses the concept of a precise asymmetric light distribution to evenly illuminate walls, floors and ceilings from one edge. Built around a patented reflector, the system avoids "hotspots" and contrasts which can detract from architectural intent. The Elliptipar semi-recessed wall washer (1) provides light uniformity with maximum spacing between fittings. Elliptipar's Ensconce line (2) has a wide range of options for quality indirect lighting in lobbies, offices, galleries, atria and malls. UK distributor of Elliptipar: Marlin. Elliptipar, 145 Orange Avenue, West Haven, Connecticut 06516, USA. Tel: 203 932 2266.

3
Probe directional spotlight from Marlin, made from diecast aluminium with high performance copolymer. Accessories include UV and colour filters and glare relief devices. Marlin Lighting, Hanworth Trading Estate, Hampton Road West, Feltham, Middlesex TW13 6DR, Great Britain. Tel: 081-894 5522.

4
This ceiling fitting designed by Sergio Mazza for Quattrifolio of Milan can be put together using up to eight sheets of sand-blasted glass in any of three diameters, so giving the architect scope for invention. UK distributor: GFC Lighting, London. Quattrifolio, Via Kuliscioff 36, 20152 Milano, Italy. Tel: 248 300240.

5
The Techne compact fluorescent downlighter from Reggiani has been designed to offer a large number of light source options within a slim design featuring a cast aluminium flange with patterned glass cover. Reggiani, Giltland House, 12 Chester Road, Borehamwood, Herts WD6 1LT. Tel: 081-953 0855.

6
Titania from Luceplan is a suspension lamp for direct and indirect lighting designed by Alberto Meda and Paolo Rizzatto. UK distributor: Artemide GB. Luceplan, Via Belinzona 48, 20155 Milan, Italy. Tel: 02 3272249.

7, 8
The Infinite system designed by Terence Woodgate and developed by Concord Lighting is an innovative concept to provide complex three-dimensional configurations or simple horizontal planes for lighting using modular lengths of low voltage track rail. A combination of design versatility and sophisticated electronics, there are Infinite adjustable capsule spotlights (7) for a system which uses both straight and curved track (8). Concord Lighting, 174 High Holborn, London WC1V 7AA, Great Britain. Tel: 071-497 1400.

9
The Tango table lamp from Arteluce designed by Stephan Copeland has soft, organic, anthropmorphic design characteristics which reflect a move away from the hard-edged modernity of similar fittings in this sector. Arteluce, Via Angelo Faini 2, 25073 Bovezzo, Brescia, Italy. Tel: 030 2712161.

10
Magica, a wall fitting designed by S Missanelli, belongs to the Magica collection by Ladue and is available from Forma Lighting, Business Design Centre, Units 310-311, 52 Upper Street, London N1 0QH, Great Britain. Tel: 071-288 6025.

WORLD ARCHITECTURE

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