WORLD ARCHITECTURE

ISSUE NO. 16 $10 US £6 UK

JAPANESE ISSUE

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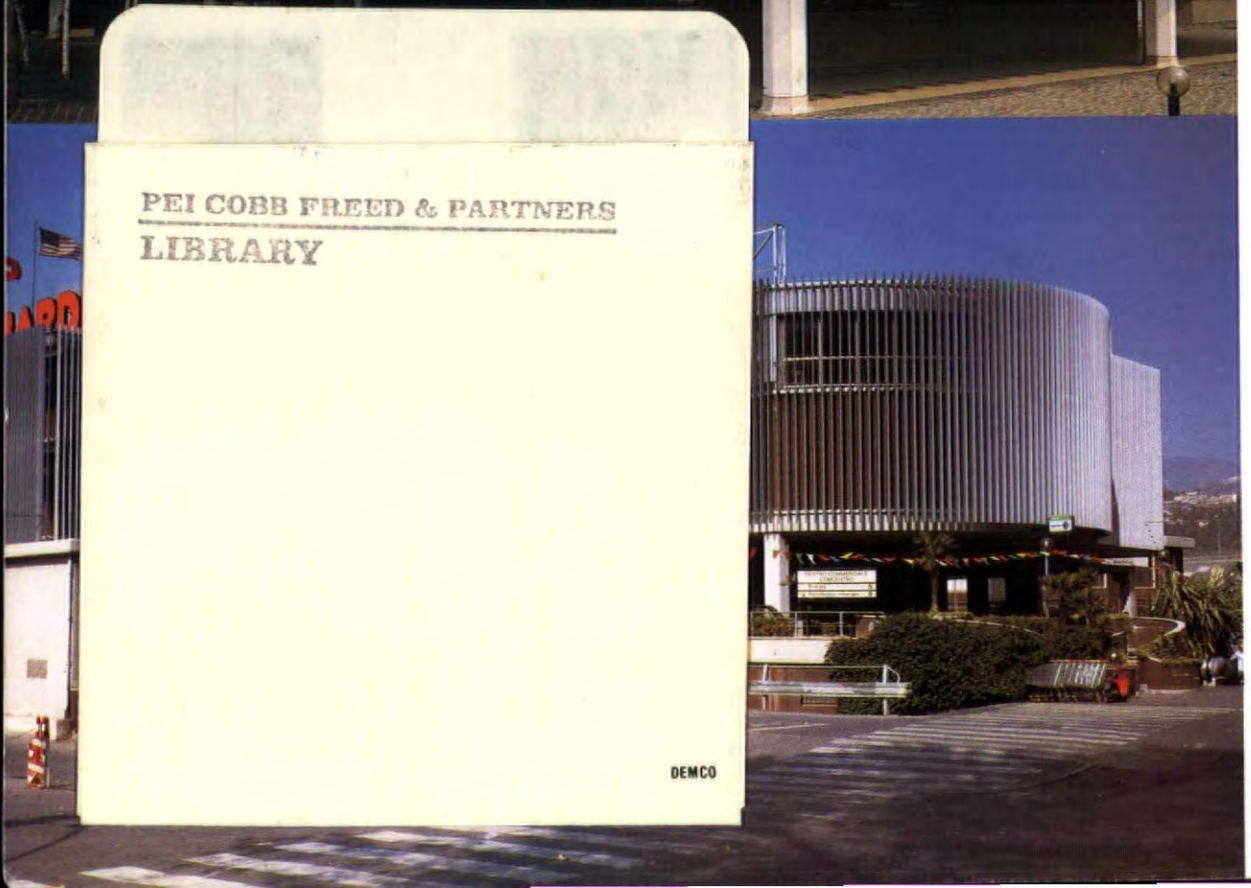

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JAPANESE ISSUE

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PROFILE

FUMIHIKO MAKI

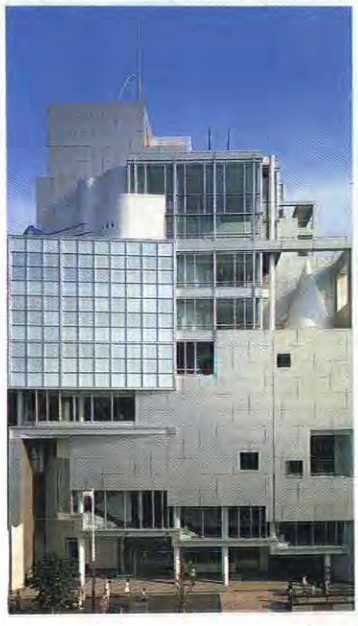
FEATURES

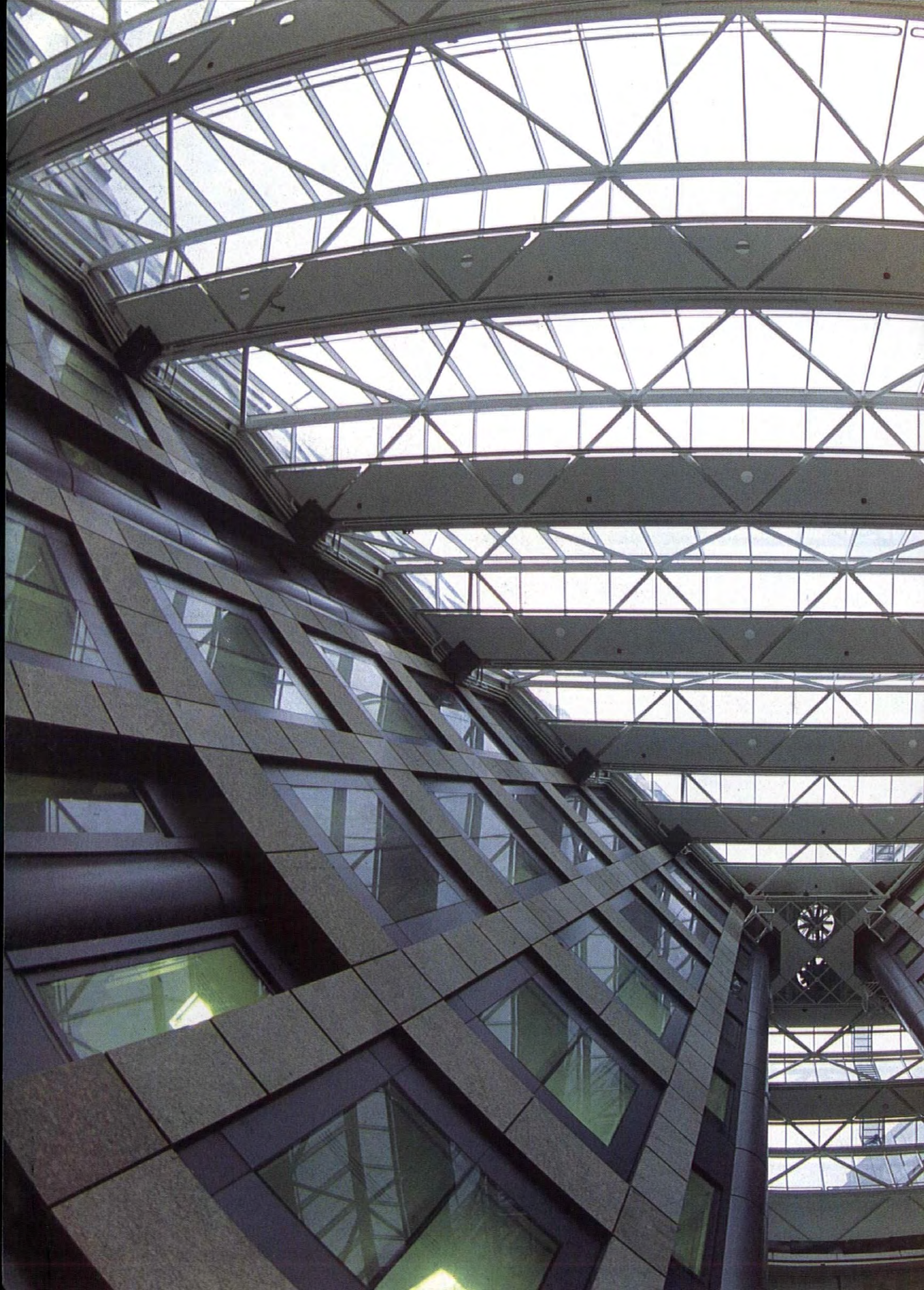
IAN LAMBOT

Century Tower designed by Foster Associates. See Face to Face

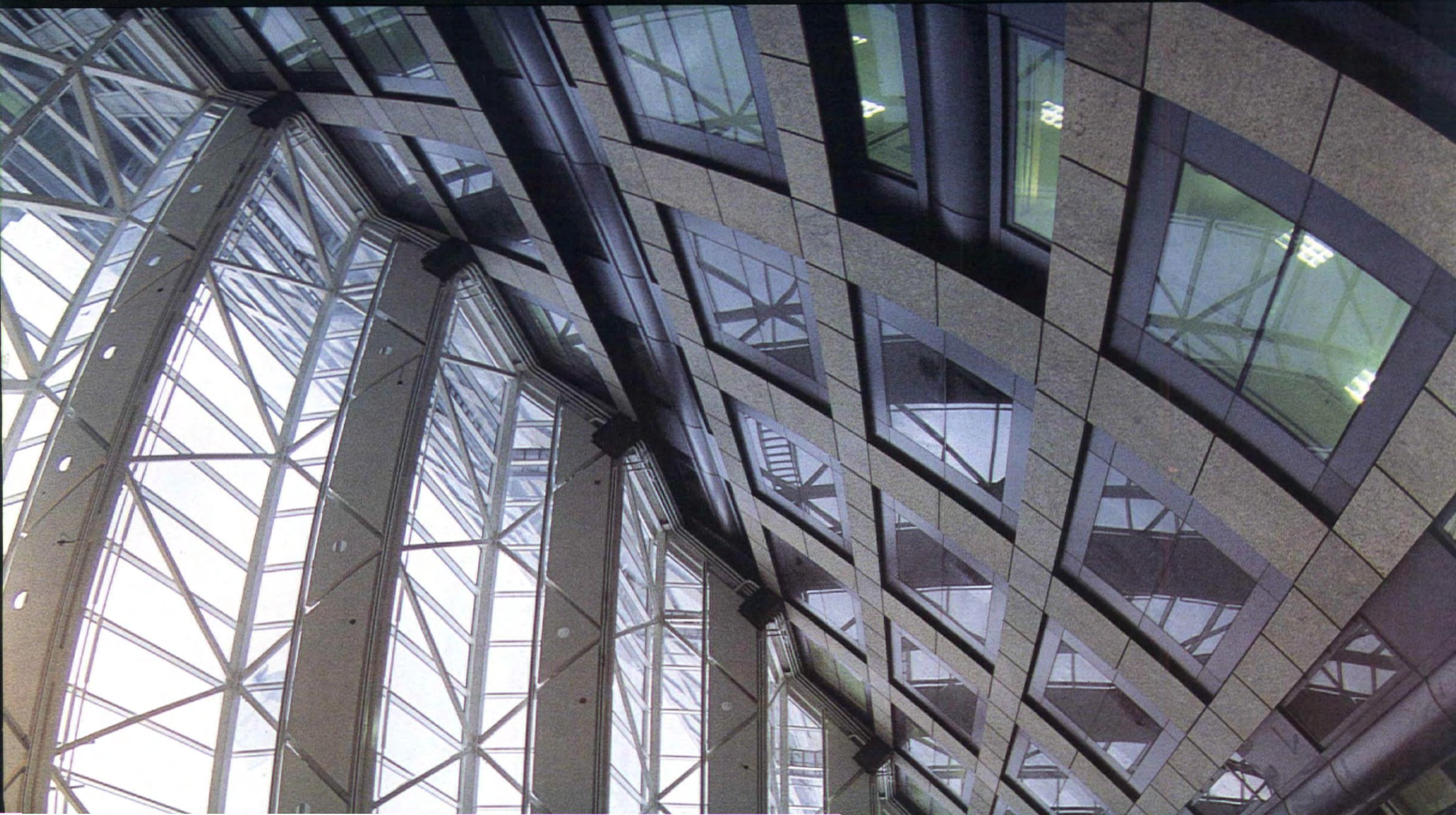
DEPARTMENTS

Cover photograph: Spiral Building, Tokyo, designed by Fumihiko Maki who is the subject of the major profile in this issue. Photo: Toshiharu Kitajima.





Client: Wimpey Property Holdings Ltd; Architect: Fitzroy Robinson Partnership; Construction Management: Wimpey Construction Management Ltd; Photo: Richard Moore; Scope of Works: External Atrium Curtain Walling



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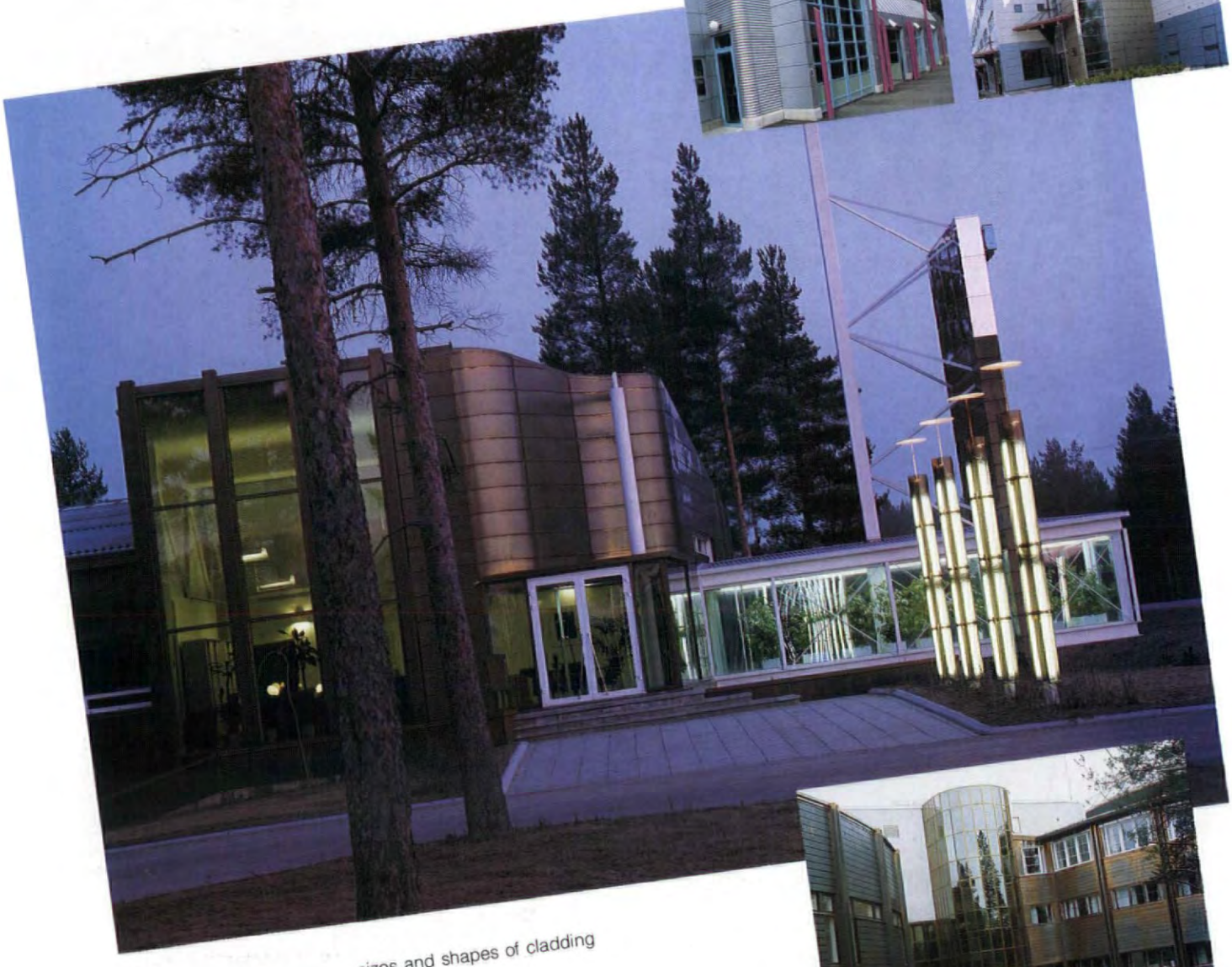

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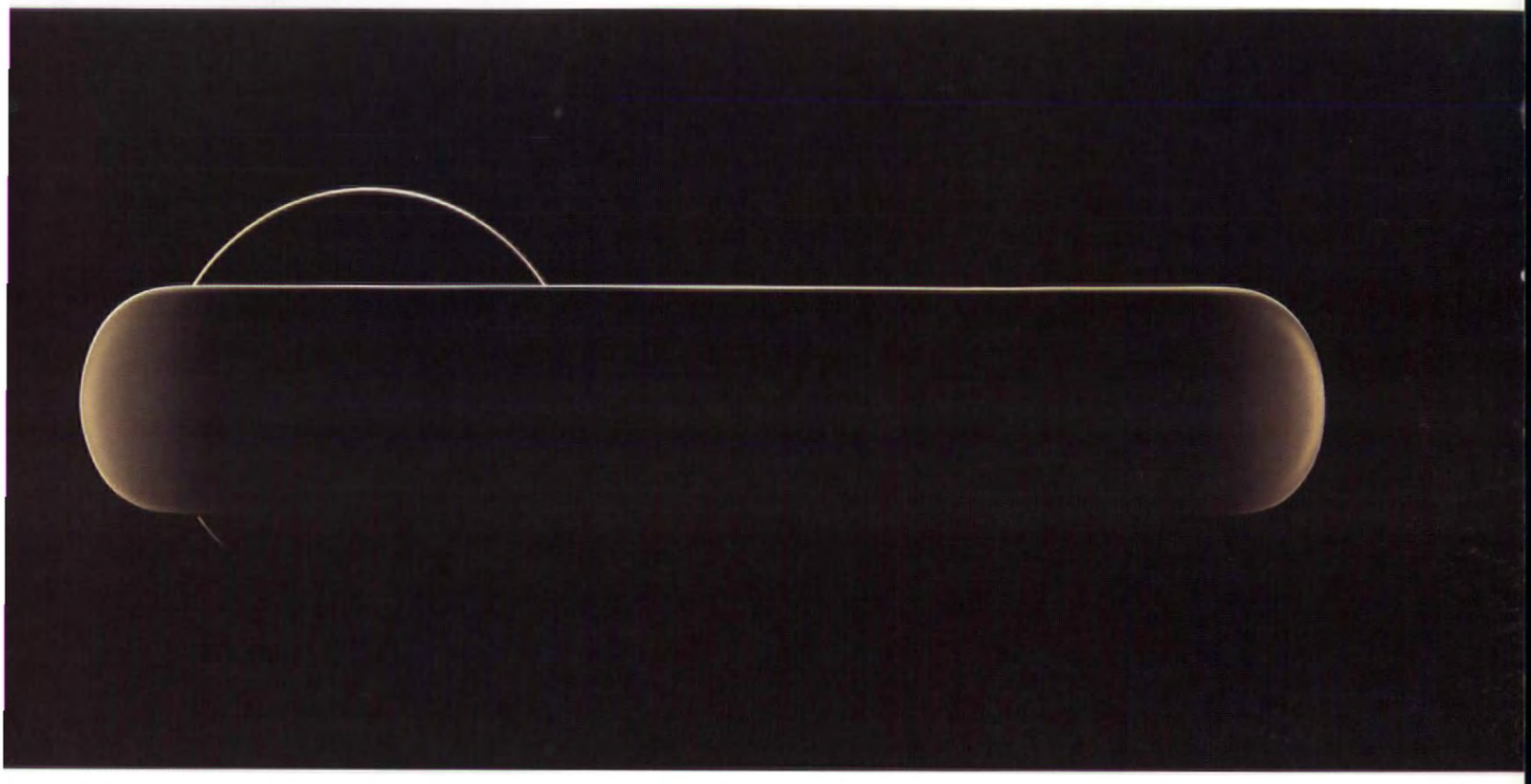
High profile. Vico Magistretti



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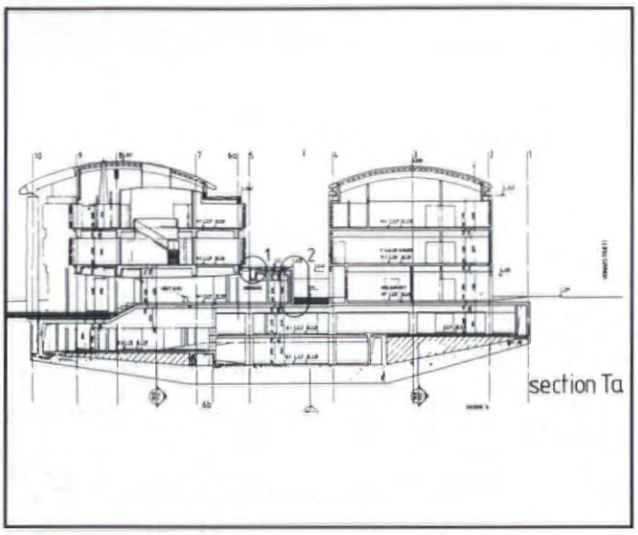

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Individual considerations and solutions to the given requirements are a must for successful realisation.

Requirements of the sealant:
non-slip compound - easiest possible maintenance and care, crack-resistant and deep penetrating, long-life elasticity, temperature stability, withstands pedestrains and vehicles, breathes, resistant to: UV-rays, biological, physical and chemical influences: waterproof.

The choice of those deciding fell on Kemperol.

A sealant which, with its high quality properties as an all-purpose material and non-slip compound, can be considered as one with the substrate.

A sealant without sealing and welding seams, fitting exactly to the structure, both vertically and horizontally.

For 20 years, this material has been used internationally in building work covering, so far, over 10 million square metres.

Only specialist installers trained by the manufacturer process this quality product, which is subject to the UAEtc agreement.

Building work is no hazard when the innovation, experience and reputation of the partners involved are taken into consideration.

Architects: Studio Grands, Reykjavik
Chief engineer: Rikhardur Kristjanson (doctor of Engineering)
Sole entrepreneur: ISTAK, Reykjavik
Execution: Björnson, Reykjavik
Technical application supervisor: KEMPER SYSTEM/Sigurdsson
Sole agency Iceland: Sigurdsson, Reykjavik

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Des considérations et des solutions individuelles aux exigences stipulées sont une condition essentielle à la réussite de la réalisation d'un projet.

Exigences auxquelles le matériau d'étanchéité doit répondre:

composé anti-dérapant - le plus facile qui soit satisfait aux exigences en matière de maintien et d'entretien, résistant aux fissures et capable de pénétrer en profondeur, d'une élasticité durable, stable à la température, endurant aux piétons et aux véhicules, perméable à l'air, inerte aux: rayons UV, aux facteurs biologiques, physiques et chimiques: étanche.

Ces aspects ont conduit à choisir Kemperol.

Un matériau d'étanchéité universel et anti-dérapant aux propriétés excellentes, qui se fond parfaitement avec le substrat.

Un matériau d'étanchéité sans joints de scellement ou de soudage qui se fixe exactement à la structure, aussi bien sur le plan vertical qu'horizontal.

Ce matériau s'employe dans le monde entier depuis 20 ans pour le revêtement des édifices de construction, et plus de 10 millions de mètres carrés ont été posés à ce jour.

Seuls des installateurs spécialisés formés par le fabricant effectuent la pose de ce produit de qualité, qui est sujet aux accords UAEtc.

Rien n'est laissé au hasard lorsque l'on prend en considération l'esprit d'innovation, l'expérience et la réputation des partenaires impliqués.

Architectes: Studios Grands, Reykjavik.
Ingénieur en Chef: Rikhardur Kristjanson (Ingénieur Diplômé)
Entrepreneur exclusif: ISTAK, Reykjavik

CITY HALL REYKJAVIK - ISLAND

Ein außergewöhnliches Bauwerk, eine bedeutende Stadt, eine besondere Insel.

Individuelle Berücksichtigung und Lösung der formulierten Anforderungen sind ein Muß für die erfolgreiche Realisierung.

Anforderungen an die Abdichtung: kraftschlüssiger Verbund - möglichst wartungs- und pflegeleicht, rißüberbrückend und wurzelfest, dauerelastisch, temperaturbeständig, begeh- bzw. befahrbar, diffusionsoffen, und:

UV-Einstrahlung, und biologische: physikalische und chemische Einflüsse, wasserdicht.

Die Wahl der Entscheidungsträger fiel auf Kemperol.

Eine Abdichtung, die mit ihren hochwertigen Eigenschaften als ein alles überdeckendes Material, mit kraftschlüssigem Verbund, zu einer Einheit mit dem Untergrund wird.

Eine Abdichtung, ohne Kleb- und Schweißnähte, dem Baukörper angepaßt, senkrecht, wie waagerecht.

Dieses Material wird seit 20 Jahren mit bislang über 10 Millionen Quadratmetern international verbaut.

Nur vom Hersteller geschulte Fachverleger verarbeiten dieses Qualitätsprodukt, das dem UAETc-Agreement unterliegt.

Bauaufgaben sind kein Wagnis, wenn Innovation, Erfahrung und Reputation der beteiligten Partner Berücksichtigung finden.

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Chefingenieur: Dr. Ing. Rikhardur Kristjanson
Generalunternehmer: ISTAK, Reykjavik
Ausführung: Björnson, Reykjavik
Anwendungstechnische Kontrolle: KEMPER SYSTEM / Sigurdsson
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SPECIAL CONSULTANT:	DR. ING. RIKHARDUR KRISTJANSON
RESIDENT ENGINEER:	ING. BALDUR JAHANNESSON
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CONTRACTOR:	THETTING, REYKJAVIK
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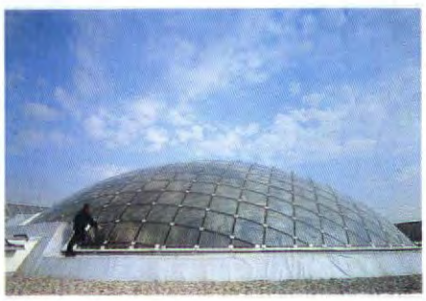

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"Aquatoll", Neckarsulm (Germany)

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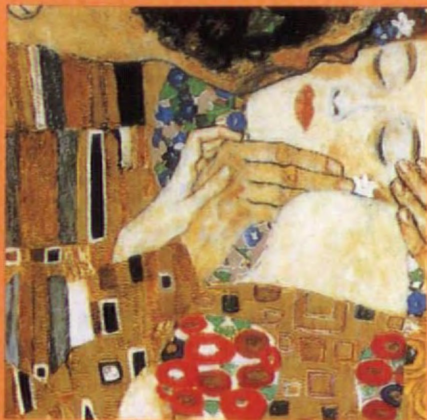
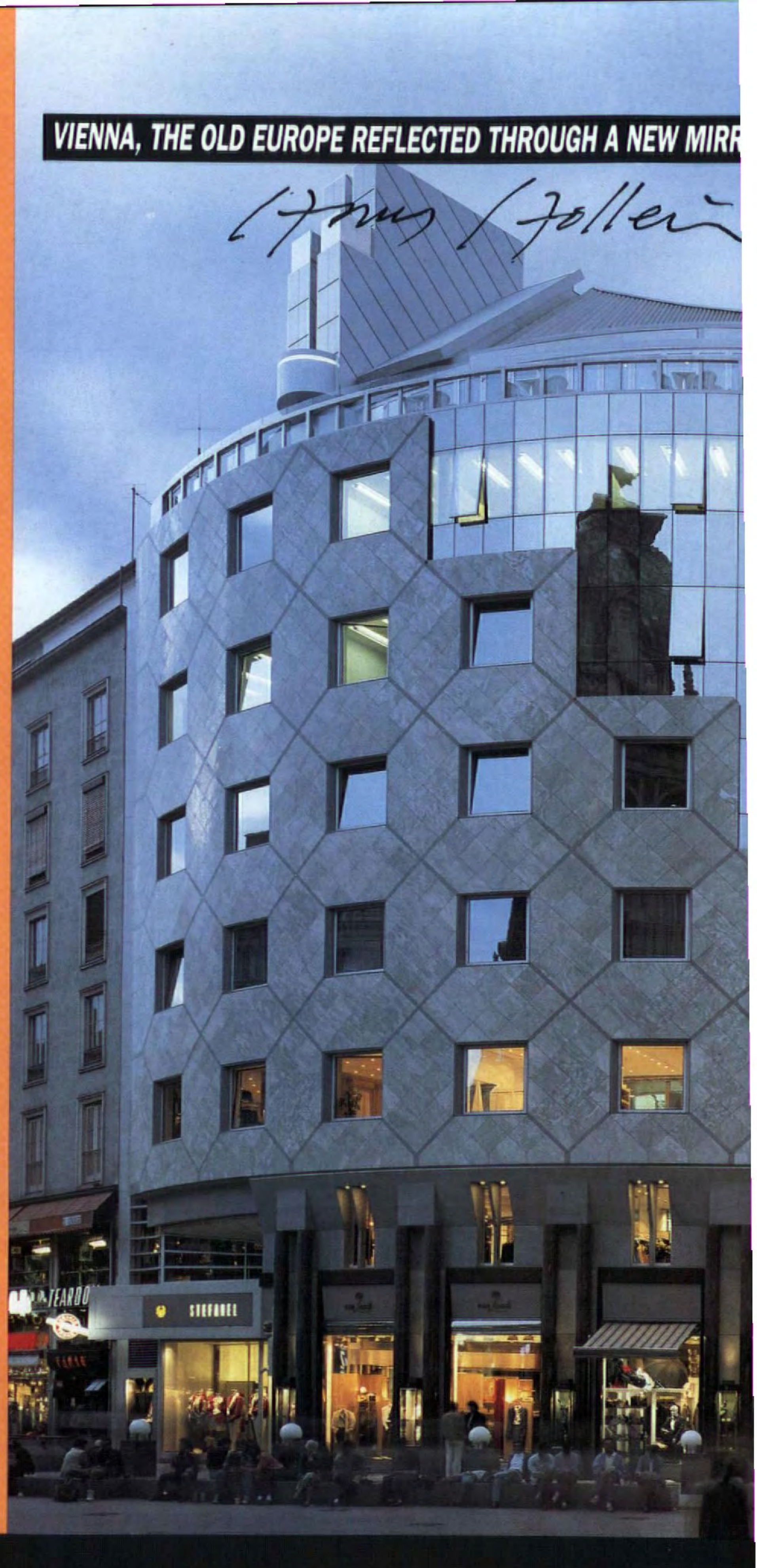


VIENNA, THE OLD EUROPE REFLECTED THROUGH A NEW MIRR



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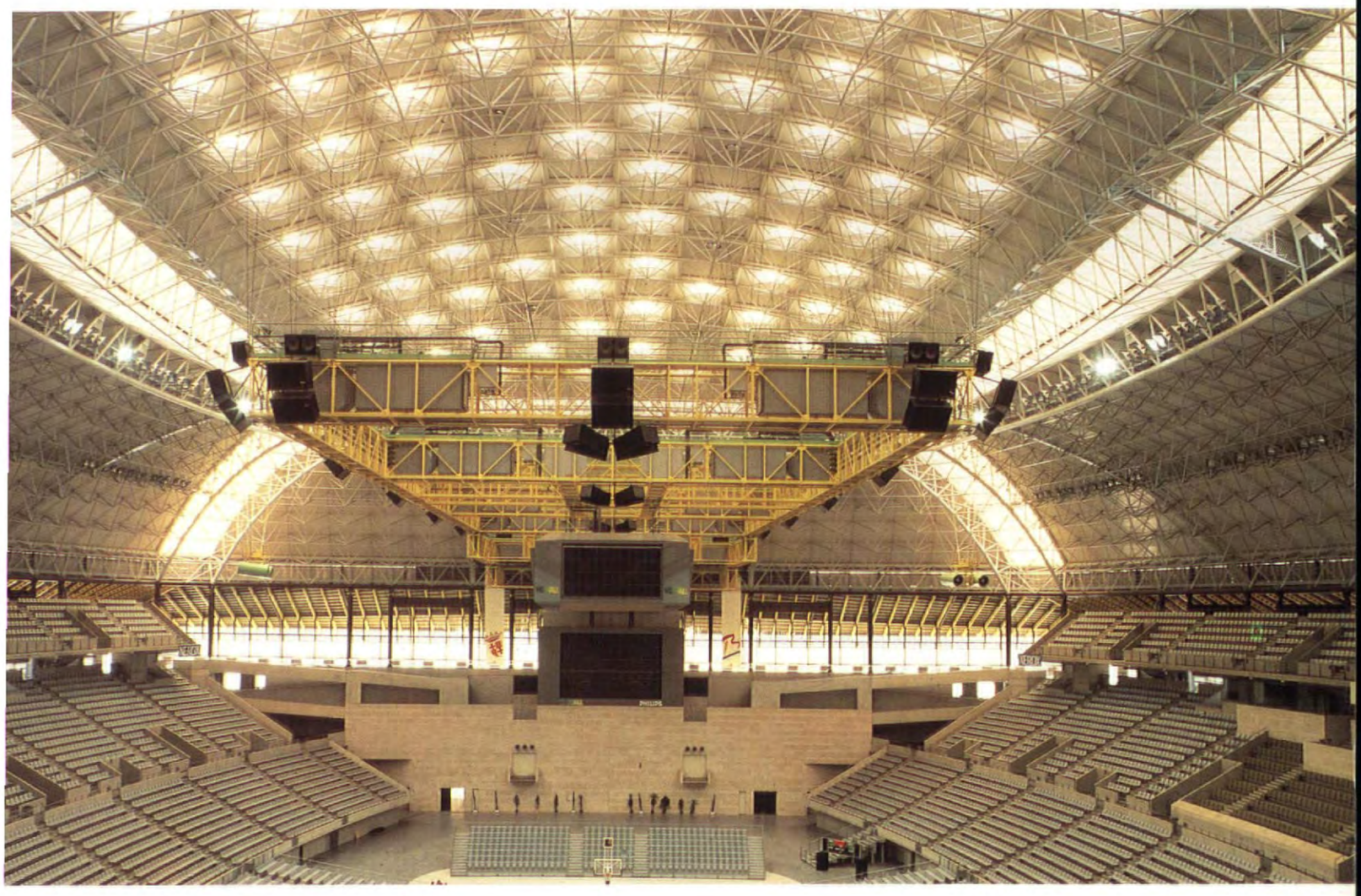

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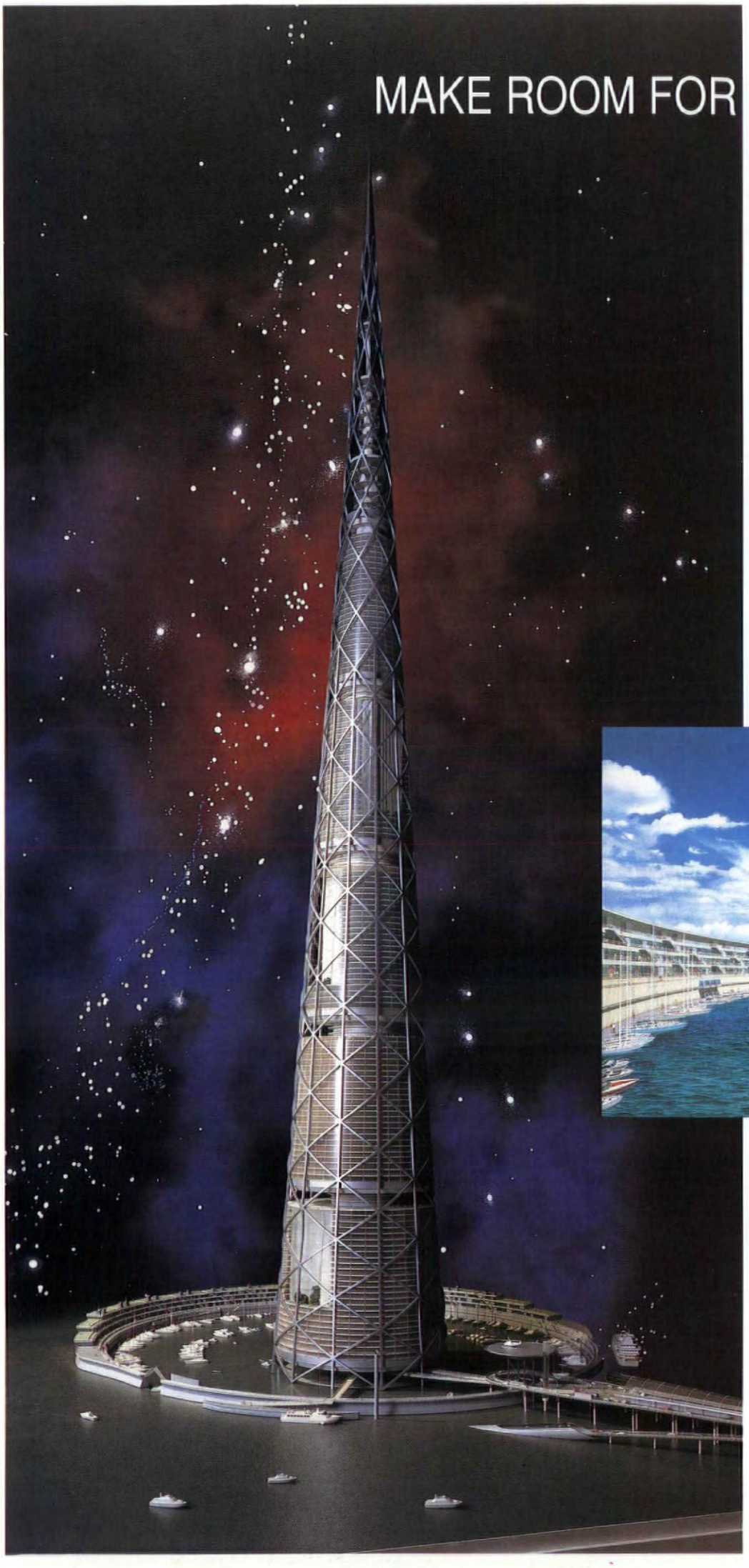

MAKE ROOM FOR THE 21st CENTUR

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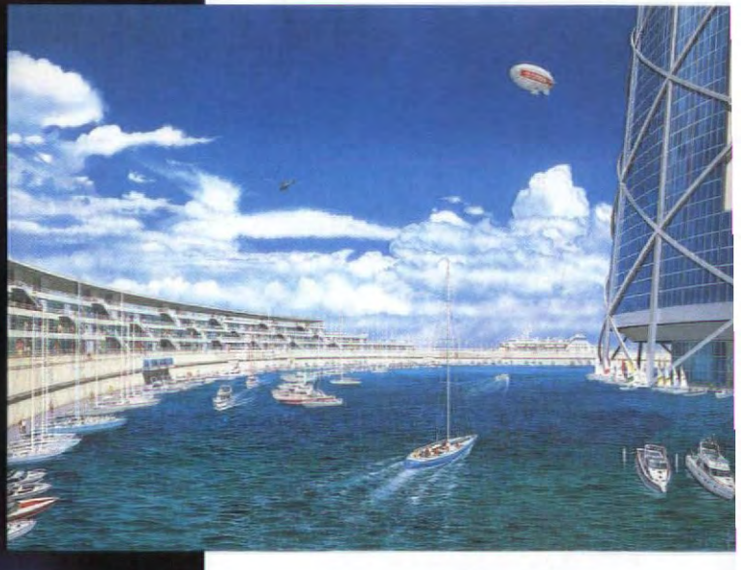
More than merely a building, **Millennium Tower** is an intelligent city of 600,000m^2 — plenty of roon for the urbanites of the 21st centur



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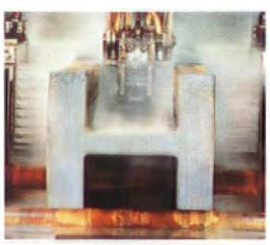
DESIGN FROM STRENGTH



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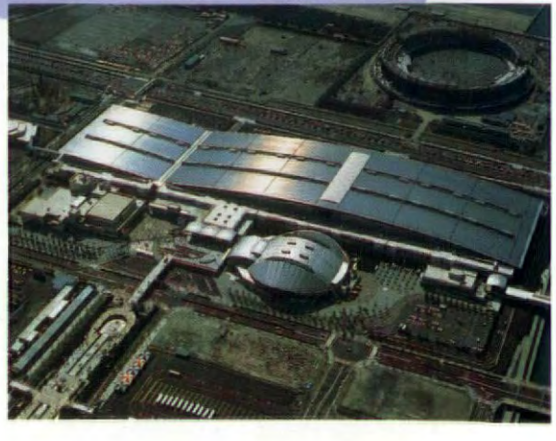
We believe creation is infinite.

NIPPON CONVENTION CENTER/
architect:MAKI and Associates



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4 WAYS THAT HALLMO HAS TOPPED THE COMPETITION.

V. Regattin

1. QUALITY

With its unique specifications for appearance and performance, the project requires total quality for the curtain wall, which must offer maximum thermal performance, acoustic performance and weather resistance (to both air and water).

HALLMO has succeeded in all its design objectives and all tests have been passed without any difficulty whatsoever.

2. PRECISION

No tolerances are allowed for this project; indeed, the greatest precision is required in the execution of all its elements. The clarity and detail of HALLMO's design have been decisive factors in solving the problems involved in the project.

3. ON-TIME DELIVERIES

HALLMO and the other companies involved in this project have made on-time deliveries a primary goal, thus achieving proper coordination of all the intricately-connected elements involved.
The facade system, which was specially designed by HALLMO, has allowed the work to proceed in strict accordance with the original timetable.

4. ASSEMBLY SYSTEM

The modular design of the elements in the project, and the assembly system for the facade (onto special iron supports) have allowed all elements on the inside of the building to be assembled without an external crane system, which would have caused undesirable problems for the building yard and would have interfered with the other jobs in progress.

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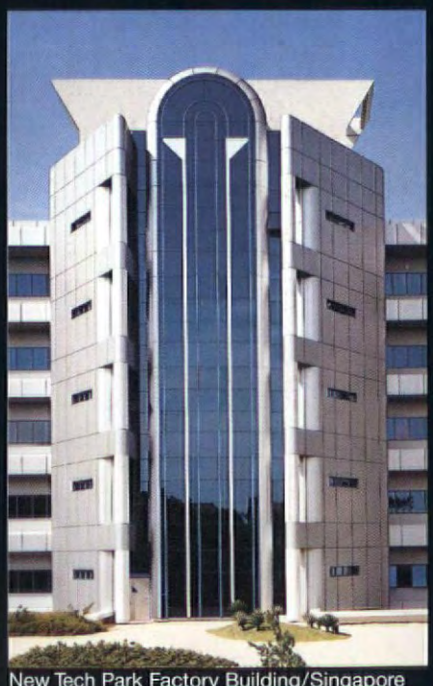

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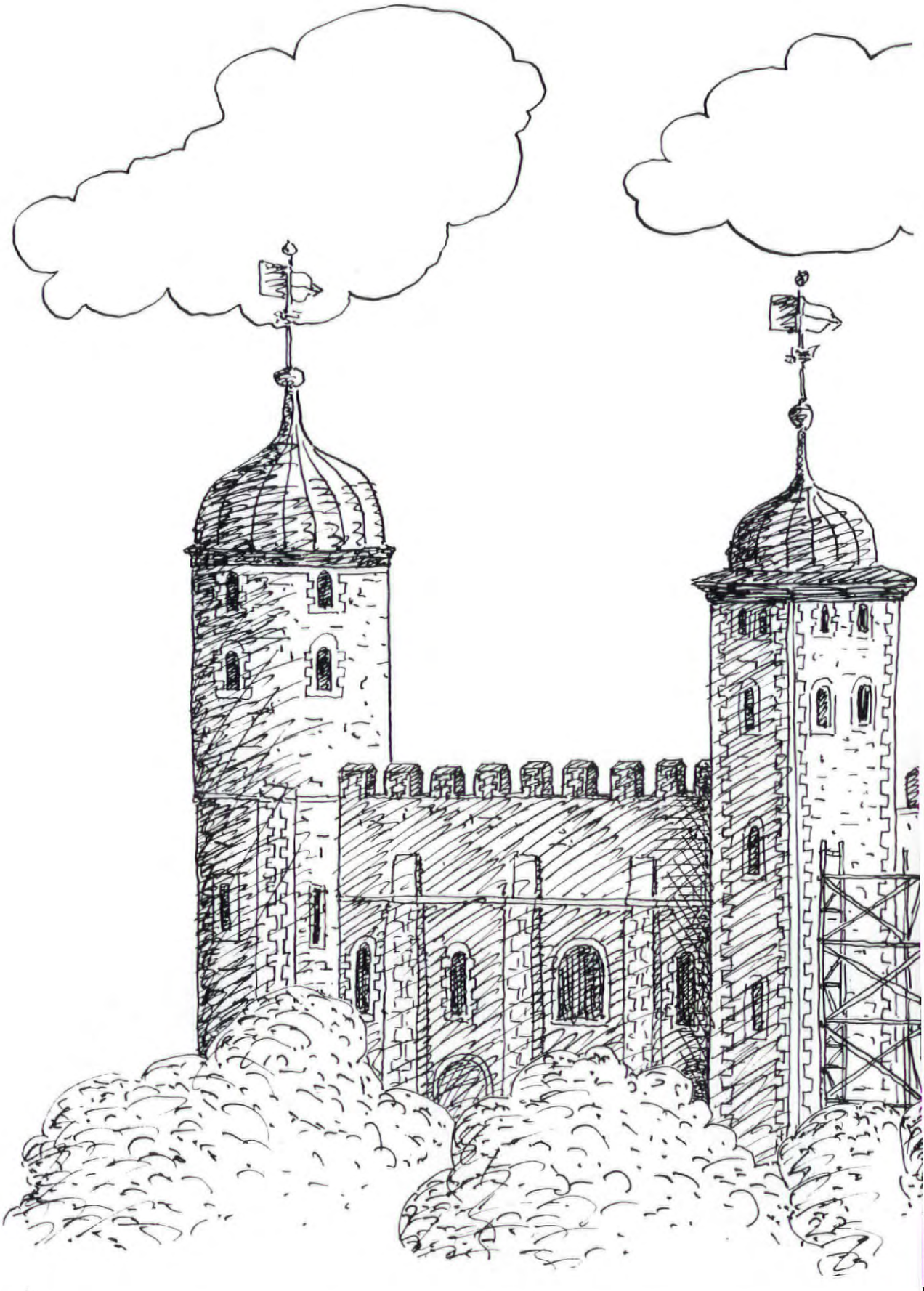

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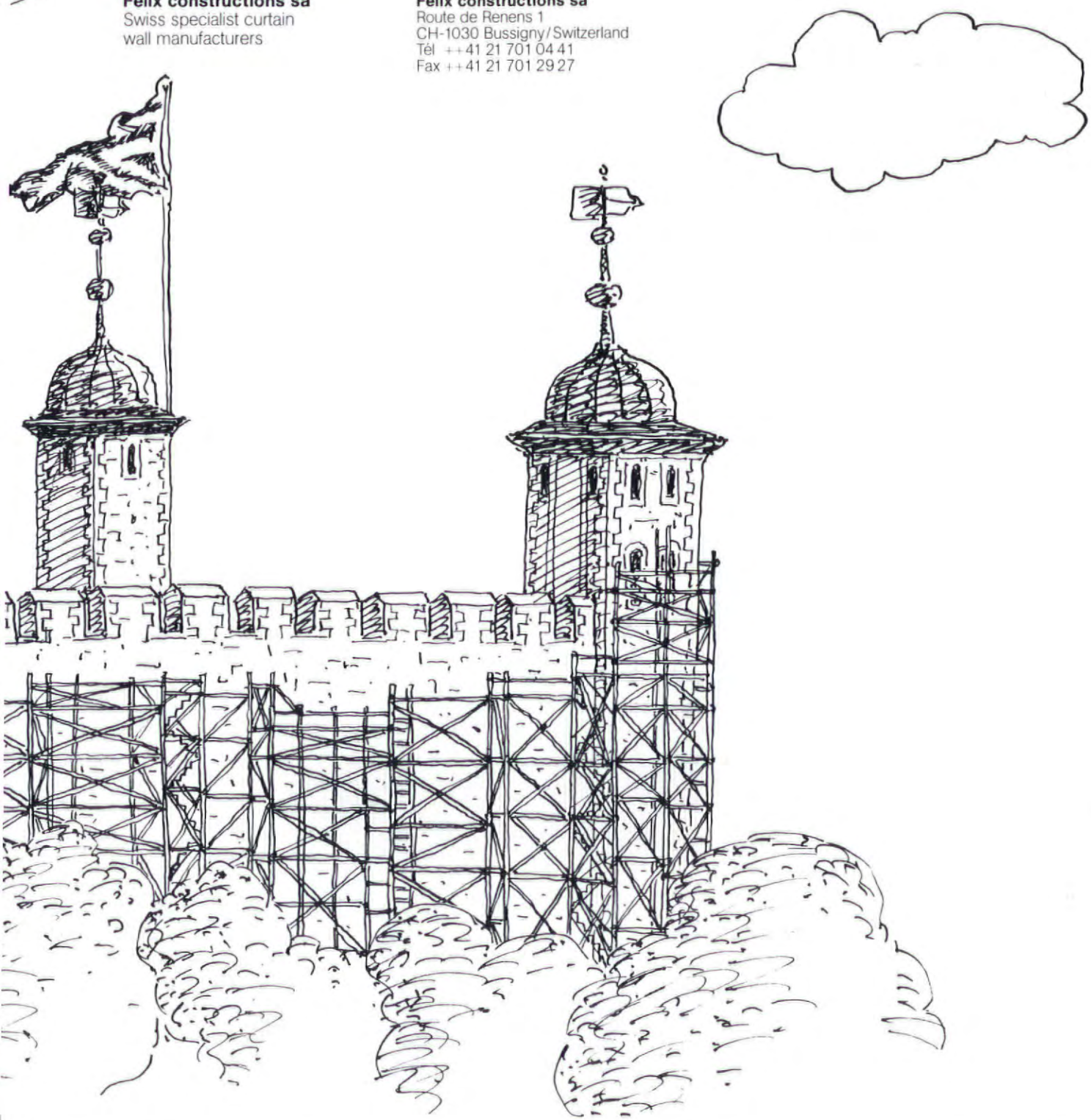

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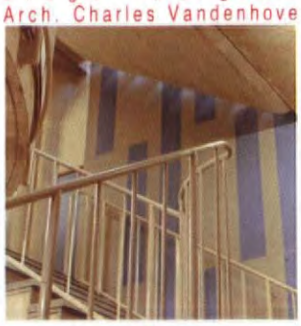

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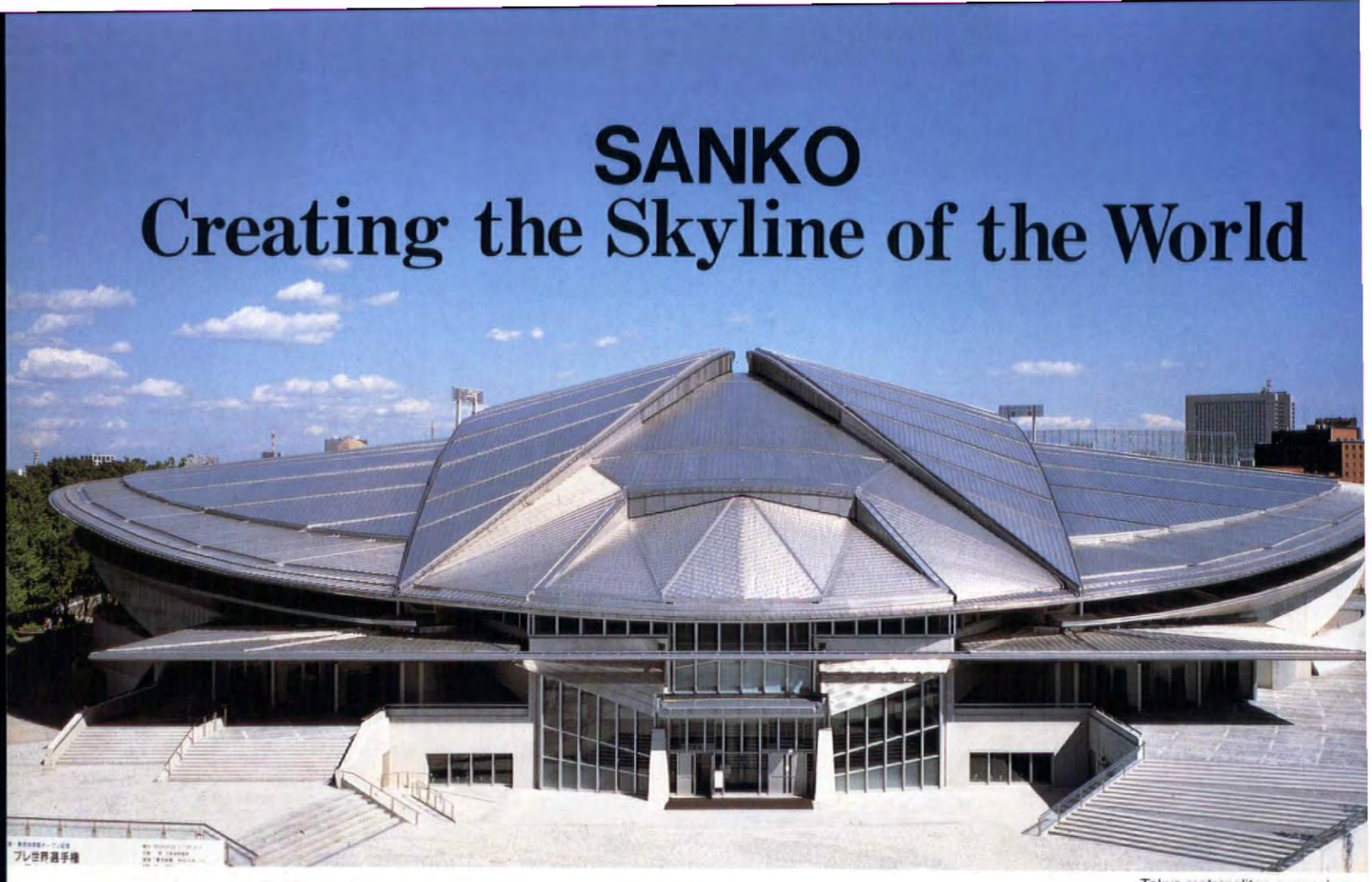

Tokyo metropolitan gymnasium

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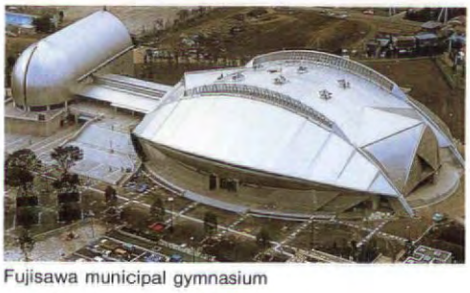

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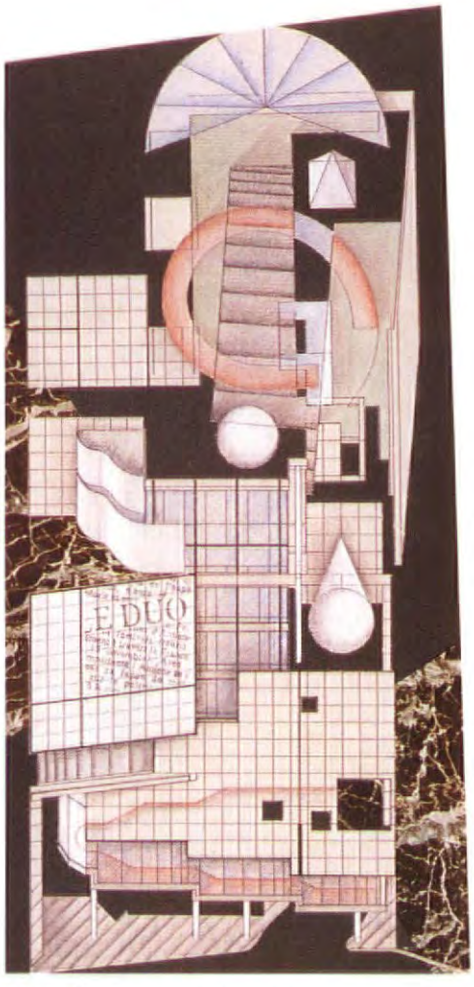


Maki collage for Spiral Building, Tokyo.

CONTRIBUTORS TO THIS ISSUE

Botond Bognar is a professor of architecture at the University of Illinois, Urbana-Champaign, and also author of numerous books, including his latest: *The New Japanese Architecture* (1990).

Gaynor Williams is a London-based writer on architecture who has toured Japan.

Martin Pawley is a leading British architectural critic. His books include *Theory and Design in the Second Machine Age*.

Dennis Sharp is an architect, author and executive editor of *World Architecture*.

Alan Blanc is a British chartered architect and landscape specialist.

Georgi Stoilov is President of the Academic Council of the International Academy of Architecture and a former President of the UIA.

Fay Sweet is a British design journalist and author of a number of books.

Pierre Vago is a distinguished French architect and critic, founder of the UIA (International Union of Architects), and chairman of the editorial board of *World Architecture*.

CAPTIVATED BY JAPAN

It was the father of modern architecture Bruno Taut who discovered that the essence of Japanese culture was "not a stereotyped formalism under academic control but the creative imagination and aesthetic concept". When he wrote that in his 1936 book *Houses and Peoples of Japan*, he was aware of much of the rest of the world's ignorance of Japanese culture and the conditioning social and aesthetic factors that made it so difficult for the western mind to comprehend.

But like a few of the other architects who had been captivated by the depths and complexities of Japan's cultural history – Wright, Raymond *et al* – he was also intrigued by its technological and artistic vitality. Taut observed all of this at a time when the architect's own status was rather low in Japan.

More recent commentators have acknowledged the change in status of the architect but unfortunately few get beyond external appearances in their elucidation of modern Japan's many-façeted cultural manifestations and idioms. The nuances are subtle; the inside information far more complicated than the street-wise gossip of the west.

What a joy it is therefore to be able to feature at length in this special Japan issue of *World Architecture* the distinguished architect Fumihiko Maki who has so clearly articulated his own views and concerns about recent architecture. Maki is first of all a Japanese architect, much of whose work is to be found in the Tokyo region. He trained under Walter Gropius and developed an admiration for and a friendship with leading European practitioners.

From them he gained a keen critical awareness of current architectural attitudes and values as well as knowledge of the currency of the formal values in today's new architecture. In all of this he has never lost the significance of the historical and cultural values of Japan's architecture, nor the compulsion to innovate in a craftsmanlike way.

It could perhaps be argued that a designer in modern Japan might feel threatened by the density and magnitude of cities such as Tokyo and Osaka. Paradoxically, Maki seems to revel in the challenge of it all. His designs seem to marry the notion of the modern metropolis with its characteristic large-scale developments with technological convenience and miniaturisation in a remarkable synthesis.

This is nowhere better expressed than in the great womb-like interiors of the gymnasia and the Messeland. Furthermore there is also in his work a rather deeper dimension which is – in an inscrutable way he appears to want to deny – concerned with anthropomorphic, even biomorphic, means of expression. It is such properties as these that ensure his firm's work is never out of the public eye.

– Dennis Sharp

FUMIHIKO MAKI

MAKING AN URBAN ARCHITECTURE

Fumihiko Maki occupies a unique place in recent Japanese architecture having completed some of the largest public projects in the Tokyo area. His work shows a deep appreciation of the problems of modern urban Japan. Professor Botond Bognar opens the latest in our profile series on Academicians of the International Academy of Architecture with a discussion of Maki's theory and practice.

"In Japanese . . . architecture, public character is expressed through the use and design of territory – in the sensitivity to borders, both marked and unmarked; in the multiple layering of space by means of . . . screens; and in spatial arrangements structured not by the idea of a center but by the idea of depth (oku)." – *Fumihiko Maki*

After more than three decades of teaching and practice, Fumihiko Maki is at the peak of his career; today he is more active and creative than ever. His achievements are amply proven by the growing number of outstanding projects: museums, commercial, educational and sports facilities that are among the finest examples of contemporary architecture both in Japan and abroad. His office now is also busy with several commissions in foreign countries, including the Yerba Buena Visual Arts Center in San Francisco.

Educated in both Tokyo and the USA, Maki has been able to fuse Japanese and Western cultural influences in his designs in a most successful way, while never yielding to trivial or formalistic historicism. Moreover, being both a distinguished academic and an internationally acclaimed, active designer, he has from the very beginning tied his practice to extensive research as much as the actual results of his completed projects have directly informed his theoretical investigations.

In pursuit of innovative and high quality architecture, theory and practice in Maki's work have always formed an inseparable unity. His increasingly sophisticated works can be characterised by a rationality of design, modular dimensioning, the extensive yet selective use of industrialised materials, components and structures, and also by a growing sensibility to details, craftsmanship and, most importantly, to the experiential *qualities of place*.

As his architecture has progressed since the early sixties through several stages with a steady broadening of scope and an enriching of the quality of design, there are quite obviously numerous and interrelated aspects that have shaped his projects, and by which his work can be introduced, discussed, and critically analysed. Nevertheless, among the many, none seems to be as important and consistent as his longstanding commitment to create and promote meaningful public architecture in the increasingly complex and contradictory conditions of contemporary Japanese society.

In this respect it is revealing to note, first of all, that while Maki has designed some excellent pieces of residential architecture, such as his own house in Tokyo (1978), the vast majority of his works, and indeed the ones that made his name well known both at home and abroad, are public structures and complexes. Even his buildings of more private nature display unique

TAISUKE OGAWA

TOSHIHARU KITAJIMA

Previous page: Fujisawa Municipal Museum, 1984 (top); Nippon Convention Centre 'Makuhari Messe', Tokyo, 1989.

Developments in Maki's work: City Hall and Civic Center, Senri, 1970 (below left); Chiba University Memorial Auditorium, 1963 (below right); YKK Guest House, Kurobe, 1982 (bottom).

qualities that lend them a certain public character. This quality derives most of all, from Maki's understanding of the relationship between architecture and the city.

Maki's architecture is unfailingly and unmistakeably urban regardless of the location. This is demonstrated, for example, by his Iwasaki Museum (1979) in the natural open landscape of Ibusuki, and by the YKK Guest House in Kurobe (1982). This, in its rural and pastoral setting, still appears as an "urban" villa rather than a farmhouse, while being able to harmonise with the natural environment in an appealing way.

Maki was born and has always lived, when not abroad, in Tokyo. The special urban milieu of the capital has had, and still has, a profound impact on his work. It was this special influence together with his keen interest in the issues of urbanism that launched and has directed the trajectory of Maki's career from the beginning. As Hiroshi Watanabe has remarked, Maki was already "an urbanite before he ever became an urbanist".

In 1960 Maki was invited to join the so-called Metabolism Group whose primary aim was to systemise design and apply new industrial technology in both architecture and urbanism. Leaders of the group – Kikutake, Kurokawa, plus the inspirational father of the movement, Kenzo Tange, and one of his associates Arata Isozaki – all envisioned the advent of the new technopolises; their numerous futuristic and in many respects utopian urban schemes were conceived of prefabricated and mass-produced elements, units and even capsules supported by various megastructures. These were utilised to ensure functional and spatial flexibility, change and growth, plus operational efficiency in the congested city.

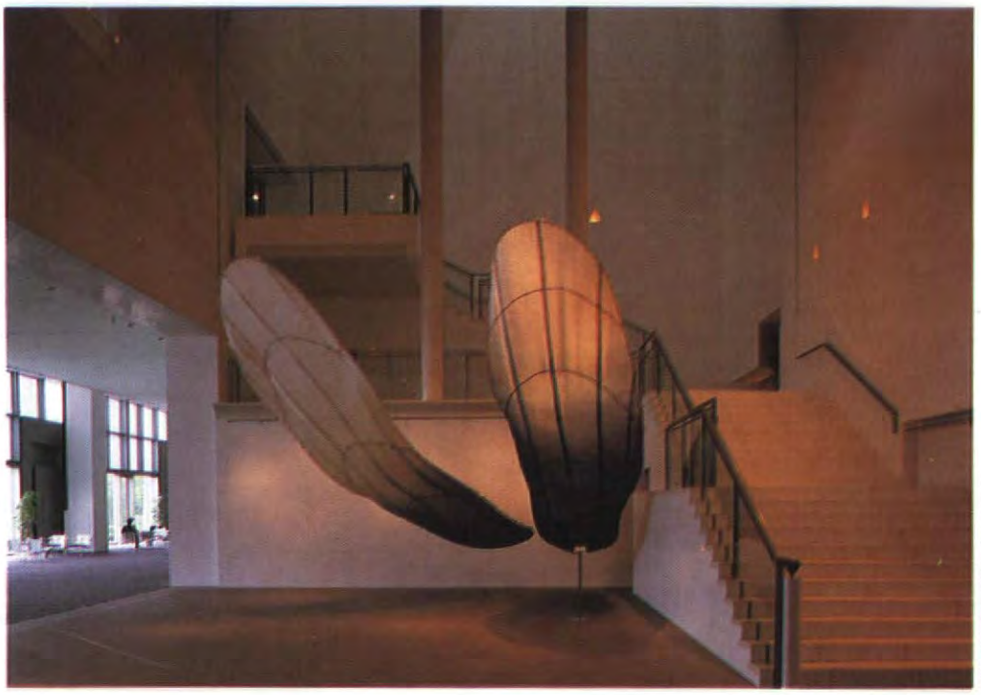
Technological obsessions

Although Maki's interest in new modes of urban design brought him in close association with the Metabolists, he never really shared their technological obsession with mechanical changeability as the basis of the future city. He and his collaborator architect Masato Otaka were the moderates in the group; their joint proposal for the redevelopment of Shinjuku, a district in Tokyo (1964), and Maki's theoretical urban project with Golgi structures (1965), while clearly critical departures from the prevailing urban design principles of the Modern Movement, were less preoccupied with rigid (mega) structuralist interpretations of the city, and were more sophisticated than the previous urban projects of their fellow Metabolist architects.

Maki, even in his early Metabolist architecture, was more inclined to approach the issue of urban flexibility from a more restrained and realistic, down to earth position, that is to say, from the reality of the existing urban conditions – a manifest refusal of the Modernist practice of master-planning. He also tried to incorporate in his actual designs the diverse viewpoints of the citizens, though his works have never resulted in simply populist or pop designs; they have always maintained a discrete elegance and an aura of dignity.

Eventually Maki embarked on a road that led to a new mode of design more responsive to the carefully interpreted urban context than to mere technological considerations. The numerous projects designed for the 1970

Exterior and interior views of the National Museum of Modern Art, Kyoto, 1986.



PHOTOGRAPHY BY BOTOND BOGNAR

Osaka Expo by the Metabolist Group, and others, under the leadership of Tange, highlight the growing disparity between the lines of Maki and his fellow members in the original group. As opposed to the majority who designed gigantic space frames, like Tange and Kikutake, and various pavilions of capsule architecture like Kurokawa, for example, Maki took a different approach: in the nearby new town of Senri, he completed the City Hall and Community Center (1970), which was articulated on a more intimate human scale with a double level public plaza, multi-story atrium with bridges and walkways, cafes and shops.

Influenced by both the work of the European Team Ten, especially that of Aldo van Eyck, and guided by his own theoretical investigations, Maki's unfolding new architecture began to lay the foundations of a contemporary Japanese contextual design, of which he became a leading figure in the 1970s.

Based on his studies of vernacular architecture and settlements in both the West and East, including Japan, his first major publication *Investigations in Collective Form* delved into the part-and-whole relationship as the fundamental issue of new "collective" or public architecture and urban forms.

A more flexible group form

In contrast to the Modernist "compositional form" and Metabolist/structuralist "megaform", Maki outlined and promoted a more flexible and sensitive "group form", an organisation which maintains a reciprocal relationship between parts and the whole. For Maki, such reciprocity (or mutual interdependence) also implied that, in responding to the qualities of the given built environment, works of architecture acquire some basic attributes of urban formations.

Having articulated the elements in a distinctive way, Maki devised various intermediary spaces, often as extensions of the spatial units themselves, that were to form a flexibly connecting system to organise the elements into an *ambiguous* whole.

There are several projects by Maki in the 1970s that exemplify this mode of design. They include the Senri Chuo Building in Osaka (1970), the Kato Gakuen Elementary School in Numazu (1972), the Osaka Prefectural Sports Center in Takaishi (1972), and the Tsukuba University Center Building (1974). But the most successful was his most renowned early work, the Hillside Terrace Apartment Complex in Tokyo (1969, 1973, 1976).

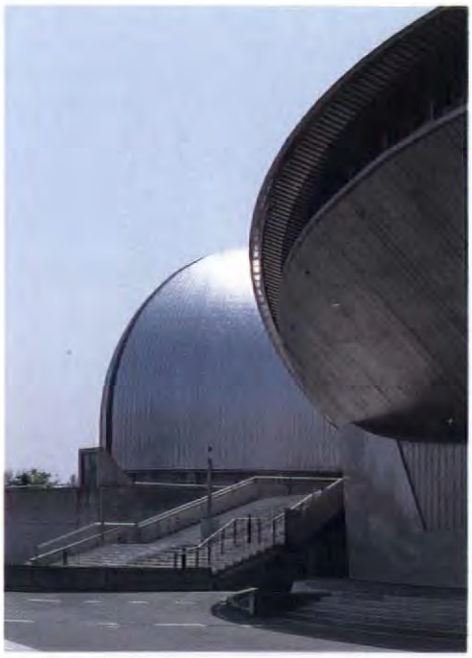
The articulation of an architectural complex as a metaphorical small city or "city in miniature" in Maki's work was to continue and foster the urban realm, and the public dimension within "individual" projects as well. In this respect Maki's architecture, although part of the multi-directional and pluralistic New Wave of the seventies, differed considerably from the intentions of most other designers. In the wake of deteriorating urban conditions in Japan – congestion, pollution, the erosion of privacy, and most importantly, the onslaught of uncontrolled consumerist urbanism – many architects such as Tadao Ando, Hiroshi Hara, Takefumi Aida, Kazuo Shinohara, Kazunari Sakamoto and Isuko Hasegawa took an explicitly negative stance toward the city.

Often centred around tiny courtyards, their inward-oriented and defensive architecture was shaped as "hermetic microcosms" in order to protect the owners or users from the disturbing outside world. Neither they nor Maki were entirely successful in providing a meaningful solution to the prevailing social and urban predicament. Therefore, the beginning of the 1980s signalled the emergence of new directions in Japanese architecture.

Ambiguous spatial definition

Maki's designs, from early on, have revealed a certain affinity with the ambiguous spatial definition that characterises traditional Japanese architecture. A more conscious reliance on this affinity combined with elements of Isozaki and even Carlo Scarpa's mannerism to introduce a new stage in Maki's work. He has gradually enriched his architecture by extending his concerns beyond the physical/formal aspects of the built

Maki's 'integration without synthesis' on the Fujisawa Metropolitan Gymnasium (top) contrasts with the Modernist approach of Kenzo Tange to the Tokyo Olympic Stadium of 1964 (below).



BOTOND BOGNAR

environment to also include the cultural, social and technological landscape or milieu. More precisely, in addition to the spatial relationships entailed by an architectural setting, the images and symbols of "primary landscapes" retained in the collective memory of the Japanese have come to play a significant role in Maki's designs. This is best shown in the YKK Guest House in Kurobe (1982), the Fujisawa Municipal Gymnasium (1984), and the Kyoto National Museum of Modern Art (1986). The orthogonal grid on the façades of the Museum is used positively in reference to Kyoto's original urban structure, rather than as a negative device as with other Japanese architects such as Isozaki or Fujii to defamiliarise and eliminate meaning.

Rather than reusing a formal tradition, Maki has begun to respond more noticeably to the layered, collage-like quality of the heterogeneous Japanese city by articulating his designs with sequentially layered spaces that, similar to traditional architecture and gardens, involve the intricate arrangement of surfaces, various screens and other thin elements. In this, his designs conjure up a phenomenological depth *(oku)*.

In lieu of a rational and easily perceptible order, and a dominant centre, it has always been a sense of depth which, in addition to a kaleidoscopic quality, characterised the Japanese city. Accordingly, building envelopes in Maki's works have become gradually 'detached' from the tectonic body and, acquiring a certain sign quality, freely manipulated, as evidenced best by the Spiral Building (1985) and Tepia Science Pavilion (1989) both in Tokyo, as well as the National Museum of Modern Art in Kyoto (1986).

Uniquely choreographed buildings

Unfolding within the depth of his uniquely choreographed buildings is a symbolic space, or rather a system of spaces that, endowed with a manifest elegance and dignity, engender a sensible urban or public character. These spaces, often reached through a relatively long entrance sequence as one penetrates the building, such as the gallery and ramp in the Spiral, or the multi-story hall with the main stairway in the Museum, differ however from the recently popular and commercialised atria found in many urban buildings. Maki's designs foster as well as celebrate gathering.

Maki's work can be characterised as an architecture of in-between; first, because of its purpose to mediate between various, often opposing or contradictory entities and phenomena: inside and outside, individual and society, part and whole, monumental and organic, past and future, machine age and information age, and so on; second, because in so doing, his architecture also establishes a feasible link between Modernism and Post-Modernism by both benefitting from, yet also transcending them both.

His high degree of moral stance, socially responsible design, respect for materials and the tectonic, reliance on applied geometry, and a certain rationality in approach, for example, are remnants, or conversely, conscious extensions of Modernism. Yet, while Maki has remained faithful to several aspects, especially the abstract vocabulary of Modernism, he has deviated from many of its ideals: in terms of urban design, the utilisation of cultural, even traditional components of design, a heightened sensibility to details and craftsmanship and, together with these, most importantly, in respect to the principles of composition.

From the very beginning of his career, Maki has questioned standard notions of integrated whole or the "synthesis" of form. As he has matured as an architect, Maki's works have attained an increasingly fragmentary quality. Imbued with a feeling of "lightness", his architecture has today reached such a high level of sophistication as to justly warrant the term by Serge Salat: "A Poetique of Fragmentation".

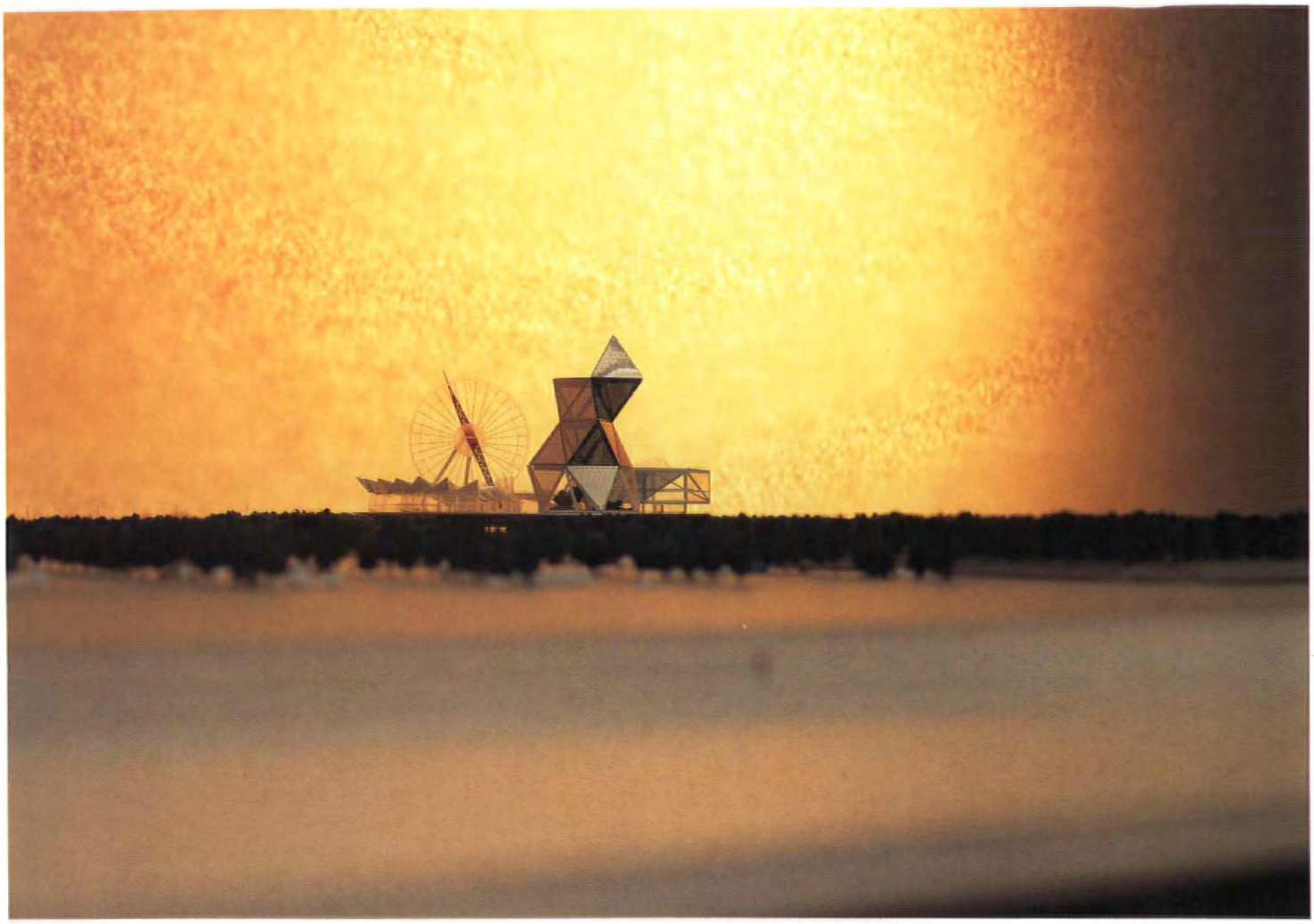
In the Fujisawa Municipal Gymnasium (1990), for example, Maki seems to have made every effort to undermine the continuity and unity of form. Therefore, this project, when compared to another masterpiece of 20 years earlier, Tange's Tokyo Olympic Stadium of 1964, exemplifies well the fundamental difference between the previous Modernist and Maki's recent approach of an "integration without synthesis". While taking the tradition of high-tectonic culture as their common point of departure, the two designs articulate architectural form in diametrically opposite ways. Unlike Tange's project, the Fujisawa Gym employs numerous formal elements which, as independent episodes, contradict and suppress the emergence of a coherent, harmonious whole. Every new vantage point reveals a new silhouette and an unexpected "face" or image of the complex.

Collaged urban texture

By way of the fragmentary composition and the resulting perceptually "unstable" overall form, however, Maki has been able to both recollect better the discontinuous and collaged texture of the Japanese city, and also broaden the range of the building's references and human associations. Activated by a sculptural energy and the tightly stretched metallic skin of stainless steel over the structures, Maki's design attains an almost hallucinatory brilliance.

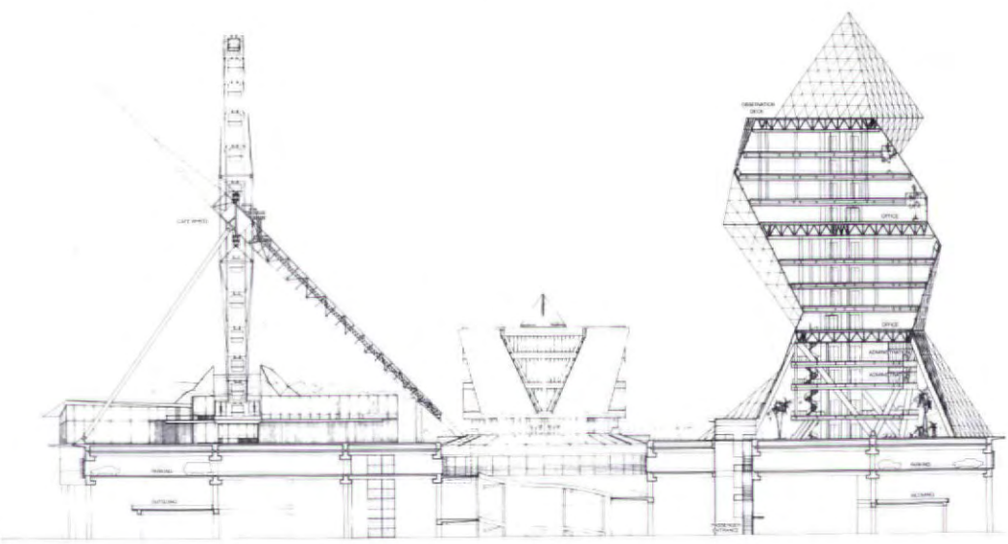
On the other hand, Maki's architecture is not entirely devoid of some risks and potential problems. His best designs have splendidly proven the values of perceptual "lightness". But when the qualities of ceremonial, ambiguity, detailing and craftsmanship are relied on to heighten the totality of human experience without the proper restraint, they can be less convincing. For example, an abundance of details and over-sophistication may tend toward excessive mannerism.

Moreover, lightness and the ceremonial can occasionally border on superfluous theatricality and even superficiality. Certain aspects of the Kyoto Museum, the Tepia Science Pavilion and even the Spiral Building reflect such tendencies to a degree. But one has to acknowledge that excess is also inherent, and with a high degree of intensity, in the special qualities of the Japanese city – the city from which Maki receives much of his inspiration, yet to which he wants to respond critically at the same time. □



THE MAKING OF A MODERNIST

In an exclusive interview recorded in London, Fumihiko Maki talks to WA's Executive Editor Dennis Sharp about his early interest in modern architecture as well as his latest projects.



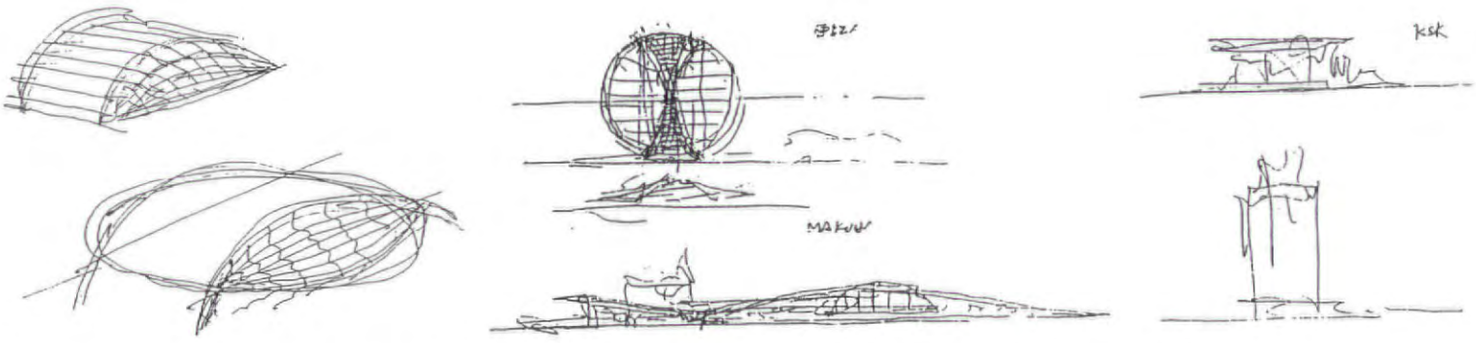
Above and top: an exciting European scheme by Maki, his competition entry for the Zebrugge ferry terminal, 1989.

The tiny top-lit annexe to the RIBA's Lecture Hall might not seem the most auspicious place to be conducting a lengthy interview with one of Japan's most eminent modern architects. For Maki, space, light and form are very special issues. However, in the hall next door he had – a few days earlier – held an attentive, conference audience in thrall as he described and showed in slides a lifetime's work. The privacy afforded by the little room on the side allowed a deeper investigation into the influences and ideas that have motivated this successful and gracious practitioner. We began our interview on an historic note:

Sharp: What has intrigued me for some time is that line of thinking that takes you back in attitude to Modernism.

Maki: My first experience of Modernism was when I saw some white houses by a Japanese apprentice of Frank Lloyd Wright in Tokyo in

Below: Sketches from Maki's recent publication Fragmentary Figures *(Tokyo 1989). Bottom: plan of Zebrugge scheme.*



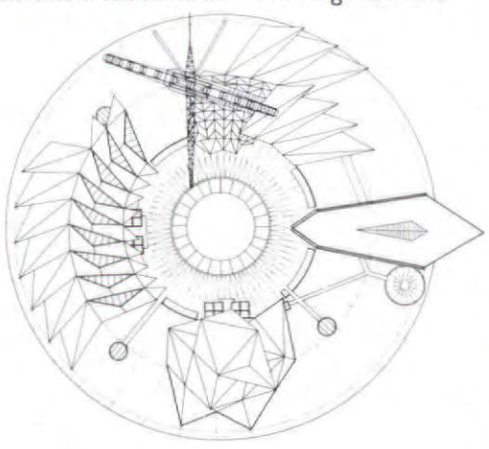
the 1930s. They were quite striking objects. That impression really stayed throughout my career, although it does not necessarily mean that it is still a lasting impression which influences my work. Nonetheless I was fortunate to be exposed to these early Modernist buildings designed by the man who was apprenticed for the Imperial Hotel. He was even asked to do more work in Taliesin too after he had finished. But the irony is that after he came back he didn't show too much influence of Wright. Instead, he picked up international Modernism.

Did Bruno Taut have any obvious influence in Japan after his stay there in the 1930s?

No, but I think his writing about Katsura, for instance, was of interest to the Japanese and also he helped the crafts movement in Japan.

You were aware of Taut's influence as a young man?

As a young man, I was aware of him but my real introduction to early Modernism was when I was able to visit a number of the buildings, from Team Ten shown in the special issue of *AD* on the 'Heroic Age' edited by A and P Smithson. Giancarlo de Carlo is a good friend of mine. I knew Bakema, Van Eyck. You see, whenever I visited Europe – which was quite often – Van Eyck took me to Mrs Schröder's house with him. We met Mrs Schröder. I was introduced to the Maison de Verre by Chareau and I also saw the work of Brinkman. These were my first exposures to traditional Modernism. I knew of Corbusier, for instance, through José Luis Sert who was my mentor at Harvard.



What was it about that simple, flat, plain, white, cubic modern architecture that caught your imagination?

When I saw it as a child I was also very much interested in aeroplanes and automobiles just like any kid, any ten-year-old boy. Those sort of images I acquired in childhood probably got into my memory, into my subconscious. Also my parents took me to see the boats and the steamers which arrived at Yokohama port, not far from Tokyo. Visiting those big ports also gave me a strong impression of space and forms and even railings and canopies. I still remember them very well, very vividly. These experiences all sort of merged into one – also when the Zeppelin airship visited Tokyo.

Did you view all this as a strange foreign cultural phenomenon?

No, initially it was very exotic and exciting. Just going up and down the decks on a big ship is a very exciting spatial experience. Early modern buildings in Japan have very similar qualities; they have decks and railings and white masts and so on, so really my image of the ports and also architecture (to a child's mind) were much the same.

What about traditional Japanese architecture? Did you see that in context too?

As a child I couldn't make any kind of a connection with that. But in Japanese space, the use of glass blocks, as such, gives an infinite sense of light behind it. So you are aware of another space – although you don't see it – and when you have a Japanese *Shoji* screen, which is a translucent one, the light comes in just like that. So you are always aware of something different which you don't see too much. This ambivalent threshold is one of the characteristics common to both Japanese architecture and also some of the modern buildings which experimented with new materials.

How did you deal ideologically with the Modernist dilemma in the 1970s?

I must say, in the west and particularly in Europe, you always have an ideological problem with Modernism. However, when it came to Japan, it was not so much to do with changing urban societies or lifestyles. It came as kind of a symbol of a new way. Naturally our predecessors, such as that architect of the early house I saw, were quite different from my generation. They introduced Modernism (to Japan) and also built their own houses; they acquired automobiles and also had dance parties. Some of the pictures which show them with their wives in those houses are very much like those in the heroic period: the images are completely the same. So for those people, Modernism meant not just architectural style but a way of life. But my Modernism – although I had certain emotional experiences early on – became a little bit more objective, as time went by.

Where has this analysis of an objective point of view of Modernism led you to? Perhaps towards a greater feeling for detail and ornament and things like that?

No. But there is one thing I could say. We also

went through a time of Post-Modernism when a number of Modernist principles were being severely attacked. For instance, the biggest failure, which I must admit, was that Modernism could not make the kind of city we envisaged, or a city that people liked. I don't subscribe to Post-Modernism but the criticism, the commentaries they made at that time about Modernism are worth considering. For instance, the boxes – houses or buildings – did not have any particular symbolic relation to the sky. All important buildings always had a kind of a silhouette, particularly public buildings.

I still use Modernism for my vocabulary and certain grammars, but the syntax I make is not necessarily to be bound by the moral values or initial vision that Modernists had. Instead, since we are still living in an age of industrial products – ranging from glass and metal to all other synthetic materials – I would like to use those materials in a more sincere way to create a greater feeling of enrichment in my handling of details and small things.

What I am very much interested in is how we can make something similar to old buildings – that impression we get from old buildings, through the use of materials. The question of tactile quality can only be understood when you visit the buildings, a picture may not be able to convey those things too. Tactility is very important. By refusing ornament we have given up something very important in architecture, that is the hierarchy of scale for space. The juxtaposition or combination of certain materials available in the modern age and the careful details which we can reveal as objects could replace the function of ornament. I am very much interested in this.

The third thing I like is well built architecture since we have an obligation to make a building last. We are looking at quite a bit of money so it is a kind of a social responsibility and I would say our detailing is to ensure this quality of longevity. Right now in Japan we are one of the very fortunate few countries where we have both technology and also craftsmanship, not only for plastering or for stonemasonry but also for metal work. A friend of mine took me to several places in England where you have very interesting craftsmanship. It recalls the early industrial age and it is the same in Japan. We have both. To me, architecture is always the expression of a particular time – what kind of materials are used, how they are used and so on. In ten years' time in Japan, we may not have

Traditional Japanese tea kettle: Maki's enduring fascination with culture and craftsmanship.

craftsmanship any more. I have no confidence. But while craftsmanship is available, I use it in my building as a testimony of the particular age we live in.

And you see this craftsmanship operating in a highly sophisticated technological way that can be used for those huge buildings you have designed?
Yes.

I would like to shift the discussion a little bit toward the question of scale because one of the things that is very obvious about your recent buildings is that they are very large buildings, particularly the gymnasia. One of the impressions we get of Japanese cities is that they are very dense urban centres. How are you able to achieve single storey large-scale structures in such dense urban situations?
I will give you two examples. One is for the Makuhari Messe. That is on reclaimed land. It was reclamation done by the public sector, and the public sector is able to allocate some of the important facilities.

And the financial return means you can still put a single storey building on that land?
Yes, reclaimed land is cheaper than land in existing central areas. Also, like London Docklands, some of those areas were once occupied by shipyards and warehouses. They are now being taken back. My second example, Tokyo Metropolitan Gymnasium, has a very large site in a dense city centre. It is not on reclaimed land. In the early 1950s right after the war, Tokyo land was not so costly. Therefore, the public could acquire large properties, even creating parks and laying out super highways. Tokyo metropolitan government built similar facilities in the late 40s and 50s, but since Japan was poor at that time the building was not in good shape. They needed bigger, better facilities. So we tore them down, removing the existing areas.

How do you deal with this problem of scale?
I think that sometimes when I'm dealing with a large building I am always careful not to make the building too neutral. Often large spaces have built-in requirements to make them very flexible and large and therefore anonymous and neutral. But to me you never have 'neutral' cathedrals, as such. Then it doesn't become a cathedral, just a box with a certain depth, height and width that would not give you a sense of appropriateness of place. A certain awe must be there for a large space since it is a public place to enjoy or celebrate. The large space has a responsibility to give people a sense of the festive. Celebration does not come out of a vast warehouse. Instead it must be constructed using architectonic principles or truths. Functionally, you could just make it like a warehouse and get no complaints by a client. It might be cheaper. But our public responsibility is to make it a place of celebration. So it requires a special intention by the architect.

It has been suggested that some of your work, particularly this large-scale work, has a sort of anthropological or biomorphic quality. People can read things into it because of the shapes of the forms. How would you answer such a point?
I think, again, that people get a certain amount of fun by reading something into buildings. When we designed the Fujisawa gymnasium people called it a beetle or a frog or a spaceship but we didn't design it to make the building like beetles or frogs. It's just the outcome of certain rational construction.

So it's not some Post-Modern attempt to create something biomorphic. You have obviously observed the response from the public that your buildings do have these qualities. Do you think that makes your architecture less serious, or does it reinforce your good feelings?
A good feeling. Children came to see Fujisawa

on the bus: as they began to see something in front they hadn't seen before, they just cheered, you know. And also some SF movie company immediately went to Fujisawa to use it as a background for the encounter of some aliens! So the people reacted to it – in the same way as I looked at the Graff Zeppelin which landed in Tokyo way back in the early 1930s. I was so excited by that airship: it was the same sort of reaction those children might have had.

Could you tell me a little about the way you adopt modern materials to create those kind of effects of transparency that you spoke to me about earlier? You seem to combine a number of materials together in creating your details and your details are very mechanistic, very precise. Do you set out to achieve a technological quality of excellence or does it arise simply from the nature of the material you're dealing with?
Both. Yes, both. In many cases I like this mechanical feeling: the precision gives me a certain satisfaction of it being well built, but the buildings I design have a kind of warmth once you get inside. I have a very sharp sort of construction but the atmosphere you get from the buildings is very warm, sensed through the tactile quality of the materials. I also try not to negate the human scale. I like to provide a hierarchy of scale in terms of the dimensions. Therefore you can feel something awesome but also friendly, you are not overwhelmed by it.

So your architecture – to use a cliché – is a kind of 'holistic' experience where the manipulation of the larger parts actually provides the technical detail?
Yes, but in this sense I don't go into a too esoteric sort of dissertation on architecture; instead, a sort of holistic experience. This is always the guiding principle.

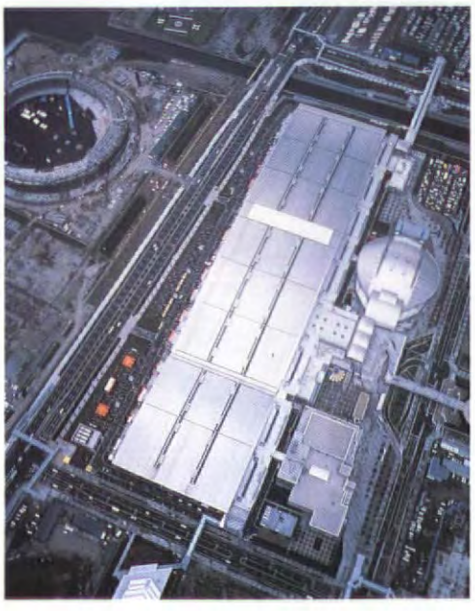
Finally, there is one thing that did puzzle and worry me a bit when I looked at the exhibition of your work and your slides. You show your buildings quite often in the traditional modern way with no people in your photos. Why is that? Surely those sports buildings are full of liveliness and intensity and colour?
I have slides which are full of people. However, since I wanted to show the construction of the buildings, I didn't use them. I admit that I should have shown them more, of course. □

Above: TEPIA science pavilion, 1989, view from south façade with reflecting pool and stair in foreground.

The three buildings discussed by Maki to demonstrate the fusion of technology and craftsmanship in Japanese construction: Fujisawa Metropolitan Gymnasium (top); TEPIA pavilion (centre); and Nippon Convention Centre "Makuhari Messe" (bottom).

TECHNOLOGY AND CRAFTSMANSHIP

In this essay, Fumihiko Maki presents aspects of three of his buildings to illustrate the co-existence of high technology and traditional craftsmanship in Japanese construction – and the integration of technical and craft principles in his own architecture.



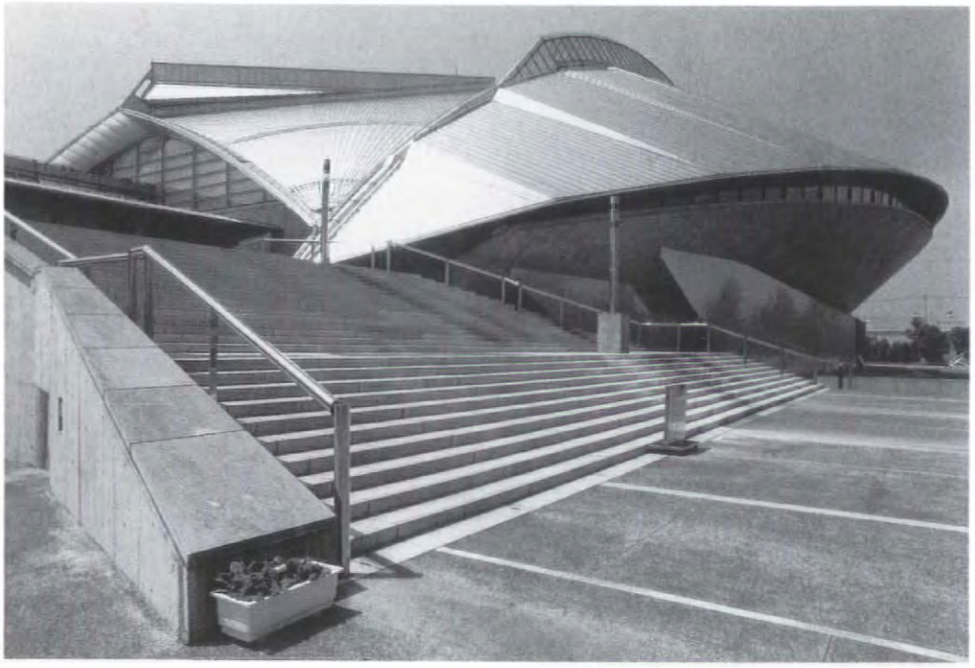
The Meiji Restoration of 1864 marks the drastic modernisation of Japanese architecture and its construction industry. Today, after almost 130 years, Japan enjoys highly developed building engineering and enduring craftsmanship which is seen in the execution, assembling and finishing of buildings on the site. Since architecture is the very mirror of the socio-cultural and technological aspects of a society in which it is built, I have been consciously pursuing my design along this line of thought. I present three buildings here to illustrate the point about technology and craftsmanship and their application in design.

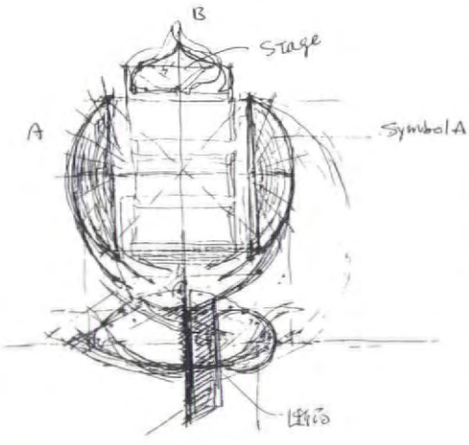
Roof structure of the Fujisawa Municipal Gymnasium

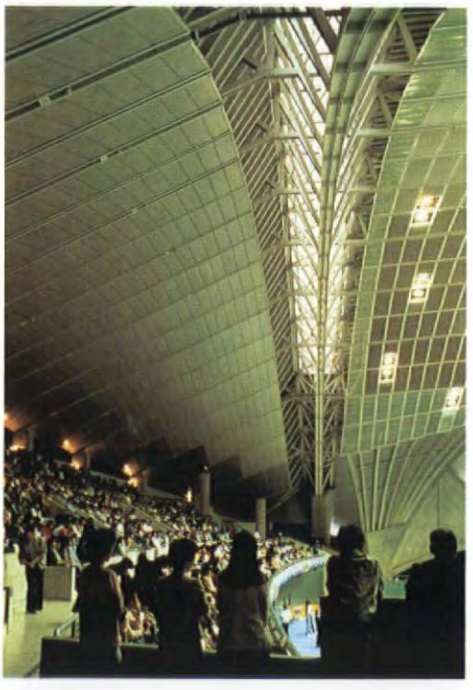
Fujisawa is located very close to the seashore, about 30 kms from Tokyo. The landscape of this area is, in fact, quite bleak. The particular site chosen for the new sports complex lacked any distinguishing characteristics of its own, thus the new building would assume a strong presence in the city. Since the programme required the enclosure of a very large space, the roof to be conceived would be crucial to the final character of the building.

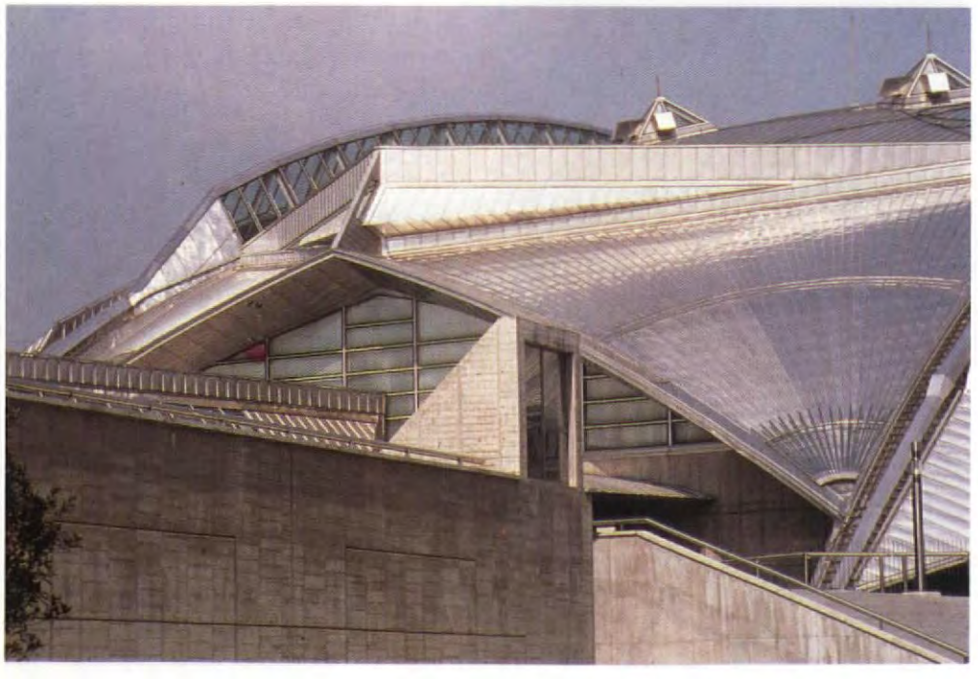
The roof structure of the main arena is supported by a pair of parallel keel arches in the form of a latticed truss of a triangular section which spans 265 ft from north to south and rises to a height of 75 ft at the centre.

Even though the structural concept is clear and simple, the structural calculations for dimensions and the details of connections are very complicated due to the curvature of the roof. Japan has established strict criteria for seismic design including building codes and regulations; however, these criteria are based on statistics of many case studies concentrating on rectangular structural framed buildings. Since a curvilinear structural frame as in the case of Fujisawa Gymnasium cannot conform to these established criteria, new studies were









conducted to find a particular mode of seismic action suitable for this structure.

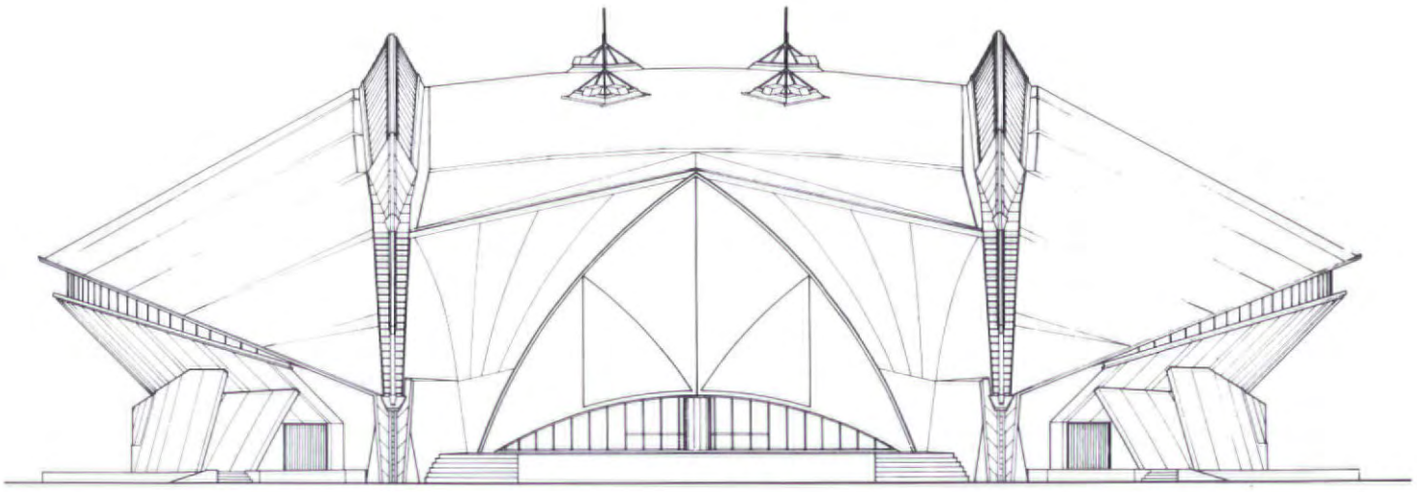
Stainless steel was chosen as the primary roofing material for several reasons. Its major advantage is its great resistance to degenerative effects of salt air; and furthermore, its qualities of considerable luminosity, its capacity to be shaped and bent into fairly complex segments, and certain inherent qualities of scale suggested by its extreme thinness and fragility.

Each of these characteristics were regarded as advantageous to the formal and technical ordering of the roof. Their cumulative effect was to provide a point of departure of considerable rigour, a set of limitations demanding precise calculation and considerable investigation of relevant construction procedures.

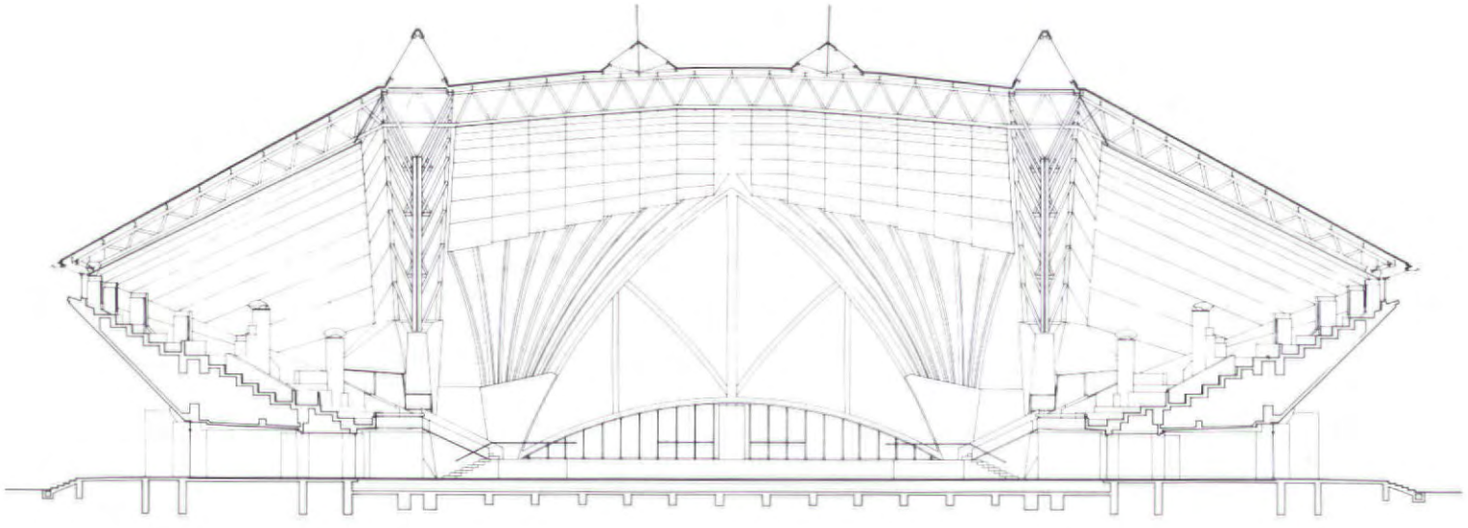
Fujisawa Gymnasium, a building that is not composed of repetitive elements, cannot be considered innovative in the manner in which it was constructed. However, it does demonstrate the coming together of traditional procedures of construction with the development of new and highly sophisticated building materials.

The building was constructed with the active participation of an attendant work force; a supervisory team responsible for both the conception and execution of detail was present at the site at all times. The character of Fujisawa Gymnasium is determined by the piecing together of carefully crafted, individual components in a complex assembly not unlike its Japanese predecessors.

Fujisawa Metropolitan Gymnasium: carefully crafted, complex assembly of roof structure

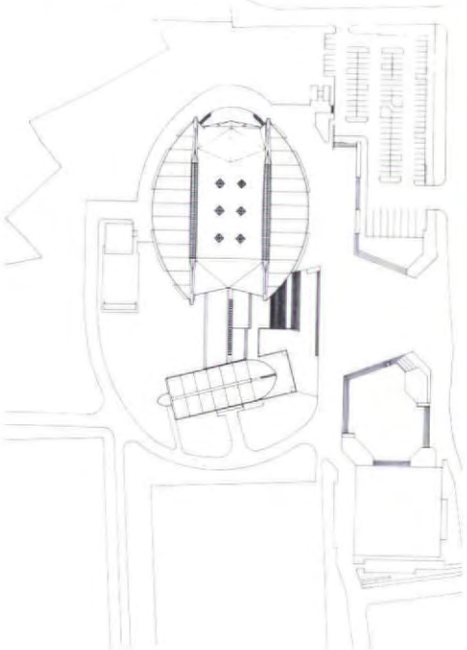


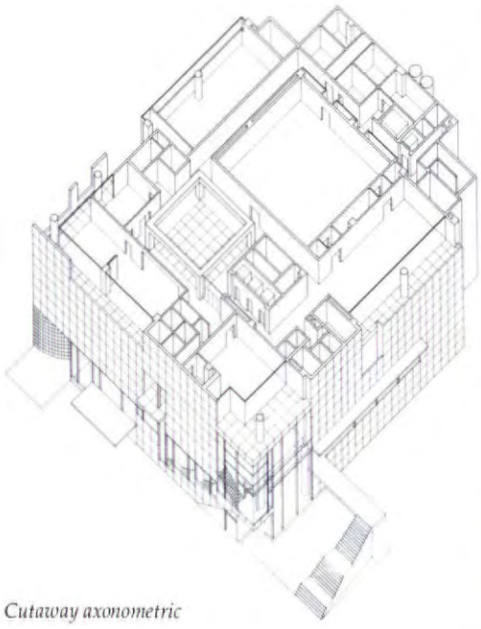
Elevation of main arena of Fujisawa Gymn



Section through main arena

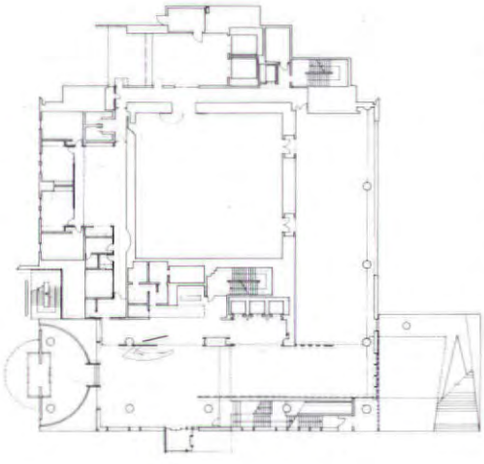
Site plan (below left) and view of sub arena in landscape



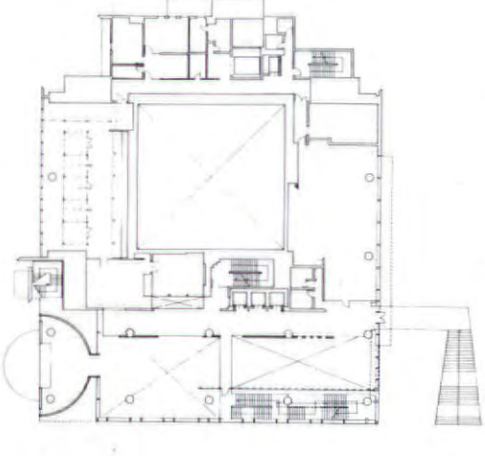


Cutaway axonometric

South-west view of TEPIA pavilion from the street.



First floor plan



Ground floor plan

Metal details and finishes of the TEPIA technology pavilion

TEPIA, a pavilion for science and high-technology (completed in May 1989), is located in Meiji Memorial Park, not far from the centre of Tokyo. The building appears to be a free-standing pavilion with open space around, by taking advantage of the zoning regulations of the Park District which delimits the volume and height of the building above ground.

It is a place to exhibit the most advanced products of high-technology and electronics, for example robots, computers and computer arts. The building and its exhibits are intended to provide an exchange of knowledge among professionals and to inform the general public.

The design principles and aesthetics of TEPIA from exterior extending into interior are intended to reflect the character and spirit of our time as well as communicating the requirements of the programme. A composition of primary elements of planes and lines were put to force, and where the planes and lines meet one another, is the creation of a "point", the third primary element in the composition.

A distinctive skyline of TEPIA is created through the combination of vertical walls and horizontal overhangs and at the point at which they intersect, a tight gap is revealed to heighten the tension of collision and separation. In the interior stairway, perforated panels of aluminium are suspended in the air by cables, leaving lines of light between the panels. The means to express the energy embodied in the "points" both compositionally and materially has been investigated and exercised from the largest scale of the building to the smallest of details.

Such compositions of planes, lines and points are best achieved with the use of metals and glass; these are primary materials of modern architecture that have acquired a certain historical character. However, new means of mobilising these materials, for example, in the 5 mm exterior aluminium panels, structural glass, and solar-air panels of aluminium extrusions on the roof - utilising the latest Japanese building technology - express our own age.

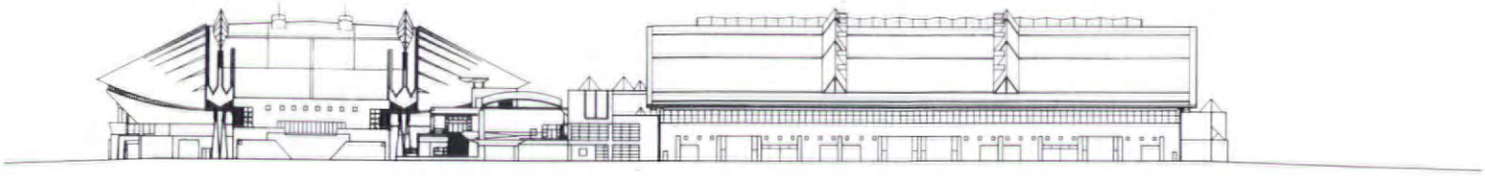
In an effort to avoid monolithic repetitious uses of the same materials, finishes and details, TEPIA attempts to introduce a variety of these to create a subtle yet sumptuous ambiance. Rubber tiles, perforated aluminium panels, fabrics and paints, fire hydrants, lighting equipment, indicators of the elevators and benches are among the many items that have been developed to achieve the overall sensitivity of TEPIA.

Similar principles have been applied in the colour co-ordination: white, grey, silver and black and their rich combinations comprise the spectrum. The principle is intentionally interrupted in some locations in order to amplify the effect - for instance, red in the carpet of the lounge, green in the courtyard, and brown painted walls.

This meticulous investigation and application of finishes and details has been employed throughout all the rooms, ramp-ways, corridors, stairways, and even the mechanical spaces. It collectively speaks of the co-existence of technological advancement and lineage of craftsmanship in the modern Japanese building industry.

The high standard of technology and craftsmanship maintained by Japan's system of building and construction has made this design and its details possible. In all likelihood, an equivalent level of technology and craftsmanship may not endure indefinitely. Thus, TEPIA is in a sense a testimony to modern Japanese society.

North elevation of Makuhari Messe



West elevation

South elevation

Makuhari Messe: Nippon Convention Center's design and construction

In an ambitious effort, Makuhari Messe Nippon Convention Center - a complex of buildings totalling 131,043 sq m - was designed in one year and constructed in two. It is built on a totally flat parcel of reclaimed land facing Tokyo Bay in Chiba Prefecture and is in a strategic location halfway between Tokyo International Airport and central Tokyo.

It is also to become a focus for the newly emerging business/residential centre Makuhari New Town on the outskirts of Tokyo.

Nippon Convention Center is the first of its kind in Japan. It is a comprehensive convention complex with exhibition hall, events hall, and international conference centre housed in independent buildings. These have been paired with three symbolic mushroom-shaped canopies in red, all fragmented into geometric and architectonic forms. They have been juxtaposed in the foreground of the giant arch of the exhibition hall.

Metaphorically, the exhibition hall abstracts the image of a natural landscape of hills and mountains. The silhouette formed by the juxtaposition of natural and geometric elements gives birth to a new image of a city in this particular place. The three buildings form an informal plaza at the central part of the site and provide for steps, ramps and escalators to the entrance of the exhibition and event halls. The international conference centre provides the eastern edge of the plaza with an arcade containing a restaurant.

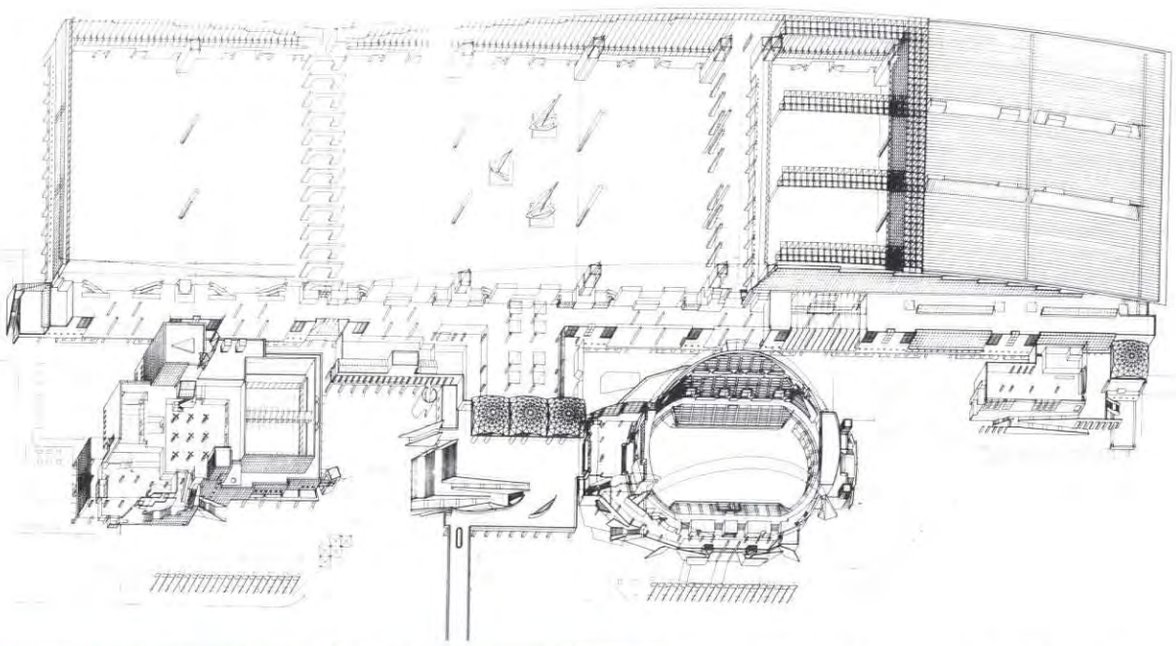
Largest of the three buildings, the exhibition hall comprises eight identical bays of 120 m × 60 m which have been covered under one sweeping roof with a giant arch hovering at 540 m. The arched roof rises to a height of 31 m at its apex from 15 m at its lowest. The large expanse of roof surface has been sheathed in 0.5 mm thick folded stainless steel sheets, for as in Fujisawa Gymnasium, Makuhari Messe is in proximity to the sea on the shores of Tokyo Bay. Thus stainless steel proved to be appropriate in resisting the degenerative effects of salt air.

Rolls of stainless steel were craned up to the roof and extruded through a forming machine into their corrugated forms in 60 m lengths. This construction method devised to finish the immense roof surface proved to be most efficient and time effective. This particular building type is quite massive with nondescript spaces. However, in the Makuhari Messe, strategic openings have been employed along the edges of the ceiling in order to offer a mood of lightness.

To minimise and control natural light, the walls of the exhibition halls were required to be solid, finished in white panels of glass wool board. The wall is formed by a Vierendeel truss, thus creating a double wall with an insulating air space. The exterior is finished in glass, but through the glass, appears the white

Aerial and overall views of the Makuhari Messe: ambitious natural landscape.

Right: axonometric showing general layout of the exhibition halls at Nippon Convention Center. Below: interior view of main exhibition hall.



panels of glass wool board which reflects the colour from the sky to project an aura of lightness.

In the foreground is the event hall with a capacity of 9,000 seats. Not only will it accommodate sporting events, it is equipped with electronic and theatrical devices capable of serving a wide range of events and activities. The curvilinear roof of the distended form of the hall is finished in 0.4 mm stainless steel sheets that are electrically welded in a similar way to the roofing system of the Fujisawa Municipal Gymnasium.

At the north-east corner of the site is the international conference centre with its independent entrance and porte-cochère. Within are the banquet hall for 2,000 people, an international conference room, a variety of meeting rooms, a restaurant, and the offices for the entire Nippon Convention Center. In contrast with the exhibition hall and event hall, the conference centre is a composition of fragmented rectilinear forms; however, to harmonise with the other buildings, the exterior has been cladded in anodised aluminium panels 2.5 mm in thickness with a uniform size of 1.2 sq m throughout.

In realising the project, the two-year construction schedule posed a great challenge. In order to conserve time by minimising on-site labour, an industrial process of systemising and prefabricating materials was extensively used. However, all of the methods used to assemble the industrial products were designed specifically for this project. The 'space beam' structure for the exhibition and event halls was pre-assembled in a factory in order to minimise on-site joints. All floors of the buildings were composed of pre-cast concrete.

Not everything was industrially produced. The combination of industrial products with site intensive/hand crafted products gives this rather large building a distinct quality of its own. □

BOTOND BOGNAR

SATORU MISHIMA

TAISUKE OGAWA

Spiral Building. Top left: view of the street façade. Top right: the building in its setting. Above: view of the interior atrium from the café.

Spiral Building Tokyo 1985

Since World War Two, Wacoal Corporation has grown into one of Japan's largest manufacturers of women's lingerie. In part to improve its corporate image, the company has recently expanded its programme to include fashion, art and music. This building was conceived as an arts centre for various corporate-sponsored cultural activities and to be in itself a work of art.

The first floor, including the entrance lobby, is designed for the display of temporary exhibitions. The main space for these installations is the semi-cylindrical multi-storied atrium, lit by natural light, in the very back of the building. A café is located in the middle of this space and directly below a mezzanine level we call a 'watchtower'.

A gently sloping ramp along the curving wall of the atrium leads to a shop of designers' crafts. A visitor may also reach the second floor from what we call the esplanade, if on entering the building lobby he turns right and continues up a stairway in the direction of the street. The esplanade continues upward through a high-ceilinged space to the third-floor foyer of a theatre.

The theatre, which seats 300, is used for various performances and activities. Video studios are located on the fourth floor, a restaurant with a garden on the fifth floor. Each of these spaces for art and design-related activities has its own character.

The conical form, which is a particularly striking feature of the elevation, functions as a special exhibition room for a costume museum. The eighth and ninth floors of the centre accommodate the owner's private entertainment spaces. – Fumihiko Maki.

Above: interior of the main arena. Right: view from the air shows the Metropolitan Gymnasium's dramatic profile in the cityscape.

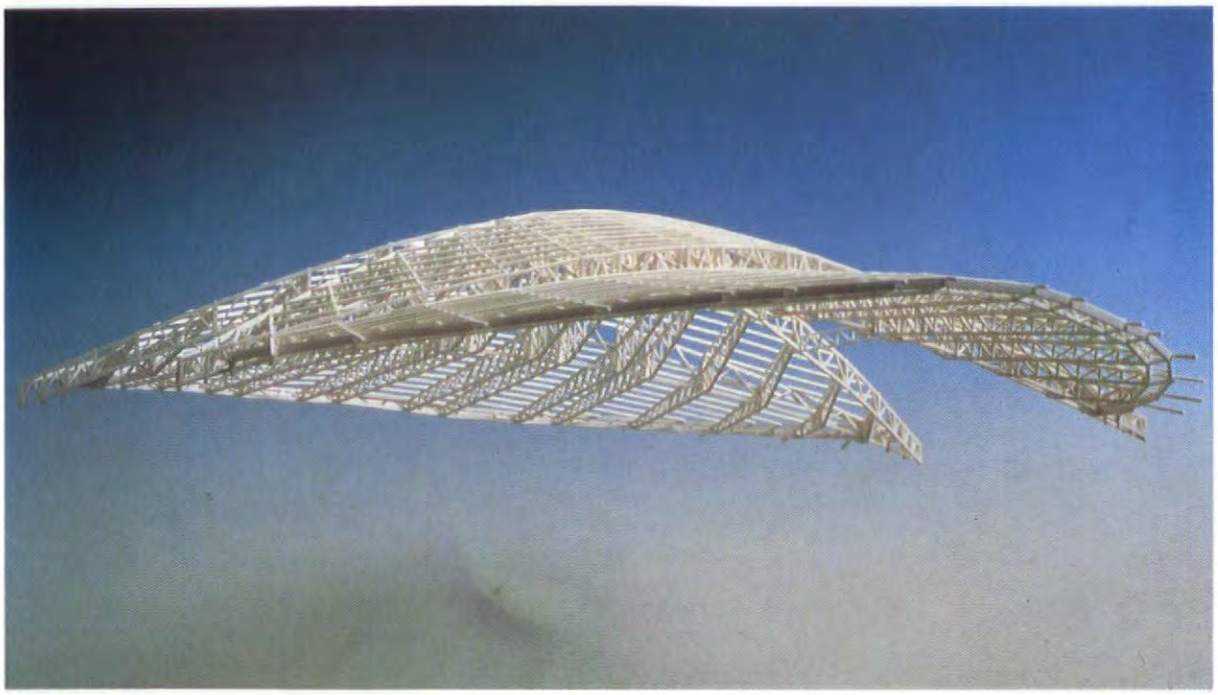
Metropolitan Gymnasium Tokyo 1984-1990

The Tokyo Metropolitan Gymnasium is a reconstruction of the old facility built 30 years ago which was quite inadequate and poorly constructed. The new Gymnasium, designed under a new programme of a total floor area of 45,000 sq m was constructed on the same site of 4 ha.

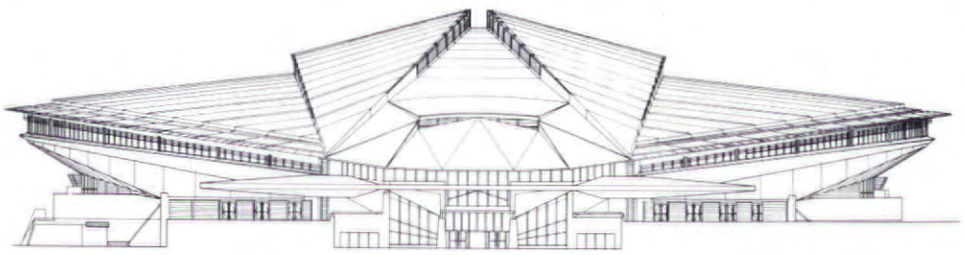
The programme consists of a much larger main area with a seating capacity of 10,000, an indoor swimming pool with a 50 m pool with less spectator seating, more backup facilities and an additional 25 m training pool. Additions included in the new programme are a sub-arena, primarily used as a practice gym, training courts, meeting rooms for sports seminars and exhibitions, generously appropriated administration spaces, and a restaurant.

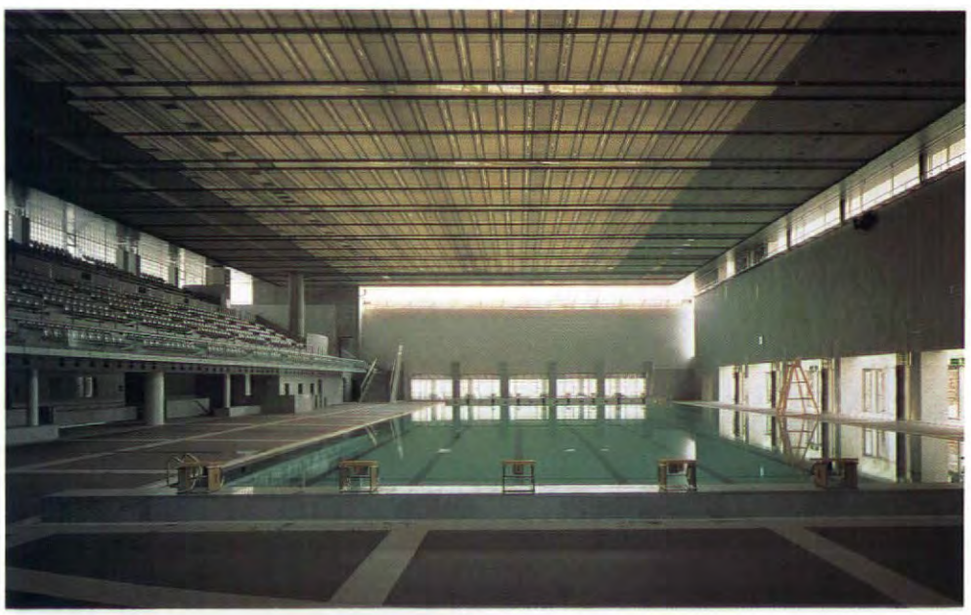
The height restriction imposed on the site of a maximum of 30 m, necessitated lowering the main arena floor 6 m below ground level and the swimming pool 2 m below. The design, conforming to the height restrictions, avoids the appearance of the massive and voluminous spaces of the required interiors and harmonises as a friendly neighbour to the residential and commercial buildings in proximity.

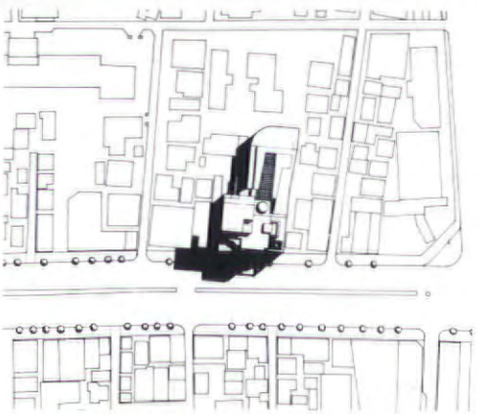
While the volumes of the respective buildings in the complex are constrained to be quite low, the roof shapes for each building is given a significant architectonic role – a continuous investigation of Fujisawa Municipal Gymnasium 1984 and Makuhari Messe 1989. The roof of the main arena gently curving as in a shell, the sub-arena stepping as in a ziggurat, the undulating roof and hovering eaves of the swimming



Significant architectonic role for each element of the Metropolitan Gymnasium: (left) roof structure model; (below) indoor swimming pool and site plan.





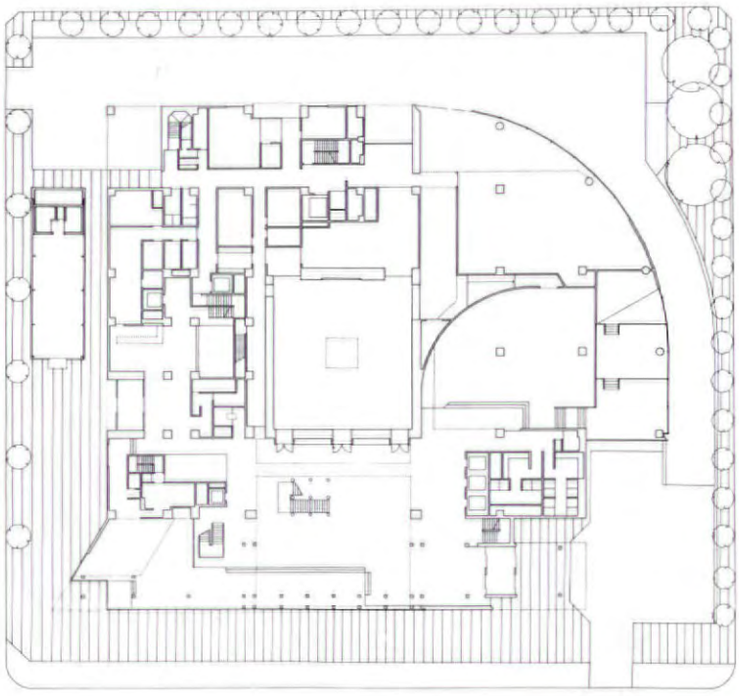


pool, the transparent pyramid, together with the sculptures and red lighting fixtures constitute a new urban-scape. While moving through the sports park, visitors will always be faced with changing views from the different juxtaposition of the buildings with different vistas out to the neighbouring park and city.

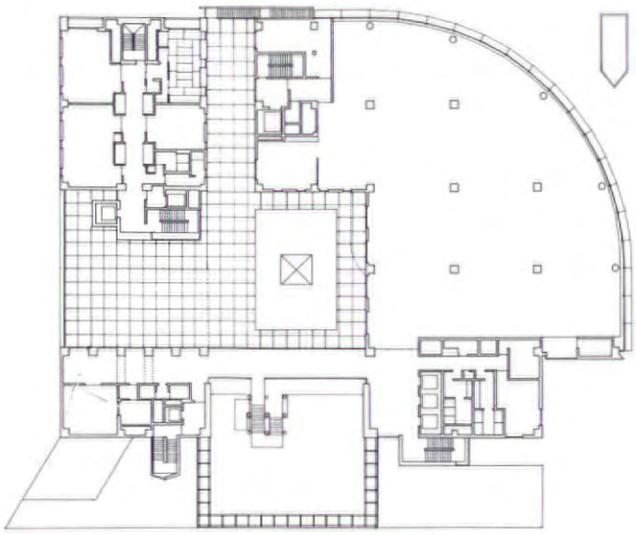
The Metropolitan Gymnasium's Main Arena

The main arena, circular in plan, is based on the same intentions as Fujisawa Municipal Gymnasium of creating a two-way curved space with a dynamic quality. The roof shape responds to this very premise but the main arena in Tokyo Gymnasium has a diameter of 120 m compared to 75-80 m of Fujisawa and 2.5 times more roof area. While the intentions are similar, the execution is quite different. In order to enclose a space 2.5 times that of Fujisawa, a pair of leaf-like girders comprised of three trusses rest on four piers resolving two-thirds of the vertical loads and 100 percent of the seismic forces. 25 columnar supports with pin-joints along the periphery of the arena seating resolve the remaining one-third of the vertical loads. The roof structure, exerting compressive forces by the pair of leaning leaf-like girders, is stabilised by a tension ring along the edge of the circular roof line.

In maintaining an ideology that natural light is important in appreciating qualities of large spaces, natural light is admitted through windows along the top of the arena seats in the main arena of Tokyo Gymnasium. – Fumihiko Maki.



Second floor plan



Ground floor plan

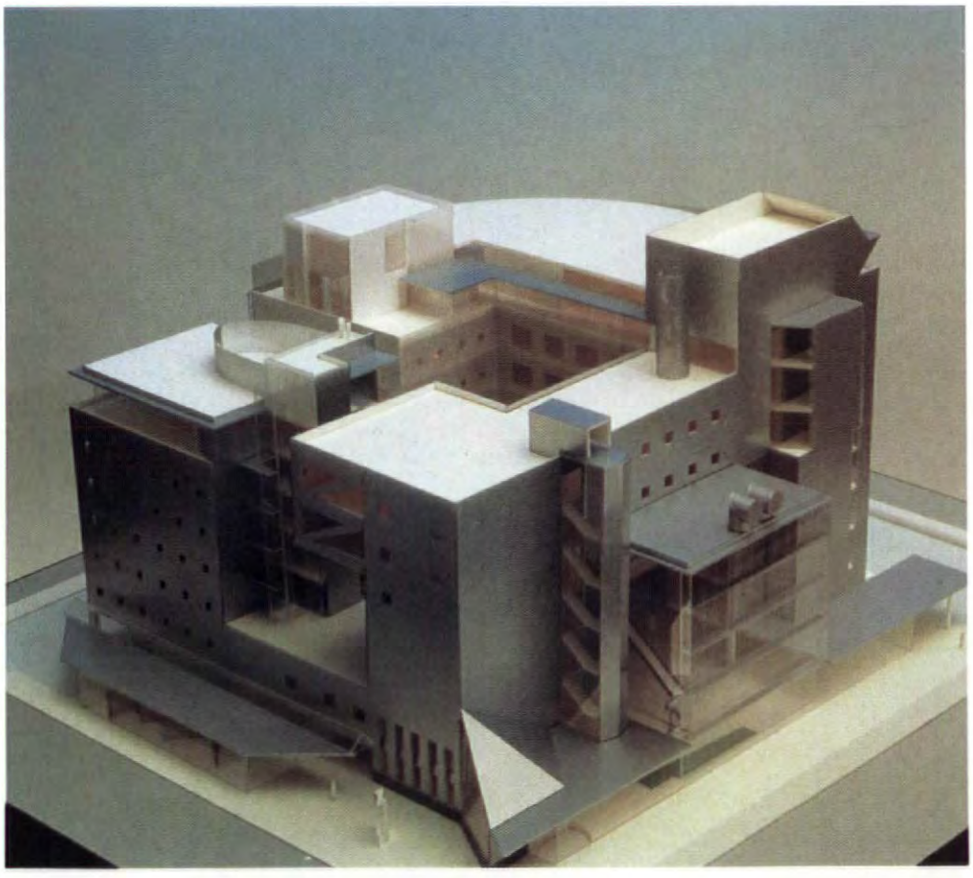
YKK Research Center Tokyo 1989

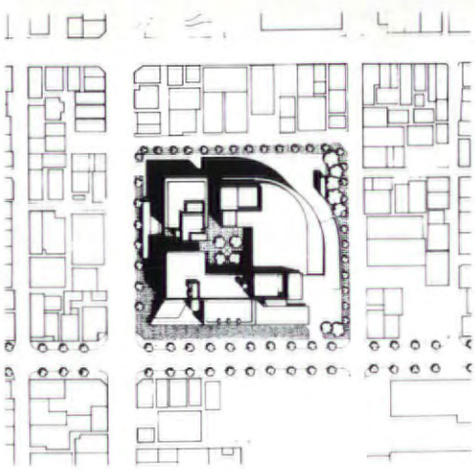
The YKK Research Center is a home base for the research department of an organisational group that is expanding its activities in various directions. An older YKK factory and employees' dormitory once stood on the almost square site of about 6,330 sq m. A courtyard garden is located in the centre of the building at 8.1 m above ground level and below it is a lecture hall. This public space is the core of the composition. On the periphery are located an exhibition hall, entranceway, cafe and lodging facilities entrance.

The most unusual characteristic of the project programme is the provision of a small facility functioning as a hotel for visitors from Japan and abroad. The center is open 24 hours a day to support this facility. In addition to cafes, convenience shops face the walkways on the north and west. These provisions are intended to contribute to the future animation of the Ryogoku district, in which the center is located.

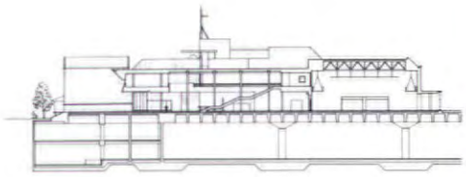
Contrast and fusion of various geometric forms create an architectural design with an overall balance characterised by a feeling of tension.

The exterior aluminium panelling, a new standardised product developed by the growing YKK Group Architectural Materials Department, imparts a simple High-Tech mood. – Fumihiko Maki.





Left: site plan. Above: model showing aerial view of north-west corner.



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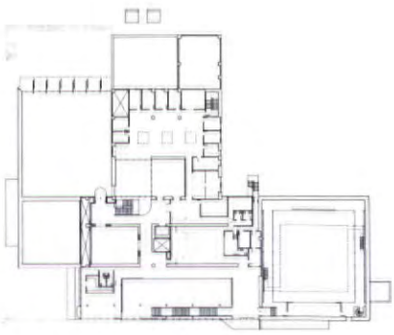
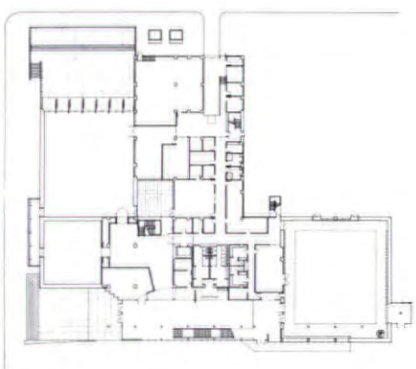


Ground floor plan



First floor plan

Yerba Buena Gardens Visual Arts Center San Francisco 1988

The San Francisco Visual Arts Center assumes an important role in a major cultural and commercial redevelopment complex planned for the area south of Market Street in downtown San Francisco. It has been designed around the theme of "showcasing" recent achievements in a diverse variety of art disciplines, and provides a low-key informal setting for participatory events and activities in the arts. It will also become a home for various cultural groups which are active today in San Francisco.

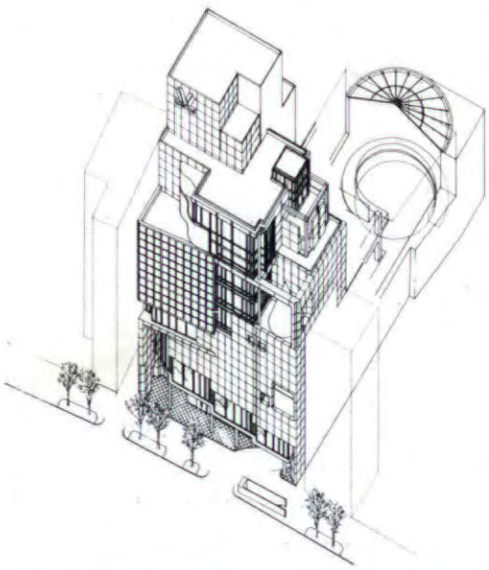
The building's requirements include a 100-seat state-of-the-art, video and film screening room, gallery or exhibition spaces, and an expansive, multi-purpose forum space. In keeping with the experimental nature of the facility, the gallery spaces emphasise a flexible and informal atmosphere over the often institutional settings of more conventional museums. One gallery accompanies the video-screening room, providing an intimate arena for small scale performance, video projection or video installations; while the others are quite large and rugged, capable of housing the broadest range of unexpected events which may occur within them.

Situated at the gateway to the redevelopment's main public park area, the Esplanade, and directly facing an important pedestrian approach from Market Street and the downtown area, it became appropriate to merge the internal life of the building with the surrounding public realm. Thus, the publicly oriented sculpture plaza on its Third and Mission Street corner serves as both a symbolic outdoor gallery to the city and a functional extension of the Visual Art Center's interior gallery sequence. Moreover, the primary components of the programme, gallery/exhibition, forum, and video/film, have been arranged along the public fronts of the Esplanade and Mission Street sides of the building and they are connected by a glazed two story lobby, visually open to the esplanade and functioning as a supplementary exhibition and event space. With this, the entire building can function as one continuous space for large events where people can move freely from one place to another.

Architecture can position itself somewhere between abstraction and representation to become evocative of feelings and associations whose sources nevertheless remain obscure or even subliminal. San Francisco and the image of ships travelling in and out of the bay are inseparable and ingrained in the consciousness of residents and visitors alike. The Center makes no attempt to literally replicate such an image; yet by borrowing expressions of horizontality, lightness, mobility, and silhouette, such an architecture aims to evoke a sense of adventure and excitement. – Fumihiko Maki.

Left: view of Visual Arts Center from Third Street.
Above: view of west elevation from esplanade.

FUMIHIKO MAKI: A Biography



BOTOND BOGNAR

Maki, the masterbuilder. Top: Spiral Building axonometric. Above: YKK Guest House

1928 Born in Tokyo
1952 Bachelor of Architecture, University of Tokyo
1953 Master of Architecture, Cranbrook Academy of Art
1954 Master of Architecture, Graduate School of Design, Harvard University
1954-56 Designer, Skidmore, Owings and Merrill, New York; and Sert, Jackson, and Associates, Cambridge, Massachusetts
1956-58 Assistant Professor, School of Architecture, Washington University, St. Louis
1960-62 Associate Professor, School of Architecture, Washington University, St. Louis
1962-65 Associate Professor, Graduate School of Design, Harvard University
1965 Established Maki and Associates, Tokyo
1979- Professor, Department of Architecture, University of Tokyo

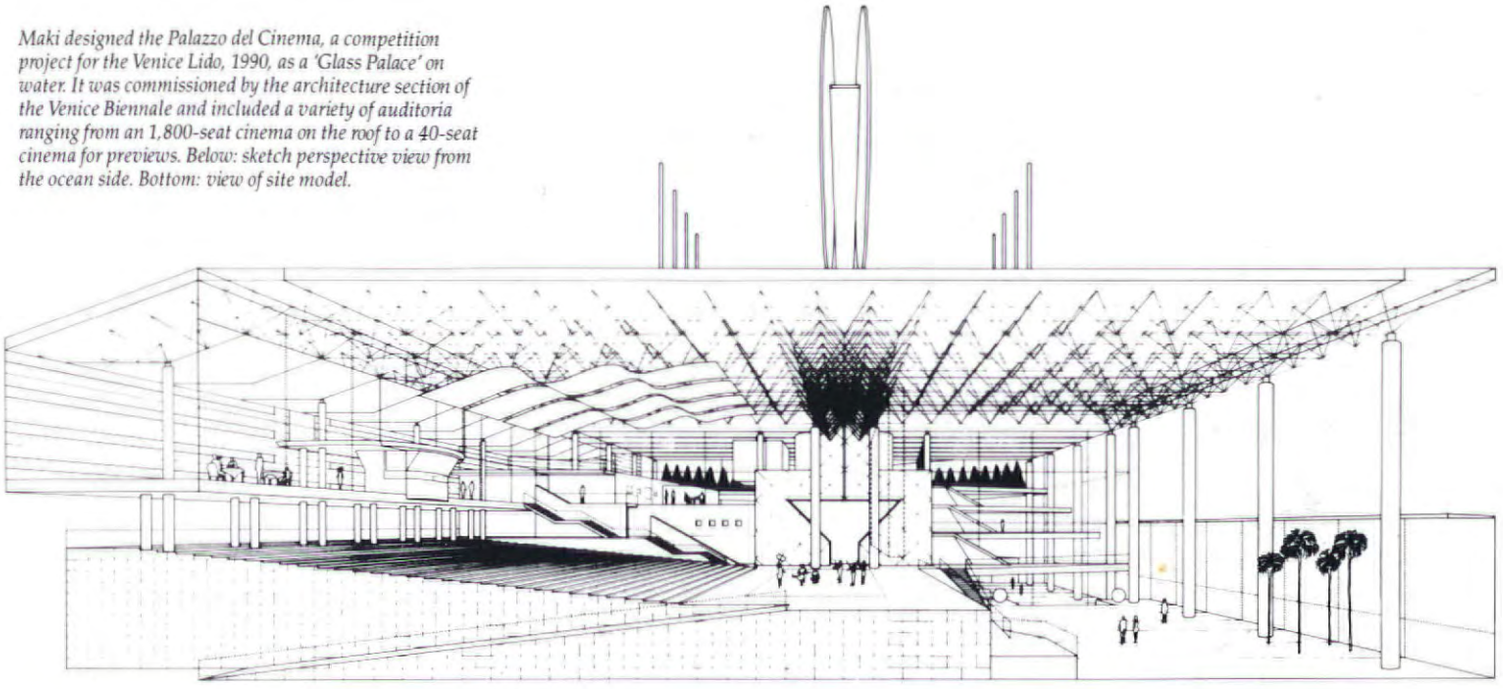
Major Projects
1960 Toyota Memorial Hall, Nagoya University, Nagoya
1963 Chiba University Memorial Auditorium, Chiba City
1968 Kumagaya Campus, Rissho University, Kumagaya City, Saitama Prefecture
1970 Senri New Town Center Building, Toyonaka City, Osaka Prefecture
1971 Kanazawa Ward Consolidated Offices, Yokohama
1972 Osaka Prefectural Sports Center, Osaka, 1972
1972 Saint Mary's International School, Tokyo, 1972
1974 Tsukuba University, The School of Art and Physical Education, Tsukuba Academic New Town, Ibaraki Prefecture
1974 Toyota Memorial Museum (with Güest Pavilion), Nagoya
1975 Embassy of Japan, Brasilia, Brazil
1975 The National Aquarium, Okinawa, 1975
1979 The Embassy of Austria, Tokyo
1979 Iwasaki Museum, Ibusuki City, Kagoshima Prefecture
1979 The Royal Danish Embassy, Tokyo
1966-79 The Hillside Terrace Apartment Complex, Tokyo
1981 Mitsubishi Bank, Hiroo Branch, Tokyo
1982 Main Library, Kelo University, Tokyo, 1982
1982 Sabah Sports Center, Sabah, East Malaysia
1982 YKK Guesthouse, Kurobe City, Toyama Prefecture
1983 Dentsu Regional Headquarters, Osaka
1984 Fujisawa Municipal Gymnasium, Fujisawa City, Kanagawa Prefecture
1985 Spiral Building, Tokyo
1986 The National Museum of Modern Art, Kyoto
1988 Tsuda Hall
1988 Dai-Tokyo Fire Insurance Company Headquarters
1989 TEPIA, A Science Pavilion, Tokyo
1989 Nippon Convention Center, Makuhari Messe
1984-90 Tokyo Metropolitan Gymnasium

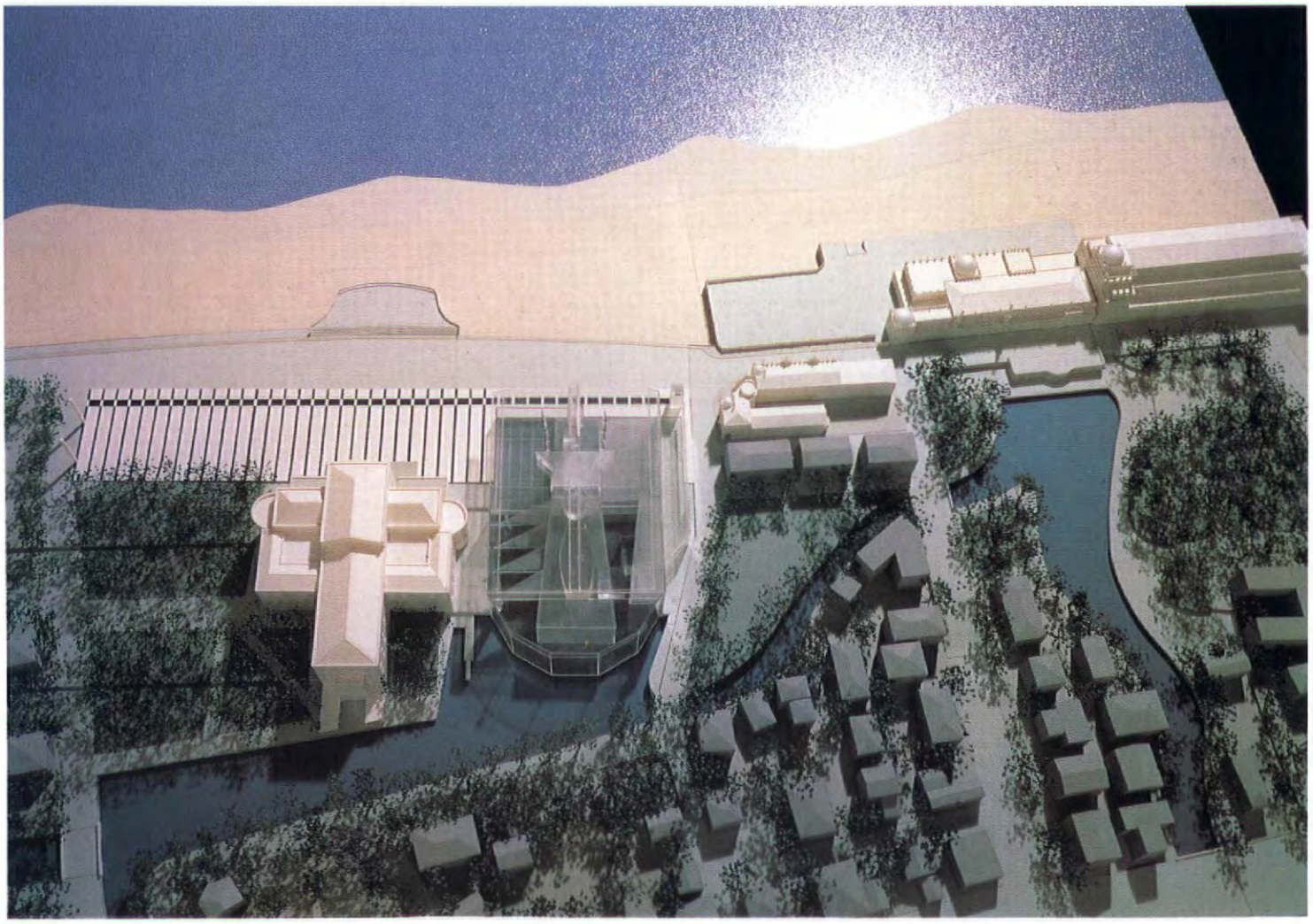
Recent Awards
1980 The 12th Japan Art Prize from Shinchosha
1985 Japan Institute of Architects Award for design of Fujisawa Municipal Gymnasium, 1985
1986 First Prize, Makuhari Messe Exposition Center
1987 Honorary Doctor's Degree in Art and Architecture, Washington University
1987 Reynolds Memorial Award for Spiral
1988 Wolf Prize
1988 Chicago Architecture Award
1990 Thomas Jefferson Medal in Architecture and First Prize, Büropark Hallbergmoos Competition, Munich
1991 First Prize, Bürozentrum Hemmerichsweg Frankfurt, Germany

Recent Exhibitions
1980 "Late Entries to The Chicago Tribune Tower Competition". The Museum of Contemporary Art, Chicago
1983-5 "Architecture in Place." Toured USA
1983 "Three Projects in Progress." Axis, Tokyo
1984 "Styrian Autumn." Graz. Austria
1984 "Japan Architecture International, Rotterdam." Rotterdam, Netherlands
1985 "Recent Projects of Fumihiko Maki." Sony Tower, Osaka
1985 Paris Biennale, La Grande Halle de La Villette, Paris
1985 "New Public Architecture: Recent Projects by Fumihiko Maki and Arata Isozaki." Organized by the Japan Society and shown at Japan House Gallery. New York, and other sites in the USA.
1987-90 "Recent Projects" IFA Paris, Venezia, Roma, Genova, Zürich, Graz, Berlin, Stuttgart, Antwerp, Copenhagen, Freiburg
1987 "Tokyo: Form & Spirit" Walker Art Center, Minneapolis, Museum of Modern Art, San Francisco, IBM Gallery, New York
1989 Architecture Shaping the Future, University of California, San Diego
1990 "Architecture in Place" The University of Virginia, Charlottesville, Philadelphia, New York

Recent Publications:
1986 *Fumihiko Maki 2:* 1979-86, Contemporary Architects Series, Kajima Publishing Co.
1987 *Design Methodology in Technology and Science,* (Co-author) The Tokyo University Press
1987 *Fumihiko Maki, Une Poétique de la Fragmentation,* by Serge Salat, Electa Moniteur, Paris
1988 *Fumihiko Maki, An Aesthetic of Fragmentation,* Rizzoli, New York (also in Italian, by Electa)
1989 *Fragmentary Figures 'Collected Architectural Drawings'* Fumihiko Maki, Kyuryudo, Tokyo

Maki designed the Palazzo del Cinema, a competition project for the Venice Lido, 1990, as a 'Glass Palace' on water. It was commissioned by the architecture section of the Venice Biennale and included a variety of auditoria ranging from an 1,800-seat cinema on the roof to a 40-seat cinema for previews. Below: sketch perspective view from the ocean side. Bottom: view of site model.





TAISUKE OGAWA

Hertzber
his critic
this is wh
hurt him

Herman Hertzberger made his name in concrete. For over 30 years he's worked in nothing but.

So when the Haarlemmer Houttuinen Project insisted their houses were built out of brick, Hertzberger was mortified. Years later, he still bitterly resents the compromise.

In the next issue of World Architecture, we take a close look at
the most important architects alive. The career of the man they
Brutalist is examined by Dr Frank Duffy.

And there's a fascinating profile on Hertzberger by recent RIBA
Medal Winner, Aldo Van Eyck.

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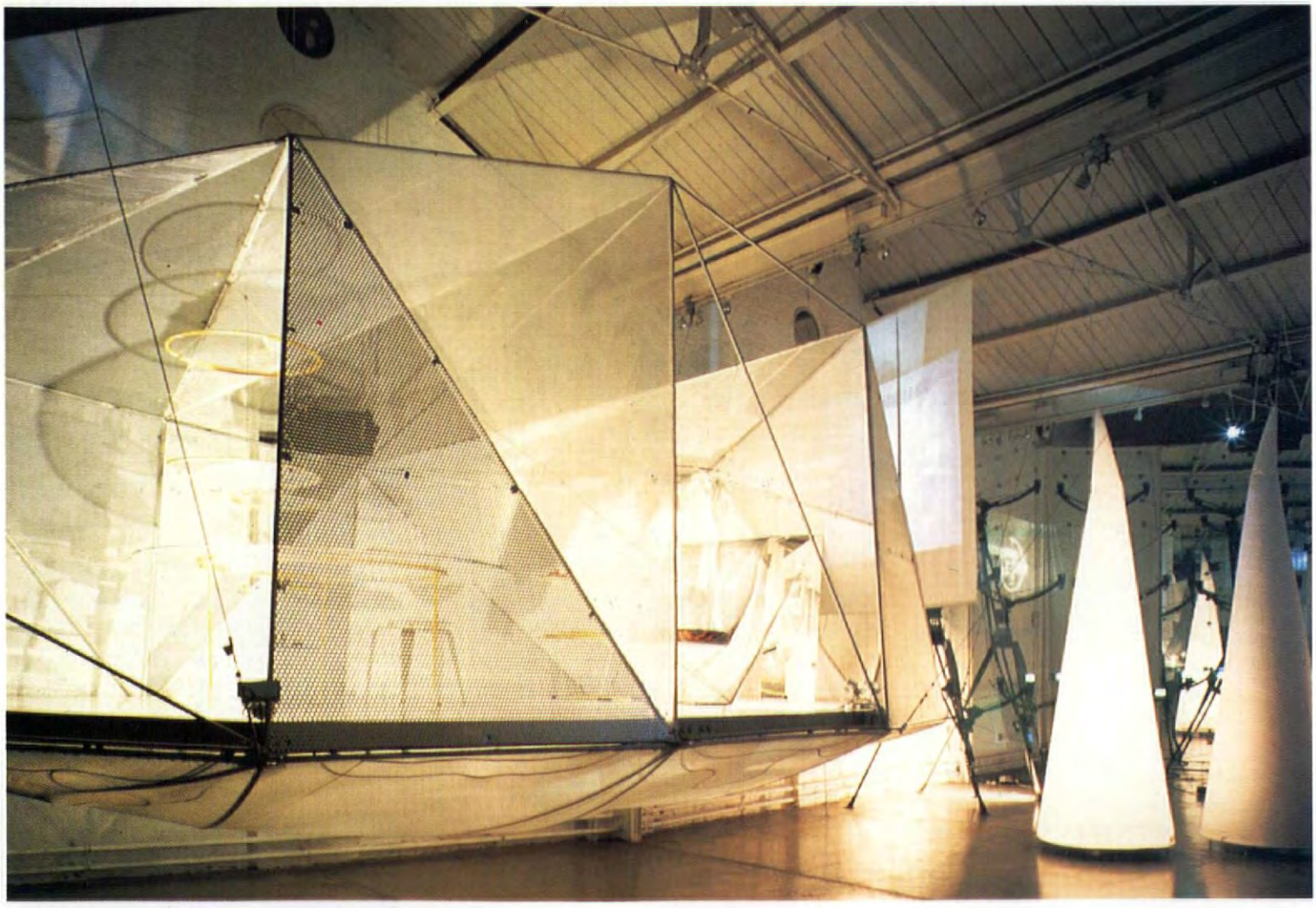
n the same issue, we move from Hertzberger to Max Berg, with an essay
Dennis Sharp. We go to Berlin with Pierre Vago and feature architects'
chairs by Jose Manser.
Order your copy of World Architecture today. Because a huge amount of
wledge never hurt anyone.

WORLD
ARCHITECTURE

Young Japanese avant garde architects are at the forefront of moves to create a new architectural language which interprets the electronic sophistication of the modern city. The keynotes are lightness, finesse and compactness – in the flight from the dead weight of architectural tradition. Fay Sweet reflects on an exhibition which explores these themes.

TRANSFIGURATION IN ARCHITECTURE



PHOTOGRAPHY BY DOUGLAS CAPE

Installation by Toko Ito: reflecting a search for lightness and transparency.

"The great mission of architects will henceforth be to rub out the remains of history and the prejudices arising from customs. Let us call the whole process Transfiguration in Architecture."

This bold proclamation was made by architectural historian Richii Miyake at the opening of *T-Zone* – a recent exhibition in London and Brussels of work by five of Japan's leading avant garde designers.

Miyaki's radical remedy is prescribed for a world he perceives as in urgent need of a new architecture: "At the end of the twentieth century what we see around us has undergone many changes and our arrangement of space has profoundly altered . . . We must strip architecture of any shackles of style . . . The computer has now put itself at the forefront of creation and materials have been completely overhauled . . . The characteristic values of industries of the past, such as thickness and heaviness,

Below: Kei'ichi Irie's Homage to Lascaux reinterprets Stone age painting in the age of the electron. Bottom: Yutaka Saito's Momoware structure exquisitely shapes natural materials.

have lost their *raison d'etre* and are being increasingly replaced by a production striving for lightness, finesse and compactness. Heavy industrial products and sturdy cities will soon be a thing of the past . . . Architecture as we know it can no longer be enough."

The avant garde quintet featured in the *T-Zone* exhibition, curated by Miyake, is formed by Toyo Ito, Kei'ichi Irie, Sin Takamatsu, Hiromi Fujii and Yutaka Saito. Each has chosen his own route to the new architecture but all agree that the fast-moving world of super-sophisticated electronics, changing lifestyles and the development of revolutionary materials demands a new form of design.

Casting off historical baggage

The desire to cast off cumbersome historical baggage is, of course, nothing new in the development of architecture, but the turbo-powered injection of new thinking from Japan appears to be laced with an extraordinary piquancy. Richii Miyake again: "The extent of the change in architectural environment in the twentieth century has no precedent in history. In world history it is not the first time we are experiencing a technical revolution, but what has never been seen before is that it is taking on a universal dimension."

In the half century since the end of World War Two, Japan's innovative advances in architecture have been very influential. What we see being built there today is the product of a culture which has enthusiastically grasped the necessity for change and which, despite still reserving considerable reverence for some aspects of tradition, has positively encouraged its designers to push forward, shock and surprise.

Japan has a long history of being able to absorb and assimilate influences from outside without the shadow of threat to essential Japanese-ness and this has been demonstrated in its architecture just as readily as elsewhere – for example in fashion, the motor industry, art, ceramics, music and so on. Art Deco, International Style, Post-Modernism, Deconstructivism have all been taken on board and have been fused comfortably with domestic Japanese work. However, the absorption now appears to be transforming into an emission of ideas.

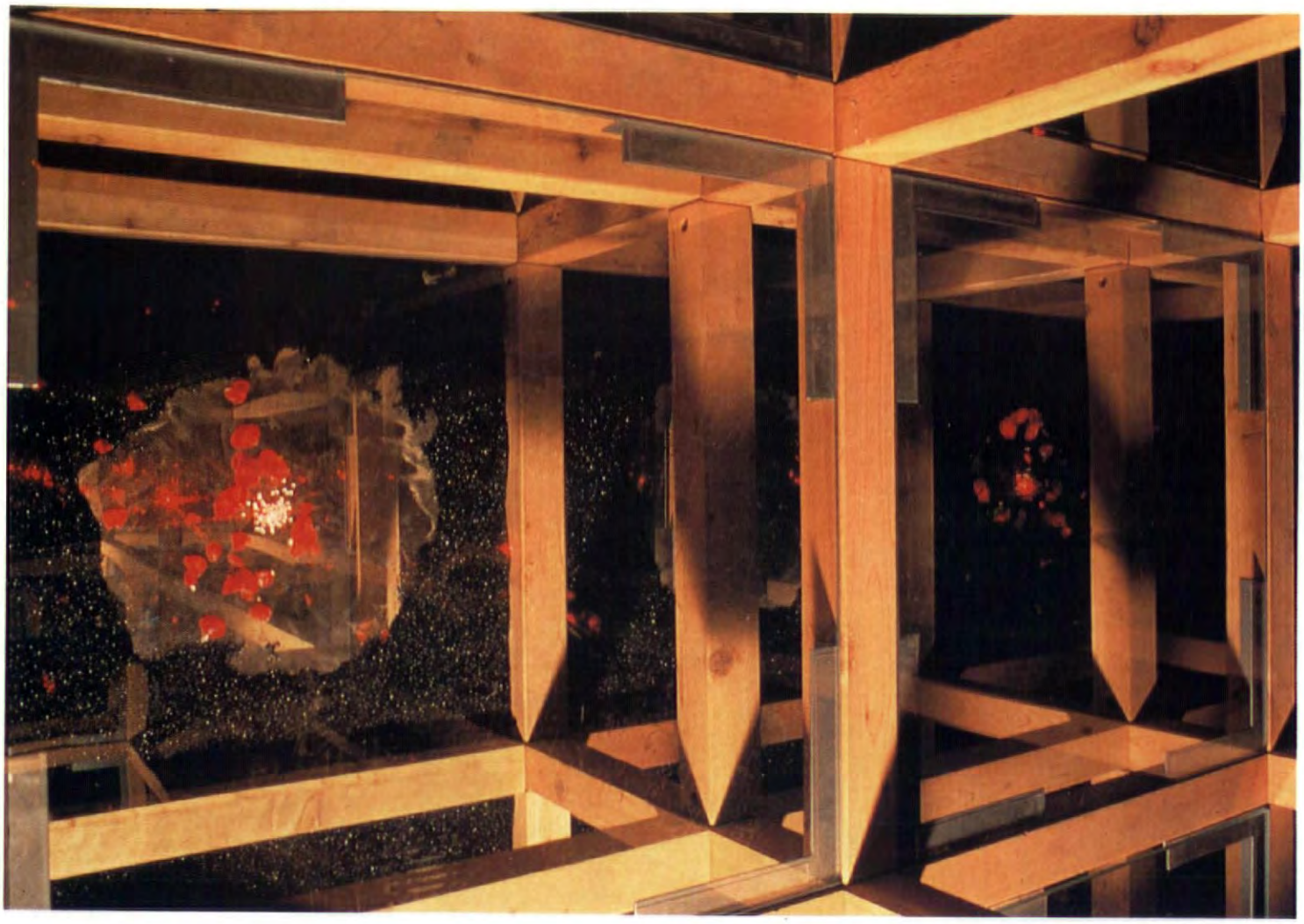
The *T-Zone* architects were invited to explain and demonstrate their philosophies about space and design through the medium of any or all of five basic materials – stone, wood, glass, fabric and metals. The youngest exhibitor was Kei'chi Irie. He is in his early 40s and has already acquired an international reputation. In 1991 he won the Tokyo Architects' Association Special Prize for his Monol systems-built apartment complex. Irie does not restrict himself to building design – he sees the architect's function more as a universal man and has worked on product, furniture, lighting and computer programme design.

Fascination with technology

His work springs from a fascination with computer technology and the madness, exhilaration and excitement of dense urban life in Tokyo, a city he describes as "like a computer programme that keeps on ceaselessly adding new sub-routines; previous schemes of architectural planning and design lack this tolerance of noise and errors. As with software, it's the errors, the programming 'noise', that produce the really interesting ideas."

Irie's *T-Zone* project, Homage to Lascaux, was a high-tech metal, glass and electronics mural designed to be an interpretation of the Stone Age Lescaux wall paintings in the age of the electron.

The ancient drawings affected Irie deeply. He admires their directness. Indeed, by living at the start of the new electronics age, Irie feels an empathy with the cave dwellers at the start of their age: "In the boundless space of possibilities in front of us, every element is still a swirling fragment. We



Shin Takamatsu's Templum Obscurum aims to shrink the 'distance between language and objects'.

understand its possibilities only a little. We might be primitive so far. But it is still possible to achieve an elegant form of expression, that is what the low-tech in Lascaux have proved."

Advanced computer and electronics technology combined with the influences of Tokyo – "a city of dreams and nightmares" – have also informed Toyo Ito's thinking. The greatest successes of his early career in the 1970s and 1980s were in domestic architecture – the stripped, minimal Aluminium House, the Silver Hut and the White-U. These structures demonstrate the influences of Frank Lloyd Wright, Le Corbusier and Buckminster Fuller.

Asceticism in structures

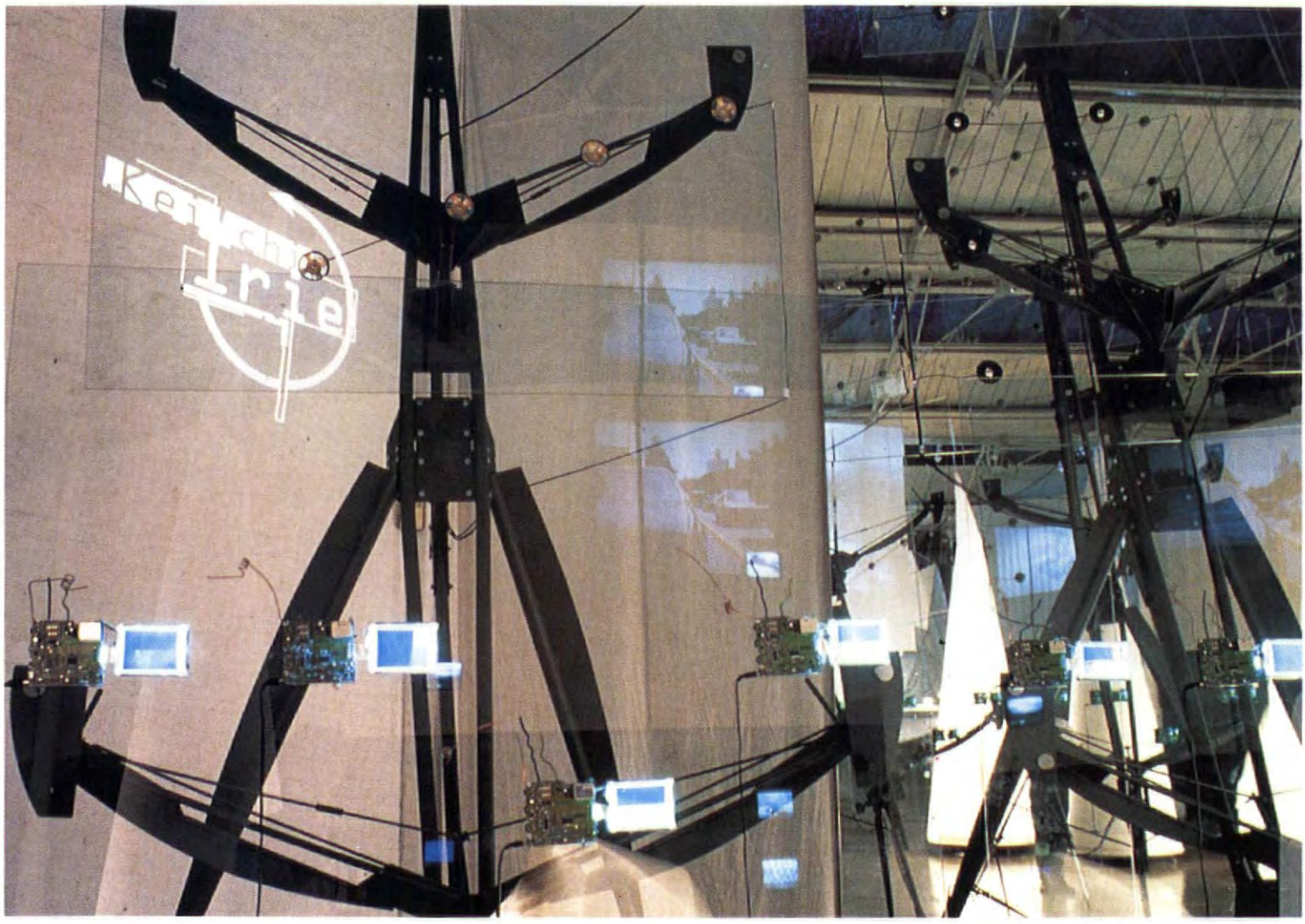
However, Ito has also pursued an architecture of increasing lightness and asceticism in structures such as the magical Tower of Winds – a ventilation tower in Yokohama hooped by bands of steel, curved glass and filled with lights and mirrors.

His exhibit for *T-Zone* – Pao – is the most ethereal yet. "My present interest is in temporary architecture. It attempts to connect the consumer society with traditional Japanese culture." Constructed of a translucent skin of nylon stretched over a frame, the Pao or nomad tend, was suspended above ground and filled with delicate steel furniture and hanging racks. It symbolised his quest to find new forms of accommodation for Japan's population which moves, like nomads, from home to office to shop to club.

Ito's quest has been "to cast off the weight of matter in search of lightness and transparency". He explains: "What I want to create is something which has the appearance of being temporary, but is natural . . . not the stage but the set." This is indeed something he achieved to stunning effect in the electronic image-filled Dreams Room at the Victoria & Albert Museum's *Visions of Japan* exhibition in London.

Playing with perceptions is one of the central themes of Hiromi Fujii's work. His approach combines Western theories of deconstruction with a uniquely Japanese understanding of geometry and space. Much of his built work, such as the Ushimado Arts Festival Centre, Okayama Prefecture, bears some resemblance to Richard Meier's reticulated forms with freestanding frames pulled free of the main structures. It takes as its inspiration the grid – the rigid pattern frequently found in Japanese architecture in the *tatami* floor mat and *shoji* screen patterns.

Known as a theoretician and intellectual, Fujii explained his theories at *T-Zone* with a



structure called Nave of Signs. "The aim of this project is to inscribe the multilayered and dispersed qualities of space," explains Fujii. The process of the design's evolution is dense and complex. Fujii explores concepts of the "inside" and "outside", solids and voids, grooves and frames.

Simple geometrical shapes

The process begins with a drawing of simple geometrical shapes and transforms to an apparently haphazard jumble of whole and partial grid elements skewed at different angles, jutting into the air or sunk into the ground and then arranged as a sort of corridor. The result is at once disturbingly formal and chaotic.

The transformation of materials is at the heart of Yutaka Saito's work and was clearly displayed at *T-Zone* with his walk-through wooden Momoware sculpture/structure. The piece showed Saito's love and understanding of natural materials which began when he worked as a *tobi* – a bamboo scaffolding worker.

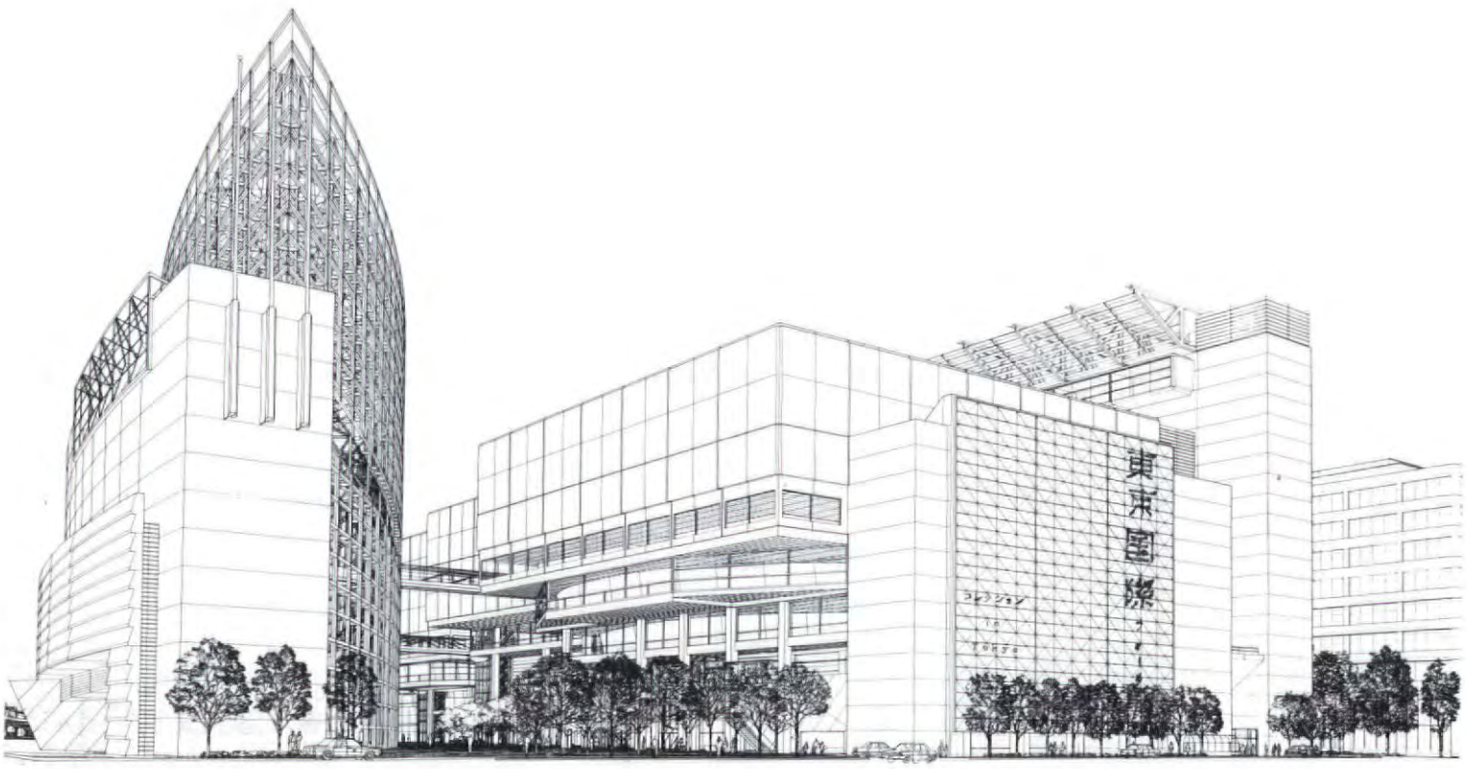
Saito's buildings are exquisitely shaped and wrought often by using traditional materials and processes in new ways. So admired was his finely finished Tasco office building in Tokyo, for example, that it created a vogue for modern buildings on small sites.

Shin Takamatsu presents a contradictory face: he has always worked in, and considers himself the product of Kyoto, Japan's oldest and most architecturally traditional imperial capital, and yet no more stylistically radical architect is working in Japan today.

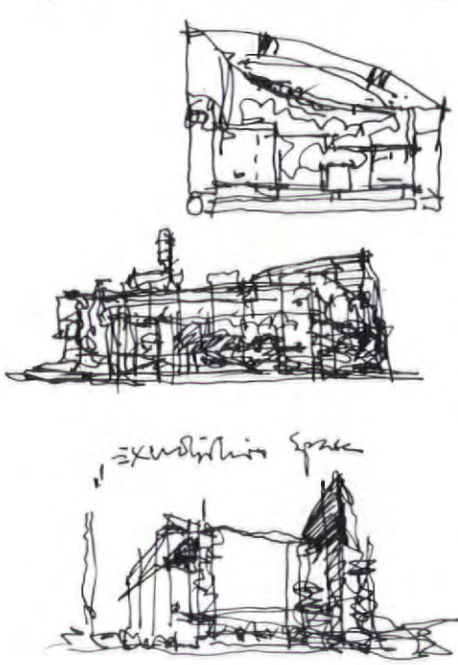
His *T-Zone* exhibit, Templum Obscurum, a forest of red wood "trees" lit from underneath the glass floor by eerie red lights is intended to demonstrate his current preoccupation with "shrinking the distance between language and objects".

The meaning of the Templum, as its name suggests, remains obscure, but the process of its making enabled him to reach the following conclusion – and it is one that can be said to be shared by all members of the avant garde quintet, each unafraid of exploring radical paths: "My optimism lies in the belief that newness can be discovered through intervention in danger." □

Irie (above) and Ito (left) seek a radical overhaul of architectural values to strip away the heaviness of history and tradition.



THE GLASS HEART



Top: perspective view of Tokyo International Forum. Above: concept drawings by Vinoly.

The drab architecture of Tokyo's financial district is set to be transformed by Uruguayan-born architect Rafael Viñoly's competition-winning International Forum building. With its elliptical glass hall, it uses ambitious technology to tie the entire district together. Gaynor Williams reports from Japan.

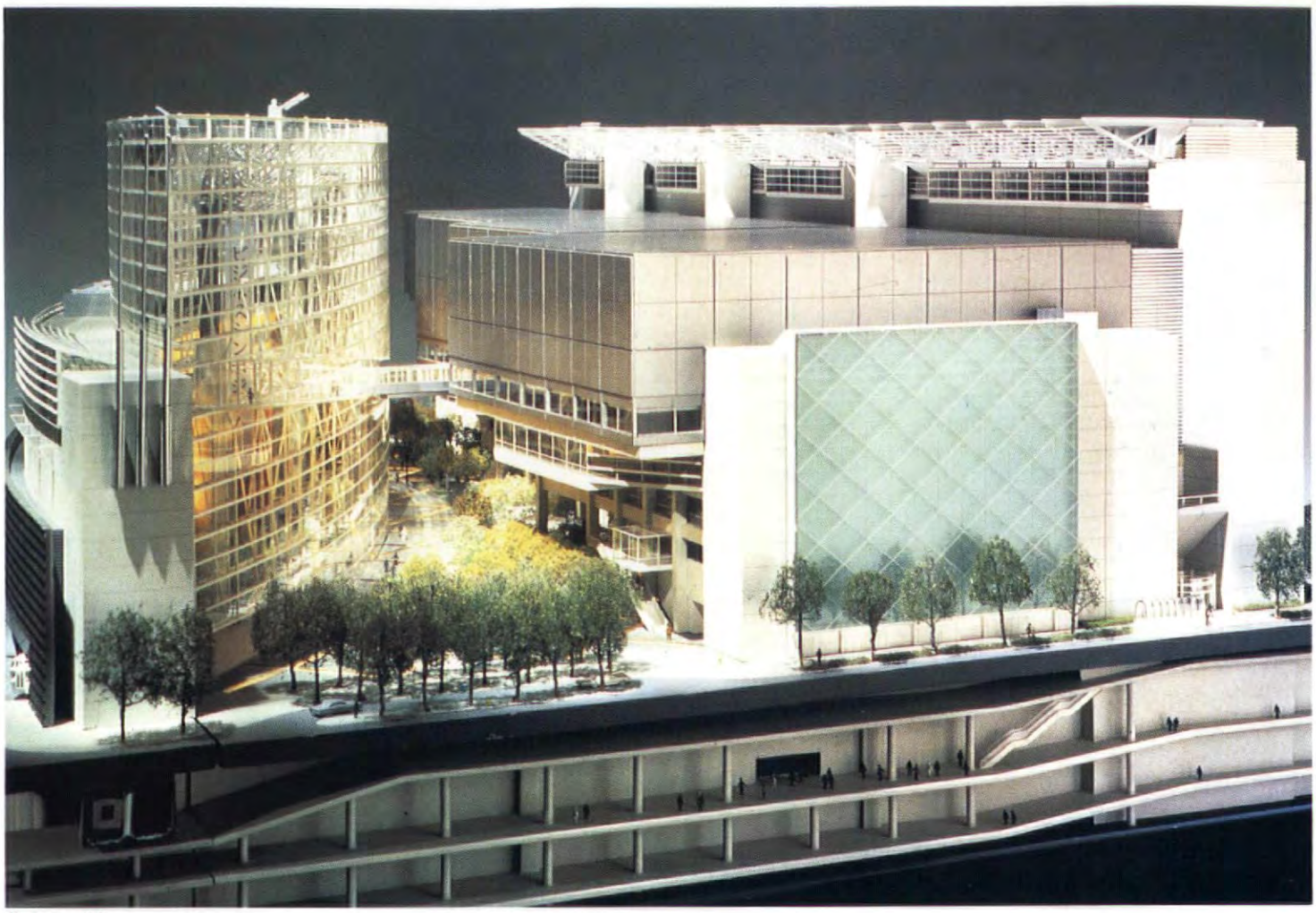
The Marunouchi district of Tokyo is the city's financial heart. It breathes an air of money and has the refined tone appropriate to an area which butts directly onto the Imperial Palace. But like much of Tokyo, it is badly let down by the architecture – a largely featureless mass of drab granite and concrete.

Not for much longer, however. Rafael Viñoly's new $1 bn scheme to create an International Forum for Tokyo should transform the area. The 12 million people who inhabit central Tokyo – and the two million commuters who join them every day – are finally to get an architectural feature that will make Wall Street sit up and take notice.

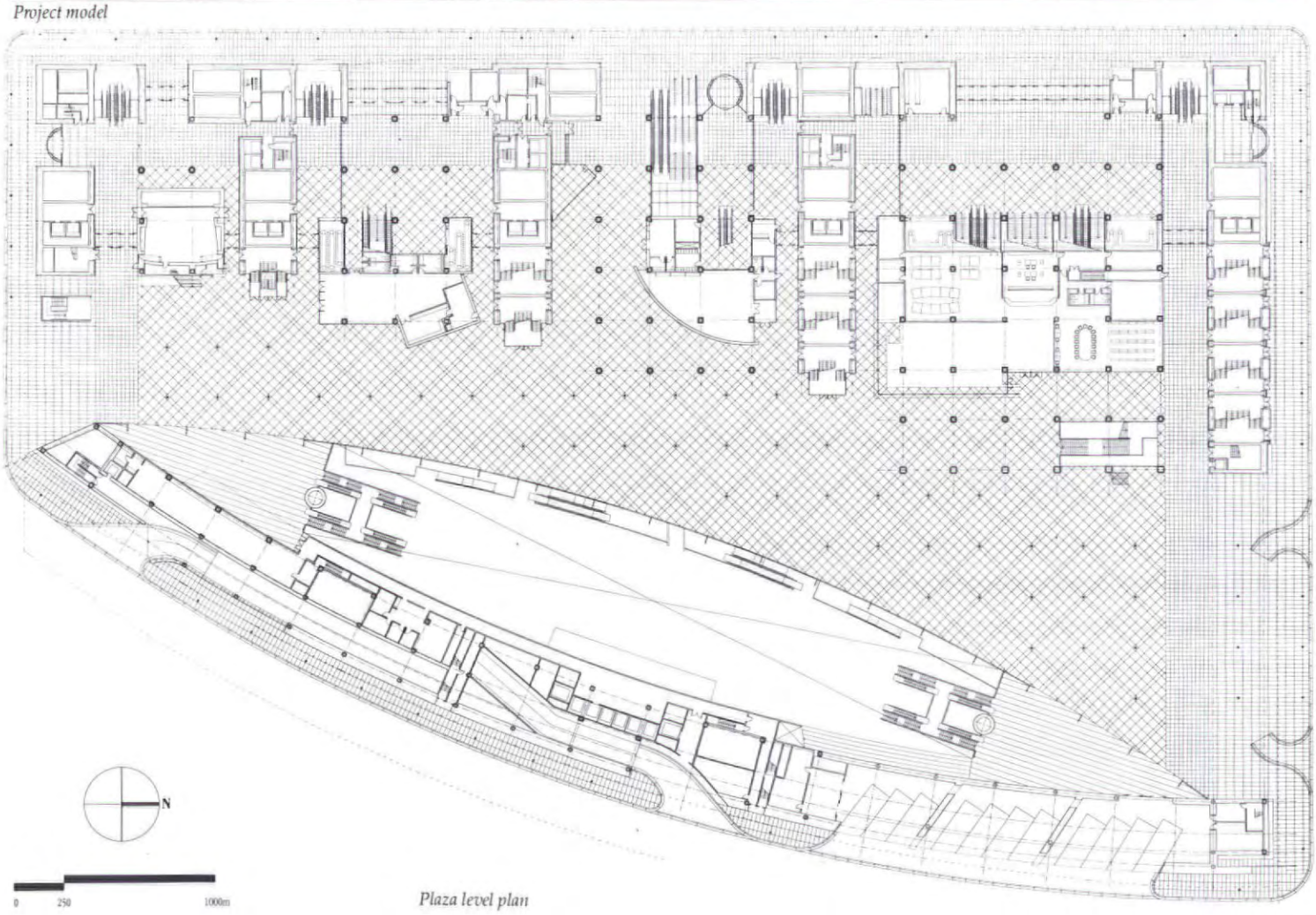
This will be the Uruguayan-born architect's first project in Japan; and it is on a substantial scale. Tokyo's Metropolitan Government wants to create "one of the most daring and imaginative structures to be built in Japan" – a 1,500,000 sq ft complex that will become an urban focus for both business and culture, on a 6.7 acre site. Viñoly has responded with gusto: he now describes his design and its extraordinary elliptical Glass Hall as "a gigantic gift", with the Glass Hall as "the wrapping".

What Tokyo has lacked since its almost total destruction towards the end of World War Two is grandeur; national pride expressed through architecture. As military defeat has turned to economic victory, the architecture is following suit with remarkable speed. "The whole country is experiencing a period of euphoria," says Viñoly, "having the resources and technical proficiency to solve problems. Our design is taken as a fantastic opportunity for an exercise in engineering.

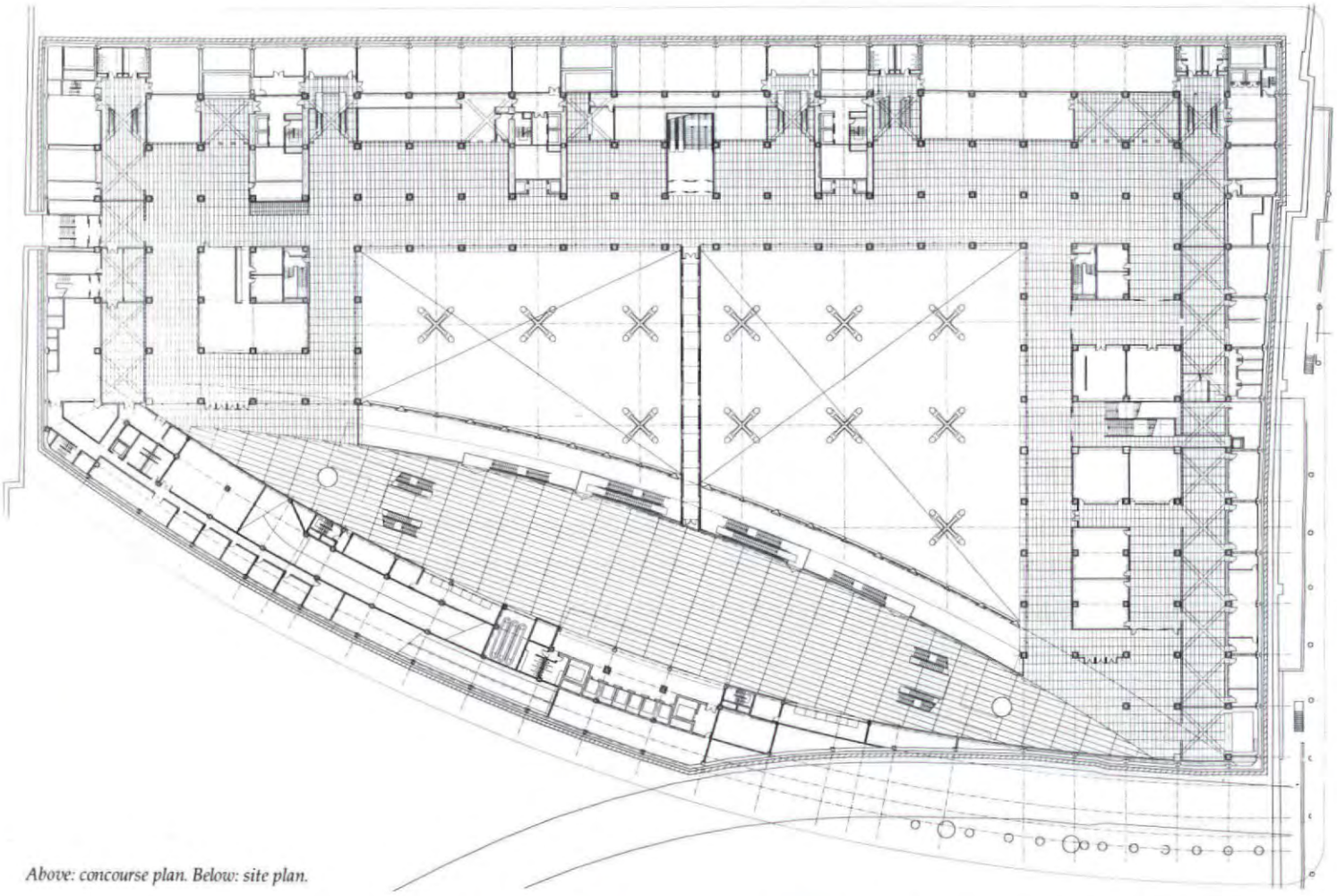
"The Glass Hall is very grand, and that's representative of the ambition of the



Project model



Plaza level plan



Above: concourse plan. Below: site plan.

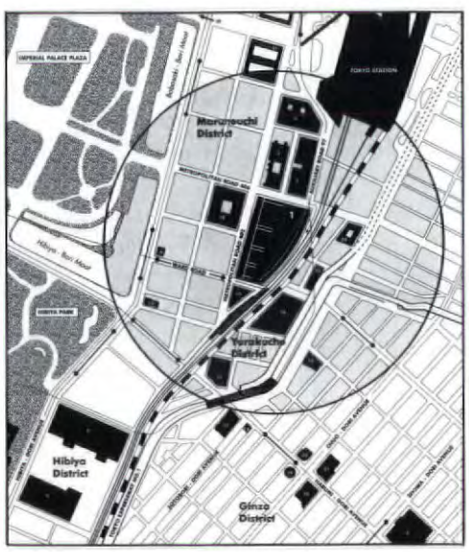
programme. The requirements reflected this ambition, expressed in a way that seemed to me very Japanese – proud, but at the same time humble."

This holds true when you examine Viñoly's complex and demanding brief. The Forum is meant to be all things to all men: a venue for international conferences, conventions and trade shows, with exhibition halls, places for symposia and public meetings, and a theatrical and orchestral centre serving both large and small-scale events. It will also become a Metropolitan Information Centre, providing information about the city to both local people and tourists.

Above all, flexibility is the key. As Viñoly sees it, he is creating a structure that has no precedent: "In terms of building typology, it is a mixture of things. It is not a convention centre, or a performing arts centre, or a major landmark. It is all these things combined."

Personal impulse towards arts

Rafael Viñoly is in many ways the ideal candidate to produce such a building. Argentinian-trained, his past work includes master planning projects such as the Chacara Tangara complex in Sao Paulo. Yet his personal impulses are towards the arts. He was studying to become a concert pianist when he decided to become an



architect instead. This project started life as an open competition – the first of its type in Japan, run by the Union Internationale des Architectes. There were 395 entries.

The Forum is made up of seven different structures, with the Glass Hall – which will be reception and main exhibition centre – as its main signature and heart. The 190 ft high Hall, two intersecting steel and glass ellipses that together will enclose a vast space will be covered by the largest glass roof in Tokyo.

The Tory's Metropolitan Government, which is funding the entire project, plans to light it like a beacon at night. Its three-dimensional trusses will be hung with thick clear glass walls, and it will connect to four nearby theatres via a dramatic series of ramps and bridges. Completion is scheduled for April 1995.

Is the architect taking a chance, using so much glass in a city with one of the world's most rigorous building requirements for resisting earthquakes? Viñoly believes not.

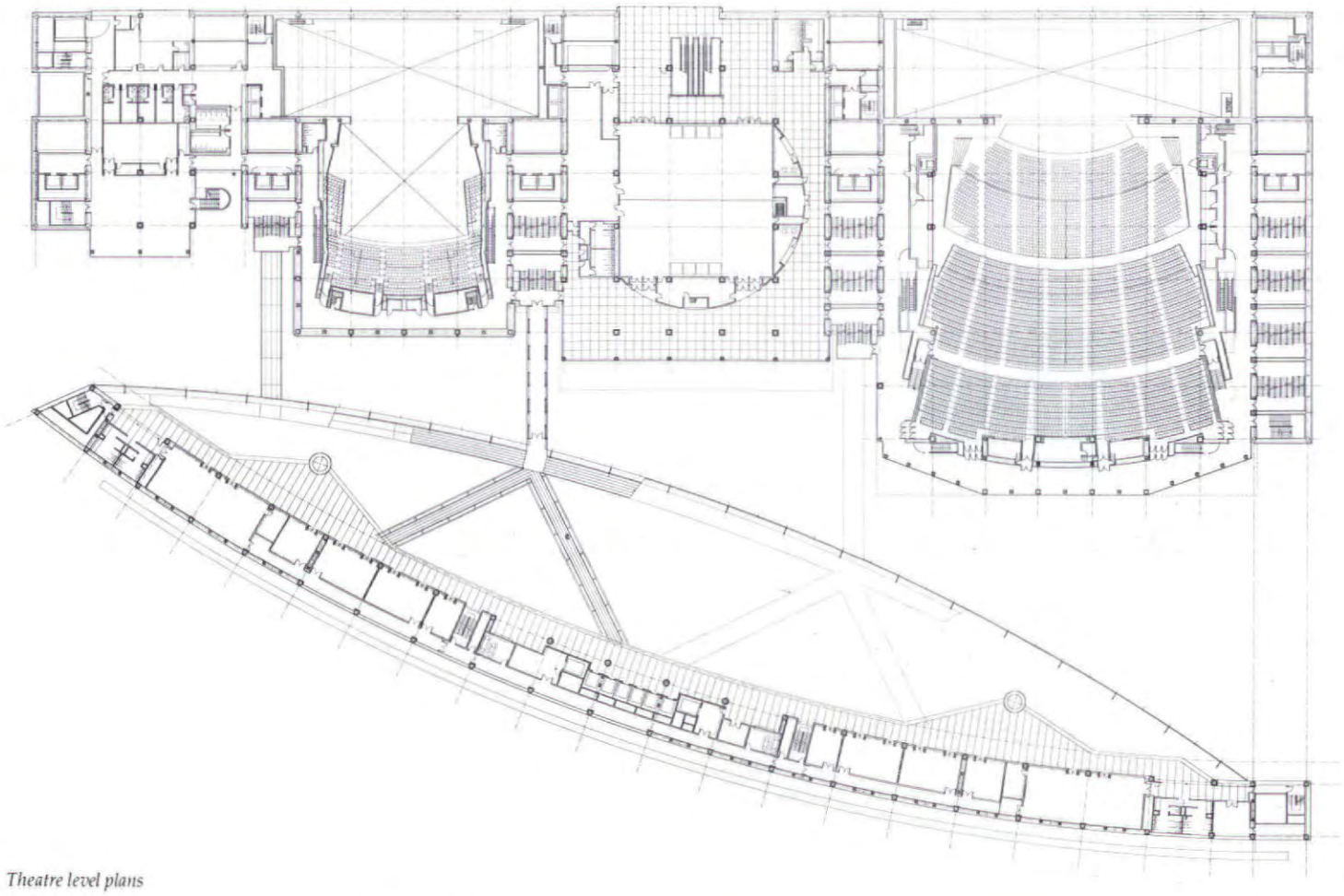
Large glass buildings do not often feature, he says, "more for psychological reasons than for engineering reasons. Glass is not a traditional building material in Japan." Viñoly adds: "The solution was to minimise the number and size of horizontal members, and hang the long curved glass wall from the roof, counterbalancing it on the other side with the symmetrical curved structure that houses the conference centre."

Dense and noisy situation

This makes wind pressure the main force on the glass rather than vertical load. And in a sublime meeting of form and function, the spiral pedestrian ramp that winds through the structure also works as a beam supporting the glass wall.

A curved bar building (with administration offices, restaurants and cafés) will nestle along one of the hall's sides, protecting it from noise and vibration.

The reason for acoustic concern is not

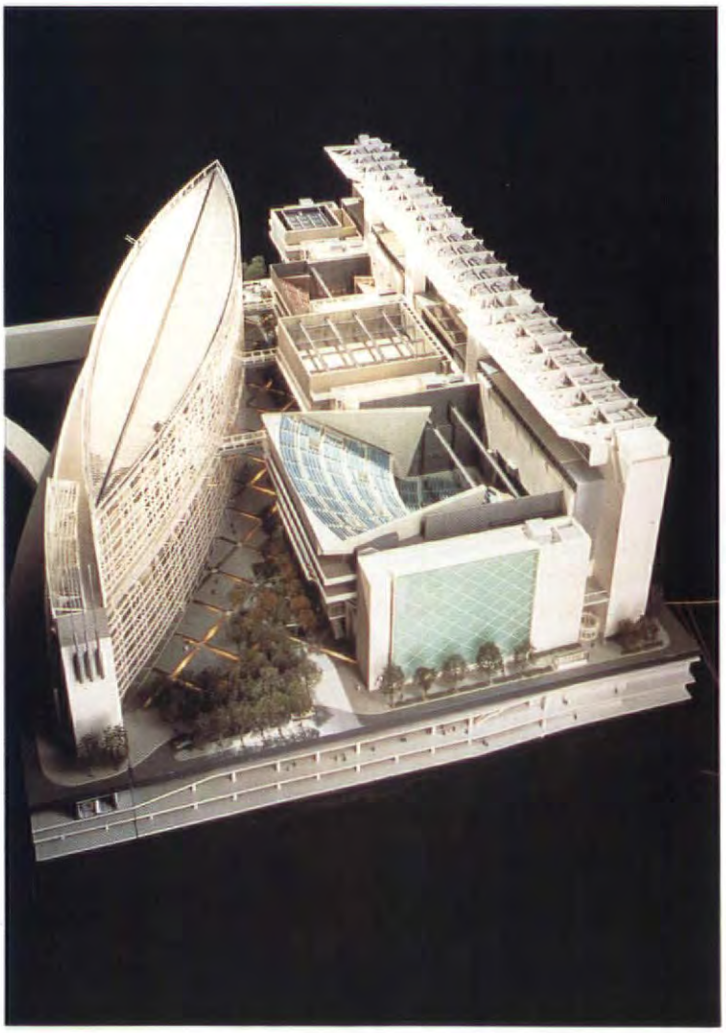


Theatre level plans

simply because of Tokyo's dense and noisy urban structure. The site, a particularly demanding one, is both the limiting and the ground-breaking factor in this project. It would have been rectangular, but for the arc created by rail tracks slicing through it. With two mainline stations (Tokyo and Yurakucho) and four subway lines, the Forum is completely surrounded – and Viñoly has come out with his hands up.

He has transformed this limitation into a positive strength, which will really make the Forum public and accessible – a focus and hub of local life. A landscaped plaza (almost unknown in central Tokyo) will encourage people to use the Forum as a concourse between stations. Street activities are planned, and an open, related atmosphere will definitely provide a contrast with the somewhat sterile high-rise area.

But will the project's immense scale defeat its humanising aim – especially when the surrounding buildings already do so much to de-personalise Marunouchi? "To some critics our design looks simplistic," says Viñoly. "It looks like the only way to respond to the programme requirements. But it has been incredibly effective in dealing with the large scale of the project. Our design doesn't preclude the possibility of detailing the building very elegantly, but its success doesn't hinge on details." □



Bird's eye model view indicating the protective nature of the curved bar building which also reflects the shape of the difficult site.

What makes a Japanese client committed to traditional Japanese culture forge an alliance with an overseas architectural practice? In the latest of World Architecture's *dialogues with leading clients and patrons of design, Kazuo Akao of the Obunsha Group discusses his relationship with Foster Associates.*

Opposite page: exterior view of Century Tower, designed by Foster Associates for the Obunsha Group.

REDEFINING TRADITION

Kazuo Akao is chairman of the Obunsha Group, a large Tokyo-based corporation with a core business in educational publishing. He has recently proved himself to be an enlightened client of architecture. Surprisingly, given his commitment to traditional Japanese culture, he has chosen to forge an enduring alliance with a British practice: Foster Associates, working from a Japanese office. Foster is now in the process of creating a variety of building and other designs for Akao. The collaboration began with the Century Tower, a 27,000 sq m twin tower investment office development completed in March 1991. Work also includes seaside condominiums and a yacht. The following interview was conducted in Japan.

As a client, what do you look for in a building? Is its primary purpose practical or do you see it as a public extension of a corporate or personal image?
I certainly see a building as something which enhances the image of a corporation. It is the additional value of quality that I consider the most important issue when commissioning a building. In order to achieve that additional value, quality must be present in absolutely every aspect of the building: in design, space, function and choice of materials.

Is your attitude at all typical of Japanese architecture clients?
I don't think so. In general, when a company appoints a well-known architect to design its building, it is only concerned about the budget and never participates in issues of design and function. In the case of the Century Tower we had a very close involvement with Foster Associates. There was a weekly review meeting to deal with issues of design and cost, things which were discussed very frankly. As a result the project proceeded in a spirit of mutual understanding and trust. There were no misunderstandings at any stage and no unexpected surprises at the end of project. I have to say that I think the resulting building is magnificent.

Have you used other architects or designers in recent years?
Yes. Three years ago I had a second house built for myself in Ito City. It was of *Sukiya* structure (a traditional form which translates as "tastefully-designed house") and all of the materials used in its construction came from an old Japanese restaurant. The basic design was developed by the director of the restoration of Katsura Palace. The overall image and landscape was designed by Dr S Komatsu, a well-known scholar of Japanese literature. Meanwhile the construction was by the Maki Corporation which specialises in constructing this style of house. What was interesting about the project was that it unified three different elements: the *Sukiya* style structure itself, the *Helan* style of landscape (a 1,000-year old tradition) and a number of Japanese stone sculptures by Kamakura Era.

Clearly you value traditional Japanese culture very highly. The obvious question, then, is why have you chosen a western architect, rather than a Japanese one, to design your recent buildings?
I do not believe that understanding the essence of Japanese culture is exclusive to local architects. Also, simply understanding the essence of a culture is not in itself enough; the architect must also be able to visualise and realise it. Sir Norman Foster and myself agree that the essence of traditional Japanese culture and architecture is not actually reflected in many modern Japanese buildings.

Why do you think that is?
In many cases, although the quality of material and construction is high in much modern Japanese architecture, there is simply a lack of design quality. The result is that there is a failure to create comfortable space. What Foster Associates bring is a genuine understanding of the role of space in traditional Japanese architecture.

Following the completion of Century Tower, I believe Foster Associates is now working on four other projects for you. Can you tell us anything about these?
The Yarai-Cho low-rise headquarters for Obunsha are due for completion at the end of 1993. This will be a twin-block office building for our core business. Meanwhile there is now a second Ito City project in progress – the Kawana Houses. This is a cliff-top project comprising a main house, a guest house and a tea house. There will be an eighth century Korean sculpture located in the terraced garden. The basic concept is to form a bridge between traditional and modern Japanese architecture.

How will this be achieved?
Essentially by basing the design concept on traditional Japanese forms, but then realising them in glass and steel. The aim is to create an image of transparency, to make the building harmonise with the natural environment. The project is due for completion in the autumn of 1992.

Finally, what about the motor yacht? Was it a natural choice to use an architect as one of the key designers?
It was not an obvious choice. This is a 58-metre luxury cruiser and the normal procedure is that the hull and superstructure would be designed by the same designer – then the interior would be designed by someone else. The problem is that there are not many boat designers around, with the result that all the existing yachts of this size tend to have a similar look. Also the interior and exterior designs are not always very well integrated or harmonised. Here the design of the hull and mechanics were by G Gillgenast, and the superstructure and interior are both by Foster Associates. The aim is to integrate a new structural design with the latest technology and to create enjoyable spaces. They are the same objectives as those of the architect. □

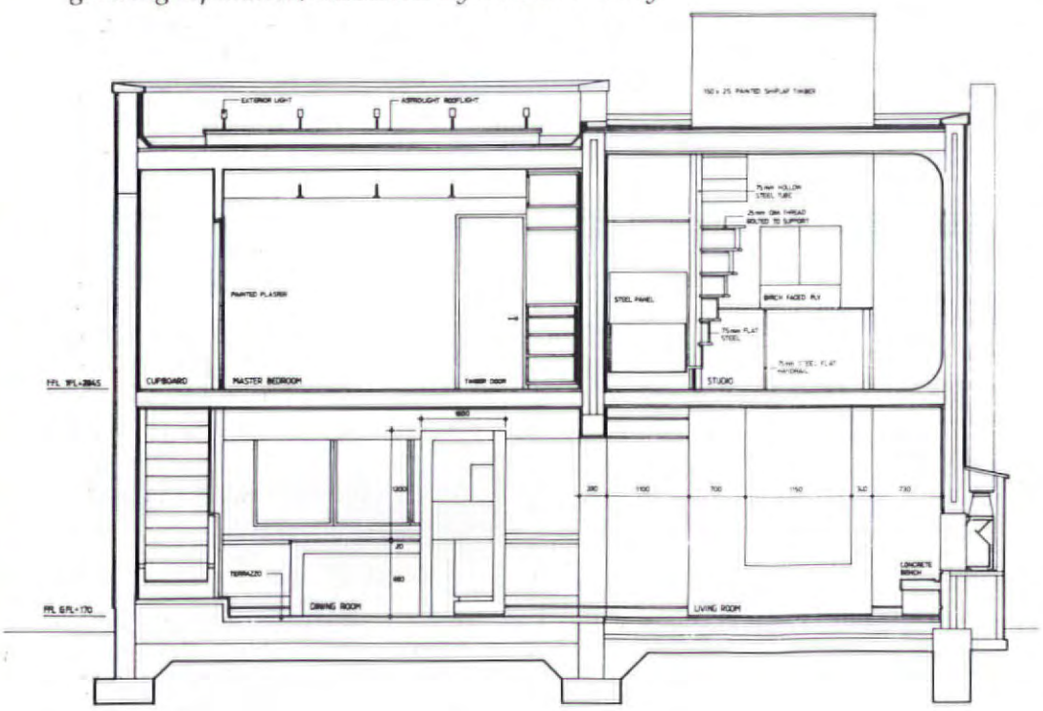
Below and opposite page: exterior view and plans for the TAK Design Store, Kyoto, Japan, 1990. Right and bottom of this page: exterior view and plan for uncompromisingly modern Knight House, Richmond, UK, 1990. While Japan gave the architect aesthetic freedom, local planners in Britain made life hell for Chipperfield and his client.

ALBERTO PIOVANO

ALBERTO PIOVANO

IN CONTROL OF THE MODERN

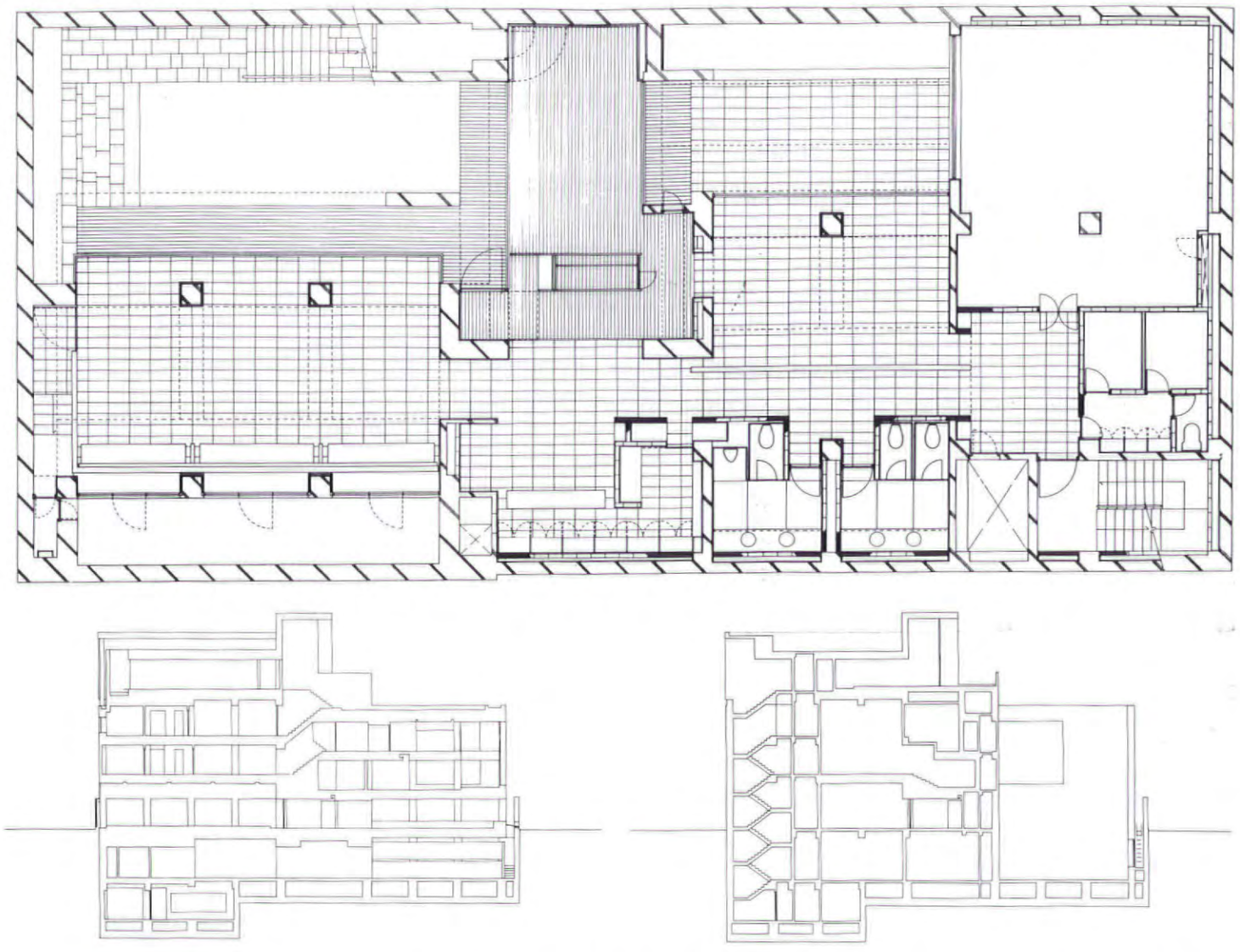
Young architectural practices who want to work in a strikingly modern idiom are most vulnerable to the prejudices of the British planning system. David Chipperfield (right) has first-hand experience of repressive building controls in the UK. But then he also finds the aesthetic freedom of Japan, where he has a growing reputation, excessive. By Martin Pawley.



It is a paradox that a country recognised all over the world for its achievements in high-tech architecture should harbour one of the most repressive building control regimes in existence. But it is a fact. In Britain not only is the planning executive urged to participate in the so-called "aesthetic control" of all new building in order to regain a homogenous aspect in the built environment, but legion conservation, heritage and special interest groups headed by the Royal Fine Art Commission and the Prince of Wales are encouraged, even begged, to comment on any substantial architectural project for which permission to build is sought.

In the City of London, interference with even the most distant view of Saint Paul's Cathedral can be held to be sufficient ground for the refusal of permission. Outside London, the dread of a possible adverse expression of opinion from the Prince of Wales can lead to the rejection of projects that are desirable upon all other grounds.

As a result of this regime, for every acknowledged masterpiece of modern design, like the Lloyd's building by Sir Richard Rogers, or the new Stansted Airport



terminal by Sir Normal Foster, there are one hundred such projects put forward that are never realised because of public opposition, conservationist propaganda, bureaucratic interference, or simply as a consequence of the costly delays that any or all of these can cause.

Vulnerable to opposition

To fight this informal national network of aesthetic censorship is particularly difficult for a young, relatively unknown architect. And no young architect can be more vulnerable to this level of opposition than a practitioner trained in the offices of the great masters of advanced technology but, as yet, without a reputation of his or her own. For such an individual, refusal to compromise over design matters can lead to a bitter contest.

Today, seven years after setting up in practice on his own, David Chipperfield is one of the rising stars of British architecture. Generally dressed in much-admired Japanese silk suits, he is as much at home playing the part of a visiting professor in Naples or Harvard, as he is at his offices in Tokyo and London. Chipperfield's work is widely published in Spanish, Italian, Japanese and English magazines. He employs a staff of seven at his North London office, in a building complex which he designed himself. He has another two people working in Japan and expects to open a third office in Siena before long – the unexpected result of a near miss at the £35,000 Andrea Palladio Prize that subsequently led to a commission to design a 400-unit housing scheme in the nearby town of Tieni.

All told, David Chipperfield has already designed some 60 interiors and buildings and is well placed to undertake larger ones in the future. But life was not always so promising for him. "I never noticed the boom, so why should I notice the recession," is his sardonic comment on the vagaries of the construction economy.

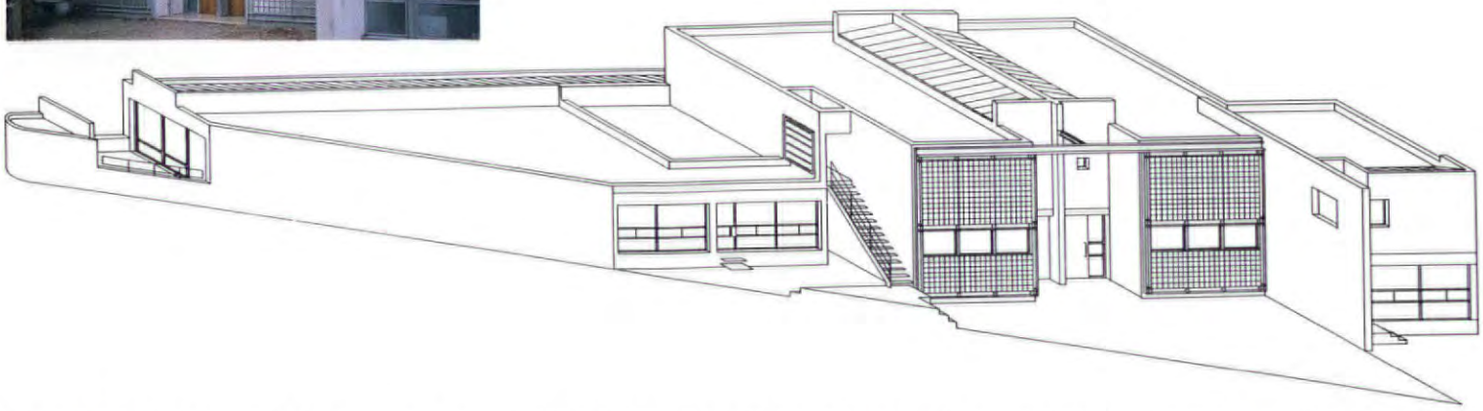
He graduated from the Architectural Association in 1976 at the age of 23. He first went to work for Douglas Stephen and Partners, then moved to the Richard Rogers Partnership and finally to Foster Associates before he set up in practice on his own in 1984. During his time with Sir Richard Rogers, he worked on the competition for the Lloyd's building, and during his time with Sir Norman Foster, he played a key role in the team on the later abandoned BBC Radio centre project for Langham Place.

When he left Foster Associates, Chipperfield set up in practice with a rented desk and a drawing board in the offices of Douglas Stephen again, only this time in partnership with another ex-Foster architect Kenneth Armstrong. The partnership did not survive for long. Having established his own reputation to a small extent by remodelling his own London flat, Chipperfield soon found himself personally recommended to the Japanese fashion designer Issey Miyake. In 1985 he designed a shop in Sloane Street for Miyake and subsequently others in Japan where he worked continuously for 18 months.

Exclusive Japanese cachet

Experience in Japan in turn provided him with an exclusive cachet in England and on his return he secured further small commissions: a remodelling of the Arnolfini Arts Centre in Bristol; an ingeniously planned graphic design studio in a London mews (which he dismisses as "a symphony in plasterboard"); and the much-admired Wilson & Gough craft shop at Brompton Cross. At the same time he began to design

Early Modernist commercial development with exposed concrete walls and extensive use of glass bricks in Camden Town, London, houses David Chipperfield's own office.



shirt shops for the French *Equipment* chain, at first in France and later in Japan, London and the USA.

In all of these works his trademark became an attention to detail and a perfect simplicity of line defined by costly and well-finished materials such as stone, timber, slate, marble, concrete, plaster and steel.

While providing him with an ever-changing laboratory for experiments in proportion, materials and texture, all these small but carefully detailed projects were what Chipperfield now calls "fragile architecture". He explains: "The problem is that there is no programme for shops of this kind, they are almost too easy because they are not really architecture. You don't have to keep a roof up or keep the rain out. It is almost no more than a fashionable interior."

But if the Miyake and *Equipment* shops were and are easy – Chipperfield continues to design them and has recently opened the first *Equipment* shop in London – what followed these early commissions was not. In 1987 Chipperfield was commissioned by fashion photographer Nick Knight, who has worked for Japanese fashion designers, to carry out an £200,000 remodelling of his suburban house in Richmond, Surrey.

The project took the form of a cool white concrete *premier modern* structure larger than the original house, with vast glass walls on its garden side and a street elevation consisting of plain wall and window surfaces unrelieved by the kind of leaded lights and brick-tiled roof slopes universally used by its neighbours. This project almost immediately fell foul of popular and bureaucratic opposition. "I wanted space, I wanted light, I wanted simplicity. I wanted something that wasn't cluttered so I could think," said Knight of the brief that he gave to Chipperfield.

What he got was such implacable local opposition that, had he not already obtained planning permission with the aid of another architect, he would almost certainly have never been allowed it. As it was, his neighbours organised petitions, convinced that the new house would bring down surrounding property values, and closed their curtains so as not to see the "eyesore" across the road. At the same time the planning committee of the Royal Borough of Richmond, some of whose members lived nearby, attempted to serve an enforcement order to stop work.

Endurance of the client

In the end, apart from forcing a series of delays so that it was not finished until 1990 even though work began in 1988, such was the determination of Chipperfield and the endurance of his client that the most the planners could inflict upon the house was to insist upon the addition of a false cornice detail to maintain the eaves lines of the house next door.

In his work in Japan, Chipperfield had grown used to an atmosphere in which fundamentalist opposition to modern design was inconceivable. Indeed he says that he thinks the Japanese are too permissive in these matters.

"I am not sure I actually approve of their attitude," he says. "In a way they allow so much freedom to architecture that it ceases to be important. Certainly nothing you can do in architecture is likely to upset them. All culture in Japan is directed towards encouraging consumption but their consumption has nothing to do with real needs. They like to have foreign architects to do strange things that tickle their jaded palates. Personally I accept the need for planning controls, even aesthetic control, and I see no reason to reject the past as a source of inspiration. But then I don't think that any of these restrictions is incompatible with good modern design."

Apart from the Miyake shops, Chipperfield has built two substantial buildings in Japan, the privately-funded Gotoh Museum in Chiba and the TAK design store in Kyoto which incorporates a Toyota showroom. A third project, the Matsumoto corporate headquarters in Okayama, is under construction at the time of writing. In all these larger buildings, Chipperfield shows the same authoritative, almost austere mastery of proportion and line as in his minimalist shop interiors. Plain white walls and an adventurous planar geometry dominated by rectangles, but not excluding a bold curve as in the roof of the Gotoh Museum, mark out his buildings.

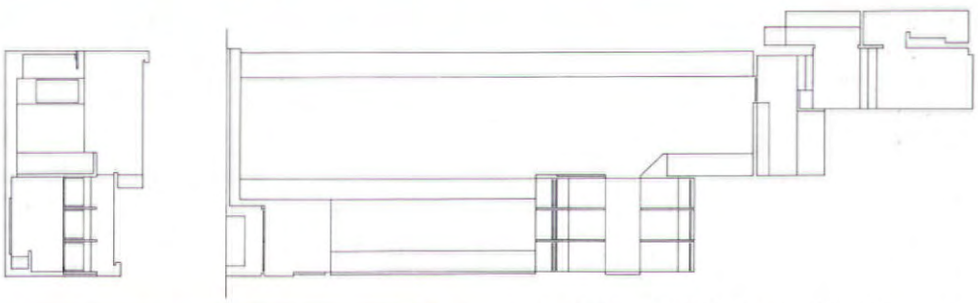
In London in 1989 he achieved the same kind of contrast with an unashamedly early-Modernist looking £600,000 commercial development set in a backlands site in Camden Town. Once again he had to fight for planning permission and only obtained it because the project was invisible from the street. Part of this complex, with its exposed concrete party walls and glass bricks, is now his own London office.

David Chipperfield's two most important current projects in the UK are the £1.5 million programme of alterations and additions to the First Church of Christ Scientist in Sloane Terrace, London, where he will be inserting new commercial offices into an underused ecclesiastical building; and the proposed £3.5 million Rowing Museum at Henley in Oxfordshire.

In Sloane Terrace he anticipates no planning problems on the aesthetic side

because the alterations will all be invisible from the exterior. At Henley he accepted from the outset that only a pitched roof structure would receive planning consent. His design takes the form of two 65m-long top-lit sheds side by side, raised up from the grass of the river bank to avoid floods. The roofs will be finished in lead and the walls clad in black-painted timber clapboarding set in concrete frames. Looking at drawings of the scheme in his office, Chipperfield reasons: "It looks perfectly ordinary from long range. It is only when you get closer that you can see it is something different.

And what do the Henley planners think of this design? "Even though we already have outline planning permission, they keep asking themselves whether Prince Charles would accept an invitation to open the building," Chipperfield answers. "Fortunately that's not my problem." □



This page: Chipperfield's Sloane Street shop for Japanese fashion designer Issey Miyake, 1986: simplicity of line coupled with attention to detail.

INTERNATIONAL FORUM OF YOUNG ARCHITECTS PUBLICATION

The International Forum of Young Architects is a worldwide organisation aimed at the stimulation and promotion of avant-garde trends, concepts and projects in the field of architecture.

Editor/Design
Georgi Stanishev
Photography
Sadamu Saito
Introduction
Toshihiko Suzuki
Text
Hiroshi Innami

At the tailend of this century, Tokyo has become a banquet of metropolitan projects. Like many other world cities, it has developed into a giant fragmentary and accidental urban texture giving a new dimension to the traditional concept of a city. Here architect Toshihiko Suzuki, environmental designer Hiroshi Innami and photographer Sadamu Saito explore the hidden messages and imagery of this metropolis, experimenting with an original method of research through the medium of photography to differentiate perceptions from reality and gain an understanding of how memory works in the city.

TOKYO'S URBAN SENSES

TOKYO 1991
Introduction by Toshihiko Suzuki

Tokyo has become a banquet of metropolitan projects developed by the gigantic capital. Various projects are realised at an incredibly fast pace, but government leadership seen in the *Grand Projects* in Paris doesn't exist. Capital investment by private enterprise is developing a new infrastructure in the metropolis based on nothing more than market principles.

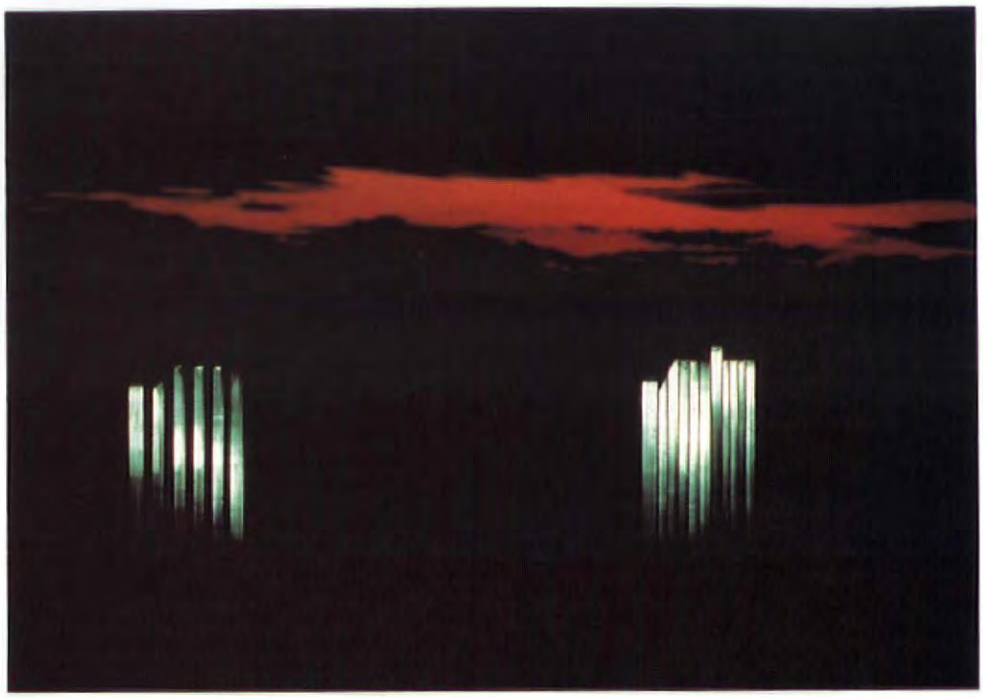
The Metropolitan express is connected to the highway which runs from Tokyo to the suburbs, creating another street pattern above Tokyo, while self-multiplying. Tokyo Bay is filled and the infrastructure for the waterfront city is laid. The area which used to be under the sea is filled with skyscrapers.

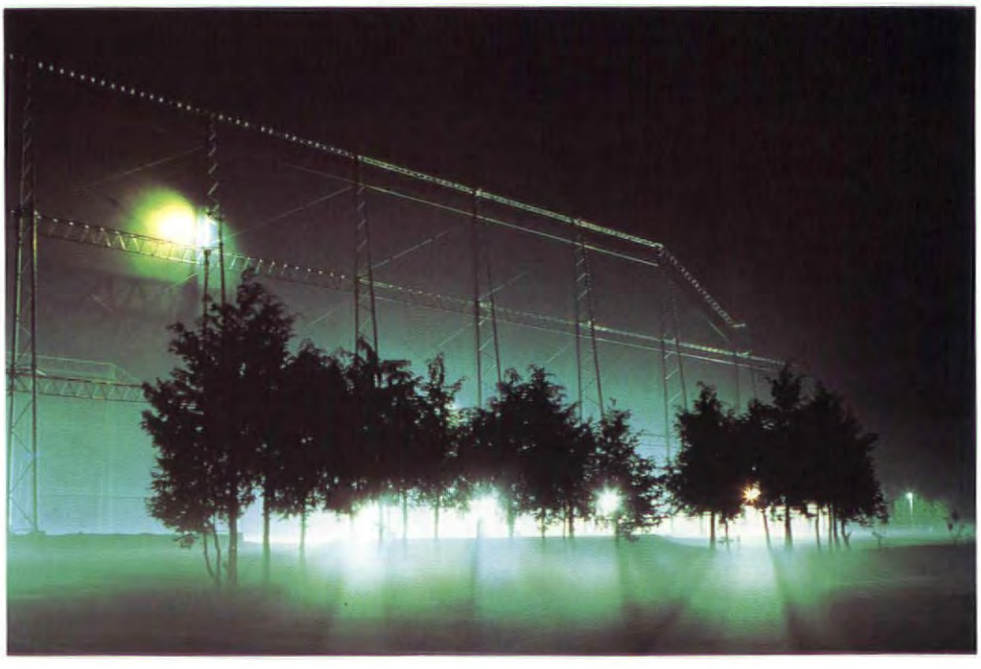
In Tokyo, where land prices have exceeded the limits of human control, the development of deep underground has begun. It would not be too far in the future from now to see another city laid 60 meters beneath Tokyo. Presently, there is no image of a city in human scale in Tokyo. The discrepancy between the image and the reality is as large as the gap between the human and the city. What will fill the gap? Will it be visible or invisible?

The development of interface technology

Landscape of Sound
Sounds which we experience on special occasions such as concerts and parties often leave us as soon as we leave that particular spot. This is because the particular place and people are totally alienated from our lives, lacking the kind of reverberation which links one scene with another. Our daily life is built on our thoughts, on things we do, and feel at each moment. Lingering sounds our ears remember, our body feels and our memory retains . . . all these different sounds no longer share any coherence. Only when these sounds reverberate and become fused with one another do we discover a new landscape of sounds.

Below: Landscape of Light
People enter a city by passing through terminals such as airports, stations and highway toll gates. There are the "interfaces" between the city and other areas. Stratification of infrastructure and circulations in the city are expressed in the form of light. Light demarcates the boundaries between the city and regions outside and makes us aware of the continuity that exists in the scenery as well as in the topography.





Above: Landscape of Water
A rugged topography, when accompanied by a warm and wet climate, will bring forth movements of water such as rivers and springs. When there is a movement of water, there should also be transformation of water into mist, rainbows and other forms. In our daily urban life, we are used to water that flows from the faucet, but we hardly experience other forms of water. Water transforms and adapts itself to whatever contains it. Water is capable of producing multitudes of sounds and allows various plants and organisms to live within it. Water can be conceived as a component element of the environment when there is a "dislocation" in the urban topography.

which is to fill this gap hides the important key to the revitalisation of the city. The following proposal was originally developed for a competition held in Canada in 1990. It is based on adding the viewpoint of the photographer to that of the architect and environmental designer. The photographs captured certain elements beyond our five senses; they not only awakened our intimate emotion toward nature, but also stimulated our attempts to unveil a specific "urban nature" that we had never experienced before. The key word for our joint contribution is "sensitivity".

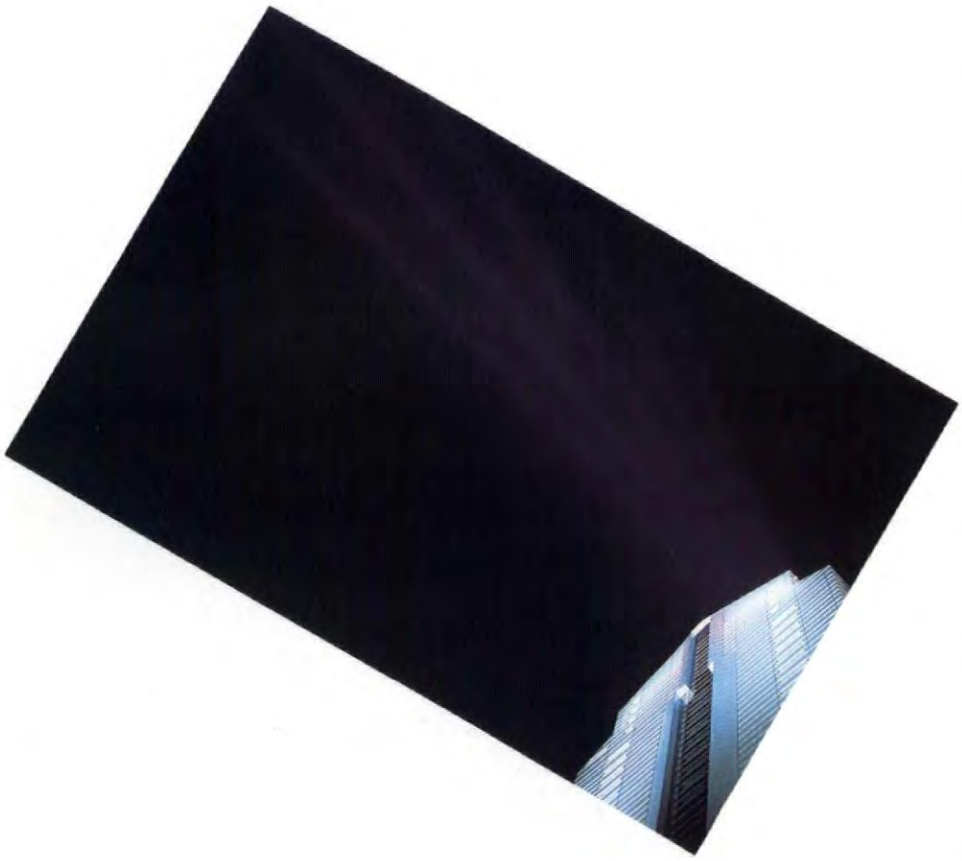
URBAN SENSITIVITY
Text by Hiroshi Innami

Fragment 1: Urban Landscapes

Everything transforms and moves. An odd atmosphere, and diversified forms catch the eye, touch the skin and revive the memories. People have grown accustomed to torrents of incessant stimuli, and ignore them as meaningless. The chaos in the city is dramatic and spectacular.

Exciting cities always have a semblance of ruins. There are no coherent links, signs or symbols that are the relics of history to fill the space, and there emerges an environment which surpasses daily routine and which is infinitely stimulating.

Today, there are those urban-dwellers who are tough in mind and body. The excessive stimuli and distorted order which they create leave us incapable of subjectively assessing the relationship between the urban environment and ourselves. Yet, we must explore discarded spaces and exploit the energy left there. We must seek a standpoint for restoring the spiritual and emotional ties that should link man with the environment.



Left and right: Desire for Stimulation
When we look at the environment, there is a difference between that felt subjectively and that which is real. The act of modifying recognition by narrowing or expanding this difference is indeed a stimulating act; a mechanism which evokes our sensations. Modern society values linear continuity and logic; it dismisses "sensitivity" as something ambiguous. However, subliminal effect – effects of speed and technology – have been imprinted in our own sensitivity as the "images of consciousness".

Fragment 2: Views as Sensitivity

Cities have long had autonomous elements that form the so-called urban infrastructure: elevated highways, monorails, tunnels, and footbridges. The urban systems which have evolved provide the circuit where man, objects, visions, information and energy are distributed.

A city comes into the limelight as a dynamic space when it involves a large number of unspecified people – a public that tends to be measured in terms of quantity. There we find an explicit aim, irrespective of ideologies, to restore order to the chaos and confusion. In addition, a city is increasingly tinted with bureaucracy as it becomes more complex and confused.

In urban life today, we observe a marked shift from the printed media which is highly conceptual to the audio-visual media which relies more on images, and images and symbols have gained significance in a new way.

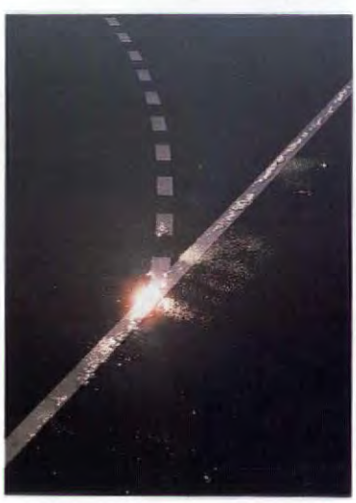
Because of the shift, the visual sensation alone has risen above the others, and our society is full of intuitive people who grasp things in terms of images and symbols through an empathetic viewpoint rather than through logic or an objective and rational stance on concepts.

Human spontaneity has matured through liberation of the senses to discovery of purer insights into the self. However, rapid changes that take place in cities have greatly disturbed the regular rhythm of human life and numbed the cognitive capacity of the senses with which we are intrinsically endowed. We have lost the basic means of communication which are rooted in the senses and rhythms spontaneously learned and acquired through contact with nature and culture over a long period.

In urban life this loss has a tremendous effect on us: alienated parent-children relationships; public education reduced to a mere shell; non-humanistic approaches predominant in the medical services; increased numbers of psychosomatic patients; and a lack of imagination and creative power in the sciences and humanities.

We now face the need to uncover the biorhythms and sensitivity buried in urban life and do away with the "unseen order" that prevents them from manifesting and maturing.

Sublimation of Forms
We use sight more than any other sense. But perception through the eyes is not necessarily a purely physiological phenomenon. In the urban environment, we can see how things are subjectively interpreted and incorporated through the filters – cultural, political, economic and religious – of each person.



Fragment 3: Conflict of Sensitivity with Reality

Urban dwellers have accumulated various memories in an environment which allows them to simulate highly realistic illusions. Cities offer us dynamic memories of light, warm breezes, speed, texture and feel of surfaces, and nostalgia for the twilight, to name a few.

All these memories, together with our own consciousness, are the components of "reality". We retain them as they were formed and arranged in an orderly manner. And yet today, we are indifferent to any attempt to unburden the load of these memories. We no longer have any sensations. This phenomenon suggests that, in the process of forging a "reality", we are faced with a problem which requires review. How do we retain the memory of the city and on what sensations do we base our memory of reality?

The visual images we regularly see in our daily life have been stored through nonchalant perceptions which are free from judgements that are based on the senses, and free from judgements based on logic. If these images are the mere "material" perceptions without any intelligent or introspective implications, then they are simply illusions.

We tend to think that memories restore things we have long known. Actually, memories do not restore things to their original state; instead, they merely reproduce the state of our mind in fragments which we have experienced before every time various senses are stimulated.

Because our perceptions revive our memories so quickly, we often fail to distinguish what we actually saw from what we are reminded of by them. The subjective difference between seeing and remembering is controlled each time by our mechanism of memory. One mechanism of our memory stores something sensual only for several seconds while another mechanism of memory stores such items as habits, customs, targets and thinking style for several days or weeks.

Memories which are related to individual emotional attachments are stored in our memory for a much longer period: months and even years.

Fragment 4: Environment of Perception

Perception connects us directly with the urban environment. Also, the world itself appears before us as a realm of coherence only through an orderly perception. This comprehensive activity of our senses has always been what makes us human.

Our sensitivity is formulated and fostered within the framework of history and society

Below: Whim of Vision
When we see something with an express intention, we are in the act of "seeing" images that we subjectively interpreted. They are not the actual images that are reflected in our retina. The difference between being "seen" and "visible" may be defined as the difference between the reality and the subjective image an individual reconstructs through different combinations of filters. We have coined a term "reactivation of a landscape" to mean a process to create a landscape that liberates the aesthetic and diversified values contained within people and allows them to fully exhibit their sensorial capacities.

Discovery of Dislocation.
Let us call the gap between the relationship which links one component element of an environment with another and their intrinsic values a "dislocation". In contemporary terms, the "dislocation" may appear to be an innocent and obscure space. It is not a mere vacant lot, but may be called so in the sense that it is full of potential use for various purposes. At the same time, the "dislocation" is an infrastructure and is differentiated from a mere vacant lot by its close relationship with technology.

and not beyond it. Our sensitivity is constantly exposed to and obliged to cope with the overwhelming changes that are taking place in the urban environment.

Fragment 5: Urban Environment as a Responsive Space

The "space" necessary to hold the contemporary urban environment is a space capable of sophisticated functions. It adapts to a multitude of activities and events. Our activities today have mobility and speed and properties that are inseparable from technology.

For example, a plaza in a city is maintained as an essential space to accommodate large numbers of people coming together and socially interacting. In rural areas and closed societies, the plaza still remains an important public space. Yet even there, its significance as a place of communication has been forced to undergo transformation. The "urban environment" required in modern cities is a physical place which is functional and yet flexible and responsive to different occasions.

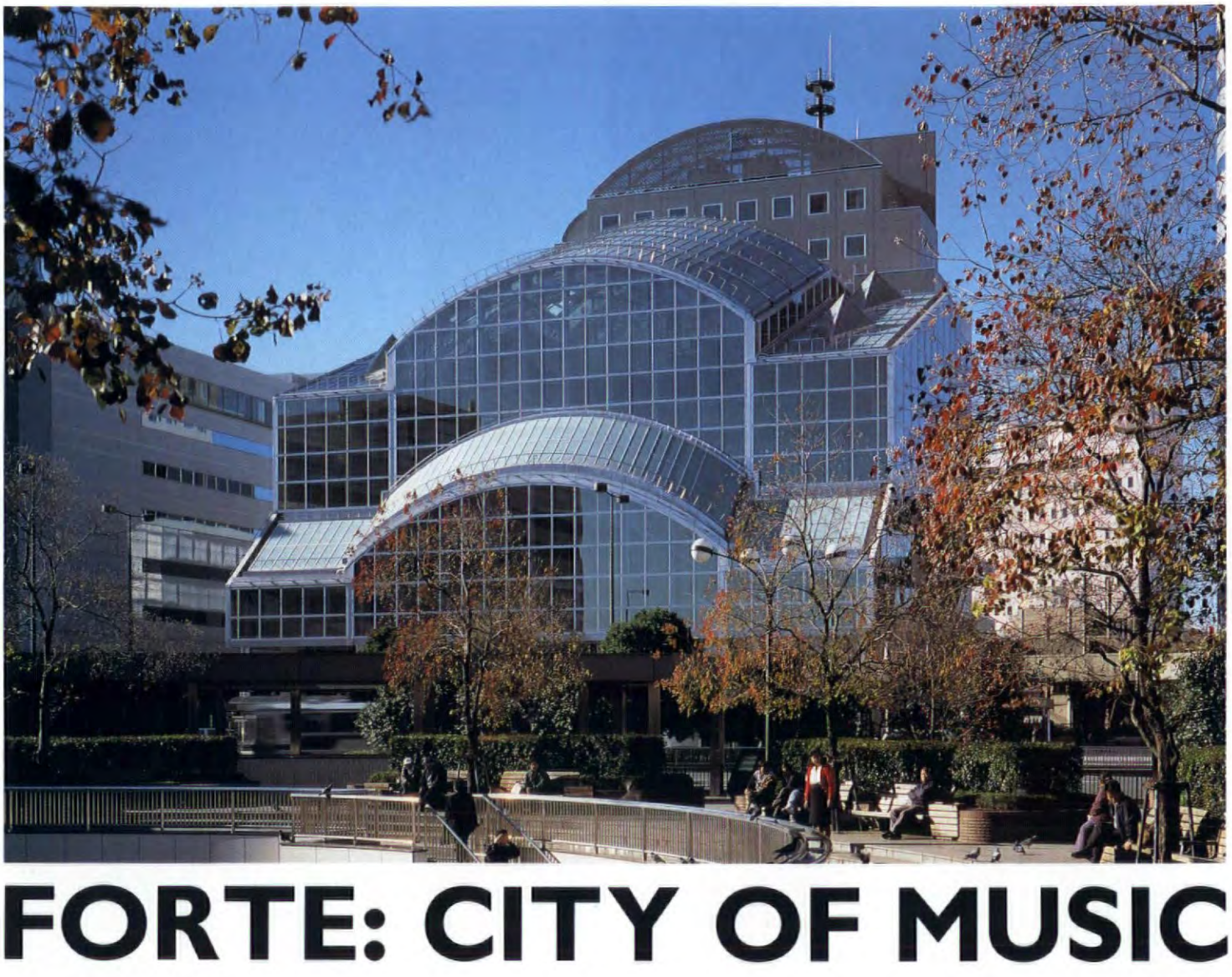
A responsive space should be capable of eliciting a different type of aesthetics by refining its functions, in the way that beauty is elicited by materialism or ready-made objects. Then we may find a new landscape in the urban environment. □

Places with Defined Meaning
A responsive space refuses to have any particular symbolism. It exists as a place for experimenting with different symbolisms. If we were to persist with the word "symbol", then a responsive space would be a symbolic space for technology and monumental in that sense.

TOSHIHIKO SUZUKI architect
Born 1958 Japan
1984 Graduate School, Kogakuin University, Architecture
1984-1990 Kisho Kurokawa Architect & Associates
1985-1986 Epa Marne (establissement public d'amenagement de la ville nouvelle de Marne la Vallee *France)*
1990 established Toshihiko Suzuki Architect & Associates
IFYA Region IAA Representative

HIROSHI INNAMI environment planner
Born 1960 Japan
1979-1983 Tsukuba University, Architecture and Design
1983-1986 GK Industrial Design Institute Department of Graphics
1986-1988 IUAV (Istituto Universitario Architettura di Venezia)
1988 Seminar of Andrea Palladio Center
1988 GK Sekkei Inc. Department of Architecture

SADAMU SAITO photographer
Born 1948 Japan
Kuwazawa Design Institute
1977-1990 Lecturer Tsukuba University Department of Art and Design
1990 established Workshop "S&A"
1991 Lecturer YMCA Design School



KENICHI SUZUKI

FORTE: CITY OF MUSIC

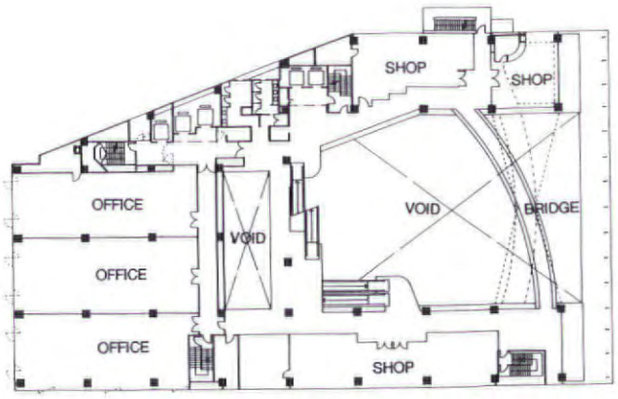
Shizuo Harada's Forte community centre design for Hamamatsu City, Japan, is dedicated to music. It was awarded the Interach '91 Grand Prix at the Sofia Biennale. World Architecture *looks at its internal urban spaces.*

Forte community centre, Hamamatsu: a new kind of architecture enclosing urban space.

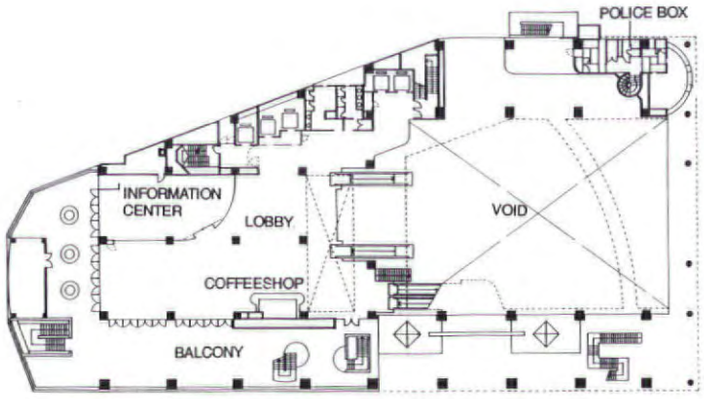
The first major project in Japan by the Tokyo-based office of Esco (Environmental Systems Consultation and Organisation) won the Grand Prix at the Sofia Biennale, Interarch '91. Called Forte, this new project, completed in 1990, provides a public urban architectural space within the building envelope. The space is dedicated to a number of cultural activities, but principally music, which is a major industry in the city of Hamamatsu where it is situated. Hamamatsu, which lies almost mid-way between Tokyo and Osaka, is known all over Japan as one of the main manufacturing centres for musical instruments.

Urban pocket park

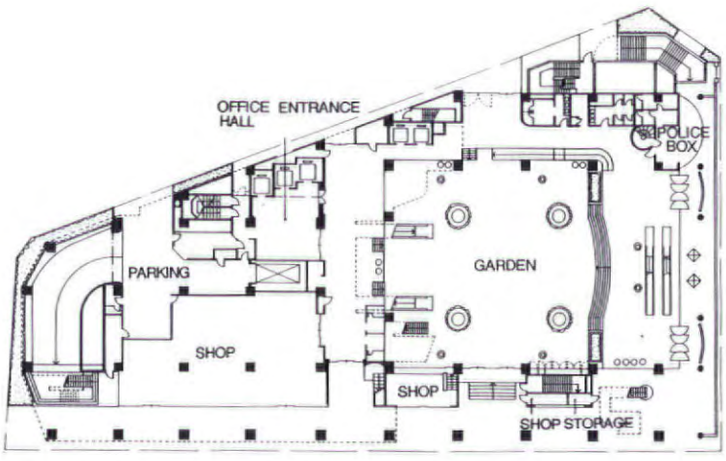
Architect Shizuo Harada, who was responsible for his firm's design for Forte, is well acquainted with the city. He worked there himself for a decade or so. He claims his concept aims to change "the city of musical instruments into a city of music". His building is, he says, a new kind of architecture "embracing urban space" in which visitors to the development will be free "to walk about, to socialise, to play music or simply enjoy themselves" in the



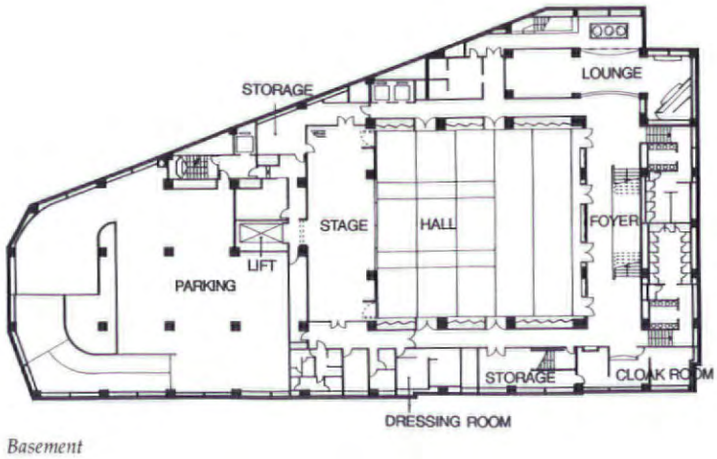
Typical upper office floor



First floor



Ground level



Basement

ISAO IMBE

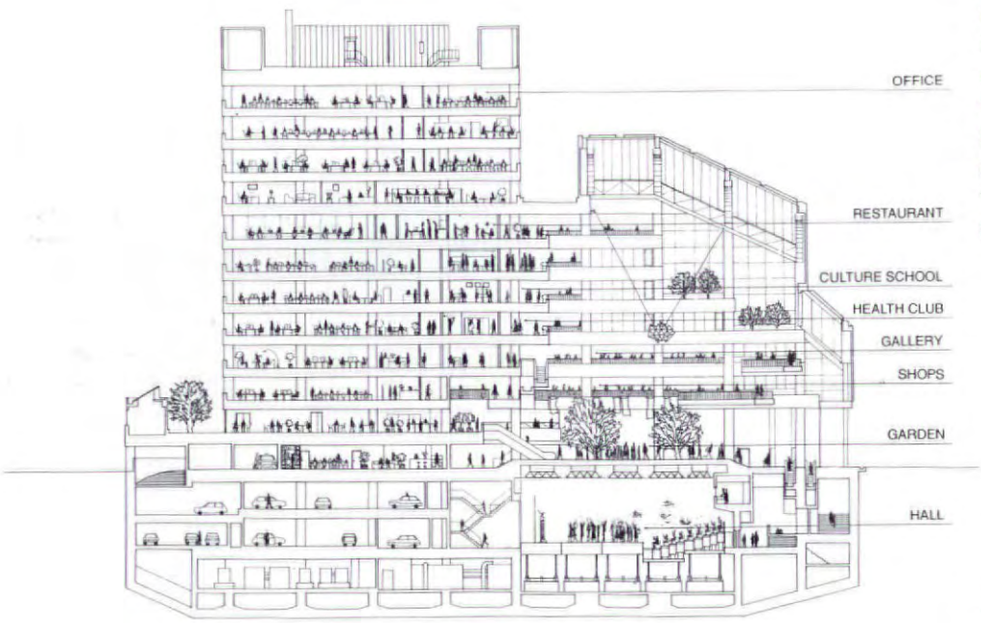
main atrium garden space. In some ways it is "like small urban pocket park, or a public garden".

Musical performances are held in the great glazed atrium which contains the public garden space on a raised ground floor.

The centre is open to the public from early in the morning to late at night. Raised above the atrium floor on ten other floors is a health club, a culture school, an art gallery and on the garden floor itself, a few strategically placed shops. On a floor below ground lies the double height theatre auditorium which is served directly from the main lobby by escalators, lifts and separate stairs.

Vital cultural focal point

The development covers a total area in the region of 21,250 sq m of usable space, most of which is already let. The complex is proving a vital cultural focal point in the city and has added greatly to the urban environment. Its great metal and glass eyebrow roof provides a symbol for the musical activities. Its successful nomination for the Interarch '91 prize was due to its strong, coherent architectural imagery as well as its well organised plan and section. □



Aerial, interior and section views of the Forte community centre.

LATIN AMERICANS

The Coleccion Somosur series

J Bland Alvaro Ortega, *P Belaunde,* Juvenal Baracco; *R Santa Maria and S Palleroni,* Carlos Mijares; *E X de Anda Alanis,* Luis Barragan; *C B Diaz,* Sergio Larrain; *G Carbonell* Regelio Salmona *and* Eladio Dieste; *R Gutierrez, M Martin and A Petrina,* Orta Arquitectura Argentina; *H Eliash,* Fernando Castillo, *Escala, Columbia (for the Americas) and Concept Media, London 1990. £26.95 each, hardboard with pictorial covers.*

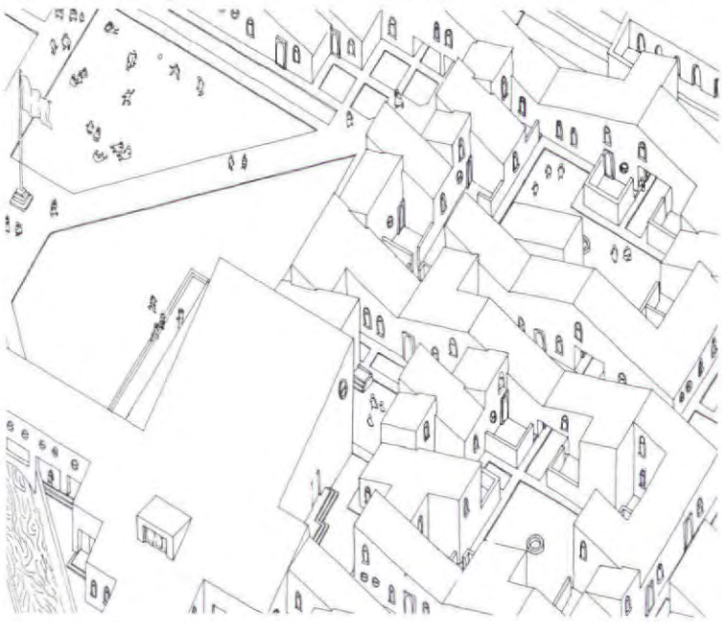
Review by Dennis Sharp

This enterprising new series of titles on Central and South American architects and their buildings comes from the Columbian publisher Escala. The titles are distributed outside the Americas by Concept Media whose own publishing programme over the past few years has concentrated on innovative and significant architects from developing countries. Whilst Concept Media's own titles have been exclusively in the English language, the handsomely produced *Coleccion Somosur* series is published in Spanish but with commentaries and summaries in English.

The great value of this series, however, is not dependant on the elegance or quantity of language but on the presentation of architectural works by architects who are little known outside the vast southern continent. Their work reveals a strong architectural tradition and a significant debt to national and regional cultures.

Architects like Luis Barragan may need little introduction nowadays but the work of the Uruguayan master builder Eladio Dieste is a revelation. His use of natural materials and bold, expressive and harmonious brick shapes show an immense skill. Similarly, the buildings of the Columbian Alvaro Ortega and the Peruvian architect Juvenal Baracco demand attention both in terms of the technical abilities displayed and their regional, organic relevance.

Two Chileans, Castillo and Larrain, whose Modernist work has been more widely recognised abroad, are the subjects of two extensive retrospective studies in a series that deserves the widest possible circulation. The Argentinian title examines the work of eleven architectural practices who, through a variety of projects in this inflation-torn country, have built up an enviable portfolio of excellent buildings. □



One of Peruvian architect Juvenal Barocco's drawings for a group of family houses.

LANDSCAPED GARDENS

Designing the New Landscape

By Sutherland Lyall. Thames and Hudson, London 1991. £29.95.

Review by Alan Blanc

This well-illustrated volume reminds one of the classic work by Sir Peter Shepheard entitled *Modern Gardens* which was published by the Architectural Press in 1953. Sutherland Lyall's introduction even shares the same pictures and there is a similar intention to provide international coverage. Times have changed, however, and Lyall has to select among Neo-Classical, Post-Modernist and other vagaries of current taste to fill out a picture book for both sides of the Atlantic.

The weakest element is the philosophic explanation of the diversity of approaches to landscape design today. Consumerism is the real culprit and the explanation for the growth of vulgarians. It is a pity that the alternatives for "greening the cities" and the new ecological attitudes explored in Germany, Holland and Switzerland are not given greater emphasis.

The author's selection is based upon the premise of one project per designer in order to give the book a democratic division. The arrangement certainly permits a detailed study of contrasting ideas. It also allows the reader to develop their dislikes in a thorough and erudite fashion. I have to confess an anathema with the Mafia-style *Piazza d'Italia* and with other vulgarities that seem to emanate from the USA. The booby prize must surely be awarded to the Rio Shopping Centre, Atlanta for the plastic toads that decorate their mall at 8 ft intervals. By contrast the Japanese work proved a pleasant surprise.

The strong point behind the presentation of the 40 schemes are the compact essays by the author that highlight the main features and leave the readers to make up their own minds "for or against" the examples presented. However, the selection of one design per team robs the book of balance. In the context of Sutton Place it has to be studied as a development of the great water garden at Chute House. Likewise Preben Jakobsen's work needs to be seen in the context of the earlier Hillingdon Town Hall.

This lack of depth contrasts poorly with Sir Peter Shepheard's primer and makes one wish for a reprint of that 1953 edition. *Designing the New Landscape* will no doubt be available in paperback but lets hope the pruning shears will be available to exclude the more tasteless examples paraded by Sutherland Lyall, even though the photography is superb. □

SHORTER NOTICES

■ Among recent books received is another impressive new series of compact paperbacks from the Swiss publisher Birkhaüser, Zurich. Its *Architektur Bibliothek* includes a new printing of Erich Mendelsohn's letter, *Briefe eines Architekten,* a German language version of Gordon Cullen's *Townscape* as well as Fritz Schumacher's *Das Bauliche Gestalten* and as *Die Zeitschrift als Manifest* edited by Annette Ciré and Haila Ochs. This assembles a wide selection of theoretical material from *Frühlicht* to *Archigram.*

■ A revised version of Dennis Sharp's encyclopaedic history of modern architecture, *Twentieth Century Architecture: A Visual History* (Lund Humphries, £25 hardback) now has well over 1,200 illustrations and extends its coverage from 1900-1990, with critical, introductory texts on each decade of this century, and a new preface.

■ A large volume recording the many entries to the new Acropolis Museum Competition, Athens, has been produced by the Greek Ministry of Culture. It features illustrations (many in colour) of most of the 438 submissions from 26 countries (see the winning scheme by Nicoletti and Passerelli in *WA* No. 11, 1991). It is available in English at £25 (price includes a contribution to the Museum fund).

IN SEARCH OF VALUES

World Architecture *is the official magazine of the International Academy of Architecture. In this special Japanese issue, we publish an edited version of an address by Professor Georgi Stoilov, President of the Academic Council of the IAA, given to the Japan Institute of Architects in Tokyo. Its theme is values in architecture.*

Charm is the most powerful instrument of architecture to make an impact on the consciousness of people. The charm of palaces and temples, offices and homes raises the prestige of owners and gives respect to institutions.

The charm of architecture is a treasure in itself, hundreds of times greater than the value of the materials out of which the building is made. The real masterpiece is priceless.

Values in architecture provide the major criteria for what good architecture is. Values determine the objectives of our profession. What are the values in architecture and how are they being created? Different social groups often put a different slant on this term. The values we often determine by narrow consumer, business or political interests. But what matters to us as professionals is not the private or temporary values but the long-lasting and objective values of architecture – as pieces of art, as a great social act, and as a demonstration of the national culture of a people.

Architecture is a complex phenomenon with a dual character and values of material and spiritual origin. Material values include investment, preservation of an ecological balance, and the most effective organisation of space. Spiritual values include aesthetic ideals, ethical expressions of social morals, and an ethnological expression of cultural identity.

The material values of architecture undergo changes in the course of time and are transformed through the reconstruction of buildings. But the real, great and permanent values in architecture are the spiritual ones.

An architectural masterpiece possesses both material and spiritual values. It is impossible to create a masterpiece without fully satisfying functional needs. But at the same time a building with no spiritual values cannot be a masterpiece either. Down the centuries, the majority of buildings were made to meet common and elementary needs. However there are also one or two reverse cases: architectural projects and erected buildings which reflect the extravagant formalistic ideas of their authors, but are in contradiction with the pragmatic contents of buildings.

The uniformity in the solution of the material and spiritual tasks of society is the main characteristic of great architecture.

It is not difficult to determine the material values of architecture. But it is very difficult to find objective criteria for spiritual values.

Spiritual values can be divided into two categories: eternal values valid for the whole humankind and relative values which can pass with time and refer to a specific culture and period of time. Aesthetic values in architecture are the most durable and resistable ones. They are bound in with the idea of man as a product of the harmony of the universe. The ancient Greek temples, the wooden Japanese houses, the Italian *palazzo* and other masterpieces of architecture do not look alike in their stylish architectural forms. But they all have one common quality: beauty. They are all beautiful and harmonious. They possess the magic which attracts and obsesses people.

One of the important problems for aesthetic values in architecture is the question of language and style of architecture. These are actually the phenomena directly related to the approaches and methods in architectural creativity.

The keenest conflicts arise among critics on the question of the aesthetic or stylish characteristics of the architectural language. The cultural and aesthetic values which we have inherited from history belong to a specific architectural style. In the first half of the twentieth century, a new system of aesthetics was formed, the so-called Modern Movement or International Style.

As a result of changing social conditions and attitudes after the 1960s, and because of a number of its organic shortcomings, the International Style entered a deep crisis and provoked the creation of new architectural styles. This is a characteristic feature of our time. The Modern Movement had to fight the classical academism and eclecticism inherited from the nineteenth century. But in the nineteenth century, great discoveries in building materials and technologies were made which led directly to the victory of Modernism.

The Modern Movement solved the contradiction between the qualities of the new materials – metal and reinforced concrete – and the old architectural aesthetics. It solved the conflict between the structure of the old town and the new means of transportation and communication, most of all the car. It provided the answer to the question of building to solve our growing housing problems. And it included the sun and the air as one of the most important elements of architectural composition.

The Modern Movement answered the requirements of the new century – a century of industrialisation, of democratic reforms and of population growths. Modern architecture spread all over the planet. But it also became a stereotype. Its great disadvantage is its annonymity. It pays no reference to climatic peculiarities, or geographic and historical environment, and imposes an architectural stereotype everywhere in the world. It ruined the cultural identity of buildings and towns, especially the traditional values of the town structure – the street, the square, and so on – which are the main elements of social and cultural organisation.

An architecture which had itself triumphed over the dogmas and the stereotypes of academic classicism – an architecture which came to look for new truths, a new humanism and a new culture – itself degenerated into new cliche's and stereotypes.

The spiritual values of the Modernist pioneers have been lost. But can we say that all modern architecture is dead, dogmatised and is not able to create real values any more? Can we say the opposite: that since modern architecture reflects the century of new technologies, it is the only one which has the right to exist?

I think both of these viewpoints are incorrect. The error comes from the idea that there should be only one architectural style in each epoch to provide the basis for aesthetic values. Many historians of architecture try hard to impose this concept.

But we can see how senseless is the struggle for one correct style.

There is coming a time of real pluralism, based on information, freedom, democracy, knowledge and talent. Authoritarian regimes in architecture are not needed.

The task of theory and architectural criticism is not to think of new "architectural styles" and wage a war for their victory. It is to thoroughly research the laws of the art of architecture and to find out the values in each of the masters. The time of stylish fanaticism has come to an end. □

TAKING FRIGHT IN THE FAR EAST

It may have its arch-theorists, master builders and articulate champions, but Pierre Vago admits that the creative anarchy of Japanese architecture frightens the life out of him.

A drawing by Bruno Taut from his Houses and People of Japan *(London, 1938).*

It was 1934 that I first came into contact with Japanese architecture, thanks to Bruno Taut's important article which appeared in *L'Architecture d'Aujourd'hui,* the magazine of which I was then the editor.

We weren't, of course, entirely ignorant of the country, which seemed then so far away. The introduction to the magazine's first issue of 1934, which was devoted to family housing, was entitled "The Japanese Example". But the few examples of Japanese architecture to be found there were not very well chosen. It's obvious that they were thought of as "modern" because they imitated European models.

The most "Japanese" was probably the house of Antonin Raymond, an architect born in Czechoslovakia who emigrated to the United States when he was 22. Raymond assisted Wright on the building of the Imperial Hotel in 1919-20. Then he worked in Tokyo from 1920 to 1937, before returning to America.

A great admirer of Japanese art and civilisation, Bruno Taut offered a more subtle analysis of the architecture of the Empire of the Rising Sun. He was attracted by a "sobriety which is the result of an extreme refinement". He detected the emergence of an original "modern" architecture, which would develop slowly and would "bring to other countries the illumination of a human culture".

But in the short term he was fairly pessimistic about the possibility of an architecture which would both be modern and respect what was essential in the Japanese tradition. He was wrong in this, for very quickly there appeared such architects as Sakakura and Mayekawa (who both worked with Le Corbusier), and a little later Kenzo Tange. All became justly famous, and there were many others.

I am on very good terms with Kenzo Tange (to whom, in 1958, I had the pleasure of handing over the International Grand Prix for Architecture). Kunio is a friend. So is Ren Suzuki, whose very gifted son was a pupil of mine. But just the same, contemporary Japanese architecture upsets me. I just don't understand it.

Despite having many excellent personal relationships and despite the enthusiasm with which Japan is spoken of by many good friends who have spent time there, my dear friend Charlotte Perriand in particular, Japan scares me. So much so – I have to admit, and to my great shame – that I have never been there, and have three times turned down cordial invitations to visit the country.

So I know of its architecture only by what has been published. And I cannot suppose that the works of Maki, Kikutake, Ando, Kurokawa and of Isozaki are typical of what is being built there. I can't claim to "know the architecture of Japan". I only know (if you can call it that!) a few works by a few star architects.

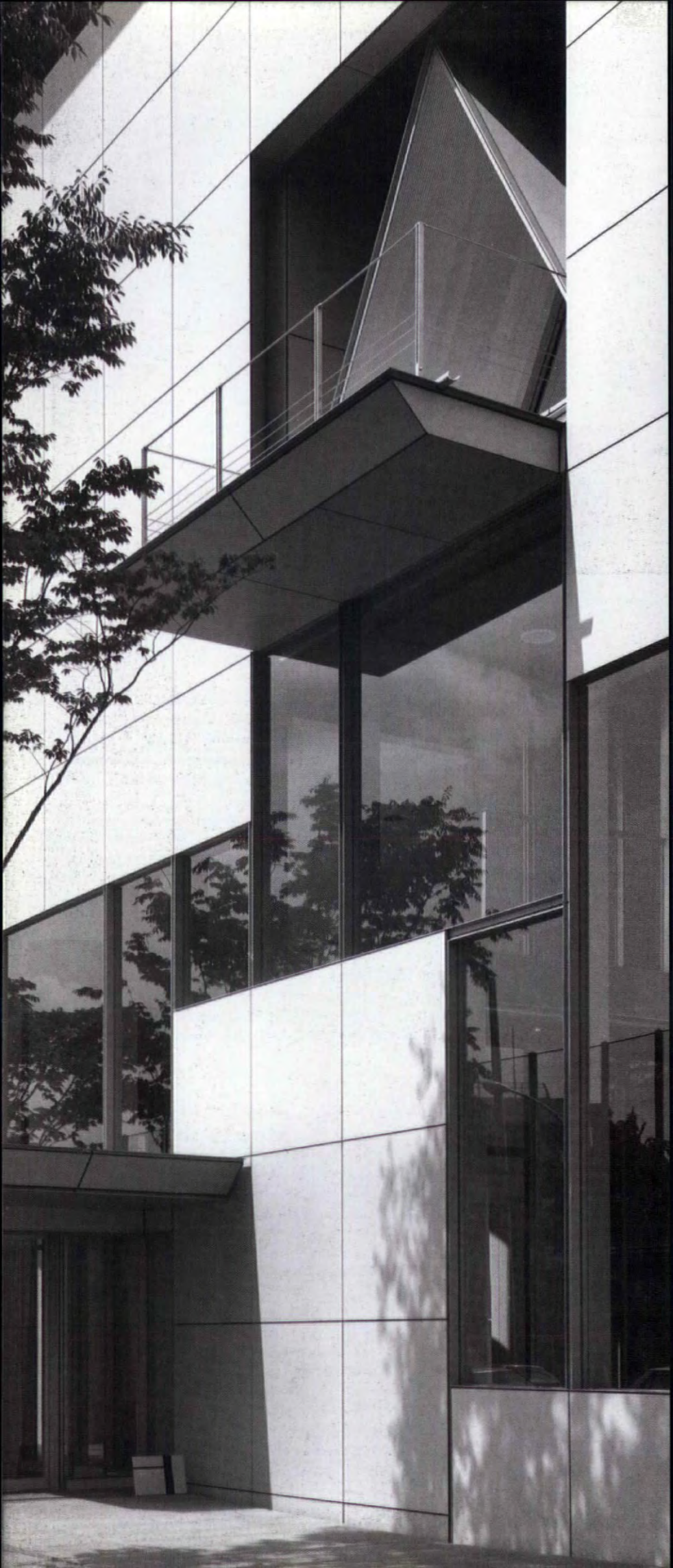
The qualifications I make about my knowledge of Japan will not be out of place when I confess a feeling of disappointment and even of disquiet. I do not understand this brutal rupture in a tradition which seemed so extremely promising. I don't understand how people of such finesse and sensitivity can produce work in which I am unable to find the virtues and distinctive qualities of Japanese art.

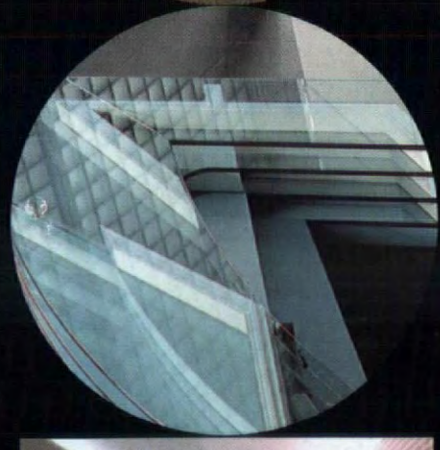
The explanations, the theories I read and I hear, cannot convince me, can't even make me understand the 'Metabolism' of Otaka and his friends, nor Takeyama's 'Meteorology', Ando's 'Minimalism', Isozaki's 'Maniera', Yosizaka's 'Discontinuous Unity' or Aida's 'Eternal in the here and now'.

Yet I believe myself to be moderately intelligent, and I certainly bring plenty of goodwill. Perhaps I just can't free myself from a western point of view. Perhaps it is just a characteristic of Japanese architecture to produce extravagant creations in complete contrast to their urban environment. Perhaps they are part of the chaos that is the Japanese town, "strong-points" the more vigorous and the more brutal for the town being a dense and inextricably tangled fabric of low buildings, without unity, without style and without beauty, criss-crossed by streets and lanes.

From this anarchy there emerges here and there a 'monument' which remains an integral part of it: Shinohara's Centenary Museum, for example. This *sensei* is one of the few architects who have preferred to teach modernity through the study of Japanese tradition and who have worked with none of the European or American masters.

For me, this Museum is a very beautiful sculpture which uses the most sophisticated (and costly) of materials: a 'pluto-aristocratic' architecture. But is this the result that this elite architect has come to as the conclusion of his long research? "Japanese traditional architecture paved the way for my abstract architecture," Shinohara writes. This is what I cannot understand. □





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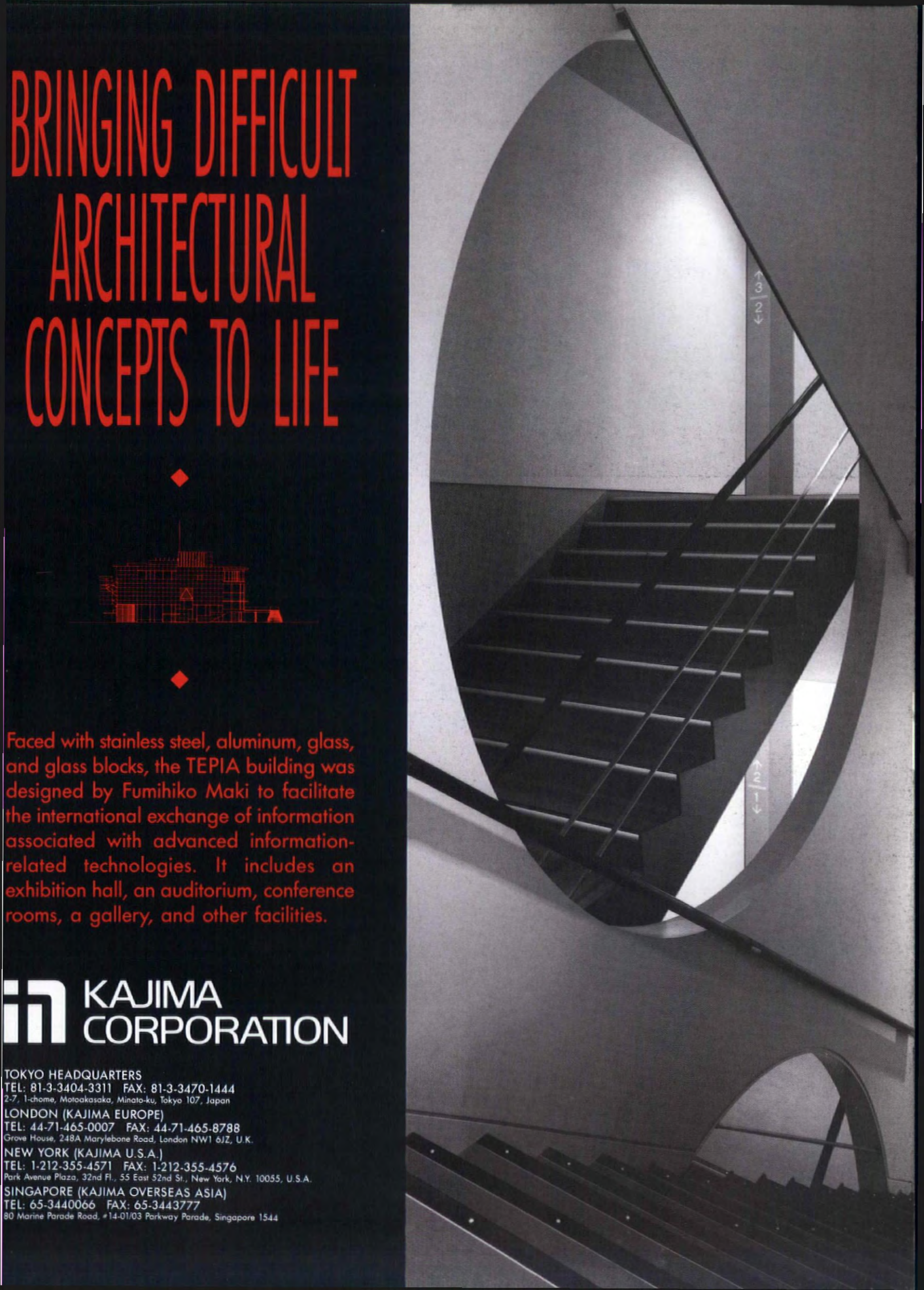

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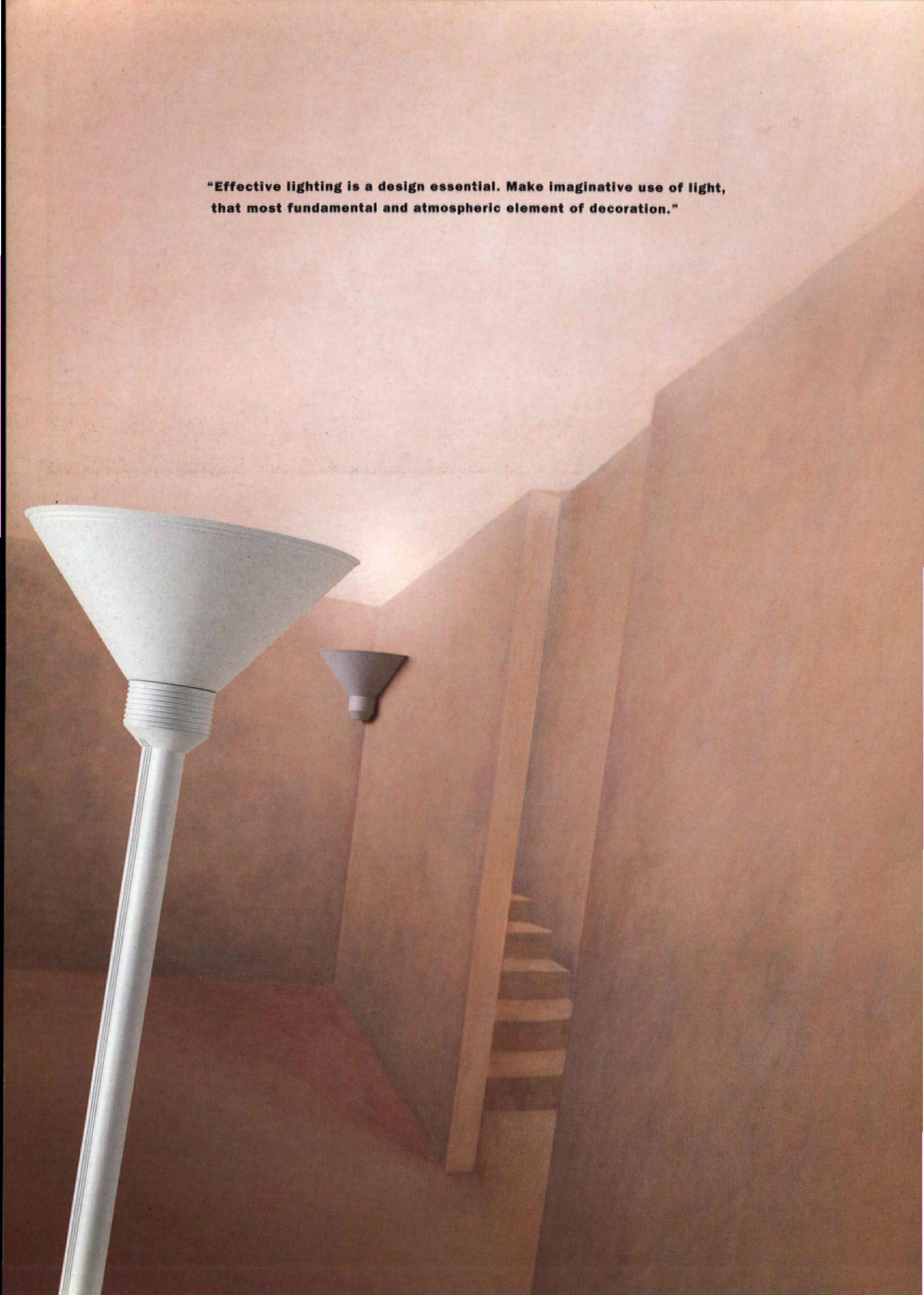
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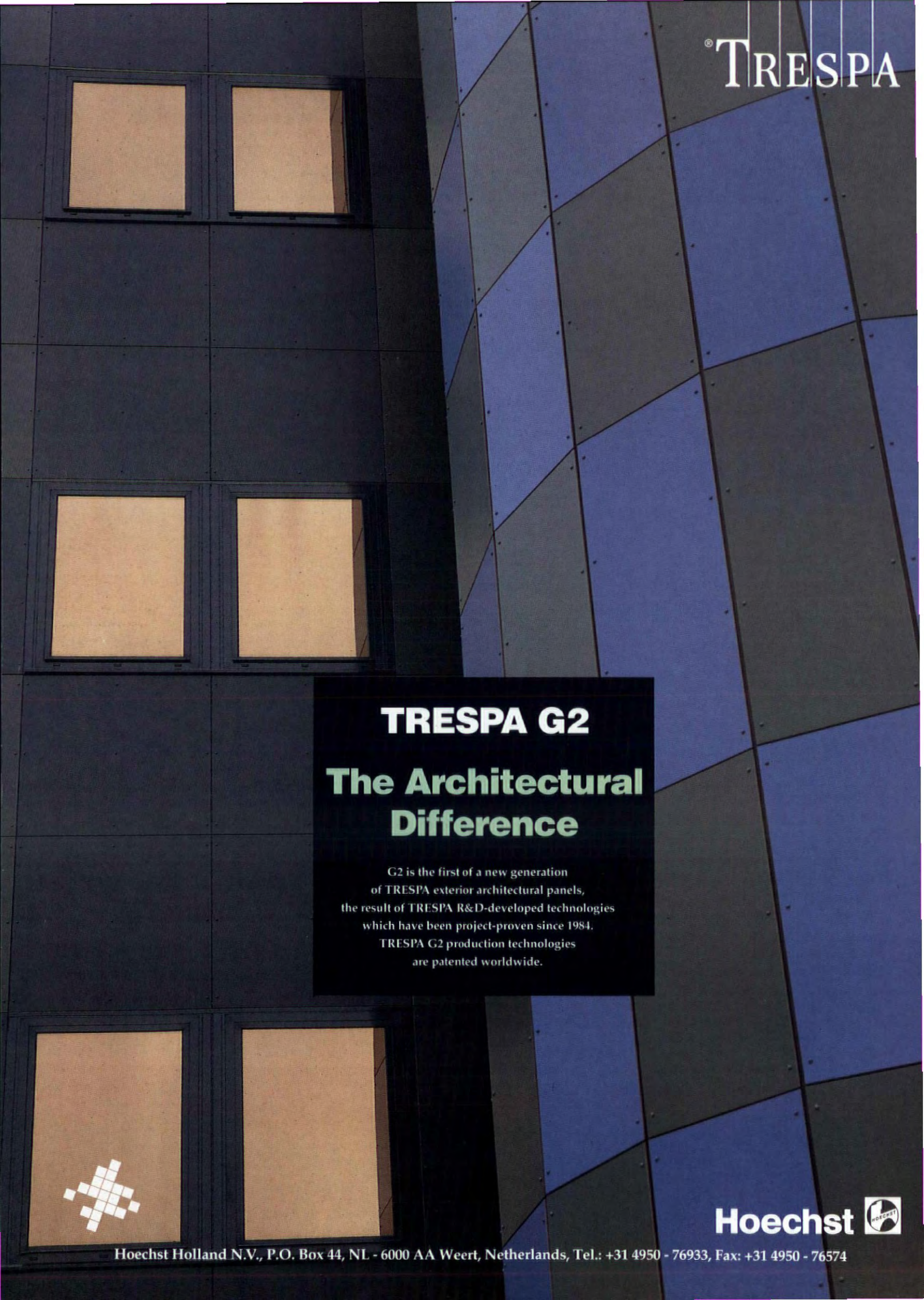

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Esso building, near Leatherhead, UK, designed by Percy Thomas Partnership: creative use of composite metal panels on a prestige building.

CLADDING
FACING THE FUTURE

Cladding technology in building design has advanced with the successful introduction of composite panels. As a prelude to Product Update, World Architecture *looks at recent developments – and the role of EPIC (European Panel Information Centre) in advising architects.*

Sheeting and cladding first came into use at the beginning of the twentieth century when a fast building method was urgently needed to meet the growing demand for single storey facilities.

One of the main advantages of cladding is the strength it gains from its profiled shape. This means that relatively thin gauge metals can be used and, because of the reduction in weight on the structure, smaller foundations are needed. Steel has generally been the material most favoured because of its high weight-to-strength ratio and relatively low cost.

Undergoing many changes

Since it inception, sheeting and cladding has undergone many changes to meet the more specific needs of different building types. At an early stage, for example, galvanising of the steel, and then the use of bitumen to give additional protection, were introduced. During the 1950s and 1960s trapezoidal profiles were introduced and pigmentation was added to give coloured cladding panels.

Originally, profiled metal sheets were fixed directly onto the building's steel frame simply as a means of providing a weathering envelope but as the need for energy saving grew, a variety of on-site techniques were developed for the application of insulation. The main weakness in such systems is the ever present risk of condensation within the assembly. Today's architects and designers are aware of the risks from condensation but in the sixties this was something new and difficult to predict. Vapour barriers were subsequently introduced into the built-up systems and they seem to have given some improvement.

In the late sixties composite metal panels were developed. Sometimes known as sandwich panels, these products comprise a layer of polyurethane insulation bonded to an inner and outer sheet of metal. Composite metal panels took assembly off the site and into the factory. A number of manufacturers invested in new production facilities which resulted in higher standards of production and the introduction of a succession of new product features.

The composite panel had arrived in a major way and enjoyed dramatic growth throughout the 1980s. Environmental concern for the use of CFCs in the insulation materials has not deterred the manufacturers and CFC-free panels are, after more research and investment, now freely available.

Market confidence in the product is high and end use is diversifying from the traditional market in industrial sheds to superior buildings. In Britain, the new Esso offices outside Leatherhead and the Lakeside Shopping Centre at Thurrock reflect this trend.

In the case of Esso (architects: Percy Thomas Partnership), cladding the overall building – both roof and walls – in composite panels responded to the need for energy conservation. In terms of high thermal efficiency, the wall panels achieve a significantly higher standard than that required by current building regulations.

The building envelope of the Lakeside Pavilion at Thurrock Lakeside Shopping Centre is made of composite metal panels (architects: Chapman Taylor Partners). With elevations in blue and grey, and an unusually steeply pitched roof, the development was commended in British Steel's 1991 Colorcoat Awards.

Joining forces to inform

To keep the building industry aware of the most up-to-date developments in composite panel technology, the UK's five leading composite metal panel manufacturers launched the European Panel Information Centre (EPIC) in June 1991. EPIC provides a free technical advisory service for specifiers, contractors and building owners. The Centre aims to give quick, clear guidance at the early design stage, and to advise on the constraints in using composite metal panels while offering technical data on thermal, sound and fire performance of potential panel types.

Between them, the five EPIC companies – Composite Panels Ltd, Huurre UK, Kingspan Building Products Ltd, H H Robertson (UK) Ltd and Ward Building Components Ltd – supply 85 per cent of the UK composite panel market which currently stands at around 3 million sq m per annum.

Another source of expertise is Salford University which has taken a leading role in researching the performance of composite cladding. Liaising with Professor Mike Davies, head of civil engineering at Salford, EPIC is holding a two-day seminar in April 1992.

The implications of European standardisation will also be covered because Salford University represents the UK on the technical committee of the European Convention of Constructional Steelwork. Following several years of research, the team has produced its European recommendations for sandwich panels.

Surprisingly for a component of such advanced design, it is over 20 years since composite panels were first introduced. All the evidence is that there are no inherent durability problems and that the earliest panels installed are continuing to give good service. However, improving standards of manufacture and performance design – monitored through means such as British Standard BS5750 on quality control – are only just beginning to be reflected by specifiers' confidence to use them in prestige projects. □

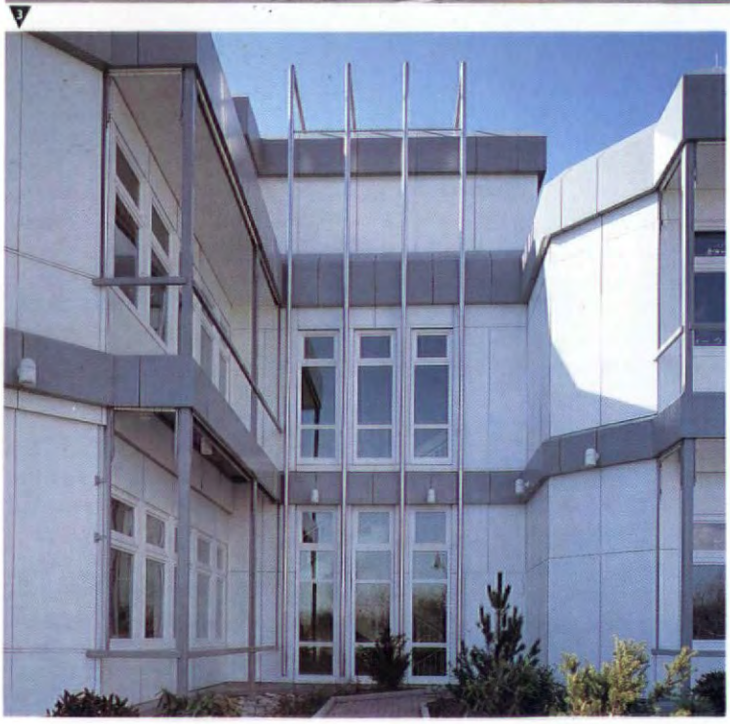
BUILDING IMAGES

An international survey of cladding products for architects.

1
The Bon-Accord Centre, Aberdeen, Scotland, clad in Kemney Silver Granite supplied by John Fyfe. Architects, Jenkins & Marr. John Fyfe (Granite) plc, Fyfe House, Westhill Industrial Estate, Westhill, Aberdeen AB32 6TQ, Scotland. Tel: 0224 744144.

2
Shell-Jamsa petrol station and cafe-restaurant in the Finnish town of Jamsa. A curved sheet steel frontage respects the setting in a coniferous forest. Architects Arkkitehtitopimsto, Castreninkatu 6A3, Cladding panels by Mäkelä Metals Oy SF-62830 Luoma-Aho Finland Tel: 3586674666

3 and 4
Office buildings in Oberursel, Germany (3) and Steenderen, Holland (4) clad in Trespa G2, a new-generation cladding panel developed by Hoechst Holland. Made of a durable mix of wood-fibre and thermosetting resins, the product is available in 36 colours. Hoechst Holland N.V. P.O. Box 44, 6000 AA Weert Netherlands

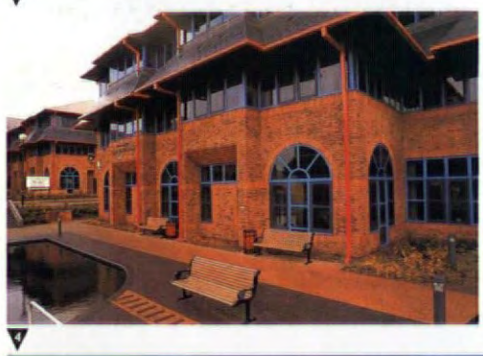


5 and 6
Californian towers designed by architect Cesar Peill: the Plaza Tower, Costa Mesa (5) and 777 Tower, Los Angeles (6) clad in stainless steel and aluminium panels respectively from Pohl, Robert-Bosch-Strasse 6, D-5000 Cologne 71, Germany. Tel: 0221 709 11-0.

7
The first UK application of glass blocks into a curtain walling system in the UK has been completed with Building W3 at Stockley Business Park near Heathrow Airport by Hinchcliffe Façades, E D Hinchcliffe & Sons, Penington Close, Albion Road, West Bromwich, West Midlands B70 8BA, UK. Tel: 021 553 5561.

8
The Swissotel, Atlanta, Georgia, designed by architects Rabun Hatch & Associates, features Alply stainless steel cladding panels. Alply inc, PO Box 538, Willow Avenue, Highway 16 West, DeKalb, Mississippi 39328, USA. Tel: 601 743 2623.

9
The Daly Center, San Diego, designed by architect C W Klm, clad in a smoked chrome Reflecta glazed wall tile from the American Olean Tile Company, Landsdale PA 19446-0271, USA. Tel: 215 855 1111.



1 and 2
Esso House corporate headquarters at Leatherhead, Surrey, UK. Architects Percy Thomas Partnership specified Formawall 1000 flat insulate composite panels for the curtain wall system. The crisp, silver-grey cladding panels have a solar reflective finish. Supplier: H H Robertson (UK), Cromwell Road, Ellesmere Port, South Wirral L65 4DS, UK. Tel: 051 355 3622.

3
Architects Mason Richards Partnership chose a combination of traditional bricks and facings from Redland Bricks in the first phase of a scheme called Waterlinks to regenerate a canalside site close to Birmingham city centre. Redland, Redland House, Reigate, Surrey RH2 0SJ. UK. Tel: 0737 242488.

4 and 5
Gymnasium in Pau in the South of France (4) and an industrial building in Brest (5): two examples of contemporary French architecture clad with building products made by Sollac, 93 Rue des 3 Fontanot, 92000 Nanterre, France. Tel: (1) 47 17 97 00.

6
Naco Ellipsoid Sunbreaker façade on the Philips factory, near Milan in northern Italy, with framework in zinc-plated and pre-painted steel. The blades are operated by remote control cable. Naco, Corso d'Italia 35B, 00198 Rome, Italy. Tel (06) 84 15 766.

7
St John's Centre, Cambridge, designed by architects R H Partnership. This innovation centre for graduates features structural silicone gasket curtain walling from Don Reynolds International, Concept House, Brackenbeck Road, Lidget Green, Bradford BD7 2LW, UK. Tel: 0275 521122.

8
Town hall at Pleucadeuc, Brittany, France, built in Bradstone Masonry Block walling to give a 'random rubble' appearance. ECC Building Products, Okus, Swindon SN1 4JJ, UK. Tel: 0793 528131.

9
The West Orchards shopping complex in Coventry has been clad by Briggs Amasco Curtainwall with a special adaptation of its Tectonic rainscreen system. Architects on the projects were John Clark Associates. Briggs Amasco Curtainwall Ltd, Halfords Lane, Smethwick, Warley, West Midlands B66 1BJ, UK. Tel: 021 558 2191.

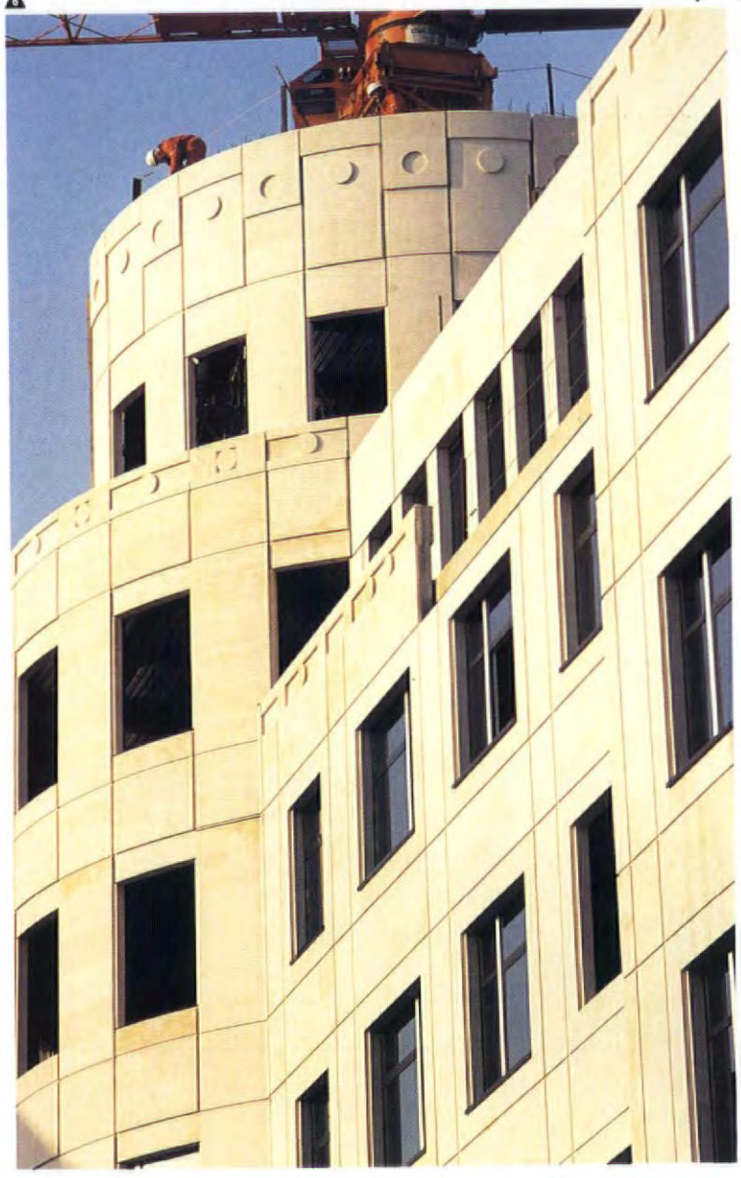
1
The Dauphine Deposit Bank Building, Harrisburg, PA, clad in porcelain exterior tiles from Crossville Ceramics, PO Box 1168, Crossville, Tennessee 38557, USA. Tel: 615 546 7661.

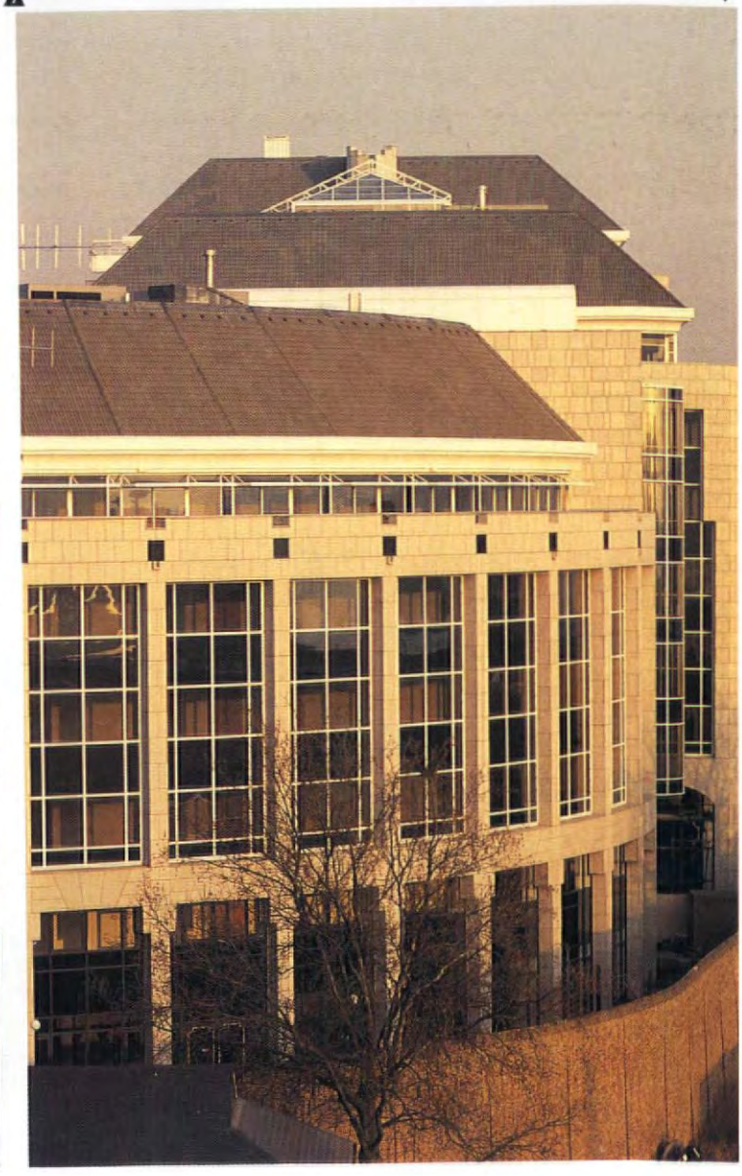
2
The recreation centre of the Saab-Valmet car factory at Uusikaupunki, Finland, designed by Kai Nordman, utilises Verho CurveLine – a patented curving process for profiled steel sheets. Verho-Metalli Oy, PO Box 77, SF-20781, Kaarina, Finland. Tel: 358 21 431 555.

3
Marselisborg harbour village, Aarhus, Denmark, by architects Poulsen & Therkidisen, with coated steel cladding from Muncholm, Norddigesvej - 6, DK-8240 Risskov, Denmark, Tel: 86 21 50 55.

4
Euro Brick System, a kiln-fired clay brick system, has been introduced into the UK from America. It is said to be lightweight, energy efficient, impervious to moisture and easy to install. Euro Brick Systems Ltd, the Old Rectory, High Street, Iron Acton, Bristol BS17 1UQ. Tel: 0454 228181.

5
A 'folie' in the Parc de la Villette, Paris, France, features cladding by EurEmalco AG, Industriestrasse 42, CH-8304 Wallisellen, Switzerland. Tel: 41 1 832 31 31.

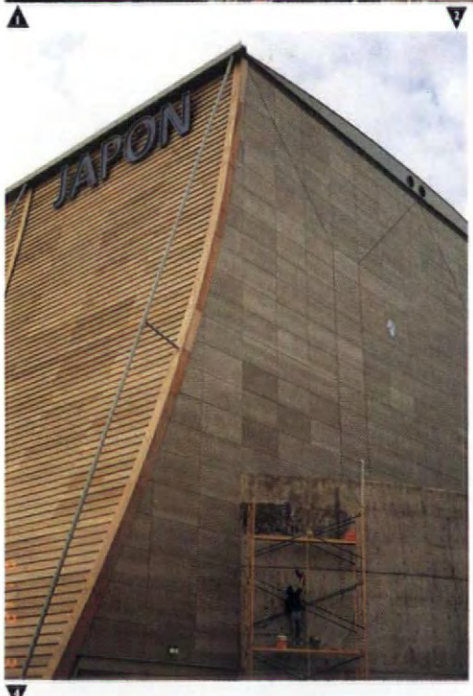




6
Two Rodeo Drive, Beverly Hills Los Angeles – a complex which houses expensive boutiques – achieves visual unity with Gladding McBean Terra Cotta. 7500 San Joaquin Street, Sacramento, California 95820, USA. Tel: 916 452 5714

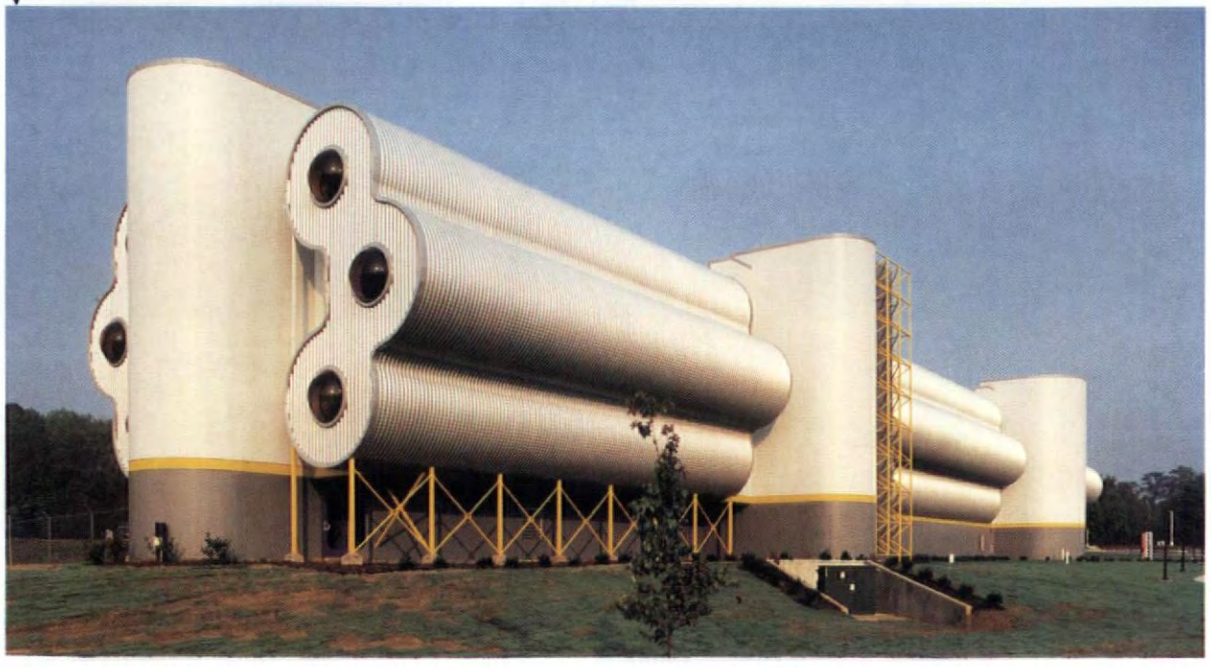
7
This new library and conference centre in Bristol, designed by PSA Building Management, features blue framed glazing with white Promisol panels from TAC Metal Forming Ltd, Derby Road, Widnes, Cheshire WA8 9ND, UK. Tel: 051 423 6565.

8 and 9
London office developments at Henrietta House (8), designed by Building Design Partnership, and in East India Dock (9), designed by Sten Samuelson and Beaton Thomas, feature Polarstone cladding. The Building Centre, 26 Store Street, London WC1E0 7BT. Tel: 071 580 3107.



1 and 2
The Japanese Pavilion for EXPO 1992 in Seville features a façade which uses Eternit's Integral Wall system, a lightweight panel cladding in natural cement colour (1) which was complemented by one wall finished in tropical wood (2). Eternit S.a
B-1880
Kapelle-Op-Den-Bos
Belgium
Tel: (015) 717171

3
Decorative exterior architectural panelling from Vacuform Industries, Inc 1877 East 17th Avenue Columbus, Ohio 43219 USA. Tel: 614 294 2616.



4
Colorcoat multi-radius curved steel cladding from the American Dupral company is suitable for scluptured detailing and includes a smooth or tough leathergrain finish. It is shown here at the Space Habitat, Huntsville, Alabama, USA. Contact British Steel Strip Products, PO Box 10, Newport, Gwent, Wales NP9 0XN. Tel: 0633 290022.

5
Vermillion Rose is a high quality deep rose-red granite from Canada, available in large, well-squared blocks with a good thermal finish. Nelson Granite Ltd, Box 178, Vermillion Bay, Ontario, Canada POV 2VO. Tel: 1-807 227 2650.

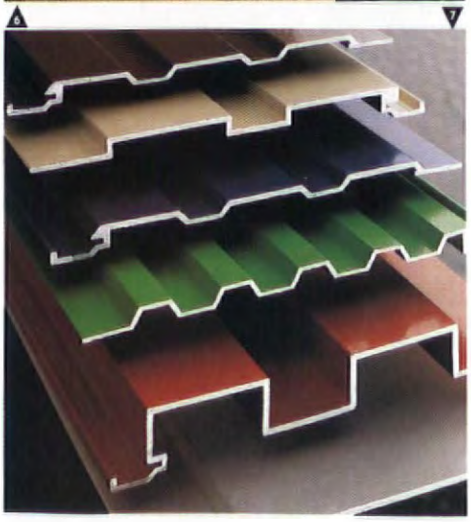
6
Glasgow's Charing Cross office development designed by Holford Associates with sandstone pink cladding panels from Alliance Enamelsteel Corporation, 56 Zuidering PO Box 19, 3600 Genk, Belgium. Tel: 011 35 65 31.

7
The Norbo Interlocking cladding system from Booth-Muirie: extruded aluminium sections with concealed fixings provide a durable, uncluttered appearance for exterior and interior cladding applications. Booth-Murie Ltd, 870 South Street, Glasgow G14 0SY, UK. Tel: 041 959 1183.

8
Monobloc-CR is an integrated system of external wall cladding modules which is durable, versatile and aesthetically pleasing. Available from Kingspan Building Products, Acornfield Road, Knowsley Industrial Park North, Liverpool L33 7UX, UK. Tel: 051 546 2050.

9
Phase 6-7 of the massive Broadgate complex in London, designed by architects SOM, features Luna Pearl granite wall cladding and Vratza limestone balustrading from Henraux, Via Deposita 49, 55046 Querceta (Lucca), Italy. Tel: 0584 760151.

10
The Tomei Expressway Service Area, designed by Kiyonori Kikutake, features dramatic façades on its two key amenities buildings. A crystallised glass material - Neopariès - is used in distinguishing colours and finishes for the buildings on either side of the expressway.
Nippon Electric Glass Co Ltd, Building Material Division, 1-14 Miyahara 4-chome, Yodogawa-Ku, Osaka 532, Japan. Tel: 81 6 399 2721.



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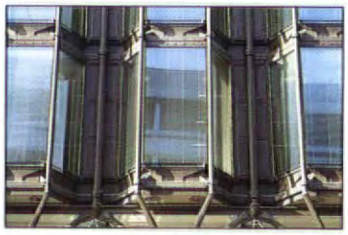
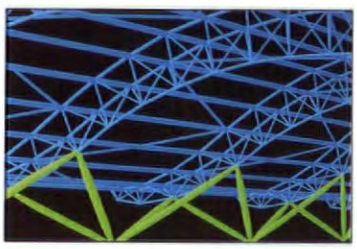
Century Tower, Tokyo - Arup designed the 24-storey office tower structure, working with architect Foster Associates Limited and contractor Ohbayashi Gumi



Bracken House, Cannon Street, London - Arup designed the structure and building services with architect Michael Hopkins & Partners, for Ohbayashi Europe bv. The building is pre-let to the Industrial Bank of Japan

Kobe Institute, Kobe - Arup has worked with architect Troughton McAslan Limited and Takenaka on the design of structures and building services of new and refurbished buildings for the post-graduate college



Kansai International Airport Passenger Terminal, Osaka - Arup has designed the structure and building services in collaboration with Renzo Piano Building Workshop and Nikken Sekkei

Toyota UK Project, Burnaston, Derby - Arup is architect/engineer with Shimizu Corporation for Toyota Motor Manufacturing (UK) Limited

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John Batchelor
Ove Arup Partners Japan Limited
3F Swire House
14 Ichibancho
Chiyoda-ku
Tokyo 102
Japan
Telephone: (81) 3-3230 9180
Facsimile: (81) 3-3230 0398

Contact: London
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