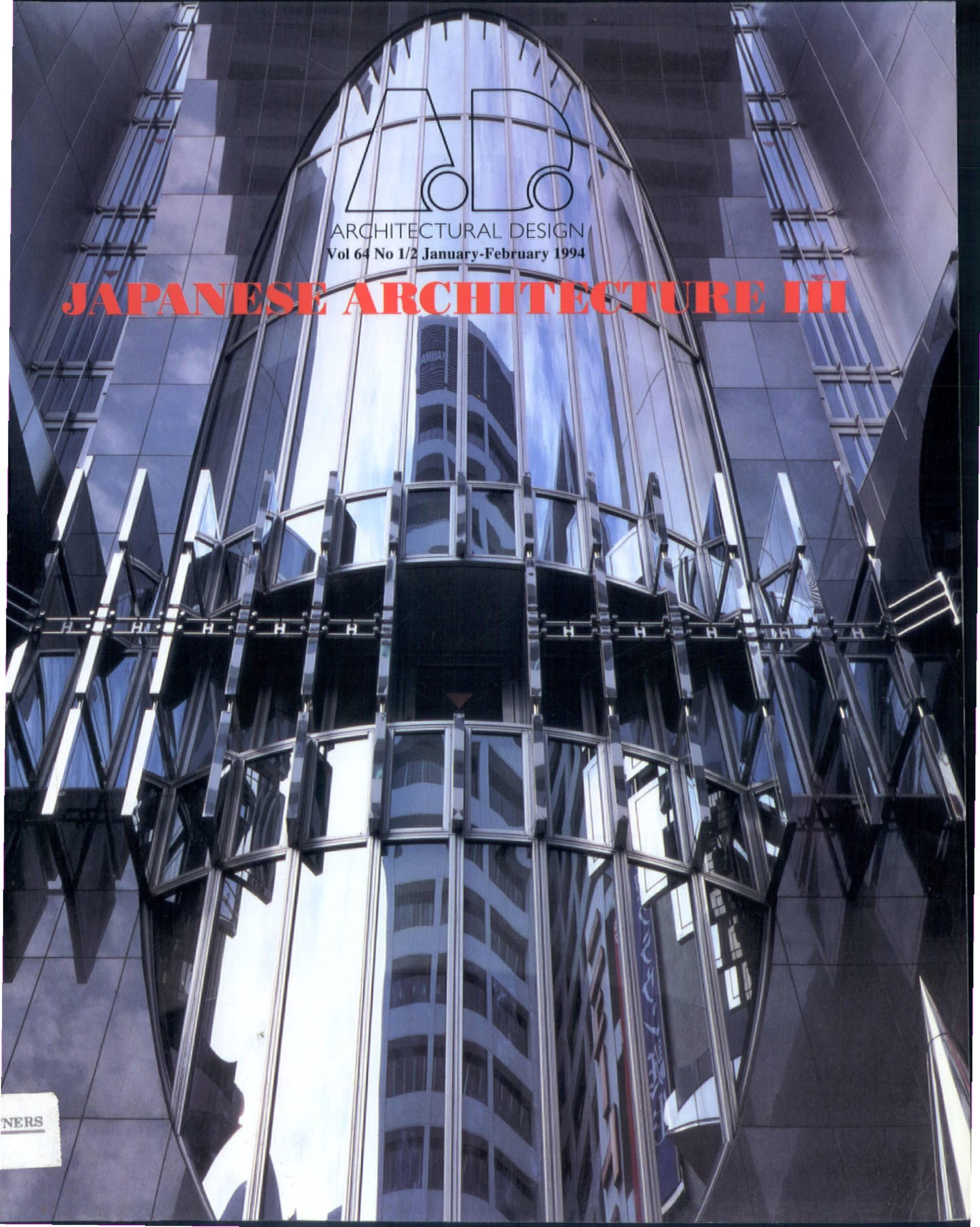

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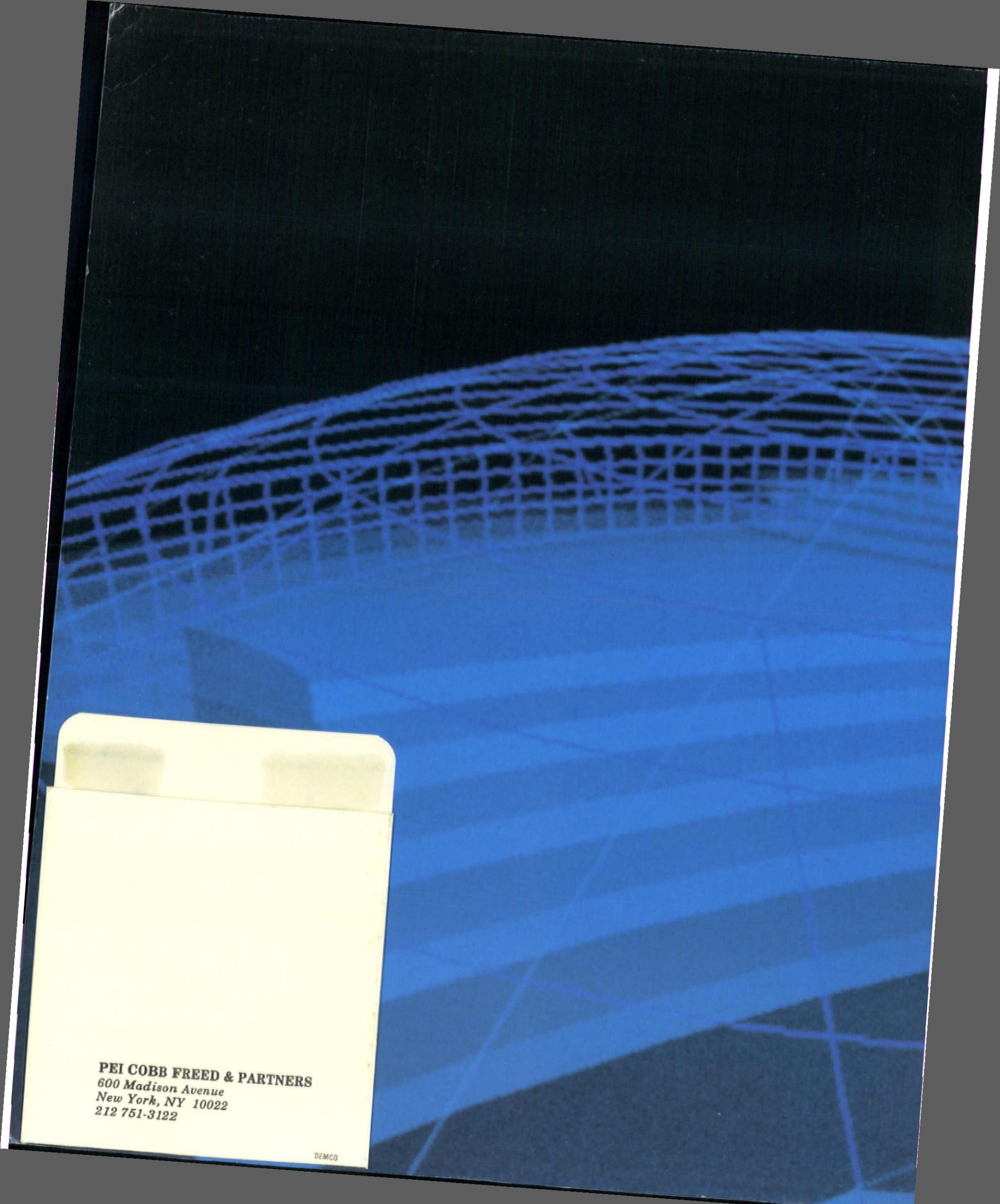

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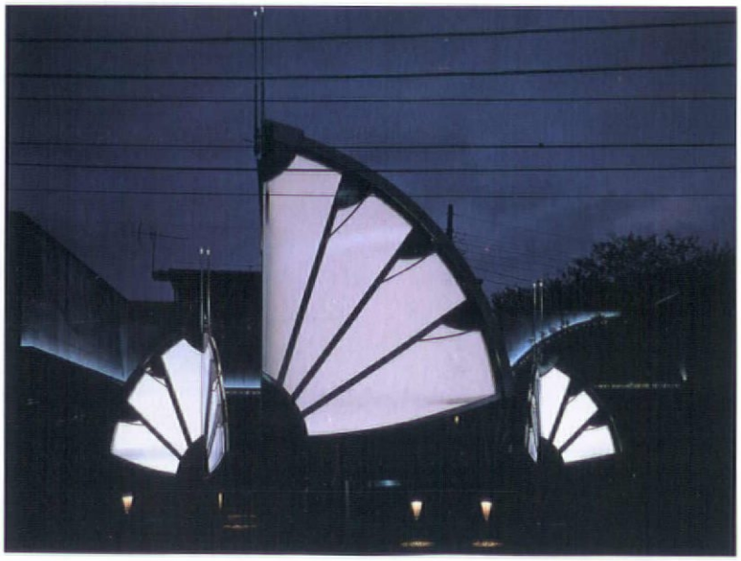


Shin Takamatsu, Earthtecture Sub 1, Tokyo

IAN RITCHIE

SCIENCE AND TECHNOLOGY

Our world is still dominated by the scientific culture and applied technology despite an increasing questioning of the validity of this cultural reality. This questioning is related to the ever-increasing change in the rate of change brought about by man's ingenuity and exploitation of scientific understanding and technology.

The depth of knowledge in so many areas of study is such that there can no longer again be an individual universal man in the Renaissance sense, but this is no excuse for not wanting to understand. In architecture and engineering, the science of matter and materials, forces, energy and power, of processed materials, transportation and communications, the atmosphere and the earth, and the quality and techniques of measurement and analysis are all important. Yet these are scientific models, constructed by man to better describe the world. How we use these and their inter-connectedness, is informed by our cultural education and environment.

> We are in the midst of a transformation of the building industry. Arts and crafts are being replaced by science and technology – or should I say science-guided design and mechanised production. Science-guided design and mechanised production technology for short – is the domain of engineers.
> (*Ove Arup Institute of Civil Engineering, 26 Oct 1972*)

This may be largely true, but somehow the dominance of this domain by engineers and the incapacity of architects and artists to influence design, either through ignorance of the materials and processes or lack of collaborative opportunity, has collectively made us, in part, responsible for the lack of quality in much of our built environment. But Arup's statement is also a reflection of the post-war society concerned with efficient industrial production to rebuild the housing and industrial fabric of our cities. This industrial efficiency subsequently became part of the commercial imperative which has dramatically contributed to the depressing character of so many city centres.

If engineers and architects consider themselves designers (although not many are), then both must be aware of the *aims* (what and for whom) and the *means* (how) to reach quality solutions. Too often the engineer is only concerned with the *means*, remaining unconcerned and ignorant of the wider *aims*, while the architect faced with unfamiliar techniques and materials loses confidence and security in his position as 'leader' of the design team and essentially abdicates, with the consequence that the wider *aims* never materialise.

A classic illustration of this schism still being reinforced was the contract brief we received from London Underground Ltd, Jubilee Line Extension for the design of Bermondsey Station. For the engineers the project objectives were to construct the project as rapidly as possible, and to construct and operate with minimum disturbance to local infrastructure, communities and the environment. For us, as architects, there were two additional project objectives: to provide a modern railway for the 21st century, meeting the best possible standard of safety, performance and quality and to provide an agreeable environment that recognises increasing customer expectations.

Divorcing the civil engineers from these two fundamental project objectives demonstrates the practice of design apartheid habitual in architecture and engineering and creates a totally unnecessary obstacle course to achieving a collaborative, enjoyable and quality solution.

To what extent do we as architects have an ethical obligation to understand such scientific diversity? Architecture is perhaps one of the few 'professions' which should bridge the scientific and artistic cultures. There is no doubt that our ecological awakening demands that our decisions are based on a better understanding of scientific and technical knowledge. Even today we should not have to be specialists to understand scientific language (though a reasonable grasp of numeracy is very useful). It should also be incumbent on scientists to write comprehensibly. How as architects do we organise this knowledge and access it intelligently?

We have to establish cross-scientific links with the research and development world, industry and our fellow collaborators in project design and realisation. Fortunately, the growth in available information and knowledge is paralleled with that in data storage, retrieval and speed of communication. This, in tandem with a more information-free environment, should enable us to access and evaluate scientific and technical knowledge pertinent to the ingredients and application of our architecture. 'Us', in this context, does not mean architects alone, or even with other professionals working together. The expertise input and analysis is and needs to be even broader; scientists, production engineers, artists and users should take part in an informed choice.

In order to be effective as architects we have to be

genuinely interested and informed, and in the process we seek enjoyment. This 'joy' comes from the enlightenment we receive through the process, the appropriate knowledge we obtain, and the success we see in integrating this new personal and shared understanding to the architectural design and its realisation. Our enjoyment often rubs off on all those involved and usually makes for a better result. If as architects we have no genuine interest, then science and technology will be represented only as an uninformed image, predetermined by industrial prejudice and politic, and will in no sense be tamed by our ethical and aesthetic obligation and responsibility to serve society better. Somehow, science through education must be demystified for architects as much as for the general population. Science is not just about 'certainty', it is also about conjectures and doubts. Today, science is increasingly having to face the moral and ethical quicksand of our time.

Scientific understanding of the principles of how things behave and work is crucial to our architectural designs, enabling us to evaluate and use appropriate materials, products and systems in each unique physical and social environmental context of our projects. This knowledge through the depth of analysis reduces the risk of errors, compared to the all too easy acceptance of specifications and performance from existing products. It may appear on the surface that in some projects we are behaving like Icarus, but we do prepare our parachutes!

> Structural engineering is the science and art of designing and making, with economy and elegance, buildings, bridges, frameworks, and other similar structures so that they can safely resist the forces to which they may be subjected.

(*Institute of Structural Engineering, UK – definition*)

> The engineer, inspired by the law of economy and governed by mathematical calculation, puts us in accord with universal law. He achieves harmony.

(*Le Corbusier*, Towards a New Architecture, *1923*)

Le Corbusier's optimism must have been based on the seduction of lightweight engineering inventiveness in aeronautical and automotive engineering in the first two decades of this century, for how rare in our building industry is the structural or civil engineer who fits this description.

Numbers

'Numbers' (to quote John McLeish) 'are not a sadistic conspiracy devised by one half of society for torturing the other half.' If we add culture to this number source, then we really do create the medium of invention.

In everyday existence numbers can be seen as concrete in the sense that they are used as symbols describing the quantity of objects. In mathematical geometry, numbers result from an abstract method of describing spatial relationships, whose interest to me is the relationship between the numbers rather than the numbers themselves.

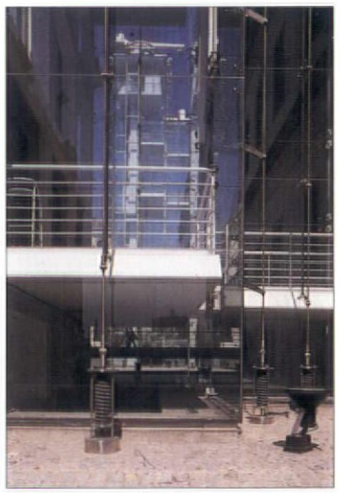
In Euclidean geometry these relationships are defined within prescribed forms, which have defined boundaries and space, and which can be 'seen and touched'.

In modern mathematics, points in space, for example, can be described by sets of numbers corresponding to x, y and z coordinates and space itself having n-dimensions. This is but one universal method of describing spatial relationships. These mathematical descriptions are abstract (non-object based), and become complex and much less tangible, and yet like geometric forms are inventions of the mind. Certain art in the early 20th century was also non-object based (Suprematism – Malevich's black square which could be read as zero, and the white square as infinity). This art is not to be con-fused with Cubism which essentially abstracted natural objects in order to look at the object afresh.

Modern mathematics was an immense conceptual shift, which by unlocking our object-based perception of the world has allowed a flowering in both mathematics and the arts. Non-Euclidean geometry and the fourth dimension is a mind game (whether understood as time: liberation from conventional linear perspective; abstract space mathematically described as four mutually perpendicular axes; or philosophically as a physical hyperspace which we cannot 'touch or see') – a game not based on our visual senses, which is why it appears alien to everyday existence. Mathematics uses imagination and logic in much the same way as our architectural creativity relies on the interaction of intuition and intellect. An interesting comparison was experienced while designing elements of Reina Sofia – the union of hand and eye in describing and judging intuitively the 'rightness' of a curved line, and the balance between this and the reliance on numerical 'analogues' by computer. The introduction of time, dynamics and energy in modern mathematics has changed our perception of static objects, giving them time-relative spatial constructs, and has embraced change as an integral part of mathematically described reality.

Art, too, became for some synonymous with mathematical concepts of space-time (eg kinetic art of Moholy-Nagy/Calder, Pierre Henri's 'music concrete', Kubric's *2001*) as pure constructions of the mind, not about describing observable phenomena.

This commentary introduces the context of the present-day application of modern mathematics to natural phenomena which we can perceive and which we are now attempting to describe with numbers. Man's desire to describe these phenomena is initially one of curiosity, but will no doubt lead to new ways of imagining and of simulating them in various fields of application. Some of the research in



FROM ABOVE: Structural components of the tower, Reina Sofia Museum of Modern Art, Madrid; Poiesis Generator; OPPOSITE: 'Arabesque' geometry, Pearl of Dubai

simulating hydrodynamic flow (eg Alistair Day's work at Ove Arup + Partners) led to a new level of understanding in the application of tensioned fabric structures. The use of non-linear structural analysis afforded a new appreciation of structural behaviour and at La Villette this enabled RFR, supported by Ove Arup + Partners, to develop the structural 'flexibility' and finesse of the structure by accepting greater deflections than normal in the cable bracing of the glass facades. Non-linear analysis recognises that the final geometry under load is different from the initial geometry by such an amount that its behaviour is different, and that 'restoration' is a characteristic of stability.

A great deal of painting (Piero della Francesca) and architecture was based on the laws of Euclidean geometry – considering regular bodies as theoretically perfect forms and whose compositional relationships were thought to reveal and reproduce the underlying order of nature. History provides plenty of evidence of integrated mathematical and artistic works and collaboration. During the Renaissance, the artist was very often the best practising mathematician as well as the most accomplished theoretician. Today, mathematicians are using visualisations facilitated by computer graphic techniques to look anew at phenomena, (eg new minimal surfaces); equally, artists are researching new forms and relationships through these new technologies. These instruments allow collaborative experiments in mathematics and art ('Renaissance revisited') in a dimension and time frame quite new.

'Visual mathematics' offers a real opportunity to reintegrate art and science in specific areas, particularly geometries, three-dimensional surfaces and quite obviously architecture.

In our architecture we are interested with the idea of 'spaces becoming' (dynamic-changing), rather than just 'spaces being' (static); based on an understanding that everyone can perceive space differently at different times. This notion can be described and analysed through space-time visualisation using computer animation, although the simultaneous presentation of several 'flight paths' in continuously varying light and levels of visibility in new spatial constructs and surfaces is still to become available. We have recently for the Leipzig Glass Hall explored certain dynamic spatial characteristics (ventilation, smoke) and human behaviour (escape) using VR/fluid dynamic software with Keith Stills (Colt International).

> Mathematics, rightly viewed, possesses not only truth, but supreme beauty – a beauty cold and austere, like that of sculpture.
>
> (*Bertrand Russell*, Mysticism and Logic, *1918*)

Materials

When Robert Filliou walked through the streets of Paris in the early 60s with his 'museum in a hat', artists such as Oldenberg placed objects out of context in situations where their scale relationship was surreal, and Warhol celebrated the consumer product. The general public and the conservative art world were predictably outraged. These controversial statements were made in order to challenge western society's complacency.

Today, in the construction industry, after decades dominated by the power of industrial production of monotonous products resulting from management and manufacturing methods seeking ever more economies, there is now a need to inject art into industry. The design, engineering and manufacture of primary materials into products which carry the signature of the designer, the presence of the human hand, mind and heart has become essential in order that industry not only serves man's material needs, but also his sensibilities.

Some of our work has and will continue to be controversial in the sense of making industry rethink its attitude, challenging its dominance while at the same time attempting to achieve those human qualities in material products through their scale, position and contribution to the overall architecture. In order to communicate this to the industries with whom we work, it is necessary to acquire a deep understanding of the true nature of materials, to learn how to manipulate these materials in an aesthetic manner and to appreciate how industry can produce the products from them.

This approach is not that of taking industrial products from other industries (marine, aerospace) and executing an aesthetic technological transfer, or taking society's industrial waste to produce one-off architectural art pieces, but is an approach which seeks to infect industry in its own home with these human and sensible values. We believe it is here that change is necessary which will allow new architectures to emerge. This approach recognises the role of industry in our society, utilises the creative and economic potential of computers and computer-controlled machines to provide the necessary products to serve society's needs through tailor-made volume production, and not just for the private and privileged indulgence of a few. This potential to link computer aided design to numerically controlled machine production to fabricate one-offs by the thousand, quickly and efficiently, redefines the old economic argument of industrial mass production of the construction industry and allows art direct access to production.

An architecture which uses materials to reflect the condition of society, where these materials are used in their primary state rather than as products, eg metal sheet coil, and engages craftsmen to manipulate them, with or without the use of computers, in the factory or in their site assembly, can represent a late 20th-century evolution of the Arts and Crafts tradition. This approach has its place in today's age in the sense of humanising processed materials, at a

FROM ABOVE: Ecology Gallery bridge, Natural History Museum, London; Bioclimatic facades of La Villette new National Museum of Science, Technology and Industry, Paris

small scale, but in my opinion does not address the larger issue where the construction industry and its products are more pervasive effect in the built environment. This predominantly urban environment is largely created by architects acting as 'aesthetic' purchasing agents, sometimes good, but more often poor, simply acquiring on behalf of their clients the construction of the vast majority of corporate, institutional and commercial buildings. The kitsch and neo-traditional use of materials and products to create a veneer architecture violate our senses in a way that truly historic buildings never do.

It is crucial to remember that architecture is a very important forum for the ever evolving development of our technical culture, and we have been very fortunate to have worked with, and to be inspired by engineers, in particular, Peter Rice.

> I am interested in the ways in which the engineer can help to bring back some of the joy and excitement which characterises many of the buildings we admire from the past . . . This brings to mind another myth about technology. The feeling that technological choice is always the result of a predetermined logic. The feeling that there is a correct solution to a technical question is very common. But a technical solution like any other decision is a moment in time. It is not definitive. It is a moment in time and place where the people, their background and their talent is paramount. What is often missing is the evidence of human intervention, the black box syndrome. So by looking at new materials, or at old materials in a new way we change the rules. People become visible again.

(*Peter Rice,* An Engineer's View, *RIBA, June 1992*)
'Life without industry is guilt, and industry without art is brutality' (*John Ruskin, lecture on Art 3:* The Relation of Art to Morals, *23 February 1870*)

Light

'Our earth is simply the natural greenhouse of our solar system home, sustained by sunlight and the magic of photosynthesis . . . An en-lightened environment is what we all seek, politically, economically and physically.' (*IR Ingolstadt, Light + Architecture exhibition catalogue, September 1992*)

Without light there is no architecture. The history of architecture has been the story of light as the essential material of architecture. Today we can look back and see how architectural interiors have been created: first by allowing light to penetrate through openings in solid walls, then through small openings in the roof, and at the beginning of the 20th century walls were removed, and today, almost at will we can remove the roof. The exceptional work of Paxton (and others) remains an enigma, having removed the solidity of the entire building envelope in the mid-19th century.

Our dominion over the physical envelope of our buildings using glass is not matched by our ability to control and compose with light, whether it is diffused, direct or indirect sunlight or artificial, yet the means to do so are now as never before available to us. It is important to understand that the absence of light makes light alive – nature's cycles day to night and the changing qualities of natural light through the seasons are constant reminders.

By understanding solar geometry we can recapture the art of carving form and the surfaces of buildings with nature's own light pen. To understand light enables us to spatially create a dynamic to tranquil range of atmospheres.

Transparent envelopes accept natural light as it is, with its continuously changing qualities, modifying it spectrally as it passes through glass. Transparency is rarely an architectural composition of light but a dynamic saturation of space, a situation which nearly always requires the control of the quantity (and sometimes the quality) of sunlight by shading. Shading design can create a strong external or internal architectural composition. Transparency is simultaneously the negation of light and its totality.

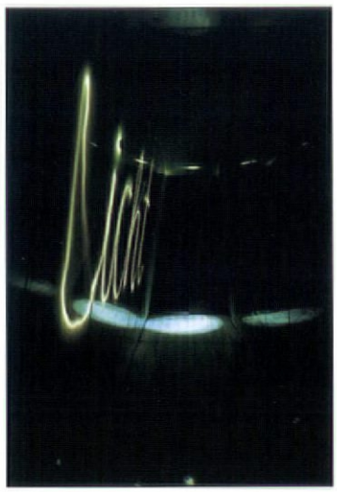
In our architecture, understanding the symbiotic relationship of glass and light is crucial. Having explored glass technically over the past few years our attention is now equally focused on light, its energy and colour content.

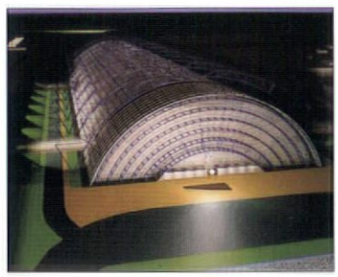
Natural phenomena such as firefly-lucifer, cold bioluminescent light-emitter, nature's own photonic communicator; mirage; virtual reality are some of the areas of research which interest us. So too have been reflector systems and holograms to control, focus and distribute light directly into spaces, or through light pipes. As we pipe water, fossil energy, air, information and waste through our buildings, it seems inevitable that there are advantages in piping light efficiently. Consequently, this should enable us to be more intelligent with the energy performance of our architectural envelopes and spaces.

In 1947 Dennis Gabor at Imperial College, London, postulated that three-dimensional images (holograms) could be created from electron beams or x-rays. Today laser technology, the control of light in '2D', primarily operating in the visible light spectrum, provides society with an exceptional range of tools.

With J-L Lhermitte, Francois Bastien and the EDF at Clamart, Paris, we experimented with the idea of the three-dimensional control of light. In a near vacuum (0.04 to ten millibars), electrical energy was discharged from different shaped cathodes in an eight-metre-high cylindrical glass tube. Rings and bird forms were created. To forecast any application useful to society of this would be to speculate about the nature of man's future journeys in space!

Light is apparently both wave and particle, and until recently demonstrated at the laboratories of Hamamatsu Photonics, analysis of photons had never revealed these behavioural characteristics simultaneously. Now the accepted 'wholeness' of





FROM ABOVE: Light installation for Light and Architecture exhibition, Ingolstadt (courtesy of Institute of Light, Cologne); Computer simulation of structure, Leipzig Messe Glass Hall (GMP), Germany

Quantum Theory has been undermined. There is a long way to go to understand light as a material and this research 'mirrors' research at sub-atomic levels to understand better the nature and versatility of glass.

The wonder of glass – transparency

In architecture, glass has for a thousand years been the medium through which light has entered buildings revealing the spatial art of architecture, while completing the protective enclosure of walls and roof against the elements while allowing visual contact to be maintained with the outside world.

Glass is a beautiful chaotic solid, whose ubiquity is a witness to its material versatility and man's ingenuity, limited only by our incomplete understanding of its material nature. It is a material based on silica, seeded with metal oxides which can render it transparent and opaque, black and white or virtually any degree between either of these limits. If one looks perpendicularly at a transparent form of it, it is not there, yet its impermeability can control the passage of air, water, noise, dirt and energy: a window between us and our environment, whether we are stationary or at high speed, in a comfortable or very extreme environment. It has particular physical strengths and by processing it can possess great structural performance and resistance. Glass is reasonably energy efficient in capital terms because it is spread thinly, is recyclable and sourced from an abundant supply making it relatively acceptable ecologically.

When its atomic structure and momentary ordered geometry is fully understood, and if its vulnerability to crack propagation can be mastered, then this 5000 year old material will enter a new phase of magnificent service to man in the fields of architecture, art, telecommunications and industrial products.

The history of making glass has seen five main stages, two by the hand and so far three by machine: the working of molten glass as it cools and becomes more viscous and the blowing of molten glass to produce thin walled vessels and the first 'flat' glass; the machine production of vessels (bottles, mid-19th century), the production of large flat sheets by the 'float' process in the 50s (revolutionising our built environment), and more recently the production of glass fibres (revolutionising the quantity and speed of our communication). The latter in woven form has also helped to create a new architectural material.

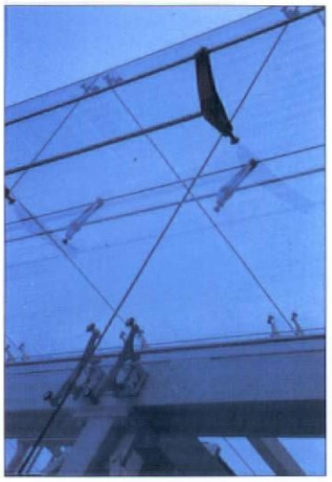
Our innovative work with Peter Rice and Martin Francis (RFR) at La Villette dealt primarily with two different material forms of glass: flat and transparent, and glass fibre fabric.

We believed that the bioclimatic facades as windows to the park were also windows into the museum, and as such transparency was a concept worth developing. It is this concept, and the defining of transparency which became the major objective. Transparency suggests the invisible, yet it was clear to us that the structure of the facades would be anything but invisible seen from within the museum. It was the clear glass plane which would represent the transparent window, and this suggested a visual relationship to the structure where the structure would 'appear' to support nothing apart from itself. Of course if this was possible, then the logic of having a structure at all would be questioned. The way we defined the existence of the transparent surface when viewed from inside and outside would be crucial to the successful realisation of our concept of transparency. We concluded that the external surface of the glass surface should be flush, which informed us that the mechanical fixing of the glass should lie within the plane of the glass itself, or inside it, thus visibly identifying the transparent surface. Equally, how people actually look, (the eye scans more easily horizontally) suggested that the facades should have a horizontal emphasis creating clear panoramas. This indicated the way we should design the structural wind load systems.

The very particular technical innovation which contributed so much to the successful realisation of the concept of transparency was in the smallest of all the components, the glass suspension assembly which transfers, under normal conditions, the accumulated load of four glass panels to the primary structure. The failure scenario of two adjacent top glass panels breaking simultaneously, together with the refusal of the checking authority to accept that the shear load capacity of the vertical silicone joints would contribute to stability, meant that the single top suspension glass hole required proof of its capacity to carry in excess of 4000 kilogrammes. In 1983 this was seven times greater than the proven experience of international glass industries. This problem was solved through the machining tolerance of the glass hole and the introduction of a spherical bearing lying within the thickness of the glass, which eliminated localised stresses from glass bending under wind load. The final design of this component, as intended, was flush with the external glass surface and small in scale. The 80s phenomena of built 'transparent glass architecture' originates from our project, although most of them have relied on the principle of a simple countersunk screw fixing through glass carrying much less load, limited by the intense concentration of local stress around the screw head due to bending in the glass or its support.

In the detailed design engineering of the facades we considered other important ideas, eg tension (symbolising 'technology with or versus nature'), their didactic role, geometric hierarchy, scale shift to create complexity and visual richness as component assemblies became smaller, approaching the scale of the human hand.

Above the entrance hall we created a 2000 square-metre roof of glass fibre fabric, in which



FROM ABOVE: 'Dolphin' suspension arm, Reina Sofia Museum; Glass fixing, La Villette Museum

were placed two rotating truncated cylindrical domes containing parallel arrays of computer controlled mylar mirrors tracking and rotating to reflect the sun's rays into the entrance hall. Our concept was to provide legible hierarchies of structure and light. We felt that the lighting should decrease in intensity from the central areas of the domes towards the perimeter of the entrance hall, in much the same way as the structure. To achieve this we designed a translucent, but thermally insulated fabric roof (K: 0.6W/m2/°C). This was composed of two skins of different densities of Teflon coated glass fibre, insulated with 300 millimetres of white spun glass fibres (Fibair) supported on a transparent vapour barrier of Tedlar film. Between the insulation and outer structural skin was a ventilated air space. The structural fabric's primary advantage is that it is permanent, and secondly, it allows a certain transmission of light. Overall, the structural fabric composite roof transmitted approximately three per cent of incident light. This was the first application of a thermally insulated and ventilated light-transmitting glass fibre fabric roof.

In contrast to our structural use of glass at La Villette was our research into three-dimensional forming and treatment of glass to create a symbol, the Pearl, to help communicate Dubai's emergence as the cultural centre of the Gulf. We sought to establish an 'arabesque' geometry for both the structure and the glazing, and several were produced working with Ensor Holiday and Keith Laws, and developing one in particular which gave a geometric pattern compatible with both a delicate single layer stainless steel structure and the current capacity of the glass industry to produce doubly curved laminated glass panels to acceptable tolerances. Translating the characteristics of beauty of a natural pearl into a glass sphere at a scale four to five thousand times larger was also a challenge. We interpreted these in the twenty-metre diameter sphere through:

– sphericity: smooth surface, absence of visible fixings, discreteness of joints, fabrication, construction and thermal movement tolerances
– translucency: choice of both glasses, interlayer and surface treatment
– lustre/depth: choice of glass, thickness, coatings and surface treatment
– iridescence: optical/surface qualities of outer glass sheet (day), internal central lighting system performance (night).

It was important that the external aesthetic of the pearl was not compromised by the legibility of the structure during the day, and that, when illuminated internally from a radial light source at night, it did not cast rogue shadows on the inner surface of the glass. To avoid any material, other than glass, visible on the external surface, we designed and tested a prototype countersunk articulated fixing which allowed the external glass surface to be laminated across it. We named it the 'phantom' fixing. Collaborating with TW Ide in London, prototypes of doubly curved glass pentagon and triangular panels were made; and with Produits Sully in France, prototype glass fixing assemblies were load tested to convince ourselves and our client of the feasibility of the project. As with the facades at La Villette, the behaviour of the structure in relation to the glass skin was crucial, and we designed the glass fixing assembly incorporating spring mountings – to overcome construction tolerances, differential thermal movement and structural deformation between the structure and the glass skin.

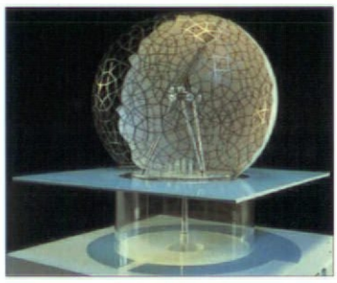
Through the development of new technologies, our own architecture will become more dynamic and less material, in the sense that transparent structural materials such as glass and diamond films will become the support medium for holograms, miniaturised lasers and biogenetic coatings offering the possibilities to improve energy efficiency, to create interactive building surfaces to both user and the environment and release new creative energies in the design and visual pleasure of our buildings.

(*Ian Ritchie, Royal Institution Lecture, October 1992*)

Yet if we stop to think, we realise that we have accepted a departure of many bodies in the late 20th century: a software-monitored society, a world of infrastructures, bleeps and wafer thin calculators, all of them suggesting that the world of the touchable, recognisable moving-part is receding. Yet design is still at pains to reassure us that it should all look 'like something' and in parallel there is a certain morality that suggests that architectural objects should have a solid sense of purpose allied to a solid sense of presence. In other words, architecture is a slow-witted and conservative art and this bridge [Lintas Bridge, Paris] is a somewhat illegitimate object. Yet it has not always been so . . . Plate glass in particular became the dream-as-reality material of the 20th century. 'It's there – but it's not there' seems to suggest the same adrenalin buzz as surfing or flying.

(*Peter Cook*, Blueprint, *May 1987*)

Excerpt from (Well) Connected Architecture, *Ian Ritchie, Academy Editions, London, 1994*



FROM ABOVE: Lintas Bridge, Paris; Model of Pearl of Dubai

RICHARD ROGERS

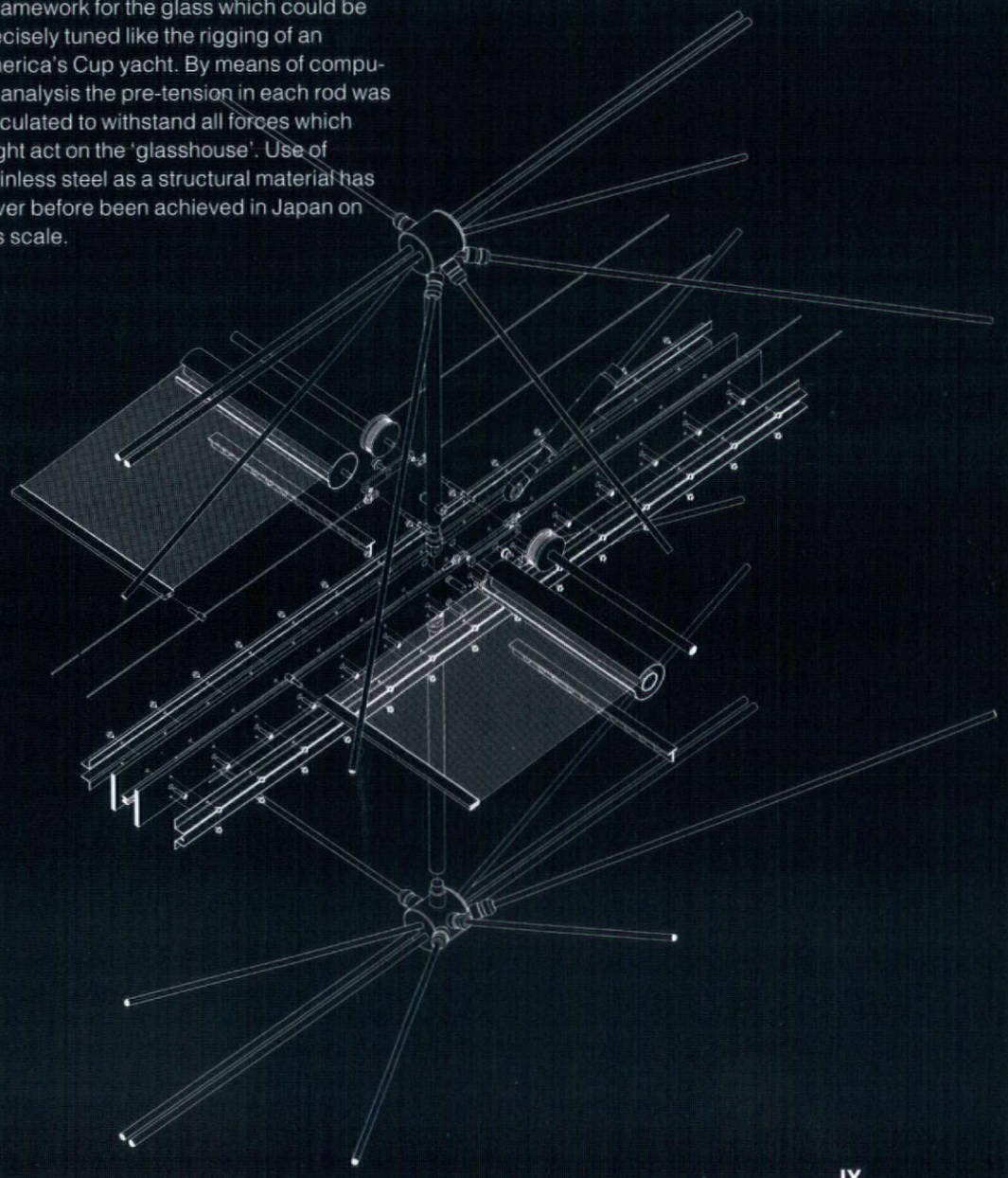
KABUKI-CHO TOWER

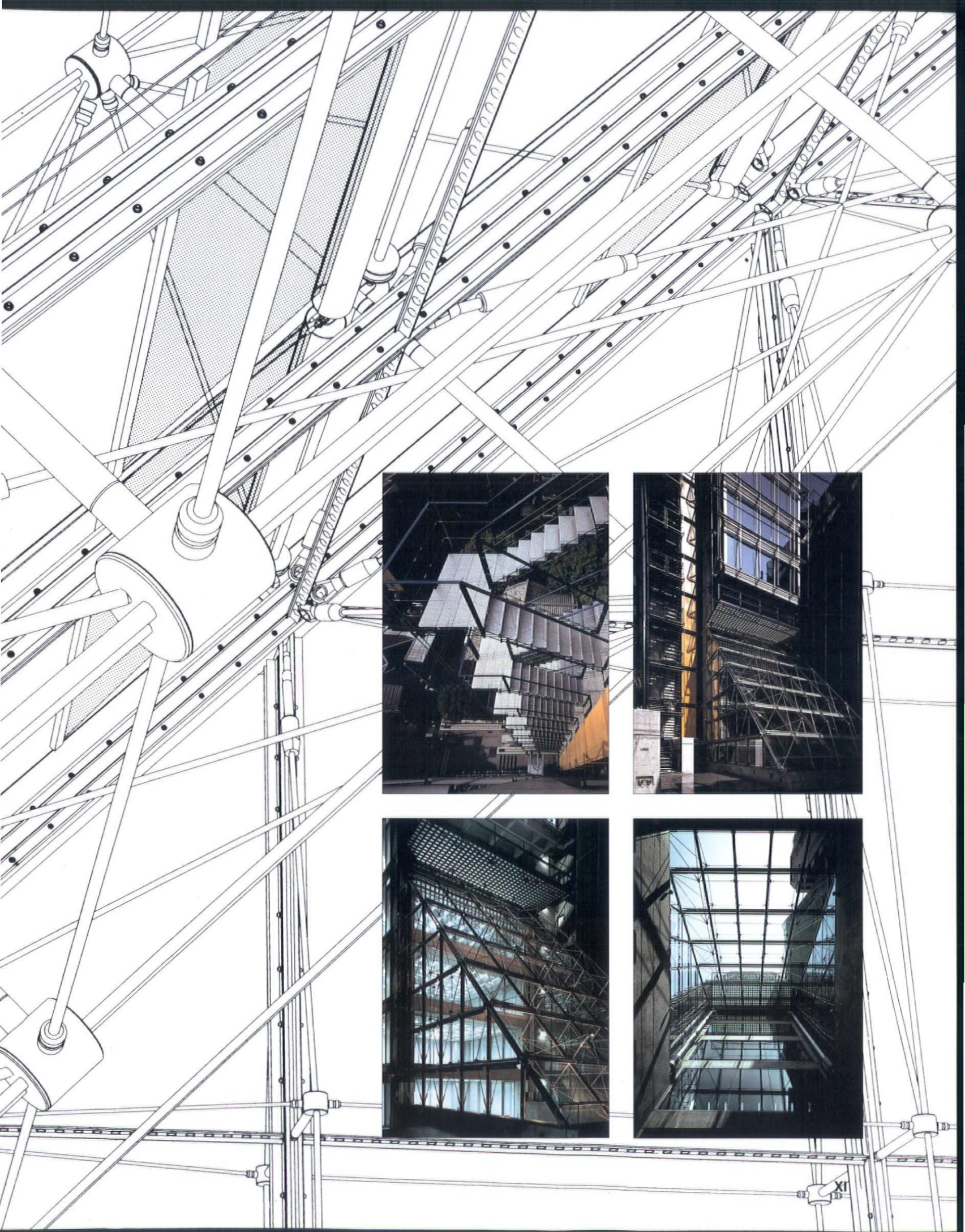
Tokyo

'The brilliant underground where 50 people file on and off the train in 10 seconds compared with London Underground's disorganised scrum; the obsession with cleanliness where corporate chairmen pick up cigarette butts' are Richard Rogers' 'likes' as quoted by John Welsh in his article 'Embracing Green' in the *RIBA Journal*. His 'dislikes' encompass the 'oft-quoted bureaucratic decision-making, the absence of the word "no" and the variety of meanings of "yes" in Japanese.' The Richard Rogers 'Kabuki-cho' building recently completed in Japan embodies these likes and dislikes. In the project report the Rogers office praise the quality of engineering design, pre-fabrication and site assembly of all the components of the building which illustrates the technical sophistication and skill of the Japanese construction industry. However they point out the paradox in which this technical expertise is 'counter-balanced by conservatism and strict compliance to onerous regulations'. They conclude that the challenge to foreign architects working in Japan is to strike a creative balance between working within the norms of Japanese industry and selecting which aspects to innovate, thereby extending the frontiers of design technology within the overall aim of producing buildings of quality and distinction.

The office building faces a narrow street in the heart of one of Tokyo's more exotic and colourful Yakusa dominated areas. Kabuki-cho is an area full of narrow alleys lined with bars within site of the skyscrapers of Shinjuku, Tokyo's main business district. Daylight cone regulations require the bulk of the building to be located at the rear of the site, creating a large open area adjacent to the road. Responding to these factors, the building is conceived as a simple ten storey concrete-covered frame supporting a filigree of steel components, fire escape staircase, external sunblind structure and balconies. A large angled stainless steel glasshouse, the first of its kind in Japan, covers the six and a half metre deep basement space. Access to the main building is adjacent to the glasshouse by way of a small urban court which leads to the front entrance directly below the main service core to the building. Through the juxtaposition of space and colour the core is expressed as an independent structure which supports the staircase, elevator and the main service elements of the building.

The glass structure of the building rises elegantly from its awkward site. The design was developed using stainless steel rods, couplings and rigging screws to assemble a framework for the glass which could be precisely tuned like the rigging of an America's Cup yacht. By means of computer analysis the pre-tension in each rod was calculated to withstand all forces which might act on the 'glasshouse'. Use of stainless steel as a structural material has never before been achieved in Japan on this scale.





Ясна,
понятна для любого
Цена „содружества“ такого:
Улыбка на губах,
Елей в речах,
В мыслях – ложь,
За спиной – нож!

А. Безыменский.

RUSSIA REVIEWED

During the 1930s, Stalin was presented with a sheet of paper outlining two alternative designs for a hotel but instead of choosing one or the other he simply signed for both. His ministers were too afraid to point out this mistake with the result that both were incorporated in one building – the Hotel Moskva. This hotel stands adjacent to Red Square – the sides are constructivist while the end facades are in a classical style. The Hotel Moskva seems to be a perfect symbol of the current Russian paradox. As this is written there are two men claiming to be president: Boris Yeltsin and Alexander Rutskoi, both of whom have been 'sworn in', not to mention the rivalry between the present Defence and Security ministers. Andrew Lemon of the Moscow branch of Ferguson Hollis claims that it is impossible to keep abreast of developments. Although one set of statistics contradicts another, both are released simultaneously. This ambiguity is a feature of the Russian psyche. As an architect, Lemon sees a similar paranoia in building plans: 'Nothing is obvious, often some quite major buildings have main entrances leading to a boiler room! You are forced to search for the stairs or the door to the lift – nothing is straightforward. Open plan is a million miles away.'

Despite this chaotic situation, Russia is a gold mine. Quite apart from its plentiful natural resources, it is a country with a history of mysterious secrecy and extravagant romanticism and its recent opening up has resulted in a plethora of things Russian. On the artistic literary side, each publisher is trying to outdo the other on the size, scope and presentation of *their* 'definitive' book on Russia. Exhibitions on Russian art and architecture are showing in major galleries such as the Barbican, London and the Chicago Institute of Art. From a different angle commercial interest has led to a series of conferences on Western investment and even specifically 'Construction opportunities in Russia'. A rough chronological order emerges since the books are predominantly concerned with Imperial Russia, the exhibitions with the Communist era and finally the conferences look into the future of Russia in the context of the potential for Western investment.

The history of Imperial Russia can be traced through recent publications such as: *A History of Russian Architecture*, by William Craft Brumfield (Cambridge University Press) which analyses stylistic developments according to their historical contexts, challenging the accepted theory that Russia was a 'pliable amorphous material on which more "highly developed" cultures placed their stamp'. *Imperial Palaces of Russia* by Prince Michael of Greece (Tauris Parke) surveys the architectural dalliance of the Russian Imperial Court whose extravagant constructions used Russia's abundant natural resources of marble, gold, malachite, lapis lazuli, agate and amber. *Imperial Palaces in the Vicinity of Saint Petersburg* by Yuir Vitalievich (Alain de Gourcuff Editions) is a collector's item containing four volumes of exquisite prints of the residences and grounds of palaces in Gachina, Pavlovsk, Peterhof and Tsarsköe Selo. It also includes delightful anecdotes about idiosyncratic architectural follies such as the Farm Pavilion where the Empress liked to devote herself to the duties of an 'ordinary' housewife, offering milk to visitors to the park and teaching young girls how to look after the farmyard. *Pavlovsk: The Palaces and the Park* edited by Emmanuel Ducamp (Alain de Gourcuff Editions) is presented as a two volume boxed edition and reveals an unusual instance of British/Russian collaboration in the choice of the Scottish architect, Charles Cameron, to design the palace of Pavlovsk. *Russian Housing in the Modern Age* by William Craft Brumfield (Cambridge University Press) provides a domestic angle by analysing the accomplishments and inadequacies of pre-revolutionary housing. He sets this against the bombastic pretensions of Stalinist architecture from sociological and historical perspectives to reveal the origins of the aggressively urban city-scapes of the Khrushchev and Brezhnev eras, bringing us up to the Communist era examined through the following exhibitions.

'Images of Persuasion', which exhibited at the Barbican between 17th September and 3rd October, was organised by Hawksbill Advertising. Forty original propagandist posters produced between 1947 and 1955, the twilight of Stalin's era, were contrasted with modern advertisements from the Russian office of Tissa, Ogilvy & Mather. Such posters are rare, since when Stalin died and the horrors of his regime came to light, the order was given to destroy all Stalinist propaganda – these posters owe their survival to a librarian who hid them in the Voronezh Library.

The context from which they were derived began

ABOVE: Competitive entry for a monument to commemorate victory in World War II, Moscow, 1988, by Igor Korbut; BELOW: Experimental Proposal for Perestroika Street, 1986-90, designed with Korobov. (Art Institute of Chicago); OPPOSITE: European Collaboration, *1952, 'It is clear and comprehensible to anybody that the price of so-called collaboration is a smile on your lips . . . deception in your thoughts.' (Hawksbill)*

after the Bolsheviks came to power in 1917. Unparalleled emphasis was placed on visual propaganda since the publishing industry had been disrupted by recent upheavals and the Soviet Union had high levels of illiteracy. Graphic artists were employed by the State to design the posters and they were rewarded with gifts and privileges to avoid the controversial issue of money in communist ideology. The content of the propaganda was decided by a centralised State body which ensured the propagation of a consistent doctrine of Socialist Realism. The exhibition allows an insight into the huge cultural and mental re-adjustments of the Russian people since Russia began to embrace capitalism in 1991.

'Avant-Garde Architecture in Moscow 1955-1991' ran from April 1st to August 1st at the Art Institute of Chicago. It explored the development of modernism and modernist aesthetics from the reconstruction after World War II to the present. It achieved this through an analysis of a range of work by selected Moscow architects. Leonid Pavlov, for example, who designed some of the Stalinist metro stations of the 1950s and the elegantly modernistic memorial building that houses Lenin's train, and younger designers such as Totan Kuzembaev and Igor Pishchukevich, participants in the Paper Architecture movement for conceptual projects of the 1980s.

The Chicago exhibition was accompanied by a catalogue edited by the Russian architect and guest curator, Eugene Asse. The text, which included the following quote from Nikita Khrushchev at a meeting of the Soviet Union of Building Construction Workers on November 10th, 1955, goes some way to explaining the paranoid behaviour mentioned in the introduction:

> I am convinced that the majority of architects will properly understand our demands [*Applause*] Those, who do not do so, shall be corrected . . . in order to build quickly and successfully, standard designs must be constructed, but it seems that some architects do not embrace this idea. . . he [the architect] wants beautiful silhouettes and people need apartments. They do not need to admire silhouettes; they need to live in houses. [*Applause*] . . . And this is considered artistically designed architecture? No, comrades. This is perversion in architecture, ruining materials and unnecessarily wasting funds.

By setting the architect's personal ambition, habits and aesthetic inclinations in direct opposition to the needs of the State, Khrushchev effected a total transition to standardised design using prefabricated concrete components. Asse points out that less than three years after the death of the architectural connoisseur, Joseph Stalin, the Soviet government declared a change in its architectural style and classicism was outlawed in the USSR. The exhibition organisers assert that the representation of buildings in the exhibition demonstrates the ability of Moscow's architects to design creative solutions in the face of an inefficient construction industry and ideological restrictions of the former Soviet government.

Despite this success of indigenous architects in the face of adversity, many Western companies have failed to do business in Russia. Andrew Lemon claims that this is not because of the lack of market demand or the risks of civil disorder but because they had been lulled into a false sense of similarity. So many things appear to be Western that the delusion is even greater – 'If we do business in the Far East, for example, we expect things to be different because everything appears different. In Russia the exact reverse applies. Just think of it as another planet and you will be fine.'

The Faculty of the Built Environment at the University of Greenwich organised a conference on 'Construction Opportunities in Russia' in July which aimed to address this problem and to point out the opportunity for Western investment in the field of construction. Yefim Bassin, Chairman of the State Committee for Construction and Architecture in Russia, acknowledged that the transformation from totalitarian State into democracy has inevitably been accompanied by a range of problems: the destruction of the historic social infrastructure, the industrial and agrarian slump, inflation up to 30% per month and political and legislative instability. He outlined the plans for construction by describing the policy adopted by the State Committee for Construction and Architecture. It aims to strengthen the financial situation of construction companies, to assist them in improving their management systems and to speed up the completion of incomplete buildings. Regional construction concerns in the form of joint stock companies and independent bodies of expertise will decentralise construction work. When preference is given to foreign companies, the contract will ensure the maximum use of local equipment and technical resources. Bassin confirmed that a minimum of 30% of building works should be carried out by Russian sub-contract companies – cheap labour and a surplus of necessary resources in Russia are considered to act as guarantee for the profitability of this latter condition for foreign investors.

Russia's deep economic crisis is reflected in the dramatic decrease in building activity. Gregory Khaikin, the Head of the Moscow Institute of Civil Engineering, claimed that construction organisations are on the edge of bankruptcy due to the absence of work, lack of modern technological equipment and inefficient supply of raw materials. In Russia, growth of housing is seen as the most definitive indication of the end of the economic crisis. The federal housing policy aims to transform State housing into the private sector with the introduction of State compensation. The Russian army is in the process of reduction which means a deepening of the

ABOVE: We are Serving the People! *1950. Although the State decreed that 30% of all deputies would be female, women only had a token presence and rarely took part in the decision making; BELOW*: Let the Indestructible Friendship and Collaboration Between the Soviet and Chinese Nations Prosper and Increase! *1951. Stalin is clearly shown as being taller than Chairman Mao so as not to challenge the theory that Stalin was father of all humanity. (Images courtesy of Hawksbill)*

housing crisis and the problem of converting much of the military infrastructure to civilian use. If properly managed it could provide *more* jobs.

Chris Siegl of John Brown Associates reminded those attending the conference that Russia has almost 60 per cent of the world's natural resources. He argued that it is in the investors' interest to help provide a stable economy and sound legal system of guarantees to create a favourable investment climate. A sound legal framework which operates free from political interference is more important than full democracy for investment purposes. He claims that stability will be achieved by building up the basic industries needed to bring the CIS into the international market instead of conditioning financial support on political reforms speeding a theoretical passage to free market economy. However the West will not take commercial risks without guarantees so investors can either seek political guarantees from an export credit agency like ECGD or sell products on a positive cash-flow basis.

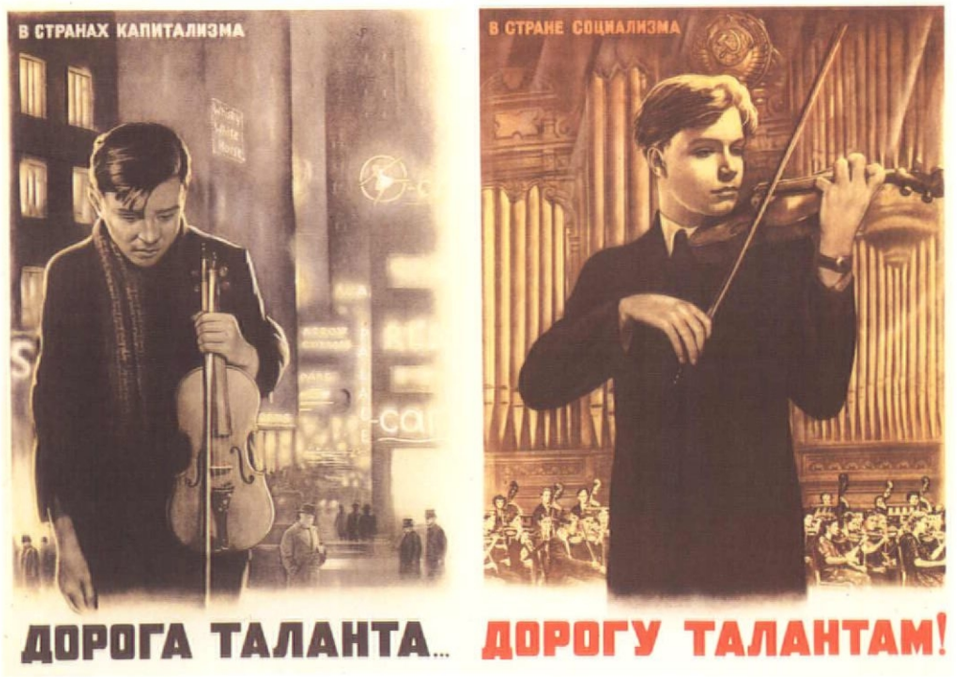
Extensive business re-education is necessary to familiarise those who only know how to operate with a centrally controlled economy, to work with international commerce and corporate business methods. Privatisation would seem to be the answer to getting rid of the State's debt burden but their managers have no parameters on which to assess its implications and how to implement it. These suggestions aim at changing the emphasis of investment from macro-economic politically related support to micro-economic projects. Siegl argues that investors must acknowledge the enormous change that the CIS is being asked to make and structure their strategies to benefit the infrastructure by for example back-loaded returns where the early benefits are recycled.

An International Economic Organisations conference will be held in Moscow in autumn 1993 to examine the possibility of foreign investments to Russia. Already Ahrends Burton & Koralek has secured the commission for the British Embassy on the Smolenskaya Embankment of the Moscow River. Bridget Else of ITN Moscow claims that there is a general increase in renovation, mostly financed by foreign money, to provide hotels and headquarters for foreign firms.

So what of the future of architectural construction in Russia? Chris Klein of the *Moscow Times* recently reported that the Moscow City Planning Museum has just taken delivery of a scale model of an architect's vision of Moscow in ten years. On a bend of the river just west of Kutuszovsky Prospekt stand 125-storey smoked glass skyscrapers, streamlined outdoor metro stations and multi-level indoor shopping malls. Some urban planners say that we will see this within ten years but the museum's historian Lev Skepner is not so sure, 'It might happen but not in my lifetime . . . I think people are more interested in survival, in bread'.

It is important to remember that commercial interest is only one facet of the unprecedented surge of interest in Russia. However, extremes meet where the vast commercial potential of tourism relies on the sites such as the Imperial Palaces to lure trade. The lack of focus on any particular section of Russian history forces any review to adopt a dislocated character which is, after all, the nature of the beast.

Katherine MacInnes



The Way of Talent *(on the left) in capitalist countries,* Show Talent the Way *(on the right) in socialist countries. Soviet propaganda depicted everything in black and white, not least the contrast between socialist and capitalist countries. One was either a friend or an enemy, which left no room for ambiguity. The artist, Koretskii, has used two distinct tones to emphasise the differences between the struggling artist in the West, given no opportunity to display his talent, and the prodigy in the Soviet Union who is performing to an appreciative audience in impressive surroundings. Many Russians believe that things are still shown in black and white, but a role reversal has led to the West being seen through rose-tinted spectacles by media and advertising. (Image courtesy of Hawksbill)*

CEZARY BEDNARSKI

MAHASARASWATHI EDUCATIONAL AND ECOLOGICAL FOUNDATION SCHOOL

Naraspur, Andhra Pradesh, India

The battle between cities for the right to host the Olympic Games, the fight between London, Paris and Frankfurt for the position as the European financial centre and the contest between Warsaw, Prague and Budapest in central Europe are all well known. Kurt Schmoke, lawyer, politician and Mayor of Baltimore is an exponent of theory of forthcoming 'Wars of Cities'. With their economic, social and cultural power cities are becoming more important as a force in the struggle for global supremacy than the military might of states.

Socio-economic development is inextricably linked to migration to cities; it is most apparent in the developing countries. In 1950, 83% of their population lived in rural areas, in 1975 the figured dropped to 75%. United Nations Population Fund forecasts that in the year 2000 the proportion will come down to 60%. Migration from villages is responsible for 60% of the population growth in cities. In 1990, of the 20 largest cities in the world with populations between 8.5 and 20.2 million, 15 were in the developing countries. By the year 2000 this will change to 17 out of 20. Migration is a physical manifestation of social change, a manifestation that is increasingly worrying.

Despite the fact that the majority of the world population lives in rural areas, it does not attract due attention of policy makers. However, because it is impossible to house, feed and employ all urban migrants, rural development is gaining importance. Reproductive health care and family planning, in the rural context, can facilitate reduction of migration to cities – families and households are the key elements in economic, social and development. The rate of national population growth is directly linked to urban growth.

There is no doubt that in India one of the causes of migration to the cities is the loss of traditional values and a blind aspiration to Western ideals. It is wealth that creates the visible material substance of cities – streets, buildings, public and private transport. Poverty to a much lesser degree manifests itself materially. Cities are perceived as oases of wealth and hope. The post-colonial education system, based on ideas and values transplanted from Britain, and totally inappropriate for rural societies, is also to be blamed.

Reinstating rural self-sufficiency and sound value systems is the only way to reduce the growing problem of mass exodus to the cities. This can be accomplished only through appropriate education. This in turn requires appreciation of the important function that the teacher plays in maintaining the cultural, economic and social health of any nation. New educational programmes have been specifically developed for the rural communities in developing countries. It is crucial that new school buildings should be designed to be conducive to these programmes.

The Mahasaraswathi Educational and Ecological Foundation was established in January 1992 in the village of Naraspur, Andhra Pradesh, India. It was initiated by Jyothi C Reddy, the daughter of a local farmer. She started a programme of economic renewal of Naraspur and three neighbouring villages. Their total population is 15,000 of which 20% are children.

The late Sri Aurobindo, one of the sages of India, said, 'The chief aim of education should be to help the growing soul to draw out in itself that is best and make it perfect for a noble use'. State education in India is far from this ideal. Personal development, self reliance and respect for nature are not its aims, what counts are abstract academic results. The growing ecological crisis, deepening poverty, crime and violence are immediate results of the alienation of village children, who lose contact with an understanding of traditional moral, social and environmental values. The first project to be undertaken by the MEEF is a school.

The school design represents an attempt to reflect the educational and environmental ideals of the MEEF through form, function and the use of materials and technologies, harmony with the surrounding environment and the local idiom. The design tries to recreate a delicately balanced network of opposites as found in traditional organic communities. The process of building, maintenance and renewal of the school will be closely linked with the cycles of village life.

The school plan is based on three intersecting circles which can be easily set out with the use of a rope. The spaces defined by the overlap of the circles create three yards. The school has been laid out as an educational village. Its spatial arrangement follows that of a traditional village and it is composed of a range of spaces that provide varying degrees of privacy and accessibility.

The courtyards serve as shared spaces. The first of them, accessible directly from the road, is open to the general public. The other two are school yards. The courtyards are like village streets; the classrooms as houses with open spaces of cultivated land beyond. The traditional logic of open school yards and enclosed classrooms has been reversed: the yards are closed, shaded spaces and the classrooms are open, with no walls. Traditionally, village teaching took place in the shadow of a large tree.

The circle of learning, with the library as its focus, is the most private and peaceful. It faces away from the road towards the fields and far views. Children will learn in these classrooms without walls, aware of the world outside and their immediate natural environment. The school shall enable them to understand and appreciate their reality not alienate them from it.

The work circle is more open and dynamic. It is defined by four classrooms devoted to the arts, four workshop buildings and a dense wall of greenery serving as a buffer to the dust and noise of the road.

The most open and lively will be the circle of play with the assembly/performance hall at its centre. The hall, 30 x 30 x 30m in plan, will accommodate over 300 children with ample space for performance and play. It is a 'frugal' structure with a minimum number of members to achieve stability. Architectural textiles were selected as cladding material which would take the least space for delivery 1.5m^3 when folded. A union of

one of the most advanced Western technologies and one of the most ancient ones – tensile structures and compacted earth. It will be conditioned by a constant flow of air rising along the inner skin of the sun heated roof, drawn in from the cool shade of the surrounding trees. The geometry of the school layout, placing of buildings and trees and the landscaping have been inspired by dynamics of south Indian dance. The plan design was approved by a Vaasthu specialist, an Indian equivalent of Feng Shui.

The compressed earth brick was selected as the key building material. It will be made of local soil mixed with a small volume of cement for stability. It will be the most cost effective building component for this project, both in terms of material as well as transportation cost.

The proposed design represents an attempt at putting forward an idea in the debate on what 'modern' architecture could be in the context of rural Andhra Pradesh. So far, villages have been trying to adopt Western styles and technologies believing them to be superior to their own proven ways. This has resulted in visual and cultural pollution of the countryside with alien, box-like 'graceless' buildings, and a gross waste of both natural and financial resources. These Western 'ideals' rely on the use of cement and steel in their construction. Both of these materials are expensive and have to be transported over long distances. They are both inappropriate and uneconomical for application on the majority of these rural building projects.

The thatched roof is the most traditional way of covering buildings in this area. Although picturesque, these roofs are a breeding ground for all sorts of vermin including snakes, and as such have to be considered as a health hazard unacceptable in a school building.

The school has been designed with the aid of engineering expertise embracing the fields of structure, environment, acoustics and lighting. Technologists working in India were also involved. Advanced technical knowledge and computer design were employed to produce a contemporary design that is high-tech in input and low-tech in realisation. It employs traditional building technology immediately achievable and easily comprehensible to people with no building experience and with limited education.

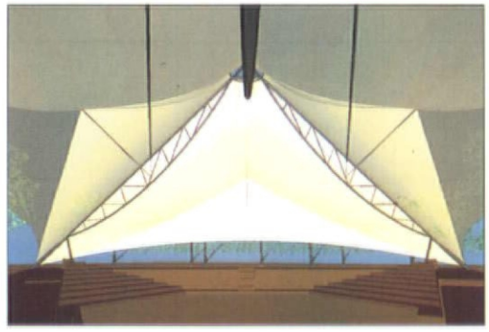
The school project will be a training ground for new craftsmen who, after the project is completed, will make their new skill available to their local community and stay with it rather than migrating to the cities.

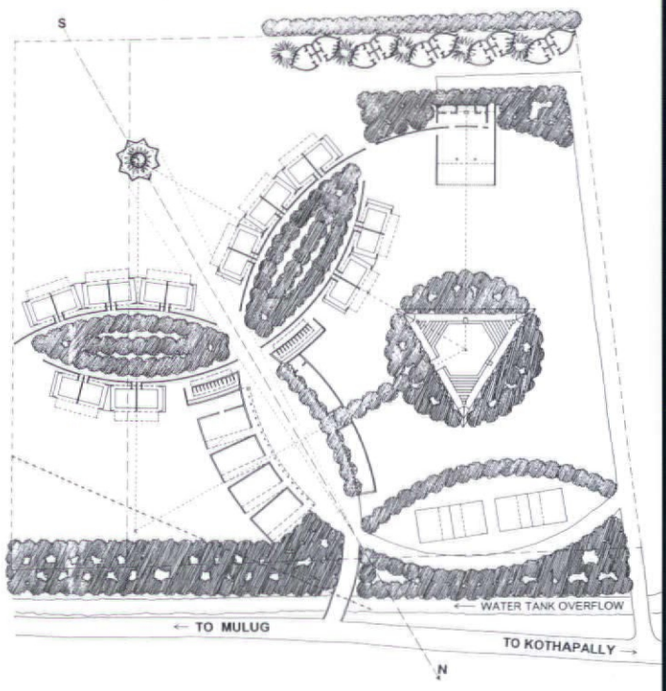
Environmental protection has been high on the project's agenda. The earth bricks will not use any fire wood, and will not contribute to global warming since they do not require any form of firing. Because they are made of local soil, they will also reduce the reliance on road transport reducing CO^2 emissions and waste of natural resources.

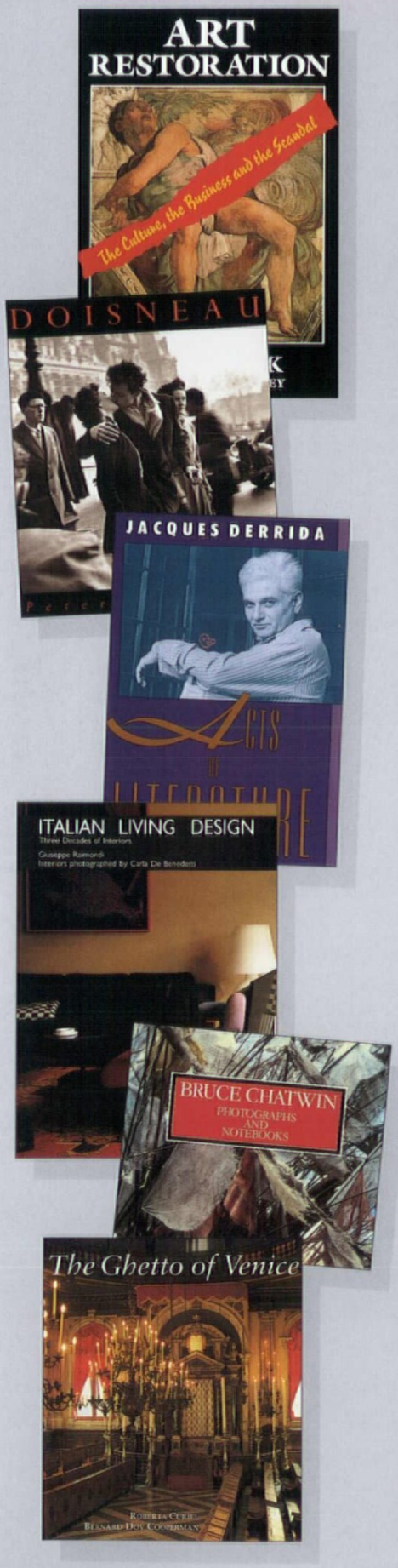
A significant part of the design team effort was directed at establishing ways of utilising natural light and air movement in creating a good learning environment. An acoustic study has also been carried out to establish forms and materials which would be most effective in terms of noise reduction and in improvement of the acoustic quality of the school. Subject to final costings the use of solar energy for both production of electricity and heat control will be considered.

The Naraspur School project serves as an example of the possible symbiosis between modern technologies and traditional indigenous methods of building achieved without compromising either of them. It could serve as a signpost on the road to co-operation between advanced nations and technologically less developed ones. The great scientist Sir Peter Medawar, addressing the British Association as its President said : 'Human happiness depends on continuous development in many fields, including Science and Technology'. Quoting Francis Bacon, the 16th-century thinker, he also said: 'Knowledge should be perfected and governed by love, the fruit of knowledge should be used, not for profit or fame or power but for the benefit and use of life'.

Architect: Cezary Bednarski, C Bednarski Architects; Structural Engineer: David Hamilton, YRM/Anthony Hunt Associates; Environmental Engineer: Tim Knaggs, YRM Engineers; Acoustics Engineer: Iain Clarke/Ove Arup Acoustics; Lighting Engineer: Jane Gosney, YRM Engineers; Technology Consultant: Tency Beatens, Auroville Building Centre, India; Models (materials and workshop): Richard Armiger, Network London; Classroom model: Valery Steele and Liz Evans; School model: Marcos Frangos; Photographs: Andrew Putler. The MEEF (a registered charity) is looking for donations to help build the school. Enquiries can be addressed to Cezary M Bednarski who represents the MEEFoundation in the UK: Tel 081 968 3358, Fax 081 960 2275







ART RESTORATION: The Culture, the Business and the Scandal by James Beck and Michael Daley, John Murray Ltd, 210pp, colour ills, HB, £17.99

Through analysing the motives for art restoration, this seemingly harmless topic is presented in a controversial light. This is achieved through two lines of argument, one social and tenuous and the other chemical – blinding one with science with the result that only a sociable chemist would be able to assess the validity of the text. Beck and Daley argue that 'museums encourage restoration because cleaned pictures can be re-launched and the publicity attracts more visitors'. Surely this is mutually beneficial rather than shamefully commercial – museums cannot survive on fresh air. 'Businesses offer sponsorship because the favourable publicity is valuable to them, and they can sometimes set terms that bring them their money back in film and photographic rights' – but few business do something for nothing. Altruism and art became disconnected long before painting left the monasteries – why should we expect to find it at the end of the 20th century?

DOISNEAU by Peter Hamilton, Tauris Parke, 126pp, b/w ills, PB £ 14.95

Professional photographer or voyeur? Time has lent Doisneau's photographs the status of respectability. Doisneau claims that the profession itself was regarded with distaste and that 'to be frank about such a thing was considered to be a sort of obscenity!' His motivation was '. . . to share this animal joy of being able to see clearly with others of a like mind, since the refined bohemians wanted nothing to do with me.' David Elliot, director of the Museum of Modern Art in Oxford suggests that in acquiring the status of popular icons his images have paid Robert Doisneau the ultimate compliment by returning to the streets where they were conceived – 'bootlegged – sold on pavement stalls'. Most famous of these is 'The Kiss at the Place de l' Hotel de Ville'. In an article in *LIFE Magazine* in 1950 many more images of these spontaneous 'se baiser's' can be found. In the text, Doisneau observes that there are two peaks in the day's osculation: 1. at noon, when offices, shops and universities are closed for lunch and thousands of youngsters are released into the streets, and 2. between five and seven when young males make the opening moves in the evening's campaign.'

ACTS OF LITERATURE by Jacques Derrida, Routledge, 456pp, PB £12.99

Jacques Derrida is one of the most influential figures in literary theory in the English-speaking world, yet much of his writing on literary texts and on the question of literature is not easily available in translation. *Acts of Literature* brings together for the first time a number of these works – on French, German and English literary texts and figures – including Rousseau, Mallarmé, Joyce, Shakespeare and Kafka. Also included is a substantial new interview with Derrida on questions of literature, deconstruction, politics, feminism and history. This book concentrates on Derrida's thoughts on literature – Derek Attridge's introductory essay explains the theory of deconstruction as . . . 'the coming together of literature' ('Deconstruction in America'). Deconstruction has been applied to architecture through the association between Derrida and Eisenman. *Re: working Eisenman*, available from Academy Editions, argues this philosophy from the other side. The reinterpretation of form and space forces the user to re assess the meaning of the space. In his essay on James Joyce, Derrida argues whether intellectual context in which this reassessment takes place can affect the interpretation so that it may be assessed using value judgements. Could the same question apply to architecture?

ITALIAN LIVING DESIGN: Three Decades of Interiors by Guiseppe Raimondi, Tauris Parke Books, 288pp, colour ills, HB £29.95

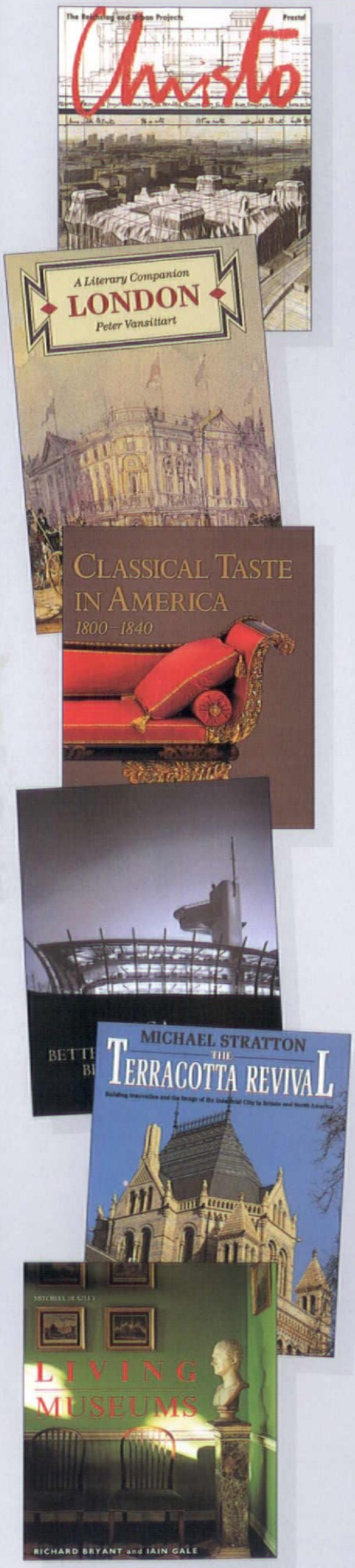
'The House of the Five Senses' is an example of a 70s interior. It consisted of five environments, each dedicated to a different type of sensory stimulation: a room frescoed in different shades of colour to gratify the sense of sight; the hall of temptations stimulated the sense of taste by means of a system of mirrors that reflected an infinity of images of foods; touch was called into play by the passage between walls lined with fabrics pleasant to caress; smell by a room transformed into a stretch of seacoast, with images of the sea and marine life projected onto the walls, soft rocks to sit on, and the pungent odour of a storm at sea permeating it all; lastly the sense of hearing was stimulated by a hilly environment with the sound of a waterfall in a forest. Other examples include the interior Adrian Lyne designed for the film *9½ Weeks* which creates a rapport between the protagonists. Through various different examples, this book examines the cause and effect of three decades of interiors.

PHOTOGRAPHS AND NOTEBOOKS by Bruce Chatwin, Jonathan Cape, 155pp, b/w and colour ills, HB £20

Bruce Chatwin and travel seem almost synonymous. When he died at the age of 48 he left behind 50 pocket-size moleskin notebooks and thousands of photographs. The notebooks are in no sense diaries: like the photographs they do not record events but are a collection of spontaneous jottings – the literary equivalent of a painter's sketchbook providing us with a link between Chatwin's eye and his writing. His turn of phrase is unique: 'I happen to like lands that are sucked dry. They suit me. We complement each other', is as informative and loaded with irony as it is brief. The very next entry changes smoothly from disquieting cynicism to open humour: 'My travelling companion is a charming girl student . . . she is naturally on strike against the greed of President Pompidou'. This is quite literally a transporting book with prose that allows the reader to escape to the outer reaches of the planet – a gratifying posthumous celebration of Chatwin's enormous and irreplaceable skill.

THE GHETTO OF VENICE by Roberta Curiel and Bernard Dov Cooperman, Tauris Parke Books, 176pp, colour ills, HB £35

The Ghetto of Venice was first established in 1516. Seen in historical context the Ghetto was a social mechanism which allowed for the admission of Jews when older rationales no longer sufficed and when earlier arrangements had given way before strident demands for religious purity. The Venetian Ghetto was created at the point of tenuous equilibrium between two opposing forces. It was, at one and the same time, an entry way for Jews into



Venice and an enclosure to keep them out. The synagogues have a rich and theatrical feel but Curiel and Cooperman search out the lesser known corners: a small study reached through a well camouflaged entrance in the synagogue and a secret entrance to the Ghetto Vecchio from the opposite side of the bridge. They point out details that the untutored eye would have passed over: the detail of a cornice on the Scuola Grande Tedesca and the arched door way which was conspicuously more dignified than its neighbours.

CHRISTO: The Reichstag and Urban Projects edited by Jacob Baal-Teshuva, Prestel, 160pp, colour ills, PB DM58

Christo started working on the Wrapped Reichstag Project for Berlin in 1971, when Germany was still divided and there seemed little hope that this building would ever again house a German parliament. Today, more than ever, it represents the encounter between East and West, past and present and is a fitting vehicle for Christo's monumental public art. Jacob Baal-Teshuva observes that Christo's art is a profound comment on the desensitisation resulting from the increasing number of packaged consumer products surrounding us. Other projects featured include the well-known Valley Curtain, Rifle, Colorado, 1970-72 and the beautiful, Pont Neuf Wrapped, Paris 1975-85. The Surrounded Islands, Biscayne Bay, Greater Miami, Florida, 1980-83 are pure surrealism. Each island is enclosed in a pink area of cloth floating on the water. By transforming a familiar object into an ambivalent presence, Christo's projects are imbued with mystique, forcing the viewer to concentrate on the shape and the over all implications rather than the detail.

LONDON: A Literary Companion by Peter Vansittart, John Murray, 331pp, b/w ills, HB £16.95

This book is part of a series, the success of which is an indication of the increasing interest in 'dilettante' rather than package travel. It describes a multi-faceted London: royal London; commercial London; criminal London – through the eyes of its writers: Samuel Pepys, Martin Amis, I Thackeray and VS Pritchett. You can see suburbia through the eyes of PG Wodehouse, blitzed ruins through those of Rose Macaulay, or Hampstead society through Ezra Pound's. Max Beerbohm introduces the goat that used to live in Piccadilly and Victor Hugo introduces Charles II's watchman whose job it was to crow like a cock. You can watch GB Shaw dance in Fitzroy Square with a chorus line of policemen and see GK Chesterton and Hilaire Belloc ride donkeys into the Ritz. Dr Johnson performs a citizen's arrest, Marx extracts money from Engels and EM Forster helps E Nesbit to set fire to models of suburban villas. Anecdotal details include a revealing insight into Queen Victoria's mind, provided by her wedding present to Prince Albert which was a nude picture of 'Diana' at a time nudity in pictures was denounced from some pulpits as morally corrupt, and when Thackeray thought William Etty's nudes should be hidden by 'a great large curtain of fig leaves'.

CLASSICAL TASTE IN AMERICA 1800-1840 by Wendy Cooper, Abbville Press, 305pp, colour ills, HB £35

This assessment of the influence of classicism on America during the first four decades of the 19th century is comprehensive including an analysis of the impact of classical, political, intellectual and aesthetic values. The symbolic and material significance of classicism can be seen through the adaptation of antique forms and motifs by American craftsmen and consumers and the vernacularisation of classicism. The interior of a parlour from Waterloo Row in Baltimore shows furniture of a classical theme but with ornate floral decoration that belies its origin.

BETTER BUILDINGS MEAN BETTER BUSINESS, The Royal Society for the encouragement of Arts, Manufactures and Commerce, 66pp, b/w ills, PB £2.50

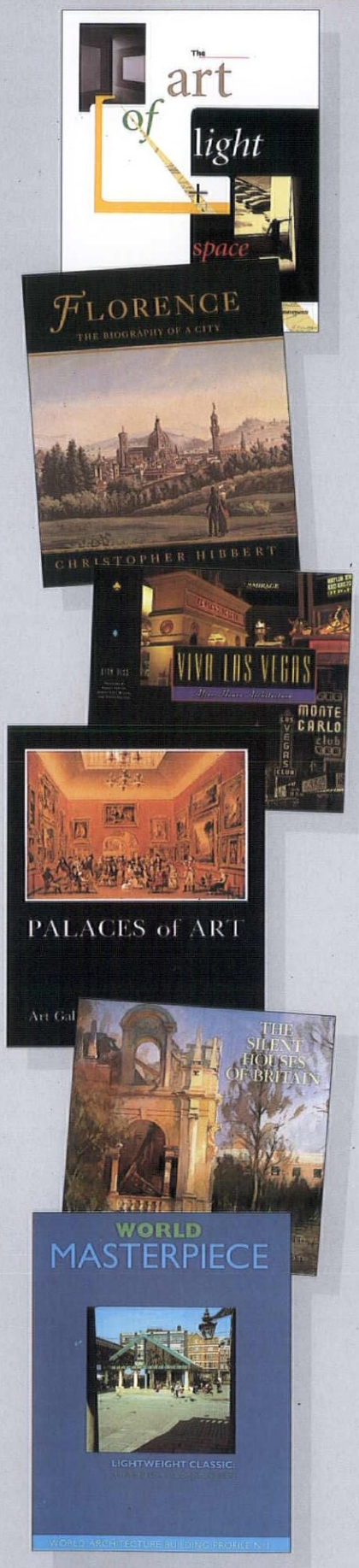
This publication includes all the papers given at the RSA Symposium on 18th January 1993 by the Rt Hon Michael Howard MP, Councillor David Weeks, Roger Taylor, Christopher Carter, Nicholas Grimshaw and Vincent Wang. In the section on the role of Vision in City Planning, David Weeks listed the achievements of the City Council: the clear up of the 'nasty housing' around North Paddington; the clean up of Soho and the making of Covent Garden, 'once a sleazy part of the West End . . . now a vibrant heart to London's theatre land'. The heritage's fabric of City architecture has been enhanced and refurbished: the Sainsbury wing of the National Gallery; Terry Farrell's building at Embankment Place; the Lanesborough Hotel at the old St George's Hospital site at Hyde Park Corner and the new hotel which opens shortly at Marylebone station. His suggestions for the future include improvements to transport, grants systems and monitoring facilities.

THE TERRACOTTA REVIVAL: Building Innovation and the Image of the Industrial City in Britain and North America by Michael Stratton, Victor Gollancz, 250pp, b/w and colour ills, HB £30

This book examines the revival of terracotta over the last 200 years in the context of changing attitudes to decoration and the evolution of building construction in Britain and North America. Manufacturers, architects, decorative artists and clients enthused about terracotta as it offered a solution to pressing problems of urban construction such as fire, smoke pollution and the need to replicate ornamentation over large frontages. The 'Terracotta Revival' became of considerable significance in British architecture during the 19th century and the development of the American Skyscraper after the Chicago fire of 1871. In the United States it was fundamental to the evolution of high-rise construction and attempts to create forms of 'New World' decoration.

LIVING MUSEUMS by Richard Bryant and Iain Gale, Mitchell Beazley, 190pp, colour ills, HB £25

This book was conceived to record the work of devoted restorers who have breathed life into the fusty image of museums, preserving, restoring and recreating houses as they were when they were built or when they were lived in by their famous inhabitants – providing a visually inspiring display of period homes from around the world. Richard Bryant's unique skill as an architectural photographer means that this book can almost be seen just as a collection of beautiful photographs. His sensitivity to the quality of interior light that the architect intended pervades his images with



atmosphere to give a genuine feeling of what it would be like to be there. Thus this book has a third purpose as an armchair guide to these far flung places. The quality of the images combined with museums of the calibre of the Sir John Soane Museum in Britain and the Jim Thompson house in Thailand make this a beautiful portrait of Living Museums.

THE ART OF LIGHT + SPACE by Jan Butterfield, Abbeville Press, 280pp, colour ills, HB £42
Ethereal evocative, the art of light and space pushes the viewer beyond the everyday limits of perception. It takes many different forms and uses many different materials: from natural daylight and scrim to glass, plywood, neon and fire. It taps into far-ranging ideas and systems of knowledge, including alchemy, Buddhism, aerospace technology, witchcraft, astronomy, physiology and phenomenology. The book focuses on the work of ten artists: Robert Irwin, James Turrell, Maria Nordman, Douglas Wheeler, Bruce Nauman, Eric Orr, Larry Bell,'DeWain Valentine, Susan Kaiser Vogel and Hap Tivey. Jim McHugh captures the quirky individuality of these creative men and women in his introduction to each chapter. The most monumental of these projects is James Turrell's Roden Crater where he moved earth to create a 'celestial vaulting' effect. He has designed spaces to be empowered by starlight, enabling one to feel the physical presence of that light.

FLORENCE: The Biography of a City by Christopher Hibbert, Viking, 200pp, colour ills, HB £22.50
Michelangelo's friend and biographer Giorgio Vasari, claimed that God had made the great artist a Florentine 'so that one of her own citizens might bring to absolute perfection the achievements for which Florence was justly renowned'. It was here that Dante first set eyes upon Beatrice and Boccaccio and began work on the Decameron; that the Medici rose to power as the richest bankers and most munificent art patrons of Renaissance Europe, that Savonarola preached his terrifying sermons and that Machiavelli organised the forces of the commune to resist its foreign enemies. In Florence the greatest architects of the day created a city which was to become one of the principal delights of the Grand Tour, 'infinitely the most agreeable place' that Horace Walpole had seen since leaving London. '. . . for all the modernity of the city centre the ancient stones of Florence remain solid and immutable and no visitor can fail to be haunted by the ghosts and moved by remembrances of the past that linger around them'.

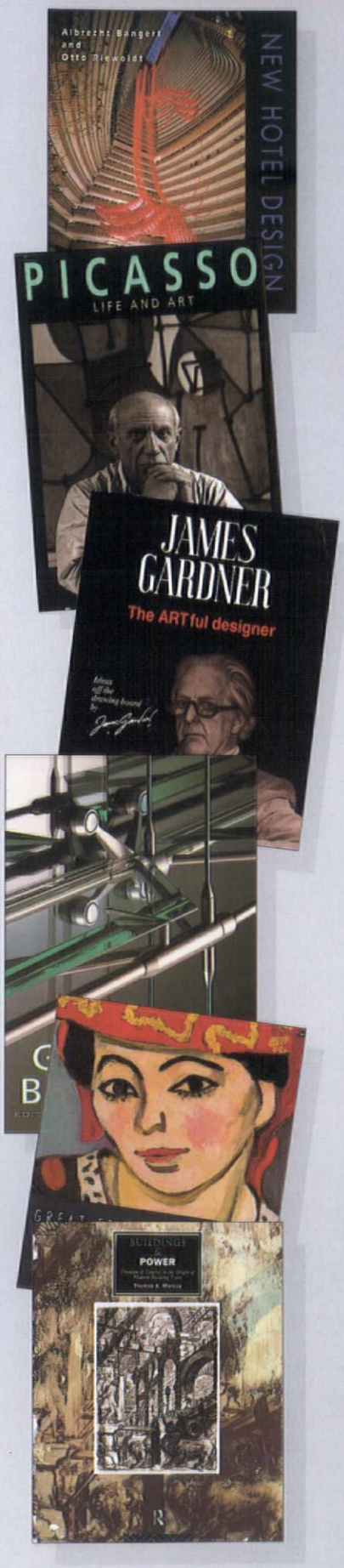
VIVA LAS VEGAS: After-Hours Architecture by Alan Hess, Chronicle Books,128pp, colour ills, PB $18.95
Las Vegas is one of the great models of urban development – a city that rose from a desert's blank slate, is a prime example of vernacular architecture responding to popular and economic demands. Each chapter focuses on a period of a few years and describes the architectural growth during that time, the various trends in theme architecture and the fierce competition for signage. Las Vegas is the only city where signage qualifies as architecture. The trend of neon signs, like everything else in Las Vegas was simply to grow bigger and bigger paying tribute to the sign artists of the Young Electric Sign Company. The epitome of strip architectural planning, Las Vegas was built to accommodate first wagon, then train and finally auto and pedestrian traffic – perhaps the most democratic example of urban development where buildings reach directly to the people on the streets with huge beckoning signs and moving sidewalks.

PALACES OF ART: Art Galleries in Britain 1790-1990, edited by Giles Waterford, Dulwich Picture Gallery, PB £15
The South London Art Gallery is included under the title of 'Palaces'. Although strangely it illustrates the desire on the part of a small number of late Victorian artists and educators to bring art to the urban masses, it was derived from the determination of a local tradesman William Rossiter who was associated with the Working Men's College in Great Ormond Street. Earlier this year Thierry de Duve gave a lecture called 'Authorship Stripped Bare, even' in the atmospheric lofty top 'Engraving Gallery'. Either the lecture was brilliant or the space was moving, or both, since it produced a powerful effect. Indeed, this book explains that Ernest George's drawing illustrates the innocently improving nature of this lecture room which was, it appears, originally conceived as a quasi-medieval Great Hall, with a minstrels' gallery at one end and a queen post timber roof, containing skylights. This is not another museum book but an anecdotal account of the inspiration behind many famous and endearing British Galleries.

THE SILENT HOUSES OF BRITAIN by Alexander Cresswell, Macdonald illustrated, 160pp, colour ills, HB £25
Alexander Cresswell is one of those artists whom your children will imagine has always been around. His work is transporting. It is like music. His immense sensitivity to light and his skill in communicating atmosphere are combined in his love of qûality architecture. In the acknowledgements he thanks all those who have helped him including Mary Green, now Mary Cresswell, 'for her companionship as I dragged her around the kingdom to share this passion of mine'. His passion gives depth to his pictures and lends a quasi-spiritual air to these dignified edifices. People who start to flick through this book can be found hours later in a private corner of the room with a far-away look in their eyes.

This elusive quality belies the artist's sense of humour evident in the text accompanying each house. He has repeatedly been asked to explain the term 'silent' houses and quotes one man as saying 'If he wants to paint a silent house, why doesn't he come and paint ours – nobody says a word there . . . oh you mean *ruined* houses? . . . well *derelict* then?', and so on. Cresswell explains that 'somewhere between the lost romanticism of ruination and the unfaithful neglect of dereliction lies the essence of this silence . . .'

WORLD MASTERPIECE: Lightweight Classic by Terry Farrell, World Architecture Building Profile No 1, Cheerman Ltd, 96pp, PB N/A
Terry Farrell's Clifton Nurseries Covent Garden will be remembered long after it is demolished according to Martin Pawley. In 1981 he dubbed it 'The Barcelona Pavilion of Post-Modernism'. But what does he think of Post-Modernism? By implication he does not subscribe



to Dennis Sharp's assessment of Post-Modernism in *Twentieth Century Architecture*, published by Lund Humphries as 'little more than a fashionable mood and lacking in any real substance'. However he does not present both sides of the argument, with the rather disappointing result that this book resembles a dry project description. It was commissioned by Jacob Rothschild who felt that Terry Farrell's 'type of post-modernist architecture was full of wit and humour but also had a very serious side'.

NEW HOTEL DESIGN by Albrecht Bangert and Otto Riewoldt, Lawrence King Publishing, 255pp, colour ills, HB £42

This is the sort of book that everyone needs: those who don't and won't have the money to afford a night in one of these sumptuous establishments, and those who have so much money that it is almost a hardback brochure from which to plan the next circuit of the globe. If anyone is listening, consider the following: a stay in L' Atelier sul Mare, Castel di Tusa, Sicily, 1989 in Paolo Icaro's round stone beds with counterpanes that look like layers and layers of floppy pitta bread and views that look out over the Mediterranean; a pina-colada, sipped while reclining in the modern Starck-inspired 'chaise longue' designed specifically for the penthouse suite of The Royalton, New York; then on to the Otaru Marittimo in Japan to dine in the theatrically appointed fish restaurant (followed by coffee in OMA's uncharacteristically cosy Swiss interior s of The Furkablick, Furka Pass, Switzerland).

PICASSO: Life and Art by Pierre Daix, Thames and Hudson, 450pp, b/w ills, HB £19.95

'Olga Picasso dans un fauteuil' 1917 by Picasso shows an unfaceted women looking, with two symmetrical eyes, directly at the artist; attention to detail belies his Cubist associations. Humanising rather than dehumanising seems to be Picasso's intention. Such idiosyncratic changes of direction remind us not to pigeon-hole. They also arouse curiosity in the man himself – why the momentary change in style? What was the context? This is the most complete and up-to-date one-volume study of Picasso's life and art, by a writer and critic who knew him intimately for 25 years. Daix's close personal knowledge of Picasso has enabled him to consider the artist's achievement in relation to the events and personalities woven into his life.

JAMES GARDNER: The ARTful Designer, distributed by Lavis Marketing, 300pp, b/w ills, PB £19.99

This architect, designer and inventor has become involved with politicians such as Margaret Thatcher and Teddy Kollek; artists such as Henry Moore and Gerald Scarfe; scientists including Julian Huxley and Jacob Bronowski; and a mix of personalities as varied as Jocelyn Stevens, the Sultan of Brunei and Simon Wiesenthal. His skill as a cartoonist is evident both in his designs and in the text which caricatures those mentioned above with a gentle but perceptive humour. He has designed electric cookers, space settings in ultra-violet light, Puffin books for children, war pictures for the press, an aircraft flight simulator, crown jewels for the Baroda State, a river pier, a 'planetarium experience', uniforms for air hostesses, a village for mice, a pin-table that talks, pneumatic deception devices an exploding bicycle pump, a walking skeleton . . . The 20th-century Renaissance man indeed, whom Sir Kenneth Clark and Ralph Steadman have both compared to Leonardo da Vinci.

GLASS IN BUILDINGS edited by David Button and Brian Pye, Butterworth Architecture, 372pp, colour ills, HB £40

Saying that there is a lot more to glass than meets the eye is perhaps not the best way to begin reviewing this important book. Which other material is waterproof, transparent, hard, can be coloured to provide shade and is fairly self-supporting? Even the little that one already knows about glass proves it to be a unique and versatile material. Recently, numerous other capabilites have been discovered: dichroic coating, dielectric coatings, mirror silvering, chemically/vertically/roller/hearth toughening and so on. The text explains how such discoveries can be used to allow glass to adapt to almost every structural and functional requirement of a buildings skin. It is the major component of 'intelligent buildings' since it can become sensitive to variations of light and heat. This is the definitive layman's book on the most important modern building material. Academy Editions and David Button plan to provide a sequel.

GREAT FRENCH PAINTINGS FROM THE BARNES FOUNDATION: Impressionist, Post-Impressionist, and Early Modern, Alfred A Knopf, Publisher, New York in association with Lincoln University Press, 318pp colour ills, HB $65

This book purports to be the 'most eagerly awaited set of reproductions in art-book history: more than one hundred masterpieces of modern French painting from one of the world's fabled repositories of great art – the Barnes Foundation, Merion, Pennsylvania'. Indeed this book includes works by Manet, Renoir, Monet, Cézanne, Van Gogh, Gauguin, Seurat, Toulouse-Lautrec, Rousseau, Soutine, La Fresnaye, Modigliani, Picasso, Braque, and Matisse. The major landmarks of modern art that many know of but few have seen, including 24 Renoirs encompassing the entire span of his career, 30 monumental Cezannes including bather groups, landscapes, still lives and portraits. This volume is the catalogue to the exhibition which will be at the Musée d'Orsay in Paris from September 8th until January 2nd 1993.

BUILDINGS & POWER: Freedom and Control in the Origin of Modern Building Types by Thomas A Markus, Routledge, 343pp, b/w ills, HB £25/HB £75

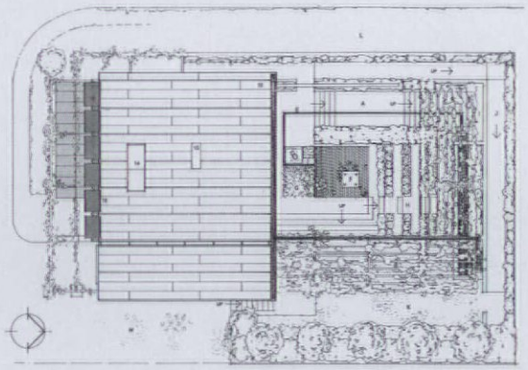
This book shifts the focus of architectural debate from the dominating themes of art and technology to an analysis of meaning in terms of social relations. Everything about a building has social meaning – its form, function and spatial structure are each capable of analysis. The building types are divided between those which control relations between people directly and those designed for leisure. From the panoptican prison of Philadephia Penitentiary in 1821, to the Travellers' Club plan, 1829, this fascinating books surveys the psychological effects of built form. The chapter headings are inspirational: Formation, Re-formation, Re-creation etc. The main focus of the book is on the critical period around the Enlightenment and the French and Industrial Revolutions.

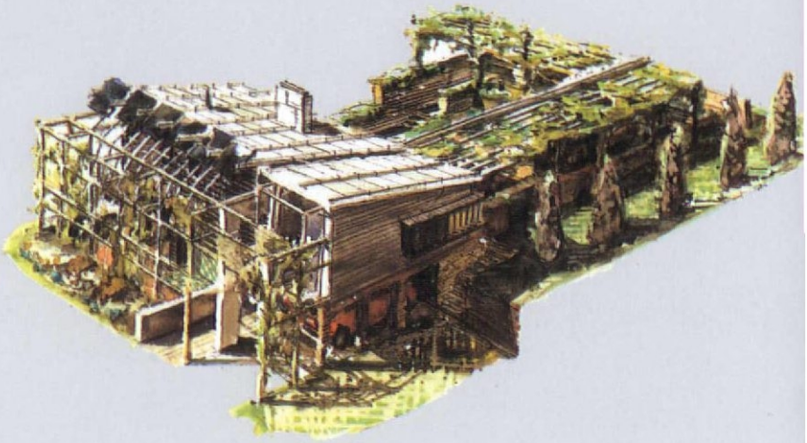
'HOUSE OF THE FUTURE' IDEAS COMPETITION

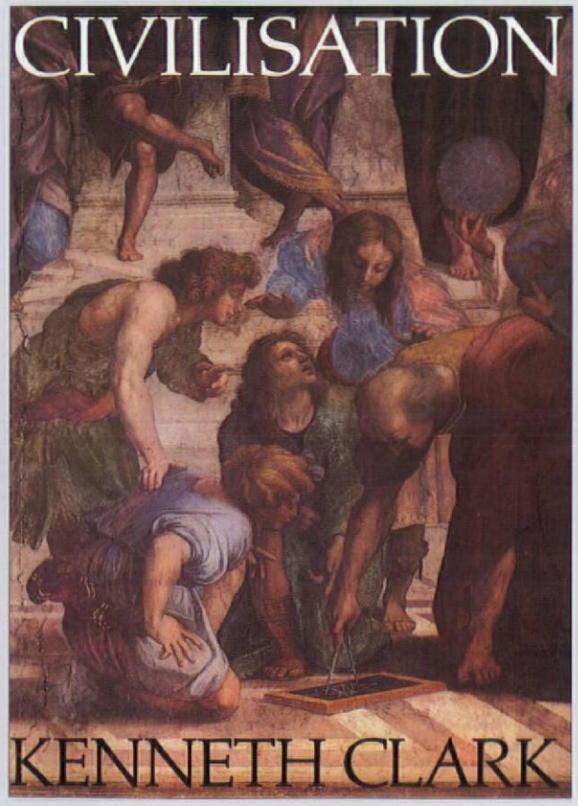
On opening the sealed envelopes, the designers for the scheme for which the assessors were unanimous in their decision to give the first prize of £4000 turned out to be Part 3 students. The objective of this competition was to seek new ideas in housing design which illustrate the importance of energy efficiency and environmental considerations along with developments in home automation, interiors.

The proposal put forward by the students Ian McKay and Duncan Baker Brown was considered to be intelligent and intelligible. The house and garden were accorded equal design importance to underline a symbolic unity the family should share with the nature and to encourage more efficient use of outdoor space. The design advocates working from home to stabilise the family unit, allow flexible hours and decrease the time and energy resources used up in commuting. Five major environmental systems it includes are: a solar control pergola in the conservatory; pivotal solar panels above the conservatory; dense concrete elements which have large thermal mass warming up slowly and radiating warm air around the house; a breathing wall which reduces the chance of 'sick building syndrome' by allowing air flow through it by 'osmosis'; finally the last feature is an Aga located in the centre of the building working in conjunction with an air and water heating system. A detailed 16 point BREEAM assessment of this proposal reveals that it is remarkable for its practical and realistic proposals – recycled and re-used materials are proposed for wall, roof and terrace. Joint third prizes were awarded to Andrew Howcroft and Andrew John Jackson. These two schemes were poles apart in approach: the former a hi-tech solution and the latter a homely 'green' approach. Duncan Webster received a commendation for his proposal to build a round house using ingenious methods of circulation and heating methods.

Prize giving, RIBA, 24th Sept, 1993







KENNETH CLARK 1903-1983

This television biography features the man who, more than any other individual this century, has shaped the ways in which we all think about art. Kenneth Clark was an immensely influential writer, lecturer and administrator. Lord Grade, together with Clark's three children are among those who recall him in this new biography which is illustrated with an extensive range of rarely-seen archive material. Clark worked with Berenson in Florence and at the Ashmolean museum in Oxford before becoming Director of the National Gallery, London from 1934-1945. Among his numerous books are monographs on Leonardo da Vinci and Piero della Francesca and a catalogue of Leonardo's drawings at Windsor Castle. Outside scholarly circles, however, he was best known for his widely popular television series *Civilisation*, a survey of European culture broadcasted in more than 60 countries; first shown in 1969 and repeated from October, 1993. It traces civilisation from the fall of the Roman Empire to the present day. Clark does not attempt to give a complete record but concentrates on the crucial civilising episodes – from Iona in the ninth century to France in the 12th, from Florence to Urbino, from Germany to Rome, England, Holland and America. Against these historical backgrounds he shows us the men who gave new energy to civilisation and expanded our understanding of the world and ourselves. The implications of a wide variety of works of genius are analysed, both in their contemporary context and for the future: in architecture, sculpture, painting, philosophy, poetry, music, science and engineering. Kenneth Clark's perception of their quality and the spirit which they embody enables him to let us see a painting, a building or a piece of sculpture; whether it is something we know like Raphael's *School of Athens*, or something we might not have thought of considering a work of art, like a Brunel bridge – the excitement of new discovery.

WOODCARVING MUSEUM AT INAMI by Peter Salter

The museum is part of a complex of buildings grouped around a precinct. Its scale and arrangement are derived from the temple nearby, which is situated close to the foothills on the edge of the town of Inami. The design was conceived as a set of territories ranging in scale, materials and indigenous techniques of construction, from the crudest form of spatial enclosure to the finest, providing a distinction in emphasis between the rooms and the courtyard.

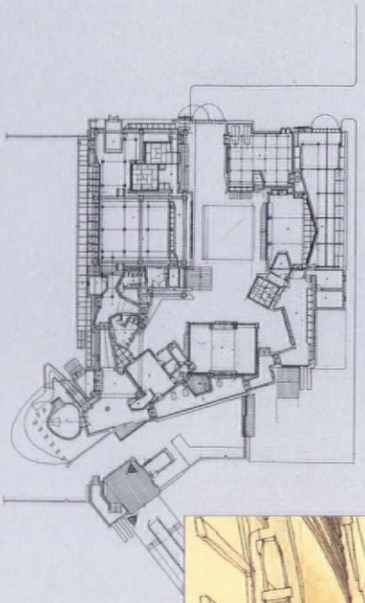
The museum will primarily accommodate religious sculpture and fretted transom screens as well as displays of the craft of woodcarving but there will also be temporary exhibitions of wood sculpture, associated with an international sculpture exhibition that takes place at Inami each year.

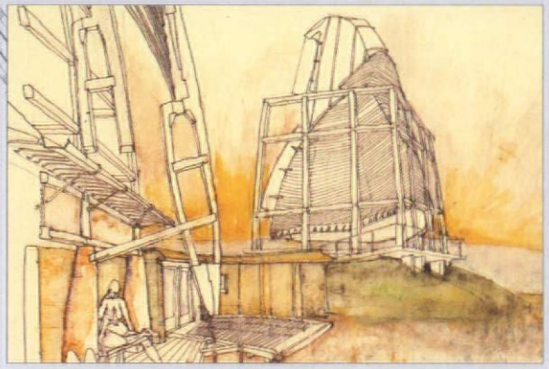
The permanent collection comprises objects that were originally part of a domestic environment. These are relocated in a series of small-scale enclosures within the museum, so as to re-create an intimate relationship to the viewr and the setting. Similarly, instead of providing a neutral space for the artefacts, the design aims to integrate them with the surroundings.

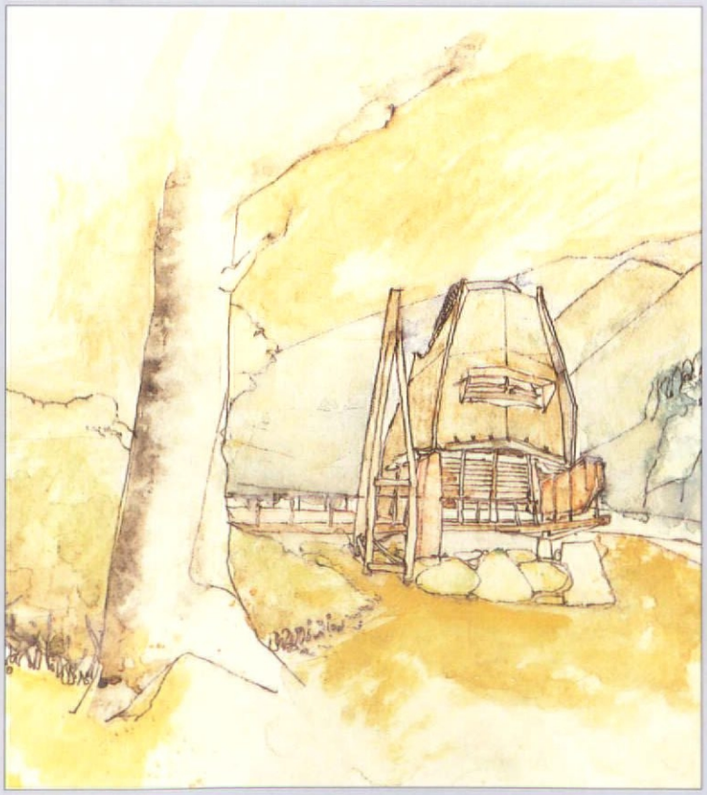
Each of the rooms in the museum has a different spatial character, reflecting the sequence of visitor's movements. As in a temple interior, lighting levels are generally low and the artefacts are mostly seen in ambient light, with concentrated sunlight occasionally channelled in through light snorkels.

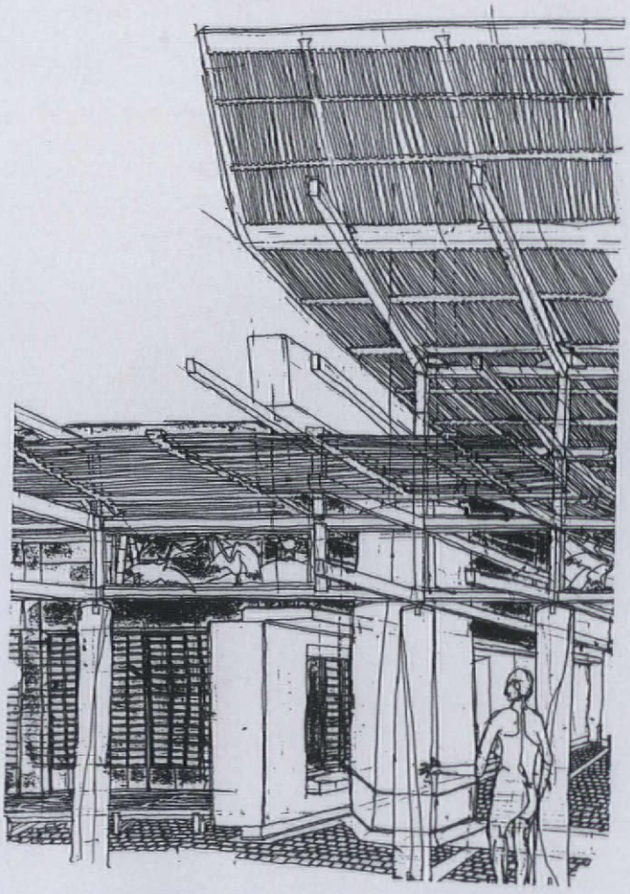
The courtyards will be planted with brightly coloured, scented trees and shrubs complementing the dark tones and scents of the timber. These external 'rooms' provide additional space for temporary exhibitions, reinforcing the relation between exterior and interior.

Excerpt from the catalogue of the exhibition of the work of Peter Salter at the AA, 27th Sept-27th Oct, 1993







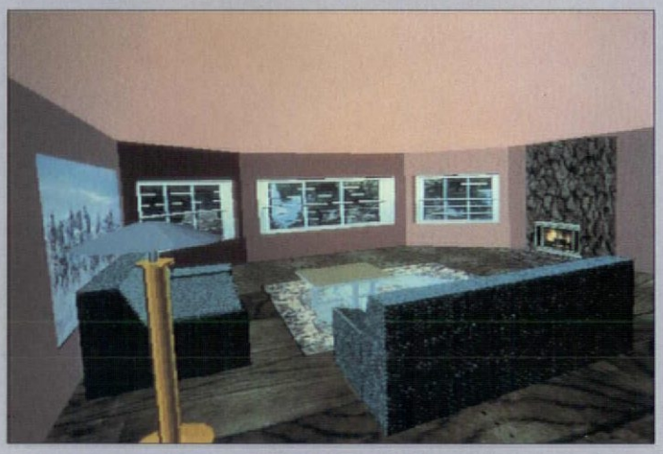


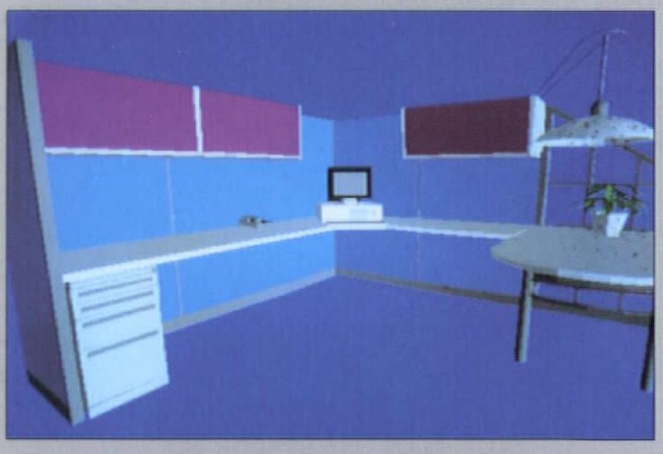
VIRTUAL REALITY

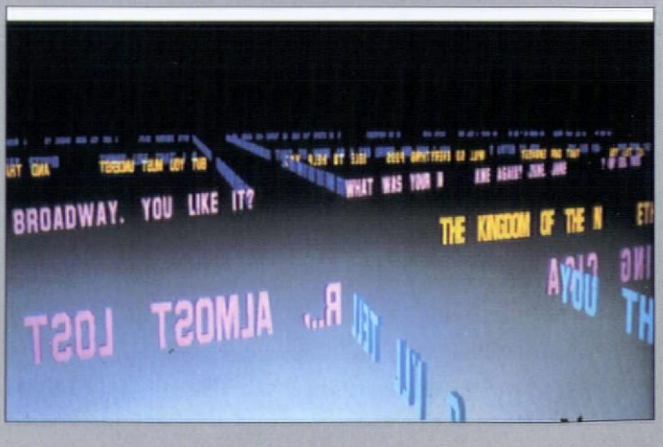
Virtual reality has a vast potential in the field of architecture. The system has been applied to regulating the flow of people during rush hour, fire safety precautions and wheelchair access. The VR User Conference and Exhibition was held at the Novotel Centre, Hammersmith, London on the 1-2nd December 1993 to assess the wider implications of VR to Construction. Jo Mentelers of the Calibre Institute Eindhoven, The Netherlands, created a real-life housing development via immersive VR techniques at a public exhibition in the Netherlands, before using it to sell homes successfully. Environmental Simulation by Hisashi Kodama, the manager of Living Environment Systems Research Laboratory, Matsushita Electric involves a system which simulates complete living environments in VR, including air-conditioning, lighting and acoustical characteristics. In the future it is planned to provide a system which will allow customers to experience and experiment with the effects of virtual appliances on their own homes. Tony Bernstein, the Sales Operations Manager for British Gas, uses VR at High Street showrooms to enable purchasers of fitted kitchens to evaluate and modify layouts before buying. Potential customers can walk through their kitchen and experience the finished design. Dr Wilhelm Bauer of the Fraunhofer Institute, Stuttgart has developed a Virtual Office Design System that enables office designers to create and enter virtual office layouts and to select and put in place a wide range of furniture and equipment, light fittings and floor and wall coverings. Presumably, architectural models will become obsolete when using gloves which transmit the sensation of each different shape, weight and surface, the client will be able to 'try out' his new home. The gloves' special electronic sensors will allow a user to interact with the virtual world. Through hand gestures, objects in the visual display respond just as they would in a physical world.

The 'Universal Geography' result of VR, is illustrated through a work by Dirk Groeneveld called *Legible City* which appears in Art of the Electronic Age by Frank Popper (Thames and Hudson). This involves using an exercise bike to take an imaginary bicycle ride through a space comprised of 3D story-lines. The angle from which these are read depends on the chosen route. Using a telecommunication link-up, cyclists in different parts of the world could simultaneously travel in the same virtual space.

Perhaps buildings will not have to be built if we can all walk around in 'Virtual buildings' and have the freedom of being wherever we want to be!





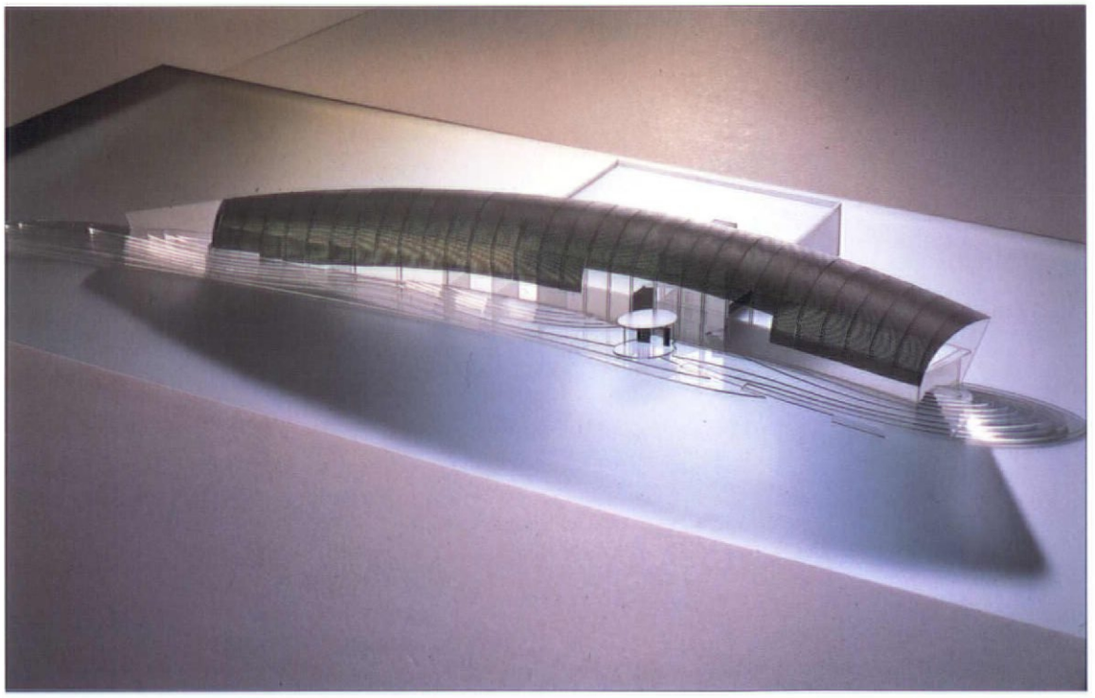


JAPANESE ARCHITECTURE III

KAZUHIRO ISHII, THE BEAM CONFIGURATIONS OF THE EXHIBITION ROOM CEILING,
SEIWA BUNRAKU PUPPET THEATRE, KAMIMASHIKI

Architectural Design

JAPANESE ARCHITECTURE III



TOYO ITO, SHIMOSUWA MUNICIPAL MUSEUM, NAGANO; *OPPOSITE:* MASAHARU TAKASAKI, TAMANA CITY OBSERVATORY MUSEUM

ACADEMY EDITIONS • LONDON

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JAPANESE ARCHITECTURE III

EDITORIAL

MAGGIE TOY

Despite devastating world-wide recession there is one area of the world where we have come to rely on a lively and innovative architectural scene. Although the pinch of financial limitation has been felt in Japan, progress thrives, albeit on a tighter rein than that of previous years. As the third issue of *Architectural Design* to chart the development of architecture and design in this part of the world, this feature is able to expose even more innovative and exciting architecture at the cutting edge.

Several factors contribute to the style of Japanese architecture today. Not least of these is economic influence: staggering land prices in the centre of Tokyo lead to a continuous need to change and rebuild. Cultural influences are manifested in the lyrical description by the celebrated architect Kisho Kurokawa of the rebuilding of the Ise Shrine, reconstructed in exact detail every twenty years only a few yards away from its previous position; creating a system of perpetual renewal and yet spiritual permanence. This intrinsic phenomenon, underlying society's perception, exists as a cultural reference point. It acts as a cleansing and revitalising process assisting the users to start anew and essentially to perceive built space, rather than the actual structure itself, as the commodity to be cherished.

Perhaps the tranquillity of spaces, such as those created by Tadao Ando, is induced by the cultural background which encourages spatial development to harmonise with the nature and content of architecture; rather than be tailored exclusively to the resultant structure. Sense is inherent in the creation of buildings from inside out, while in addition, the development and harnessing of new materials remain integral to the space-enclosing structure. It is the combination of these significant factors which culminates to produce what is indeed a fascinating architectural landscape.

The results of our latest survey include the proceedings from the 'Learning from Tokyo' forum which was held at, and in collaboration with, the Royal Academy of Arts, London. This stimulating event saw an august collection of architects and critics gathered together to discuss at length the concepts, results and significance of Japanese architecture in relation to the rest of the world.

Also chronicled here are the initiatives and innovations of the Kumamoto ArtPolis, where the organising body has dedicated itself to producing architecture of the most progressive nature in order to demonstrate the area's individuality, while responding to the needs of a flourishing city. Hajime Yatsuka describes the orchestration of the process and the excitement engendered by such a project which includes not only established architects such as Tadao Ando, Shin Takamatsu and Itsuko Hasegawa, but also new leading lights such as Shoei Yoh and Kazuyo Sejima.

A small, though significant, selection of Western influences is also featured, including Peter Rice, Renzo Piano, Tom Heneghan and Inga Dagfinnsdöttir. The focus is then transferred from Kumamoto to other inspirational and innovative creations executed by Tadao Ando and Itsuko Hasegawa; and finally to one of the latest schemes from Toyo Ito, without whom no such survey would be complete.

Kisho Kurokawa speaks of the invisible tradition: the intangible inheritance which subsists within the form of the architectural approach. Tradition exists, though not of the stylistically retrogressive ilk which often hampers design in many areas of the Western world, where sanctity is associated with the structure itself. Rather, it commands a free-thinking architectural environment uninhibited by many Western shackles. For this reason it is difficult to believe that the influence of Japanese architecture will be distilled as such in the West. However, many of the architects included here are becoming increasingly popular world-wide and the effects of this can be discerned.

Japanese architecture appears to confront the arrogant clairvoyance of Western city planners without imposing a brief for urban anarchy. This influence is being discussed at length and therefore being felt.

OPPOSITE: Shin Takamatsu, Planet Building, Kyoto

LEARNING FROM TOKYO

Academy International Forum
The Royal Academy of Arts, London. Saturday12th June 1993. The International Forum on *Learning from Tokyo.*

Paul Finch
This is the second in the three planned 'Learning from . . .' Forums to take place in 1993. This afternoon we are here to discuss Tokyo, and we are very privileged to have Dr Kisho Kurokawa with us whose exhibition is the first architectural exhibition to have occupied the Sackler Galleries, which I think we can safely say is a triumph. I'm going to hand over to Charles Jencks to introduce Dr Kisho Kurokawa.

Charles Jencks
I asked Kisho Kurokawa and Peter Popham how I should introduce them and Kisho said, 'Well, just say I'm Japanese and from Tokyo. I feel that most of you will know him or his work so I don't want to say too much. I will just say that first of all, these are strange non-directive events in which we really hope that we won't just get papers and positions, but that we'll get an open-ended dialogue which involves all. It's different therefore from most symposia and most seminars in that respect for it has no set direction, it isn't under control, except for two different chair persons, so we don't know where we are going but we do know that it's enjoyable to get to different places, particularly to a city of 26 million people in a 100 square mile area. It's a city about which everything that can be said is likely to be true. So, starting off with Kurokawa and Popham, we are setting forth with two people who have lived there, or around there, for a very long time: Kurokawa for most of his life and Peter Popham outside Tokyo in Karmakora for 11 years. Peter speaks Japanese so we are going to get two different views, the transplanted British view and the home-grown view, although Kurokawa is from a different city and was born in a different city.

I must emphasise the poly-centred, poly-morphic and poly-meaningful symbiotic nature of Tokyo, so I hope you are inspired to intervene after we have set the stage. We will get a little bit of history just to remind ourselves of Tokyo, and then we will open it up to discussion. Kurokawa is more than an architect, he's also a city planner and a member of all sorts of committees that take him into economics, social issues as well as politics inside and outside of architecture. Peter Popham equally has a wide ranging view of this city and architecture so we're really very lucky to get outside the usual restricted field of architecture and even urbanism and look at a cultural way of viewing Tokyo. So, with that sort of non-introduction let me give you Kurokawa.

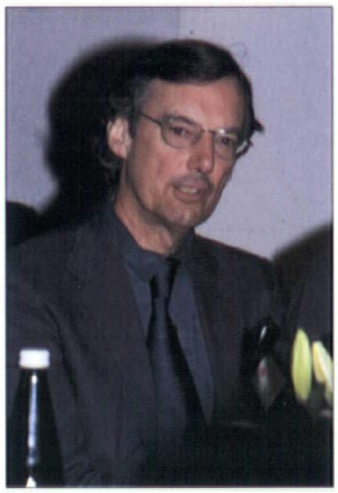
Kisho Kurokawa
I think that when we discuss Tokyo, we must keep the following four historic parts of it in mind. The first is the invisible tradition, the second is the provisionality, the third is the holistic structure and the fourth is the dense society. In the first there are traditions that are both visible and invisible, the religion, philosophy, aesthetics, lifestyle, customs, psychological environment, emotional sensitivity and a sense of order are all clearly characteristics of the people and their culture, but they remain invisible, an intangible tradition. In contrast, architectural style, works of art and traditional symbols and forms are given expression in concrete objects such as roof-shape, decorative element and traditional performing arts, and these forms are a visible tradition. The Japanese traditions, compared to those of western societies, tend to place more value on the invisible traditions.

The comparison of the Greek Parthenon and the Ise Grand Shrine will help to explain this difference. Let's imagine, for instance, right next to the Parthenon I build its exact replica made out of bright new marble. People would recognise it as a copy and would certainly not recognise it as having the same value as the original. The Grand Shrine of Ise is a classic masterpiece of Japanese Udan architecture with a history of 1,300 years but in fact the shrine has been rebuilt every 20 years. From the very start the two adjacent sites were prepared and it was planned that a new shrine would be built on each at 20 year intervals. The old design and the construction know-how was passed on from one master carpenter to the next and 20 years was the interval of this change of generation. The most important reason for this practice was that in Japan the visible object and its form might be destroyed every 20 years by earthquakes. The heritage was believed to be transmitted and the tradition preserved as long as the invisible tradition was behind the object. With its aesthetics and sense of order this was passed on spiritually from generation to generation, in contrast to the materialist aesthetics of Western civilisation, which sought eternity for its architectural monuments. We can call the Japanese aesthetics spiritual, the

special character of this type of cultural transmission has been inherited by Japanese contemporary cities and architecture.

For those foreign visitors who arrive in Tokyo for the first time, it seems an international city not so different from Los Angeles, but those non-Japanese who have lived in Tokyo for many years all believe that it is an extremely Japanese city. Tokyo has been built with modern materials and technology so that it is indeed typical to claim that it is an inheritor of the Japanese tradition in external appearance. The Japanese are perfectly willing to incorporate new cultural elements, new technology, new forms and the symbol of foreign cultures as long as they are certain that they will be able to preserve their invisible tradition. In my own architecture, which spans over 30 years, I have always incorporated the Japanese tradition and the philosophy of Japanese culture, but this has not always been evident as visible form but has often been hidden behind the latest technology and most advanced material. One frequently used technique in Japanese cuisine is what is called the hidden flavour, taking care not to call attention to the precise ingredient used, a sophisticated tip is given to a dish with a sweetener condiment or *sake*. The invisible Japanese tradition is like this hidden flavour.

The second point is the provisionality. Most Japanese cities were destroyed in World War II except Kitakyushu. When Western cities were destroyed, bricks and stone remained as proof of their past existence, but since Japanese cities were largely built of wood they nearly always seem to have disappeared completely. Historically speaking Japanese cities have been beset almost yearly with natural disasters such as earthquakes, typhoons, floods and volcanic eruptions. Edo, which now means Tokyo, was almost entirely destroyed on several occasions during the battle of the warring state period of the 15th and 16th centuries. In the great earthquake of 1923 a large portion of Tokyo was reduced to ash. This continual and repeated destruction of buildings and cities has produced in the Japanese an uncertainty about existence, a lack of faith in the visible, and a suspicion of the eternal. In addition, the four seasons are extremely clearly marked in Japan and the changes throughout the year are dramatic. Seasonal differences are an important part of Japanese culture, indispensable in the art of *haiku* for example (a Japanese poem) and one of the special features of Japanese cuisine in the use of first catch or harvest of the seasons, is known as *shun-no-mono*. When they eat *shun-no-mono*, people sense the passing seasons and are moved. The idea that buildings and cities should appear as natural as possible and that they should be harmonised with the rest of nature helps to create the tradition of accepting and incorporating the changing seasons into the human lifestyle. The tradition of making buildings and cities provisional structures evolved from this heritage. This provisionality is integrated into the root concept of the Buddhist philosophy of the doctrine of impermanence. The Buddhist concept of impermanence teaches us that the whole of what we can see is nothing more than the succession of knowledge. When Tokyo was destroyed only 50 years had passed since building had begun. The first buildings of those 50 years with their continuous growth and change have made Tokyo into a city well suited to provisionality. The provisionality that I am referring to is not only physical, meaning something that is short lived and easily amended or added to, but something that is off-centre, a symmetrical structure, an architecture that purposefully rejects consistency. All of these represent provisionality in a large sense, life is defined as the process of continuous growths, both dynamic and stable. The importance of the idea of provisionality was also a reason that we chose the biological term 'Metabolism' as the name of our movement in the 1960s.



The third one is the holistic structure, the character of Tokyo and Japanese culture which is separate from, for example, the typical craftsman's attempt to express his individuality and expertise in the execution of the details. His process of working, not from the whole to the part but the parts to the whole, is part of the uniquely Japanese aestheticity that places such barriers on details. Japanese art and architecture and Japanese cities do not reveal their distinctions or their strengths when they are viewed as a totality but as you approach them gradually and investigate the details a whole new world opens before your eyes.

Up until now the human race has moved in ever broader spheres to the world, the group, the universe, but if the 21st century becomes an Age of Life principle, I believe it is quite likely that the focus of interest assisted by such fields as bio-technology, genetic engineering and micro machines will seek to add details to other new micros; so, believing in the importance of details also suggests that the hierarchy that I have described is the symbiosis of parts and wholes. While Western architecture in cities is organised in an exemplary hierarchy from infrastructure down to the part and detail, there is a stronger feeling of autonomy of parts in Japanese cities. In previous writings that analyse Tokyo I have expressed the idea that Tokyo is a conglomeration of 300 cities, in fact Tokyo in the Edo period was forced by the ruler of Tokunaga to take up residence in the new capital, Edo. Each Lord was assigned an area and in addition to his ample revenue. Temples and shrines and monks from that region gathered in the area and took up residence, forming a city within a city. Tokyo used to be a group of small cities and this tradition has been inherited by contemporary Tokyo in a symbiosis of parts and whole. The new Japanese style hierarchy is evident in this new

Kisho Kurokawa
Charles Jencks

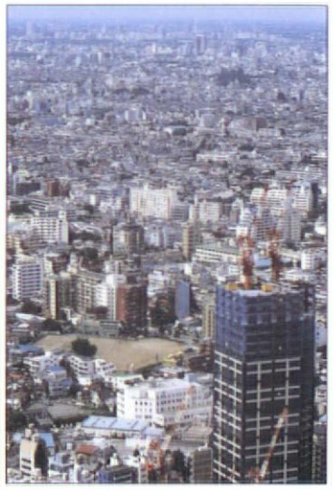
hierarchy, no city-centre or plaza, no boulevards or landmarks are necessary and there seems to be no order except for the energy, freedom and multiplicity that comes from the parts that are there. The creation of this new hierarchy is a process which makes use of spontaneous occurring forces, and for that reason it is probably most accurate to say that Tokyo today, where private investment plays too strong a role, finds itself somewhere between chaos and order.

Tokyo was already a very densely populated city in the Edo period with a population density of 890 people per hectare. The streets were always filled with people and all sorts of business was constantly being conducted on the street. In the 19th century the population climbed to over one million making it the most populated city on earth. According to Professor Dore of Oxford University, the Edo period in Japan had the world's highest level of general education for the public. This tradition is inherited by and persists in modern Tokyo. Much of Japan is mountainous and almost all level ground holds cities. Several cities around the world have high population densities, among them are Hong Kong, Shanghai and Mexico City, but the Japanese cities of Tokyo and Osaka have an extremely high population density per house. Public transportation in Japan is the most crowded in the world, so much so that there are special pushers whose job it is to cram people from the platform into the carriages of the rush hour trains. The population density of the offices is also very high, and since most offices are laid out as large rooms without divisions, the crowding is only emphasised. This physical density is reflected in business, regional society, groups and families as a strong feeling of belonging or group awareness. Japan's groupism creates a collective oriented lifestyle in both business and local regions of the country. The family system within professions and the group awareness in each occupation is very strong. Foreigners, in a sense, are different from the group cultivating a subtle sensitivity that itself recognises the most minute distinctions.

One of the most remarkable features of contemporary Japan is the density of information. Everyday, information and events from every corner of the world appear on Japanese television, in newspapers, magazines and specialist journals. Although mostly about the USA and Europe, a remarkable amount of detailed information concerning Africa, Central and South America, Asia, Russia and Eastern Europe reaches the general public on a daily basis. Such information from other countries and cultures on a popular level is unknown in Europe or America. It is unique to Japan. The astonishing development and widespread availability among the masses of the latest communication and technology, including all the audio and visual devices, cameras and the world's latest telephones, smallest portable computers, word processors and faxes has made Japan a nation with the highest concentration of information in the World.

From huge urban centres to farms in the countryside, from universities to industrial research centres to local shops and homes, these highly advanced devices have spread throughout the nation. Every year the capacity increases, their prices drop and their size shrinks. What makes this speedy development possible is the Japanese love and curiosity for the new which makes the consumer willing to keep exchanging their possessions for the latest product to hit the market. Technology which will greatly improve the quality of the information in the future; high vision television and DAT (Digital Audio Tapes), are already available, and as soon as their prices drop they are certainly going to spread world-wide. The effect of the combination of a dense society and a highly developed information society will work to increase Japanese economic power.

This wave of internationalisation, increasing density and growing information has created stiff competition for Japanese architects. The condition of the dense and highly developed society forces the Japanese architect to practice and study continuously in this society, the slightest difference is taken seriously, encouraging the architect to create works that distinguish them from their competitors. A project I did seven years ago is on an island in Tokyo Bay, ten billion cubic metres of sludge is at the bottom of this bay. We researched how we could make the struts forming the man-made island and keep its ecological environment and there is an artificial canal which flows into the bottom of Tokyo Bay. If we could create a big island in the centre of Tokyo Bay, we could provide for five million inhabitants on the island, because one of the most difficult problems Tokyo has is people living outside of it. The central area of Tokyo is filled with offices or commercial passages so that people have to commute by tram, car or the subway; the average commuting time is one hour, sometimes two hours, so if we could transfer five million people from the outside of Tokyo into the centre, we could save a large amount of public investment. I tried to keep the existing Tokyo as it was without any big development project, but the two canals were necessary for the prevention of fire. If we had an earthquake, measured at 6.5 on the seismograph, from our calculations 46 per cent of the living area would be destroyed, so the only way to prevent such a disaster would be for the two canals in the existing city to be very efficient.



Another proposal I made seven years ago was to connect Kyushu Island, the southern island, to Shikoku Island by tunnel and erect new bridges from Shikoku Island to Osaka going towards Tokyo. This would make a new conglomeration of existing cities including Osaka, Nagoya, Kyoto, Kobe and other cities in the Kyushu and the Shikoku areas which

Peter Popham
The borderless sprawl of the city

would be the only way to decentralise the power of Tokyo. It is almost impossible to decentralise the population or industries from Tokyo because Tokyo is so strong and we are now living in an information society. This information society means that human resources are the only resources for the future. The only way would be to make another big city or big conglomeration of this city-like structure in the western part of Japan by using the existing structure including new trains with speeds of 530 kilometres per hour and also improving the highway. Another sophisticated way to make a connection to the small local cities would be to make a conglomeration of the western part of Japan in each area, and to combine local cities to rural cities, we could make quite an interesting information city in a rural area. This is an image we have for the 21st century against the centralisation of Tokyo.

Charles Jencks
Thank you very much Kisho. Peter Popham has written a book called *Tokyo City at the End of the World* and in it he talks a lot about the ephemerality, the provisionality and indeed the ever present danger of earthquakes, Peter . . .

Peter Popham
Several things are striking about Tokyo when looked at from a European viewpoint; the area it occupies is almost entirely flat and the coastal flat plain stretches most of the way down the western road which goes to Nagoya and onto Osaka and Kyoto. The reason that Japanese cities are able to spread in the way they do is partly because there is so much flat land and that the rice paddy converts so readily to urban uses while the city stops short when it comes to the mountain to the west.

The Sumida-gawa River in the traditional heart of the city stretches as far as the eye can see. When you arrive in Tokyo from Europe this is the impression of the city which takes such a long time to come to terms with, how it just spreads across Japan like a vast field of lumpy porridge and I think that one has to recognise that it is an extremely ugly city. It is also a very fast moving city, perhaps the strongest contrast to a place like London is the ease with which circulation happens, not particularly in terms of roads but in terms of the vast numbers of people who are shifted round with great efficiency and speed and with very few hitches. One of the reasons is because, in contrast to the great cities in Europe, the flyovers have been cut through in a much more ruthless fashion, it is much harder for citizens to mount campaigns to stop their neighbourhoods being torn in half by road development schemes.

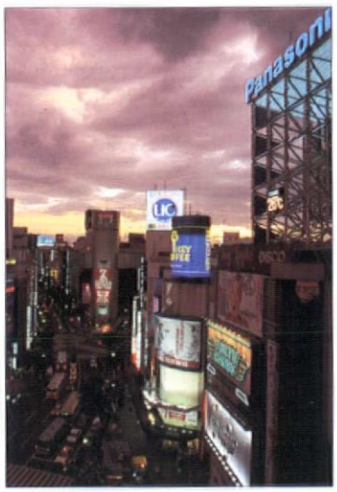
Arriving in Tokyo you know it's a city on the bay, you wonder where the pleasures are of living in a city on the bay and in fact they are not to be found. Ever since the middle of the 19th century the shore has been eating away at the bay because of the pressure to make maximum use of the land they have got; there have been land recreational schemes which have been in progress for a long time and it produces a very efficient use of the other city land, although it is not a great deal to look at.

However there are reasons why people grow very fond of the city, the first is that every type of architectural development is crammed in without any concern for the impression which the whole picture makes, it is just a complete random conglomeration of economically viable elements. Second, the most glamorous face of modern Tokyo, which is only apparent at night, has a lot to do with the fantastic quality and importance of Japanese neon signs. Roland Barthes made a great deal of this, quite rightly, that in a way the signs are more significant than the buildings and at night-time the buildings disappear and the signs are left hanging in the air and you suddenly have an unfamiliar image of urban glamour which is quite persuasive and quite novel.

The problem with Tokyo has been finding places to put high buildings, in the 60s they covered over a reservoir in Shinshiku, not far from the centre of the city, and put in a new park of skyscrapers. There is also a filing cabinet style of office block which you find everywhere in Tokyo. The first office towers went up when they decided they were safe from earthquakes in the 60s and they have been rising steadily wherever they can put enough pieces of land together. The picture of the city which I have been building up so far has been, I expect you'll agree, a rather dreary and bleak one, and it is the reason why people who know the city and are very fond of it tend to ask themselves, 'Why on earth do I like this city, what is it about it that is worthwhile and likeable?'

However, there are the odd bits of park in Tokyo which are very beautiful. Some Japanese critics like to say that the office towers fronting some of these parks form the modern version of the Japanese idea of borrowing the landscape to form a backdrop for your garden. The Imperial Palace near the middle of the city has a great deal of elegance and a sort of feudalistic awe about it, nevertheless it's a rather chilling part of town and I think that it is hard to find people who are actually as fond of this part of Tokyo as it's inaccessible to the public. If you look at it from the sky you think that Tokyo has got plenty of green but you cannot get into it, it's for the Royal Family – a situation we are familiar with in Britain. The Shrine in Asakusa is an extraordinarily popular place full of atmosphere and in fact is only 50 years old because the original was burnt down in the bombings and this one is made of reinforced concrete.

Kyoto is a much more satisfactory city from the point of view of traditional relics; which brings me onto what it is about Tokyo that is special, and also what it is about Japan that is special. Is it the smooth and rather old fashioned way of life which is carried on by the people who have enormous respect for



Alan Cunningham
Shibuya Station by night

their professions however humble they may seem? Is it is also the way that Tokyo often seems like one house occupied by a very large and rather chaotic but very close family where men go to work shaving and the trains are full of people who behave with a complete lack of inhibition? It's a common sight to sometimes find an entire carriage where everybody's asleep, and you may just faint in the middle of the station, it happens all the time, and people will step over you, no harm will befall you, the idea of having your possessions removed would be extremely improbable.

There is a closeness about Japanese society which allows it to work in a very smooth way and the extraordinary achievement I think of post-war Japan is to have created this extraordinarily brutal, ugly and unattractive physical environment and yet to have preserved so much of the emotional quality of life that existed before it. One is still left asking the question, 'What on earth is there to be learned from such a place?' The fact is that architects have an enormous amount of freedom to build what they want; it's surely very enviable from the point of view of architects working here and yet because the chaos is so vast and so unrelieved the effect of any particular architectural design, I would suggest, is very limited by this. An example of this is that a lot of foreign architects have built in Tokyo over the last ten years, but I would suggest that of those who have built there, the one who has had by far the most impact and the most popular success has been Philippe Starck. Barely an architect, and building really quite cynically to shock and to astound in a city where it is necessary to shout at the top of your voice to be heard, is what Starck has done with his extraordinary building in Asaksa with the golden sperm or whatever it is shooting from the roof. We could learn how to make our city much more functional, how to make our trains run more on time and at a faster pace so as to render our own archipelago into something such as Dr Kurokawa envisages. I am not sure that this is something that would chime with the moods of the people of this country. Maybe it should.

It's mystifying, to answer one of the first points that Dr Kurokawa made, to talk about the invisible tradition of Tokyo. If you say that the important tradition is invisible, it follows that it doesn't really matter what you do because the tradition will continue to survive. I don't however think that this is the case and I think that one only has to go back a couple of generations to find evidence that Tokyo used to be an infinitely more delightful place than it has become, and that the environment of Tokyo has suffered colossal damage as a result of unimpeded development since the war. In the last century it was regarded by visitors from the West as the most beautiful city in the Orient right up to the 1920s; writers such as Nagai Kafu were celebrating the melancholy beauties of the city where you could still enjoy the rivers and the trees and the gardens which are now lost. The invisible may remain, but invisible it surely is. Thank you.

Charles Jencks
Thank you Peter. I like the way you face the question so directly, and the way you both underscored what Kurokawa said and also took issue with one of his points. I think before we open it up I should ask Kurokawa if he wants to respond.

Paul Finch
Geoffrey Broadbent

Kisho Kurokawa
I think that I quite agree with your perspectives of Tokyo but maybe it would be better to add to some of the facts we have already learned about Tokyo about why such confusion is happening there. Possibly the facts behind the economy are unclear to you, for example if someone wants to build buildings somewhere in Tokyo, they need money, they need a budget, but more than 90 per cent of the budget will go towards the cost of the land property and just ten per cent will go towards construction costs and architecture. That is the most important difference, comparing Tokyo with London, or Tokyo to Los Angeles, or any other city. Of course the property cost in a city like London with its central area is very high, but Tokyo is completely different especially in the last ten years, for the speculation goes into the buying of the property and building new architecture and not the architect's fee. Also due to the high cost of land in the central area, if we make a four lane street due to public investment one hundred metres of the street costs one trillion Yen, which is about one hundred billion US dollars. It is impossible for the government to make a street as now every part of the construction is done by the private sector, so how can the government control this situation?

During the Edo period and the Meiji restoration from the 17th to the 19th centuries there was a marked difference in the way of thinking. In the Edo period we still kept the Japanese tradition in the visible way, as Peter Popham has shown, in the park or small shrine that we had in the late Edo period, but after the Edo period we got a new kind of revolution called the Meiji restoration, which was the age of modernisation, where cities were changed so as to be based on the text book of Western culture. It is very easy because for Japanese people visual tradition is nothing, if we can keep our lifestyle fitted to the traditional way then we can easily import and plant into different cultures, it is this that makes Tokyo quite difficult to understand for outsiders, but for Japanese people Tokyo is very easy to read and very safe and very dynamic. There are many interesting places, the restaurants are very good, so the only difference between Paris and Tokyo is that Tokyo does not have a visible tradition. We now have a generation that was born in Tokyo which is different from the Edo Period, where 90 per cent of

the people came from the countryside, and the Meiji era and Tyshoo eras where 70 per cent of the people came from the countryside to Tokyo so they had no relation actually within the area.

Now we have a new generation like Toyo Ito or Itsuko Hasegawa who were born in Tokyo and have spent their whole life there. For them, the artificial things like technology or concrete *are* nature, actually the massive concrete city looks like a new mountain or river, and that is why the new tendency of the younger generation is easily making a high-tech architecture as second nature or their own nature.

Peter Popham
I would like to say that one of the most attractive things about Tokyo is that a great deal of that rich texture of commercial use has in fact survived and this relates to the idea of an invisible tradition in that the look of it might have changed but the guise is still there. You can still buy your lacquered *bento box* or get your shoes fixed or whatever – tradition hasn't been homogenised or wiped out and replaced by large-scale things – this is in a way what America and other people are trying to export to Japan and are continually complaining because of the dense distribution network. It is what prevents large numbers of goods from flooding in although people do go more and more to great big malls outside the centre but the little places survive and they are convenient and they are familiar.

Charles Jencks
It is decentralised everywhere, the periphery is one hundred miles of the periphery everywhere even in the centre.

Paul Finch
Is there a sense in which there are villages in Tokyo, that is, can you identify certain areas as being as it were, a village in itself, like Hampstead, and on what basis is that to do with the economic status of the residents?

Kisho Kurokawa
Yes, lifestyle is also different from area to area in Tokyo, many people still have their roots from where they descended. The Aksaksa area for example, is closely related to the Tohoku area in the north-eastern part of Japan, so the many people who speak this dialect live there and we can feel the different lifestyle.

Peter Popham
But also there is a different class distinction quite apparent in Tokyo. A very simple one is between the people who live in the flat areas, called *Shita-Machi* which means the low city, and the people who live in the *Yamanote* areas, which means the fingers of the mountain, which are the more salubrious areas. As in the case of London, Tokyo is divided with proletarian areas in the east, the areas where people like the new empress live in the west and the suburbs which have risen up above the teeming floor of the city.

Paul Finch
Are those geographical and class and economic subjects represented in a visible way, I mean if you are moving about Tokyo, do you get the sense that you are moving from one part to another. Just how defined is it?

Peter Popham
Well, I think you do actually, you do move from east to west because the east is much the oldest part, there's Asakusa which is the most popular shrine in the city with millions of people around it, which has been neglected because it is outside the loop railway line which connects all the other main sub-centres, and so it is forgotten about. The area is still basically quite poor and traditional and it feels quite distinct from the western city which is all the boom area.

Peter Cook
One thing that interests me about every Japanese person is that once I get to know them reasonably well one finds that they're amazing gossips, the other is that there is this curious relationship or non-relationship between what you are supposed to appear to be and actually what you really are.

When I first went to Japan it seemed very familiar to me, and probably appeals to a certain wing of the English consciousness in that it is a tightly packed, damp island; certain philosophers look at people from the mainland as having come at some imperceptible moment; in the same way that the UK is taking its cultures from the Continent but deliberately choosing to get them slightly wrong. This is, I think, a fascinating analog. The very narrow roads upon which people drive on the left between small fields seemed immediately familiar, and also the English predilection for the picturesque, which in our case leads often to distasteful things, seems more tasteful in Japan because it's different. Also appealing to my particular tastes is the combination between the amazing *finesse* of certain details and then the terrible air conditioning parts sticking out of it, all with an extraordinary collage of the extremely refined and the silly, the inventive and the kind of, 'My God, how did it get like that?'.

I'm very interested in this notion of how on earth you find your way about, how you can tell if you're in one part of Tokyo or another, it is fantastic training for somebody, you need to have more than just an eye; after being there a week or two you develop amazingly accurate eyes. The other extraordinary thing is how many drinks machines there are. I have had long conversations with other visiting Europeans trying to invent a whole series of social, political

Peter Cook
Cezary Bednarski

and economic, or whatever reasons, as to why there are so many drinks machines. The other fascinating thing is whether there is in other cities the feeling of a locality trapped behind a main street. I think certainly in some of the areas of Shibuya there are these three tier major streets with six- to eight-storey average building size and then immediately behind something goes right down in essence to village scale, but there's an extraordinary calmness to these small areas. Although they may be changing relentlessly there's this tremendous village atmosphere, so I think there is this tight packing into time, tight packing into space and having to develop fantastic antennae because you're probably dead at 40 anyway.

Paul Finch
Can I just ask if there is a sense in which the younger architects are responding to, let's not call it tradition, the new architecture of Tokyo? Are the sorts of buildings they are doing actually building on what has emerged from modernisation and the ending of that rural city-link, or is there a city architecture which is a specifically 'Tokyo architecture'?

Peter Cook
It's funny, but many Japanese architects tell me that they get very few opportunities to meet each other. I would say that there are those that are now infinitely more aware of traditional values based partly by things that Kurokawa and people like Arata Isozaki have been talking and writing about, and I think that's an inevitable reaction but not much chance really to put it into operation, but then there's a parallel and an even zanier fringe than there might have been. I began to think it would all go Po-Mo but it didn't, it's now gone sort of zany. Three to five years ago we thought it was all over and that it was all going to get fairly straightforward, but now there seem to be even more eccentric people than there were five years ago building in very inaccessible places.

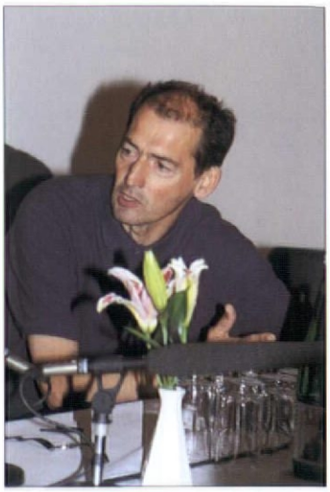
Rem Koolhaas
What I found interesting in the two presentations is the contrast between European tradition from the European viewpoint and the Japanese view. There seems to be a very big separation between the way Japanese architects are now looking at Japanese cities and Japanese political discourse. I was very struck that in almost every Japanese city I've been to there was a lot of evidence of attempts to improve the city; not in the Japanese way, but according to very trivial Western models. So I find it an interesting discrepancy that on the one hand politicians seem to want to move the Japanese city to a more recognisable form where, for instance, the public domain plays a major role and on the other hand architects are interested in making Japanese cities even more Japanese in terms of chaos and control etc. The other point which I found interesting is that it is said that since the value of the Japanese building is at most ten per cent of land value, the value of the architecture is thus almost accidental and that fact alone tends to diminish the importance of the architecture; also the statement that Japanese architects have to work incredibly hard to create distinctions and differences between themselves. What is the relationship between these two observations I wonder?

Kisho Kurokawa
I think the major part of Japanese structure is still continuing from the Meiji restoration – this means that Westernisation is still the mainstream especially for the Christians. The architect's thinking for the future city is completely different to the governor's or mayor's thinking. People say Japan is very rich, but to the Japanese government it is quite poor. The total deficit the Japanese Government has is bigger than the USA's, so the government is poor and money is solely in the private sector. Each citizen is still poor because of the high cost of the property and usually members of the public cannot live in the central area, but Japanese enterprise has a huge amount of money which they have no idea how to spend, so it is always speculative when buying property and also investment for foreign countries. Their idea is just economically oriented. They have no idea how to find a new philosophy and the government is still thinking 'Westernisation', they tried to make a Champs Elysées, a Central Park and they try to make skyscrapers, which is not the idea of a professional architect.

Rem Koolhaas
What is the idea of Japanese architects for the city?

Kisho Kurokawa
Almost all of the architects who don't belong to the bureaucrats think that we have a very interesting process of finding new ways of living in the city, it is a completely different way compared with the Western lifestyle.

Rem Koolhaas
I once did a test for which every time a Japanese said, 'Japanese', I would say 'Dutch', so I completely transformed their Japanese discourse with Dutch discourse. So I would start, 'We in Holland', as if there were a kind of vast unbreachable gulf between anything I would feel, do or think and anything a Japanese could ever imagine. I would then claim that everything I did was actually not me but was a period 150 years ago. In other words, I was struck by how the Japanese could defend themselves and the incredible barriers they had and the extent to which they don't take responsibility for the present. We live in a special moment right now. To what extent is that special moment different from



Rem Koolhaas
Crowded traffic junction, Tokyo

all the other special moments that everybody in this room is living? We all live in an ugly city like London, or we all live in an ugly city like Tokyo or Los Angeles or New York, we all know a lot about Africa although we say the Japanese say they know more about Africa than anyone else needs to know about it.

Charles Jencks

Architects such as those in the 50s, 60s and 70s, who were associated loosely with the Kenzo Tange background, looked to the West for a lot of their images and understanding of how a city should work, and to a certain extent they were always trying to think about the city as the *ville radieuse* in Western terms to give it a visibility, legibility and comprehensibility. That was the mental set which an architect like Kazuo Shinohara was brought up with and for 30 years or more he laboured under this idea and ideology and world view of modernism and structuring the city; then maybe in 1983-85 he started to re-read Jane Jacobs again and saw the city as an economic institution and realised that maybe he was applying the wrong kind of thought patterns as an image to the city; so clearly on one level Tokyo was a great success, although he felt it was still incomprehensible and extremely ugly, and then he started to read Prigogine and chaos theory and theories of self-organisation and suddenly he had his conversion and he said, 'Hey, all this ugliness is really beautiful, we just aren't looking at the right patterns of chaotic!' There is a way in which there is an order amid all this jumble but it isn't the usual kind of order those of us who have been to Tokyo might have expected.

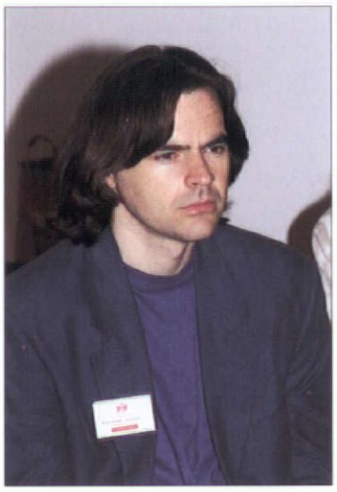
When you move about the city in a car you move about three miles per hour, which is the speed at which you often walk, and if you want to travel around by car you find, as Peter Cook has been saying, it's so small scale that it's like being in a furniture shop with a whole lot of other furniture, in other words, it has an extraordinary opposition here, on the one hand chaotic, furniture scaled, small scaled, impossible to move about in, while on the other hand underneath the city or along these high speed routes is an incredibly dynamic city. Due to chaos theory and Jane Jacobs' writings we are now in this position of looking at Tokyo very positively, its mixture and its urbanisation which it takes to an extreme.

I remember seeing Kurokawa's big box building in 1976 with 22 storeys and each floor had something completely different on it, rather like the Pompidou Centre. It is more extreme in its differentiation with five ethnic restaurants down to the bottom floor and shooting by laser gun up on the 12th floor. On each floor there was a completely different function and way of life, so I romantically thought that when I saw that or the barricades that Peter Cook was talking about, a high rise sky-scraper and right next door to it a tiny Shinto Shrine, and then a wedding going on with a bulldozer pushing through the wedding, these are incredible juxtapositions and incredible dynamisms; incredible chaos and no noise, while at the same time, through the friendliness of the social structure of the people, these images remain and they make thinking about a city non-architectural. So I would like to ask Ben Wooley who made a film, *Tokyo New Town* for the BBC about a year ago and Martin Richardson who's here too, if they'll respond to how they, as non-architects see us, mostly architects, here thinking about Tokyo. Are we thinking about it in the right way?

Benjamin Wooley

Well, it's difficult to say if you're thinking about it in the right way because it was a very difficult project. Martin Davidson and I went out to Tokyo with one camera in that big city and tried to make sense of it we were then told that you can't make sense of it. We tried to make sense out of *not* being able to make sense of it and so on. The way we did it was to actually concentrate the programme around the City Hall that's being built, and the criticisms of architects like Dr Kurokawa about the City Hall, because it was this great big Western marble cathedral-like skyscraper. In fact it looked like one end of Notre Dame, I think that was Dr Kurokawa's comparison of it, and it contradicted everything that Tokyo was supposed to be about. There was a ready supply of arguments about that, on the one hand there was Kenzo Tange who was the architect of the City Hall who represented the modernist old style of what the city should be like, and on the other side was the very post-modernist view. However Martin and I came back just glowing with this feeling, as Peter Popham was talking about, that you come away from the place liking it but could not for a moment really figure out *why* and you come up with this great theoretical framework to try and explain it. As was mentioned earlier it's a completely un-architected sort of city and we were presented with this strange position of doing what was effectively a bit of architectural television about the least architected city-made capital city in the world. We talked to lots of architects about it and they kept saying, 'Well, it's not really a matter of architecture at all, it all sort of spontaneously comes out of the ground,' and it's those sorts of strange contradictions that make it such a difficult place to talk about on the one hand, and also the easiest place to talk about on the other, because you could say anything about it.

Ultimately I suppose that the most spectacular thing about Tokyo was its statistics; the fact that in the entrance hall of the new City Hall amazing computer graphics are produced. This really did look remarkable and seemed to be the true landmark of the city, and it did appear to yield to any number of different things that one wanted to give it. Perhaps this is why Rem Koolhaas said you could



Benjamin Wooley
Expressway interchange, Tokyo

just switch the terms around a bit and still make sense out of it, which for our purposes was great.

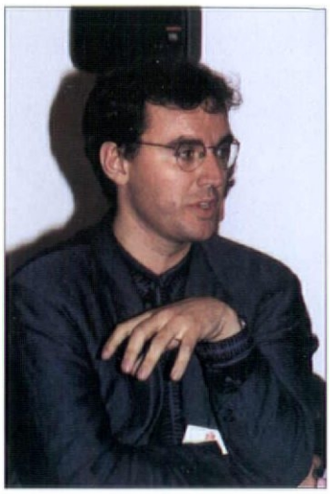
One of the things that Martin was just telling me in respect of 'Learning Lessons from Tokyo' that struck us, and that maybe has an application to other cities, was that public spaces were worked out; there weren't any parks – compared with London there are not that many parks – but as we've pointed out, everywhere is a public space, every street corner you go down and tiny little back alleys are a public space in the sense that there would be people wandering around. It's Benjamin Warner who describes that you could just dig a hole anywhere in Tokyo and people would just flood in; it was how the place felt, and that was one of the things that left us overwhelmingly with this sort of warm glow.

Martin Davidson

I arrived in Tokyo with the advice of a BBC colleague who had made a Panorama programme about Japan and he said, 'I don't know why you're going to Tokyo, it looks like Croydon, it's awful!' and judging from the view from my drive from Arita this description was absolutely right. I thought, 'As I've got five weeks of filming to do, what on earth am I going to film, it looks awful?' and that evening, jet lagged admittedly, the woman who was doing our translating took us, first of all, to Shinjuku on the Yamanote line and then to Shibuya and I fell in love with it. I was dragged screaming from Tokyo five weeks later. It is the most amazing city, not for the department stores, nor for the formal areas, it's because it is an absolutely public space in the way that perhaps the piazza in the middle of Siena is, there are very few other places I have been to in the world where that is true and it wasn't intended to be.

I came away with two impressions, first that there is no space in Tokyo too small to be public and second, wherever you are you are supposed to feel alienated, to feel all these terrible things as I was forewarned which would be evident in the faces of the Japanese people you met; however it is completely untrue. These are the most gregarious, outward-going and outdoor living people I have ever seen in a city, and I completely fell in love with it. I suppose it is a version of chaos theory I'm drawing on in that no matter how large the picture yields degrees of microcosms of itself you give up on the large picture and concentrate on the small.

I went to see the movie *Falling Down* last night which tells you about, among other things, Los Angeles. It's about what happens when there is no public space. The white man's crisis in America is what happens when he realises the consequences. You could not make that sort of film in Tokyo because the people would be too helpful, the journey home too un-problematic. Another example of chaos theory are the thousands of replicas of the Main Central Ise Shrine on the other side of town. There's one that's medium sized, one that's tiny, about the size of a dog kennel, and they are all identical and they all get knocked down, and they each have a little site next to them. It's the most extraordinary idea which we thought undermined our notion that the value of the building is synonymous with its permanence. It is curious to have a building that you happily raise to the ground and replace and then there is some fact that started to come together which is that 25 per cent of Tokyo has been rebuilt in the last five years. Well, you add that up and that's every 20 years the whole lot has! This was a fact going at the backs of our minds, does the Ise Shrine really provide a metaphor for urban flow? We thought, possibly not, but nobody else had explored it so we wanted to see what would happen.



When we came back to London there was an interview with Arata Isozaki, who made this concept really gel in our minds as a way of understanding Tokyo, that here is a mentality, a view of the city that is fundamentally different from ours and he said that in 1923 the great earthquake wiped the city flat and in our film we mixed footage from 1923 and 1945, a period 20 years later when Japan was wiped flat by the Americans; again 20 years later the 1964 Olympics were to be followed in 1985 by the economic boom where Japan took over from America; and suddenly this '20 year' idea appeared absolutely correct. When you add those figures up you think that by whatever cosmic coincidence, there is presence here, something that does explain why. When you talk to Japanese architects you see evidence, of which Dr Kurokawa epitomises, of Post-Modernism and the Pre-modern Japan with its emphasis on things that lie beyond the material.

There's another observation I would like to make, we also went there to make a film about 'chaotic architecture' and it kept going through my mind that it was chaos we saw as exemplified both in the city fabric and in specific buildings. However it suddenly occurred to me that the reason that the architecture is chaotic is because the social structures aren't. In Los Angeles this is a real problem, it is a city that could eat itself and *is* eating itself, with chaos that is a difficult idiom to play with, and if you're simply going to play with it there are real risks attached; whereas I got the impression in Tokyo and Japan that you could afford to be chaotic in your architecture because that's where the chaos stops, it didn't seem a society at its own throat.

Benjamin Wooley

The one question is of course whether this chaos can continue, I mean, how much is it the result of the economic circumstances? One of the main characteristics with chaos is that it has always been a very high volume of energy; there's a lot of economic energy feeding into the system that's keeping it chaotic and I don't know whether or not there's talk of the recession in Japan, as I understand it, but

Martin Davidson
Shinjuku streetscape in the Kabukicho area

there has obviously been some sort of turning point and I don't know whether that would have an effect on this image of the city.

Charles Jencks
Can I ask Colin St John Wilson or Sir Philip Dowson about this notion of visibility and comprehensibility and all these things that don't appear to be there. Colin do you want to say something?

Colin St John Wilson
Well, what's been said about Shibuya, which I've been to very briefly, really almost sweeps that question away because I think that was an amazing exposition just now of what actually isn't chaos. It's just a different kind of order, it has to be because it has a structure. I'm quite tantalised at the moment by the fact that next week we are going to celebrate Giancarlo de Carlo and his work in Urbino. That is the exact opposite thing which is to draw extraordinary new things out of something that's very old and very stable. But Giancarlo also talks about disorder because of the way he sees architecture socially as an unpredictable response. I'm feeling rather dumbly unable to go beyond understanding that there are kinds of order that one hasn't articulated and I don't think the word 'chaos' helps in the same way that Giancarlo de Carlo says disorder doesn't help either. However, under different circumstances of social and probably philosophical and religious connections quite different orders can take place and flourish.

Sir Philip Dowson
Well yes, I follow Colin, and I'm inclined to ask what it is in Tokyo that can provide the loose framework in which this volatility and vitality can live, and people can actually use the city as well as being a part of and feeling a part of a larger corporation? How does that work within the government and how does that actually politically, within Tokyo, manage because, as Colin says, clearly there is chaos theory but is there some very close social order?

Peter Popham
This has come out several times already, but the amount of power which the authorities have in Japan generally is very circumscribed, and one of the reasons one can point to the human and social success of Tokyo is that it is very difficult for authorities to compulsorily purchase large areas and re-locate large numbers of people to set up into another.

One of the few examples there have been in the last 20 to 30 years of large-scale development in Tokyo was put together by the man who died a few months ago, Mori Taikichiro. He was one of the richest men in the world, who painstakingly over a period of many years bought up little plots of land, cajoling and bullying residents and gradually accumulated a large development. I think the fact that we are not talking about chaos is very important and we are also talking about an extremely circumscribed political framework which means that political central initiatives for central re-development get nowhere, and as a direct result small, socially strong communities continue to flourish.

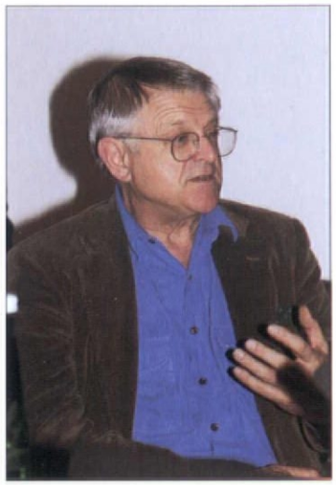
Caroline Walford's book, *The Enigma of Japanese Power* is significant here because Japan often strikes people who are not familiar with it as an authoritarian place and yet the authorities do not have a great deal of direct power, so it is hard to locate where the power exists and where it is exercised. The society does have this charm and this resilience.

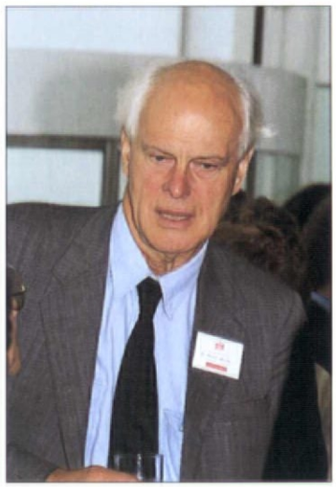
Charles Jencks
Paul Waley has also written a book on the Japanese city, so we will get another viewpoint.

Paul Waley
I have been very much in agreement by what Martin and Peter have said just now about the strength of the social order in Japan, and I feel this strength permits people to live in a world of physical glut and in that sense it's the contrary to the western urban order; it's also interesting that inside the Tokyo/Japanese dwelling there is also a great deal of physical clutter which is surprising because you'd think that if you lived in a very small space you would have to order your property very carefully; and of course, with the danger of earthquakes, you would want to be very careful about how you arrange your own personal property.

In my experience, if you go into a friend's house in Japan you'll find that everything is stacked upon something else which is stacked upon something else, a sort of danger zone in case of earthquakes. If I could just pick up on a few points mentioned earlier, to what extent do the Japanese relate to the concept of public space? One of the marvellous things about Tokyo is that people do feel at home in the streets.

The British often think of Japanese cities in terms of villages, like we often talk about London where the old centre expanded and absorbed various villages, and so it is very easy to think of Tokyo in similar terms, and architecturally maybe it does lend itself to that interpretation. But socially, I don't think that helps us to understand Tokyo, and in fact the communities that exist in cities like Tokyo have developed since the 1600s, so there's a very long tradition of communities developing and people getting on together, and so I see the Japanese cities, especially Tokyo, as a sort of meeting place within which there are lots of smaller meeting places like Shibuya, and there are still smaller meeting places so it helps to see Tokyo in terms of a place where we can meet and where people are converging.





Colin St John Wilson
Sir Philip Dowson

Charles Jencks
I wanted to drag a red herring across this argument because I think it's probably wrong, but Bernard Rudofsky, who wrote the book *Architecture Without Architects*, also wrote a wonderful book called *The Kimono Mind*, and at the end of it he makes the point about the *banchi* system of numbering and laying out of the traditional city as different from the system of numbering in the West. Let's take Thomas Jefferson as an example of a typical western architect who laid out America from Washington DC to Los Angeles as a series of grids, and because we believe in Egalitarianism, and democracy and the rule of Reason (the Enlightenment) we legally inhabit this grid in a way that makes sense and so we number our streets accordingly: first Avenue, second Avenue and third Avenue which results in a highly rationalised, specialised city. The argument was that over many years the Japanese number their buildings and their streets, not One, Two, Three, Four, Five . . . but the first building is number one, and then the second building over there is number two, and the third building that was built is number three, so this forms the district 'onion' other than the Cartesian space; it's the 'onion' versus Descartes.

The virtue of the 'onion' as proposed by Bernard Rudofsky is that it keeps bureaucratic centralised government from sending you a draft announcement because the postman can never find out where you're living! It's certainly true that when you want to see a building by Kurokawa you have to get inside an 'onion' and ask someone who knows which way to go. So clearly this *banchi* system, this 'onion' system is a privileging of time as to who's there second, who's there third, it's a kind of feudal thing, it's history over space. Now, I say this is probably a red herring because I have asked Peter and he says it's more or less untrue and Kurokawa will probably say it's not true either, somehow a deep structure that still remains. When the Americans came in the Second World War they changed all those things to a grid and they re-numbered the streets but after 20 years apparently that fell apart and the *banchi* system made its mark again.

Paul Waley
Well, I would like to say that I agree to a large extent with that idea and I think it goes back to what Martin was saying about the pre-modern and the post-modern and there being a sense of continuity; so that time, in a sense, is more important than place, so we can interpret a city in a contemporary and different way from our interpretation of Western cities. If you look at Kyoto and Tokyo you can still see the blocks of the street patterns.

Kevin Rhowbotham
This naming system is all to do with the way the Japanese write as opposed to the ways of the West in using, for example, the pictorial system. We are constantly talking about the differences between various positions as if they were permanent rather than speaking about the difference them. For example, the difference between private and public is bound to change in Japan as it has changed in the West, surely the issue is that there is a difference which allows a meaning to be drawn into it.

Peter Popham
I think this *banchi* thing is interesting but it just wants explaining slightly more. The basic idea we are talking about, for those who are not familiar with it, is that instead of having streets with numbers off them, you have, in an ideal form, simply a square which is then divided as people buy bits of it and the location of any address is given according to a position within a block which can be magnified to the area of the whole city or shrunk to the level of the individual block units, so it's a very different way of organising urban space.

Paul Finch
One interesting thing that seems to have come out of this discussion is to what extent one could substitute London or Paris for Tokyo in these things. If one thinks about the business of Tokyo rebuilding itself over a decade that's exactly what the City of London has done and if one thinks about a complete breakdown of planning and political ideas in relation to the city, then you could think about the Isle of Dogs. I wonder whether the relationship between architecture and the culture from which it springs can handle a completely disordered architecture? How Japanese is this or how much is this a particular example about Tokyo and to what extent could one actually switch most of these arguments, whatever the particular difference is to, for example, Los Angeles?

Kevin Rhowbotham
I think particularly in this case that architects look for order because this is the kind of discourse they feel represents the natural condition for the way they operate. Clearly Japan is strictly ordered from a particular perspective; that perspective does not have an architectural point of departure, as opposed to the rather conservative and retrogressive culture that has established itself in Britain, partly as a result of a kind of interest in a regressive neo-rationalist and political approach to the city which has continued. I think that we have to be careful with our understanding about the way urban organisations might be established because we are seeking to find an end before we have actually looked.

Peter Cook
There was a certain generation, Kisho will know about this, where you worked for a certain person

Paul Waley
Shinjuku streetscape with roof top advertising

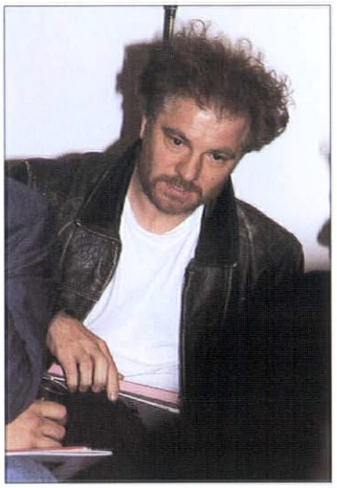
and it was suggested that perhaps it would be useful to marry person X; it wasn't until you left that office that you could marry the person you wanted, person Y; and there are layers and layers of this which I am intrigued to know whether there is any equivalent of the sort of cynicism, street-wise or whatever it might be, that makes the parallel with this country start to break up. The one thing that is always said about this country by non-English people, is the continuing survival of the class system. A parallel I am intrigued with therefore is how long this might survive. I am always itching to hear of deviation.

If the hypothesis that seems to be agreed, is that there is this stability of the system, of the connections of the firm, then it appears that the mind the culture can absorb I would call 'play'. There are various layers of 'play'. The first is an acceptance of visual play which is extremely difficult for most Europeans to comprehend, the English would probably get nearer to understanding it than the French or Germans and certainly the Americans. There are many layers of the visual, one of them being habit.

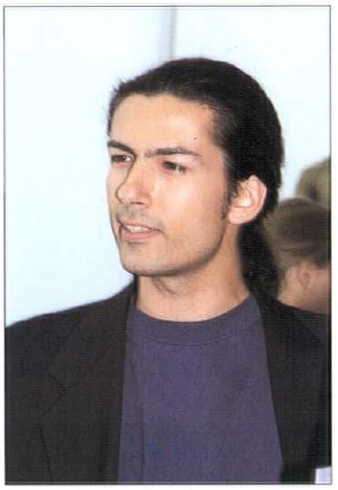
One absolutely accurate bit of information about some well-known architects who are in Kisho's book is the circuit of Itsuko Hasegawa, Toyo Ito and two others who meet up in those terrible *karioke* bars. I have twice been embarrassingly with them having to sing Beatles' songs because I'm English, they don't just do it for a laugh but they take it as an opportunity to meet up and have layers peeled away. I think for that reason there are all these curious things, for example the fact that you very rarely meet anybody's wife in Japan. So I think it's the front, the system and the network that you are appearing in and the points at which you are allowed to play which provides the symbolism.

Dominic Papa
It's not so much invisible but more interiorised within the individual person in that society. Earlier there was talk about whether a Japanese architecture exists? I'd like to say that as soon as it's there the architecture becomes part of that culture, and you find parallels between this and their language, certain characters within the Japanese language are like islands, they float. There's a meaning that allows them to function however they like and that's the manifestation of the language culture which transfers onto public space. Public space hasn't occurred in Tokyo for one principal reason: it's not profitable. There seems to be a conflict in Kurokawa's masterplans, between the large-scale proposals and the idea of trying to rationalise everything, which is out of the context with how I see and understand their culture.

Kisho Kurokawa
I don't think we have any of the 'masterplan thinking' in Japan. For example, I was a member of the grand design for the water front of Tokyo Bay and the Chair of the study group was Vice-Prime Minister Kanemaru, and members of the government as well as top bureaucrats were all included. I thought, 'This is a last chance for Japan', and we had a ballot. We have never adhered to history because the Ministry always thinks in a different way. Tokyo Bay is divided into three different projects and nobody has thought about its total design; in the same way that nobody's thinking about the total image for the future of Japan in the twenty-first century. Someone living in Kawasaki or Yokohama city would not be interested in the total design of Tokyo Bay.



I think the only way for Japan is the private sector and in a secret way something is happening which works out best for the government as they have no responsibility for the total outcome. However, interesting things are happening. For example, one of the proposals I did for the grand design of Japan is the second new axis. I pushed the local city to make a bridge like the one at Ise Bay. I proposed a ring road around this bridge which would encircle the bay which the government is now producing. Then in Osaka I pushed forward a proposal to make a new bridge at the entrance of Osaka Bay. In both these projects there was no discussion about the total image of Japan but rather the local image for each. The third project included a tunnel between the Kyushu islands. The people understand that the new bridges and tunnel make a new axis. It is quite an holistic structure because the people never ask the government to do an entire structure incorporating the whole of Japan but they are rather concentrated in detail or local area.



Dominic Papa
It's an attitude of strategy, you're talking about trying to combine a grand idea with many strategies.

Paul Finch
Now that that question's been left hanging in the air I think that it's time to draw to a close on this rather optimistic note. It did strike me that Kurokawa's doing good by stealth and persuading a lot of useful local things to happen which could mutate into something. It's rather like taking elements in a wonderful Japanese meal, where you start off with a series of rather disparate parts but when you put them together, in quite an unexpected way, you suddenly have an experience rather than simply a shopping list.

Kevin Rhowbotham
Dominic Papa


PIATTO
元
禄
司
想
シェル
HANA
上今
ファッション
レジャー産業
薩摩興産
有限会社
リーン
サービス
COFFEE
ピット
クスリ
みどり

YOSHINOBU ASHIHARA

THE HIDDEN ORDER

Tokyo through the 20th Century

The Ambiguity of Outline

How would you define the outline of an object? Is it a distinct form like the Gestalt shapes created by the borderline between the black and white spaces of figure and ground? Or is it more amorphous, like the outline of a human body? The outline of a human figure may at first seem clear and distinct, but when you think about it, that outline is a constantly changing shape – you slough off layers of skin every time you take a bath, cut your fingernails, adopt a new hairstyle or shave. Certainly our body outline changes subtly all the time.

Likewise, we can consider the line that divides the land and the sea. Take, for example, the distance between point A and point B – say between Aomori and Tokyo. If we calculate the distance on an ordinary road map, we arrive at a rough estimate of the length of the coastline, about 3,000 kilometres. If we obtain a topographical map that shows the area in greater detail; with the coastline more accurately depicted than before, we can see that it is actually much longer than we thought.

In *The Fractal Geometry of Nature,* Benoit B Mandelbrot says, 'There are various ways of evaluating length . . . coastline length turns out to be an elusive notion that slips between the fingers of one who wants to grasp it. All measurement methods lead to the conclusion that the typical coastline's length is very large and so ill-determined that it is best considered infinite.' The shape of a coastline changes constantly with shifting tides. If the coast were composed of vertical, rocky cliffs, the tides would not greatly alter the configuration of the coastline, but a shore of sandy beaches will be reshaped by the tides with each advancing hour. My point is this: the borderline between even such totally different and existentially opposite things as land and sea is not as clear and distinct as one might at first think.

If we take the land as the Gestalt figure, and the sea as the ground, then the outline between figure and ground clearly belongs to the land. However, the sea is not bottomless – beneath it lies the land, and the coastline just happens to be determined by the sea level at a particular time – the actual outline flows in and out all the time. In other words, once you recognise the hidden Gestalt order of the sea's outline and gaze again at the sea as you would at Edgar Rubin's vase-faces, you see a very different outline. Moreover, this borderline is the embodiment of the perpetual transformation of *yin* into its opposite, *yang*, and *yang* into *yin*. There is a constant appearing and disappearing, enlarging and shrinking, that occurs in the time sequence. The changing shapes are the result of recognising the potential for latent shapes where there is no apparent shape.

A coastline, therefore, is not a clear-cut outline as is the borderline between figure and ground in a Gestalt figure. We are forced to acknowledge that the existence of an intermediary territory incessantly changes, both physically and conceptually, causing intrusions into both inner and outer space in accordance with such phenomena as the rising and falling of the tides. Western dualistic thought, beginning with the Greek philosophers, is traditionally reluctant to deal with this intermediate territory. Other traditions, on the other hand, attach considerable importance to this realm, as does Japan's, with its affinity for ambiguity and incompleteness. Japanese ideas on ambiguity are also related to the concepts of the new-age sciences of Fritjof Capra.

The differing views regarding the definition of an outline are important when considering form in architecture, the aesthetics of the townscape and the appearance of cities. The Western-type treatment of space and design (and I would include China's here) in architecture and urban planning is apt to be centripetal, beginning with the whole and then proceeding to its parts. The outline between a building and its surroundings or between a city and the country around it has traditionally been quite distinct. We can see this in the frontal, symmetrical lines of the Parthenon. It is also true of the ancient Chinese city Xian and the medieval castletowns of Italy, in which the outline of the city, formed by the ramparts that surround it, produced a clear shape from the beginning.

In contrast to this is the centrifugal character of buildings or cities that start with individual parts and expand, the proliferation of parts defining the shape in a random manner. Examples include the traditional architecture and typical townscapes of Japan, which are asymmetrical to begin with and where it is not at all unusual to expand spontaneously in any direction. The huge megalopolis of Tokyo and, similarly, other large Japanese cities illustrate this best: their endless sprawl encroaches on the surrounding countryside like a silkworm munching at a mulberry leaf. As a whole, the shape of these cities is extremely unstable and undefined, for their fringes are surrounded by an intermediary, ambiguous zone that is in constant flux. Close

OPPOSITE: Streetscape in the Shinjuku area, Tokyo

observation of urban environments in Japan reveals that there is some wisdom in allowing for such undefined outlines. If an outline must be clearly delineated, it is necessary to impose restraints on the function of architecture or on the lifestyles within the area. Building codes are established, and town planning or zoning ordinances are enacted. It becomes necessary to place constraints on individual freedoms. Building and urban planning policy in Japan is considerably looser and more ambiguous than that in European countries, and this is the result of the strong resistance Japanese have to giving up freedom of movement for the sake of regularity of forms or clarity of outlines.

Along the Romantic Highway in southern Germany, for example, are beautiful towns such as Rothenburg, enclosed by medieval ramparts. The houses within the city walls are distinctive, but all have gabled roofs and all conform to regulations set down by these communities with regard to the colour of walls and other architectural details. Even in the city of Paris, there is little freedom to diverge from established forms and styles. Emphasis is placed on preserving the outline of buildings, and great effort is made to do away with elements that might disturb the outline, such as utility poles, cables, exterior advertisements, hanging signs and the like. This outline, in fact, can be said to determine the appearance of the city in the West. Its form is an integrated whole, and there is not much leeway for change once completed. There is also little impetus to break up or destroy that whole. This concern with and emphasis upon form is what I call 'architecture of the wall'. Japanese architecture, on the other hand, the 'architecture of the floor', gives priority to content. Content evolves in response to societal change, but form, once determined, is pretty hard to alter.

The practice of setting standards for the height or configuration of buildings, as often observed in Paris and other cities, was never very popular in Japan, with rare exceptions. On the contrary, there was complete freedom regarding the shape or location of windows and other features closely related to building outline, as well as for the materials of colour of the walls. This lack of unity is, in addition, made to seem more chaotic by the inclusion of projecting signboards, rooftop advertising towers, hanging banners and electric poles, amid various trees and shrubs, gates, and concrete walls. Bedding is draped over balcony railings and washing is hung under eaves, creating even further convolutions in the outlines of architecture.

What are the implications of either clarity or ambiguity of outline in architecture? Where the outline is clear, a distinct form emerges that possesses a certain artistic quality. Where the outline is unclear, form is random or amorphous, like a spontaneous cluster of organisms or the branching of a tree. If, as I suggest, there is a 'hidden order' in such amorphousness, then it cannot be said to be complete chaos, and architecture and cities characterised by it have a potential not sufficiently appreciated until now.

The Amoeba City

Roland Barthes, after a visit to Tokyo, observed that while the centre of a European city may be a cathedral or market where population and people converge, the centre of a Japanese city may not be that clear. There is a central area of Tokyo, for example – the moat encircled Imperial Palace – but it consists mostly of immaculately kept gardens inhabited by the royal family and their staff. The surrounding city is crowded and congested, with little that might give it form or focus. Its boundaries are ill-defined, sprawling wildly in every direction. It grows and flourishes in fits and starts without any kind of long-term urban planning. One section may be burned out by fire here, but a new section will spring up over there; one quarter may become run-down, but another will flourish next to it.

Tokyo is the perfect example of the fluid, regenerating city. It was levelled by fire many times during the Edo period, and a major part was burned to the ground in the Great Kanto Earthquake and Fire of 1923. Even after the devastating bombings of World War II, it did not become an abandoned ruin; it survived and revived with even greater vigour. Many of Europe's metropolises are plagued by the so-called doughnut phenomenon, or depopulation of the city core, but the heart of Tokyo – and most of Japan's cities – remains vital. This is the result of a healthy – if somewhat hypermetabolism, making the city the scene of constant renewal and change. The cores of Western cities, with their indestructible masonry structures, on the other hand, suffer from stagnation and rigidity.

Tokyo, thus, is an 'amoeba city' with its amorphous sprawl and the constant change it undergoes, like the pulsating body of the organism. And as with an amoeba, Tokyo demonstrates a physical integrity and the capacity for regeneration when damaged. Whether the amoeba city is good or bad, it does persevere.

Even the ferroconcrete buildings once thought to stand forever have turned out to be quite frail, their walls corroded by acid rain and other scourges of a contaminated environment. Many of the buildings being torn down in Tokyo today were built in the 1920s, having endured for only 50 or 60 years. Both structurally and functionally, the very infrastructure has turned out to have a relatively short life span.

Today, rapid changes in society are calling for new functions for cities and some modification of the nature of architecture. Faced with a building whose exterior tile is flaking off, whose metallic curtain walls have corroded, whose elevators or air conditioners no longer work well, or which does not have strong enough floors, high enough ceilings, or powerful enough electrical wiring to accommodate

FROM ABOVE: Tokyo cityscape showing the edge of the city to the north-west; elevated expressways, Tokyo

the introduction of high-tech communications and computer equipment, the Japanese would tend to decide that it is wisest to construct a new, more efficient building. Japanese are accustomed to thinking of architecture as temporary; the notion of this earthly world as being 'but a transient abode' has a long tradition going back to early modern times. In fact, the changeless monuments of masonry architecture of the West, preserved and lived in for literally centuries, are somewhat curious monuments of the past.

The city halls facing the Piazza Signoria in Florence and overlooking the Piazza del Campo in Siena have dominated their respective cities for several centuries since the Renaissance, and they continue to serve the same function they always have. City halls in Japan, on the other hand, are not looked upon by citizens as such important structures, and many of these edifices built soon after World War II are now being rebuilt or renovated. Even Tokyo's city hall, a prominent example of post-war architecture designed by Kenzo Tange, is soon to be demolished – because it is too small and too old to meet the needs of the present era – and a new high-rise building somehow resembling Notre Dame, also designed by Tange, constructed.

How does the amoeba city change over time? Japan has been rapidly modernised and industrialised in the four decades since the end of the last world war, and its population has concentrated in its large cities. 30 million people live within a 30-mile radius in Tokyo today. Unlike the long-term urban planning projects that have been undertaken in Western countries, city building in Japan has proceeded in a rather makeshift manner, changing course midway in accordance with immediate demands and new developments. There do exist such apparently long-term projects as the National Comprehensive Development Programme, but even this is very short-term compared to similar projects in other countries and it has been subject to frequent change and revision. Although trial and error is not permissible when it comes to land development and urban planning, social change in Japan occurs very rapidly. Use of short-term development plans, amended and corrected whenever necessary, has often brought better results than rigid, long-term planning.

In most cases, for example, streets are built for functional purposes alone; little thought is given to aesthetic concerns. If the noise of traffic becomes unbearable to residents along the city expressways, unsightly sound-muffling walls are thrown up along their sides. To keep pedestrians from blocking busy intersections, spider-like elevated walkways are built. There was a time when roads and streets were coloured and shaped by the local culture through which they passed. The old Tokaido highway that ran between the centre of old Edo, Tokyo of today, and Kyoto was punctuated with 53 stations, each with its own distinctive flavour and atmosphere, and many of these places were immortalised in poetry and art. Before the proliferation of automobiles, too, the old Nikko highway and the mountain roads of Hakone were spots of scenic beauty, the roads lined with towering cedars that had stood for centuries. When main streets are built in today's large cities, it is important to incorporate an adequate buffer zone between the thoroughfare and the surrounding area. It is too late to do anything after the construction is completed and residents sue the city for destroying their environment. Street planning cannot be based solely on the priority of transportation between one point and another; it must incorporate an appreciation for the locales through which the streets will pass.

At present, the owner of a piece of land in Japan is free to divide up his property in any way he/she likes. Often, people will do this because of high inheritance taxes, and even if a city tries to consolidate land, properties have become so irregular that standardising plots is practically impossible. This is true of Tokyo as elsewhere in Japan. Since plots are of peculiar shape and size, the structures built are often oddly designed. One gets pencil-like buildings with space for little but stairways or elevators. Building sites are often so irregular that it is difficult to arrange structures in an orderly fashion, resulting in a townscape that is like a set of badly aligned teeth.

Even if one attempted to consolidate building sites through housing or redevelopment programmes such as those adopted in some countries, the delicacy and complexity of adjusting the interests of landowners in Japan would often make the process impractical. Under the circumstances, there is little that can be accomplished by administrative measures for widening the roads, consolidating the land or attempting urban redevelopment. The best way seems to be for individual property owners to make the finest use of their land within the legal limits. It is inevitable that a city built with this kind of short-range vision should appear disorderly and confusing.

Of the cities built in the 19th century, Paris is said to be the most beautiful. A masterful co-ordination has been achieved in eave and floor height and in the fenestrations of its masonry architecture, giving the streets an attractive harmony that is world famous. And yet, in the commercial districts, which sustain the very life of the city, there is a severe shortage of office space. It is even said that the unemployment rate is increasing because the city refuses to permit the construction of modern commercial office buildings made of glass and metal lest they mar the townscape.

I imagine that Parisians look upon the intense energy and apparent confusion of cities in Japan like Tokyo with a mixture of contempt and envy. The coming 21st century will be an era of sophisticated information technology. It will be necessary to lay

FROM ABOVE: The Imperial Palace, Tokyo; Minoru Takeyama, traditional urban residence showing entrance where shoes are removed

optical fibre and lines for the information network system beneath the streets in our cities and to channel them to every part of our buildings. Will a city like Paris, where fundamental architectural change is impossible, be able to adapt? Perhaps we will all be compelled to re-evaluate the merits of the amoeba-like changefulness of a city like Tokyo.
It is certainly true that Tokyo is chaotic and lacking in artistic co-ordination as well as clear identity. Nevertheless, a tremendous urban population has managed to live in relative harmony, and has been responsible for achievements in economic development that have astonished the world. Cities in the West may give greater priority to form than does Tokyo, but with its concern for content Tokyo thrives according to an order hidden within its chaos. If there were no such order, how could the citizens of the world's second largest city lead the lives they do in such reasonable comfort?

Mandelbrot's notion of a flexible orderly structure embracing randomness in what is apparently chaos is critical here. At first glance, Tokyo looks chaotic. But if we consider that there is an invisible order, a random-switch mechanism through which each level of the whole structure tolerates some haphazardness so as to respond to changes in the environment – rather like the action of genes in the development of a multicellular organism – then we begin to see an order in the city structure. The whole of Tokyo is a perpetual formation and re-formation of parts, which are endowed with a measure of randomness and haphazardness. Parts make up the whole of an individual structure, but that whole is a part in a higher level of the order. The city is an organic entity, which undergoes constant change and development, even to severing and discarding unnecessary parts.

To speak of the hidden order, not metaphysically but practically, in terms of the functions of the city, let us look at the subject of water supply and the sewer system, two vital utilities of city life. Japan is blessed with clean water in great abundance, and public water supply systems are exceedingly well developed throughout the country. We take clean water very much for granted, and tap water is drinkable everywhere. It is relatively uncommon around the world for the water used in flush toilets and the water you mix with your whiskey to come from the same source.

Sewer systems in Europe date back to the castle towns of medieval times. Cities were encircled by high walls, and at sundown, the people and even their domesticated animals were gathered inside and the gates locked. The cities were paved with stone, and the buildings were uniformly of stone masonry construction. Obviously the disposal of human and animal wastes posed problems almost more serious than the defence of the city walls against enemy assaults. No doubt necessity played a large role in the development of sewer systems, as intolerable stench and the spread of infectious disease were constant concerns. Records tell how the city of Paris adopted a sewer system in order to combat epidemic diseases, how in London, after the devastating cholera epidemic of 1848, flush toilets became the standard.

Unlike in Europe, where sewage was viewed only as a source of stench and disease and the building of sewer systems was advocated as a top priority, in Japan it was seen as an organic by-product, and much more emphasis was put on maintaining a pure water supply. Until modern times, streets and roads in Japan were rarely paved, but it did not make much difference in terms of public sanitation because footwear was traditionally removed before entering homes as well as workshops and business establishments. Here again, I am reminded of the great impact this shoes-off custom has had on the way of life in Japan.

As urbanisation spread in Japan after World War II the necessity for paving the streets and building sewage systems became urgent. These were conveniences that permitted a sophisticated way of life, but as environmentalists have pointed out, they do interfere with the natural functioning of the ecosystem. Rather, streets should be paved in such a way that rainwater can permeate back into the ground; if waste water from septic tanks is likewise restored to the earth, the functioning of the ecosystem will be properly maintained.

Kenzo Tange, New Tokyo City Hall, Tokyo,

The Arithmetic of Form

Architectural space may be created in two ways: by addition and by subtraction. In some kinds of sculpture you start with nothing and create a work of art by adding on clay, bit by bit. In other kinds you start with a block of stone or wood and hew it down, discarding unnecessary parts until the desired form takes shape. Likewise, there is one kind of architectural space that is created centrifugally, ordering the space from the inside out – this may be called architecture by addition. And there is another kind in which the space is created centripetally – by subtraction. The distinction depends on the relationship between the whole and the parts: whether you start with the parts or with the whole. Examples of the former may be found in the works of Finnish architect Alvar Aalto, and among those of the latter type is the famous apartment building, the Unité d'Habitation by Le Corbusier. In Japan, examples of the former may be found in the traditional *sukiya* architecture; of the latter, the Tokyo Metropolitan Government office designed by Tange.

The essential difference between the works of these architects has to do with content and form, and how the decision as to which shall be given priority in creating space has been handled. The Unité apartment building is the epitome, if I may exaggerate a bit, of a type of structure that gives overwhelming attention to exterior proportions and architectural balance, with the content

simply 'stuffed' into the interior of the created architectural space.

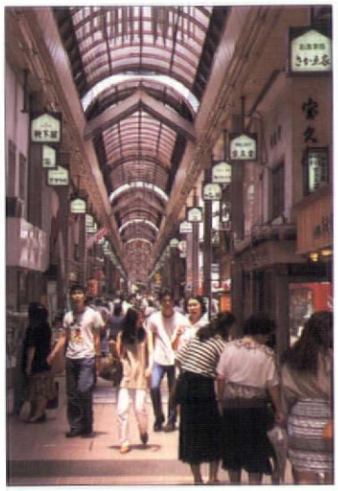
In 1954, when I visited Paris after a year of study in the United States, I went to Le Corbusier's office. The architect was not there that day, but I was shown his studio. Strewn over the table were sketches, presumably by Le Corbusier himself, that looked like pictures of architectural prototypes. They seemed practically image sketches, and I remember wondering how he could turn out so many drawings of architectural form without knowing what kind of building he would be designing. Perhaps they were equivalent to the image sketches that sculptors often draw as ideas come to mind. Still, sculpture does not incorporate any function for living, a fact which sets it apart from architecture. Later, I went to see Le Corbusier's Unité d'Habitation in Marseilles for myself. I will never forget my feeling of amazement and surprise. Seen from a distance, the proportions of the whole were truly splendid. The strong assertion of the materials in the powerful pilotis supports and the exposed concrete exterior was impressive, the deeply incised fenestrations and bright colours of the fittings striking. I felt as if I were seeing the three-dimensional embodiment of the sketches that had littered Le Corbusier's studio, the realisation of a painting by, say, Mondrian. Then I was shown inside. I had heard from the prominent Japanese architect Kunio Maekawa that Le Corbusier seldom paid visits to the sites of his buildings under construction; his concern was mainly with the conceptual design. The interior treatment of detail was quite rough. Inside one of the apartments, I was even more surprised by the cramped, crude proportions of the space. Each apartment was 4.19 metres wide and about five times that long. How could anyone live in such elongated space, I wondered. We have such long, narrow town-houses in Kyoto, but they have small inner gardens and back gardens for each unit that make them liveable. The Unité was a perfect example of a design that begins with a well-proportioned, attractive whole and attends to the parts as an afterthought. I felt as if the building were a gigantic work of sculpture, and I understood why Le Corbusier was so impressed by the Parthenon.

Later, I visited Chandigarh, the capital complex designed by Le Corbusier for the Indian state of Punjab. This time it was the immense distances between the buildings that caught me by surprise. The project was like a huge sculpture garden, the image sketches on Corbusier's table many hundreds of times larger in scale, and totally oblivious to the harsh climate of the country. The buildings of the Chandigarh capital, each with its own explicit exterior form, were scattered over the site in positions determined by geometric relationship. They represented excellent examples of architecture constructed by subtraction from an exterior outline. Unlike sculpture, architecture is intended to house interior space for human use or habitation. It is unnatural to predetermine the exterior form at the drawing board. I believe that architecture must by definition be designed after thorough analysis of the functions it is to house; exterior appearance ought to be such that the content of a structure oozes from every joint. A priori image sketches may be justifiable in the case of monuments or towers that have little going on inside them – one-room religious architecture such as the Ronchamp cathedral in Paris also by Le Corbusier, or the Olympic Swimming Pool in Tokyo by Tange, where interior space is chiefly devoted to one immense hall and minor errors in planning or details will not obstruct function. They are less appropriate for buildings for human habitation.

The same with hospitals. When architect Paul Rudolph, a leading light in American architecture some time ago, learned that I was designing a municipal hospital, he expressed some surprise. Architects like himself and Le Corbusier, he said, would probably never design a hospital even if requested, because detail is so important and there is so little freedom to exercise creativity in exterior form in such buildings. Indeed, Le Corbusier never did build a hospital, but Alvar Aalto did. A masterpiece among the early works of the Finnish architect is a tuberculosis sanatorium located in Paimio, a work that was acclaimed at the time as marking the beginning of modern architecture.

The reason I have singled out the architecture of Aalto is that he seems to create his designs by addition, not subtraction. His later works include an asymmetrically shaped church and an irregularly shaped auditorium. He is not the least concerned with module, proportion, or tidiness of geometrical form as Le Corbusier conceived them. In fact, one gets the impression that each necessary element of content is added on one after another. When you see the silhouettes of Aalto's works against the evergreen forests in their Finnish settings and observe the easy harmony between the content of building and surrounding landscape, you experience a warming sense of humanity and fulfilment. In Le Corbusier's architecture the outlines are distinct, and all factors that might obstruct or blur their clarity are considered hindrances. In Alvar Aalto's architecture, on the other hand, the forest background is a desirable, necessary context, which makes all the more attractive the structure's outline. It reminds one of the Katsura and the Shugakuin detached palaces in Kyoto, where the buildings would not be complete without the surrounding gardens. By contrast, Le Corbusier's architecture is self-centred, requiring huge spaces, as in Chandigarh, so that it can be seen uninterrupted from a distance.

Some years ago, on a summer day, I climbed the Acropolis for the first time. There stood the Parthenon, its proud 2,000-year-old profile bathed in the intense brilliance of the Aegean sun. At first I was



The Shotengai: a typical Japanese shopping street, Kyoto

astonished at the world of unrelieved stone that met my eyes. Everything, from the pathway leading up the hill, its smoothed and rounded contours testifying to the passage of untold millions, to the gables of the Parthenon, was marble. Considering the transportation methods of ancient times, it made sense to build the structure from materials close at hand. No doubt the precisely chiselled marble columns and beams that form the Parthenon were made from blocks quarried nearby, as indeed, they seemed to rise organically out of the body of the hill itself. There was not a tree in sight, and in the bright sunshine there was no ambiguity. Everything was cast in strong contrast, light or shadow, convex or concave, space or substance. The play of sunlight also coloured the friezes, reliefs, and the fluting of the columns with impressive effect. The construction of this building incorporated the most up-to-date technology and know-how of the times – the use of entasis, the subtle arching of the horizontal members used to prevent the impression of sag. Whether seen by people atop a distant hill or by visitors standing right in front of it, the Parthenon appeared perfectly balanced and finely proportioned. This, I realised, was the prototype of the frontality and symmetry that is basic to European architecture. It is only when you come close enough to touch it that you are brought back to earth: this marvellous monument is actually nothing but a structure of cold stones piled up with unusual skill. This was architecture meant to be seen from afar – not near.

On subsequent trips to Greece, I gradually learned to appreciate how the strong sunlight served to highlight the beauty of the structure's exterior proportions rather than to draw attention to the texture of the materials. In architecture meant to be seen from afar, in form by subtraction, sharply defined features, sharply cut lines, frontality, symmetry and lucidity are important. Here in ancient Grecian architecture, is the origin of the dualistic clarity of Western architecture as a whole.

One can be impressed with the beautiful form and balance of a structure with an even simpler form – the pyramids in Egypt. The total planning, which dates back a few thousand years, was utterly meticulous. The Giza, for instance, was designed so that one side of the base would be exact, at 230 metres, and the height would be 146 metres. North, south, east and west were taken into account, and the isosceles triangles had been tilted to 51° 50' 35" degrees so that they appear like equilateral triangles when seen from the ground. Over two million stones were transported and put into place systematically. At the time of construction, the white stone surface would have stood out in the brown desert all around it.

As one approaches the pyramid, however, the huge surface is revealed to be rough; with many stones, stolen or fallen off, the effect is quite unbeautiful. The monument had been constructed from an architectural plan based on the whole, which is characteristic of the desert, dry with no trees. Had there been greater variability in the Egyptian environment – with need to add parts to the whole – the well-balanced, perfectly planned pyramids would never have been built.

By contrast, the first thing one notices about the traditional buildings of Japan are their relatively diminutive proportions, asymmetry, and modest facades, often deliberately hidden in the surrounding shrubbery. Upon close inspection, one sees that great attention has been given to the grain of the wood, its carefully smoothed texture, and the precision of its joints and interlocking timbers. Each such feature demonstrates a beauty in irregularity that originates from an inner – hidden – viewpoint; together they stand in sharp contrast to the beauty of proportions meant to be seen from a distance.

In fact, one discovers the real beauty of Japanese architecture not in bright, dazzling sunlight, but in dim candlelight or in the mellow illumination of a paper covered lantern, and not from afar, but by drawing close to it and savouring the fragrance and the feel of wood and *tatami*. Even in our present society, these are the qualities that Japanese treasure most. The Japanese aesthetic draws its inspiration from the subtle changes of the four seasons. The climate is characterised by considerable rainfall, and the wet and damp casts its spell over everything. Mist and moisture soften the lines and the contrasts between things and people, blurring shapes and obscuring the clear recognition of back or front, right side or left.

The language is filled with terms that define the nuances and specific qualities of particular atmospheric states. There are *harugasumi* (spring mists), *asamoya* (morning mists), *samidare* (early summer rains), *baiu* (long, continuous rains of summer), *rin-u* (continuous rains), *yudachi* (sudden evening downpour), *raiu* (thunderstorms), and as many terms again for snow. Japanese also has special literary forms of words for the colours of the sky and for the moon in different seasons. The heavy humidity in summer nourishes the lush growth of vegetation, which left un-tended can in no time literally envelop a low, traditional-style dwelling, obliterating its outlines. In the midst of this lush environment, any attempt at grand symmetry, proud frontality or exterior symbolism is doomed. The aesthetic of Japan's climate thus came to be characterised by ambiguity and irregularity.

Let me now go back and take another look at the column in classical Greek architecture. Buildings were composed of columns and horizontal beams of stone, as roof construction methods using the arch, vault, and dome had not yet been introduced. Roofs were made of wood. What then was the significance of the largely decorative use of well-proportioned Corinthian orders with acanthus leaf motifs or scroll-capped Ionic orders in the design of the meeting point between stone columns and stone beams?

Shibuya Station Square, Tokyo

Fritz Baumgart says that in terms of form, interior space did not play a very important role in Greek architecture. It is possible that these decorative heads of columns were closely related to the exterior-oriented sense – the frontality and symbolism – of Greek architecture. Moreover, these Greek temples are built with the gable at the front.

In Japan, gable-fronted architecture is rare, except for temples and shrines, such as those of the *taishazukuri* style, typified by the main building at Izumo Shrine built two thousand years ago. Even this main building is not truly symmetrical, for the entrance is located to the right of the central column. Far from emphasising frontality, it appears deliberately to offset the building's balance. In Rothenburg, the gables of the houses, each with its own distinctive identity, face squarely on the street, endowing the townscape with a proud, outward-looking visage. In Kyoto, by contrast, the low, two-storeyed townhouses are built with their gables hidden from the street, and the townscape impresses one as secretive and reticent.

In the history of Buddhist architecture in Japan, there are three main styles: *tenjikuyo, karayo* and *wayo.* The distinctive features of these styles are the bearing block and bracket arm supports for the long eaves. These bracket systems played an important role, not only dynamically as supports, but aesthetically in each different style. Although one might be tempted to correlate these bracket complex styles with the Greek orders, it is wise to keep in mind that they are less important as elements of external decoration – as are Ionic, Doric or Corinthian columns – than as a rational, dynamic means of support suited to the functional Japanese aesthetic. They are tucked tidily and unprepossessingly into dim recesses under the massive roofs of temples or shrines. From a distance they are completely out of view, but close at hand, it is the technology and aesthetic of the bracket complexes that we find most impressive. Even Japan's large-scale Buddhist structures, in contrast to Greek architecture, are in fact designed to be viewed close-up.

In architecture intended to be viewed from afar, emphasis is placed on grasping the whole exterior, while that intended to be seen at close quarters gives more attention to the detail and texture of each part. One is not necessarily superior or inferior to the other, but the difference highlights the contrasts between the culture that emerged in Japan's peculiar climate and that which grew out of the Greek tradition of Western civilisation.

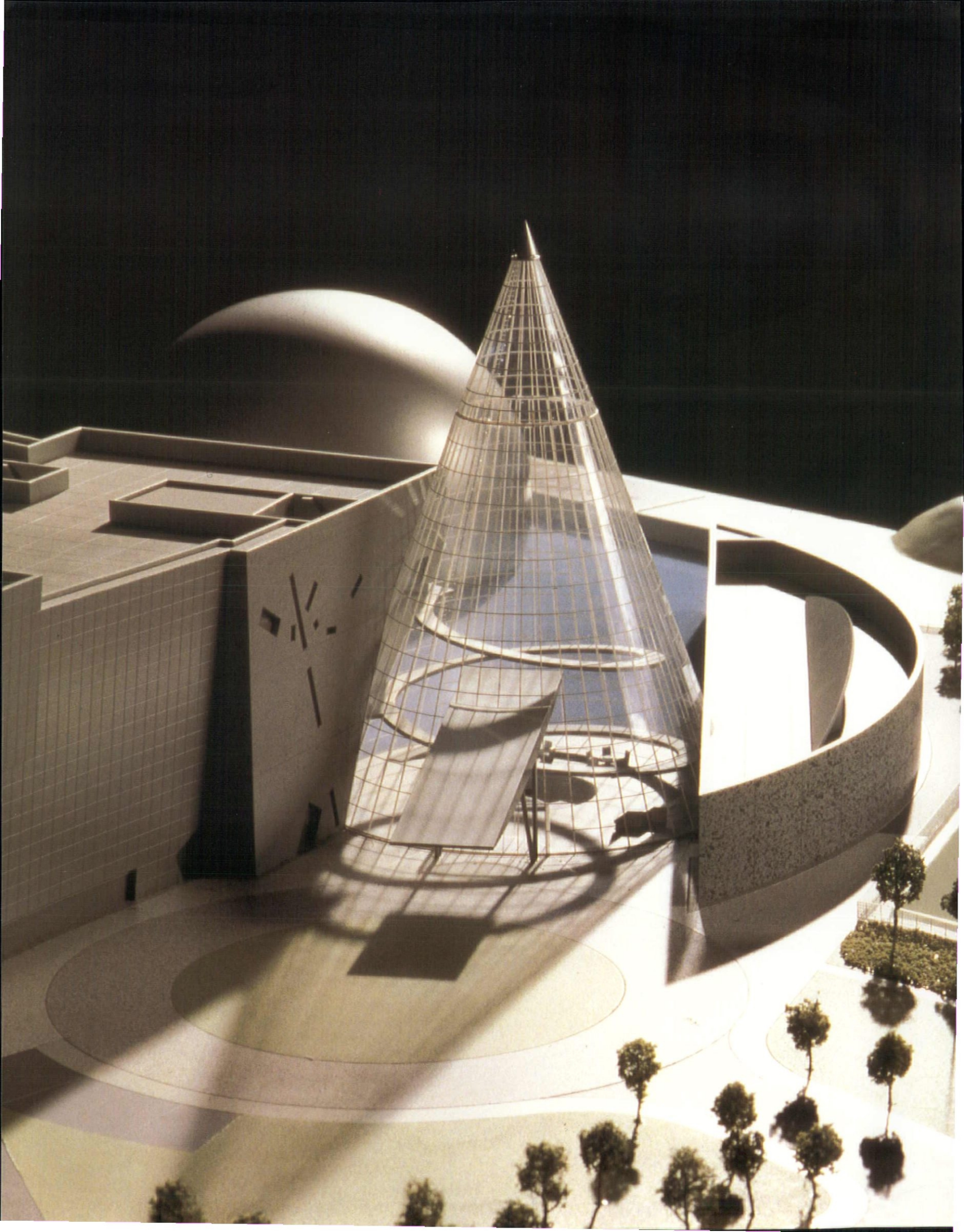
Architecture constructed by addition begins with the parts and proceeds from there to form an external order. Architecture that is built by subtraction starts with a whole, which is then subdivided to form an inner order of parts. In considering such hierarchical orders, look at Arthur Koestler's idea of the *holon,* which comes from the Greek word *holos,* meaning whole. Koestler notes that when a complex order evolves from a simple order, the evolution takes place at a faster pace in the existence of a stable intermediate form, compared to when there is none. He says, further, that the primary universal characteristic of hierarchy is the relativity and indistinctness of the words 'part' and 'whole'. The word 'part', as we generally use it, signifies something piecemeal or incomplete, something whose existence is meaningless alone. A 'whole' is something complete in itself that requires no further addition. In fact, however, such absolute wholes and parts do not exist. The 'whole' organisms or bodies in society are actually 'sub-wholes', intermediate entities that are parts in a multi-level hierarchy that grows increasingly complex. Depending on your viewpoint, each entity has the characteristics of a 'whole' as well as of a 'part'. This is what Koestler called a *holon.*

This idea of the *holon* can be applied to the formative process of architecture or of the city. One house, for instance, is a complete 'whole' for the person who lives there, but it is also a 'part' of the group of houses that form a distinct community. Still, it is not just a part, but in truth a stable intermediate form called a 'sub whole' that is a necessary element in the hierarchy leading from single houses to the complex city. The 'sub-whole' has a certain universality that is linked to a 'sub-whole' of a higher order. The concept of a *holon* contains an element that is common to the whole, like a gene. Just as a branch of a tree or a fragment of a rock possesses qualities that suggest to us something about the whole, individual buildings in a city have shared characteristics that contribute to the higher order of the city as a whole. If every structure in a given area is composed of entirely heterogeneous elements, it becomes extremely difficult to build a community of a higher order that encompasses them all.

The architecture by addition I mentioned earlier is not really a matter of simple addition, but a process based on the selection of common factors influenced by the hidden order. The concept of the 'sub-whole' can be found in the essential principles of Japanese architecture and of its cities, just as in Alvar Aalto's architecture by addition. Architecture by subtraction, I believe, does not accommodate the idea of 'sub whole', for the totality asserts itself above all else.

The architecture of Tokyo – as well as other cities in Japan – has much in common with the ontogeny of living organisms; they are constantly changing in accordance with their content and function. And though they may lack some completeness or singularity of form in the artistic sense, they are endowed with 'redundancy' within the chaos, we are beginning to recognise that there is a kind of hidden order. We need to be more aware of the 'sub-whole' – the *holon* – in individual buildings, in particular townscapes. Tokyo's architecture and townscape, which seems chaotic at first sight, can offer an object lesson in Koestler's theory.

Pedestrian overpass system at Umeda, Osaka



KISHO KUROKAWA

EHIME MUSEUM OF SCIENCE

Ehime

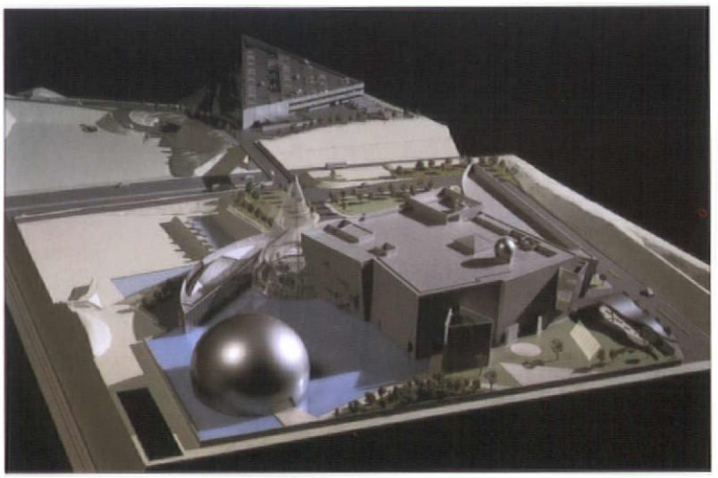
The site is located in a suburb of Niihama city, on Shikoku island, where a future highway interchange is to be constructed adjacent to the base of the mountains. Design work on the museum began in 1991 and construction is due to be completed in 1995.

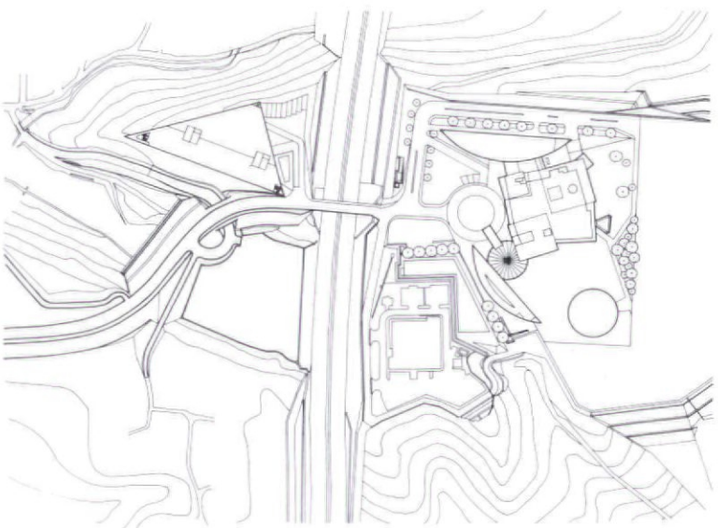
In order to create a symbiotic relationship with the surrounding area, buildings were individually articulated into four sections. Each section functions as an administrative facility, an exhibition hall, an entrance hall, an educational facility and a planetarium.

Simple geometric forms were adopted: a crescent, a cube, a square, a cone and a triangle. The layout of each section is designed in the image of a Japanese garden with a free arrangement of stepping stones. This is another way of expressing the asymmetry of Japanese traditions.

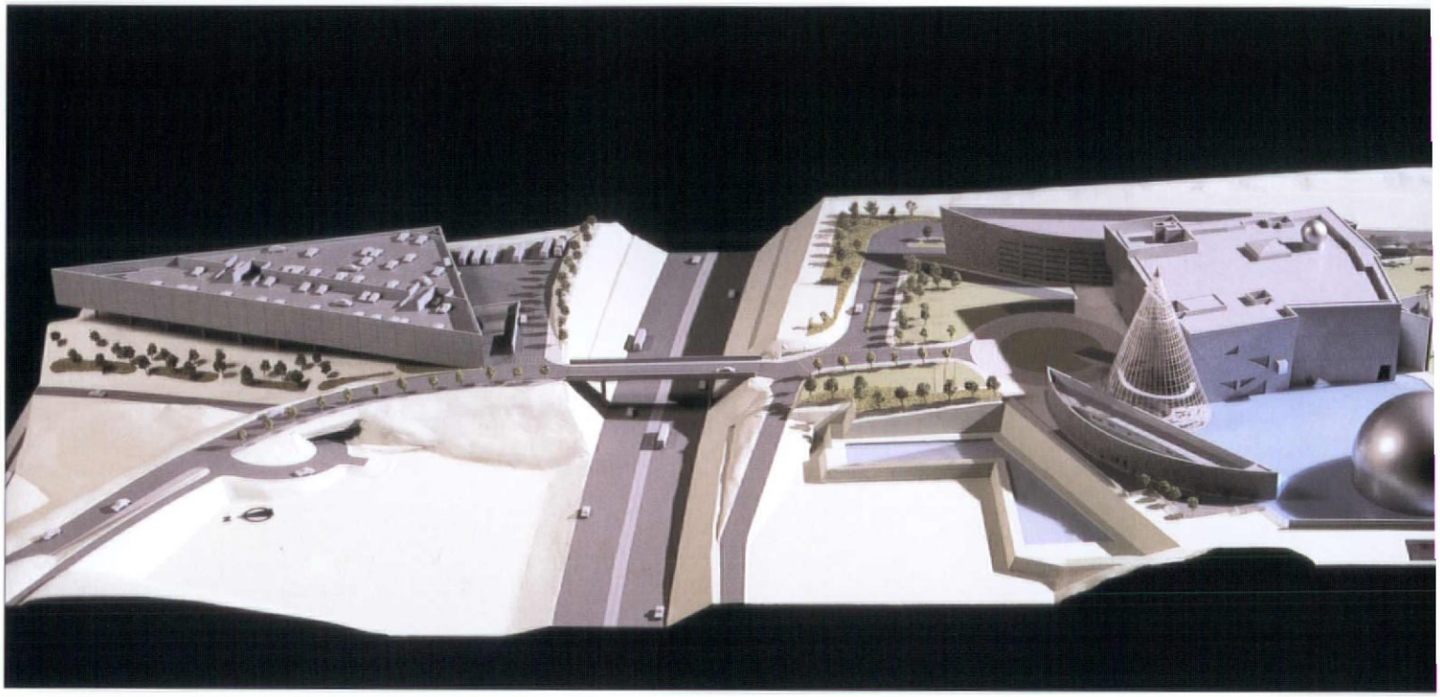
Even if one takes a careful look at the exterior of the square exhibition hall, it is slightly shifted and tilted to emphasise the composition of four different square exterior surfaces. Various finishes were applied to the facade; aluminium, glass and exposed concrete.

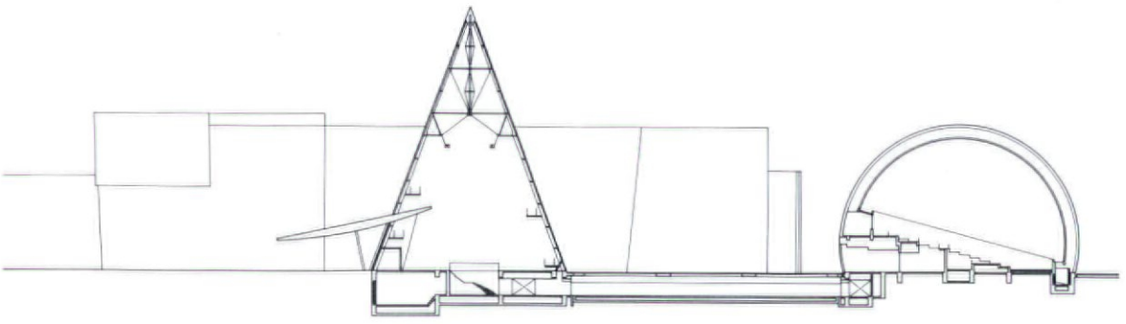
The spherical planetarium, which is located on the artificial pond, is connected to the entrance hall by an underground passage below the pond. This is to express the abstract invisible relationship.

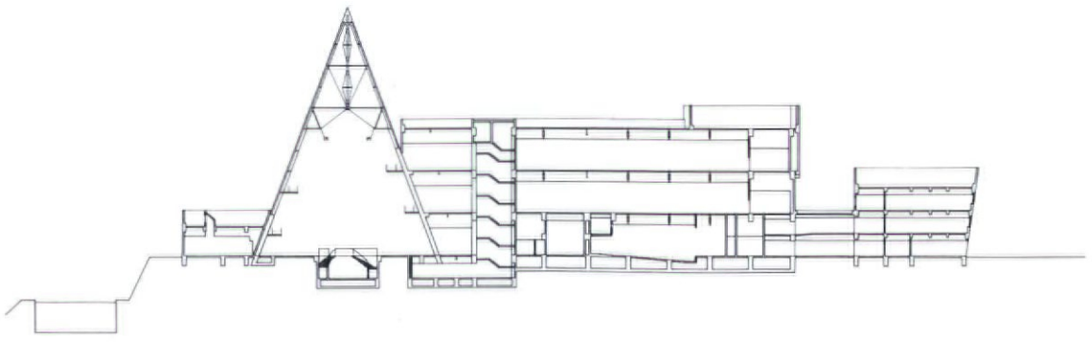




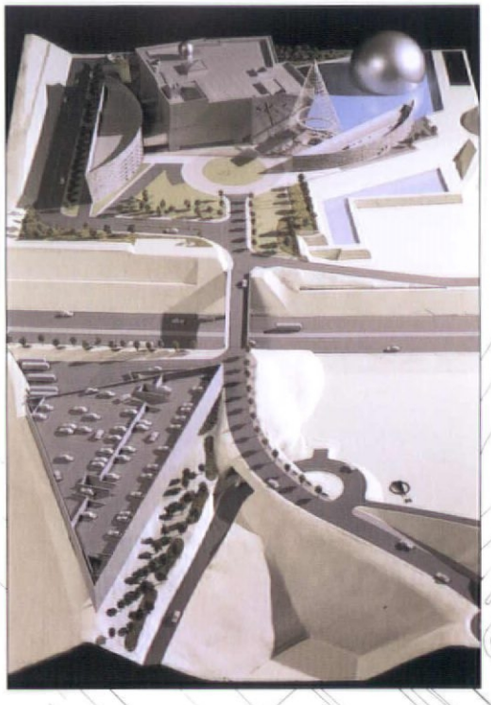
RIGHT: Site plan







CENTRE AND BELOW: Sections; OPPOSITE: Axonometric

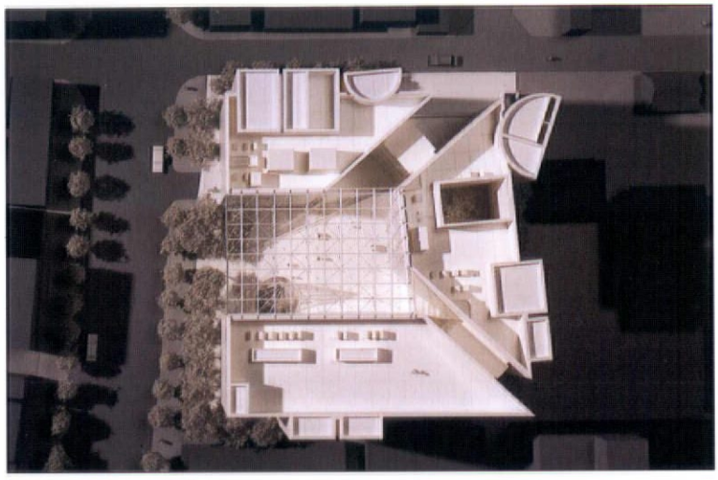


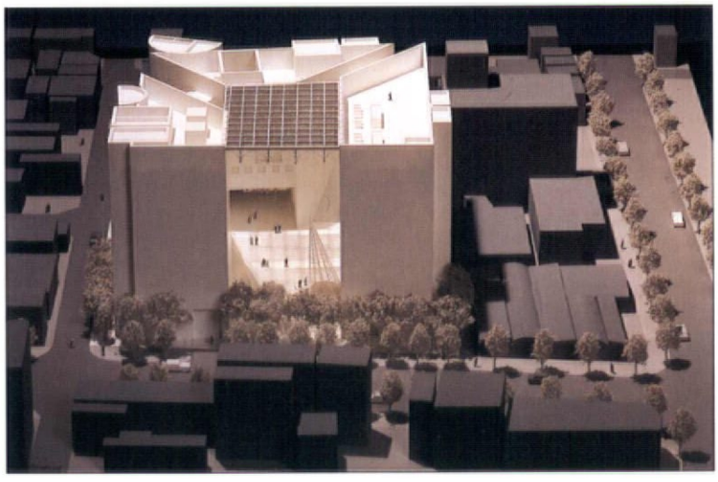
HIMEJI CITY HEALTH AND WELFARE CENTRE
Hyogo

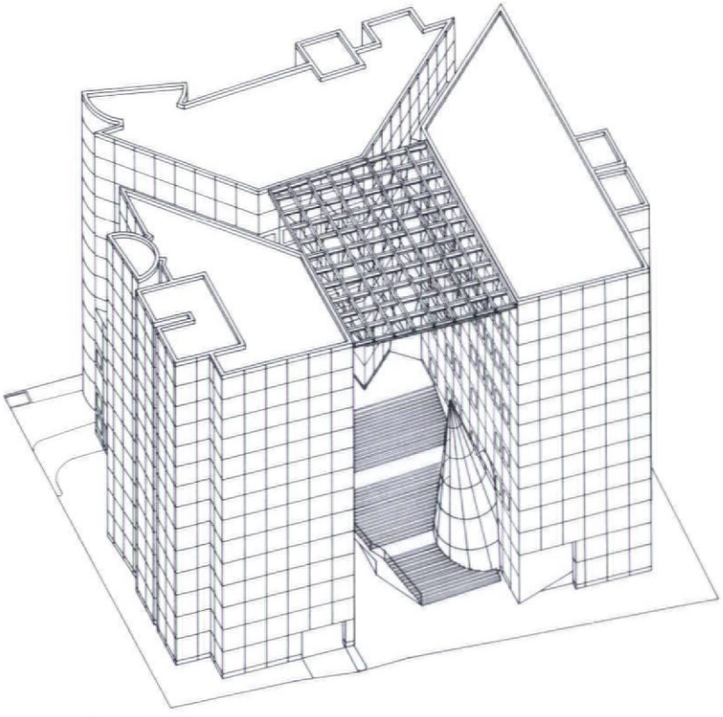
Himeji City Health and Welfare Centre (1991-94) is a complex which is composed of a public health centre, an exercise centre, a clinic, a research institute, a rehabilitation centre and a day care centre for the elderly.

Although each facility operates differently, some facilities are related functionally and are connected. An atrium with a transparent glass roof is proposed as an intermediate space which will synthesise all the facilities; this atrium is an intermediate space is of both the exterior and the interior, where the public space and private space not only function as the main access but also act as the event hall, an open theatre and a place of relaxation for the public.

This project aims for the symbiosis of the autonomous part and the whole.







Axonometric

HAJIME YATSUKA

INTRODUCTION TO ARTPOLIS

ArtPolis – a series of projects sponsored by the Government of Kumamoto Prefecture – was initiated in 1988 by the former Governor, Morihiro Hosokawa, who advocated the intensification of the identities of the provincial regions, as a foil to Japan's excessive concentration on the capital city, Tokyo. In 1987, after visiting the IBA projects in Berlin, he conceived the idea of creating, in Kumamoto, a series of public buildings by innovative architects, and invented the name 'ArtPolis' to characterise his ambitious concept.

After returning to Japan, Hosokawa invited Arata Isozaki – an old friend and advisor – to act as Commissioner for the project, with this author acting as Director, alongside Isozaki. After only four years, more than twenty-five ArtPolis projects have been realised, and twenty additional projects are currently under construction. Most of the projects have been commissioned by the Prefectural Government, while some were commissioned by Local Authorities and private companies within the Prefecture.

The Kumamoto ArtPolis, initially inspired by the IBA, is also linked to recent and historic European precedents whereby local authorities and national governments sponsored a number of projects, for example the IBA at Berlin, the *Grand Projets* in Paris under the direction of President Mitterand and a series of museums and child-care centres in Frankfurt. In November 1992, Kumamoto hosted an international symposium entitled *The Urban Design Summit* with participating delegates from eight European projects: Berlin, Frankfurt, Münster, Paris, Lille (EuroLille), Nîmes, Rotterdam and Barcelona, and from three similar Japanese projects at Yokohama, Nara and Toyama Prefecture. The symposium confirmed the linkage between the concepts of these projects, and marked the end of the first phase of Kumamoto ArtPolis providing an opportunity to assess its significance.

The principal significance of ArtPolis resides in the fact that, except for temporary buildings for world fairs, it is the first time that so many avant-garde architects have designed major public projects. The list of architects and designers chosen by Isozaki and myself includes today's most interesting Japanese architects. Most of them are from a younger generation except Kazuo Shinohara, the first architect to be commissioned by ArtPolis for the design of the Kumamoto North police headquarters.

In Japan, architects from this younger generation have rarely been commissioned for public buildings. Only a few, such as Tadao Ando, had previous experience of public works, since most such projects were monopolised by large commercial firms and established architects. The substance of Japanese contemporary architecture, which enjoys international acclaim, is mostly achieved in residential and commercial buildings for private clients. This situation reflects the historical condition created by the first Japanese economic crisis in 1973. Before that time, older masters such as Kenzo Tange, and the architects of the generation born in pre-war times, such as Isozaki and the Metabolists, had all established their professional mark, and they continued to build large public (and also private) buildings throughout the 1970s. Younger architects, who had begun their professional careers during this difficult period, had to content themselves with designing only small and private buildings – which in most cases were houses for their relatives and friends. Without doubt, such early experiences gave a particular bias to the works of this generation of architects. Small private houses in exceedingly congested cities – totally opposite in scale to the urban megastructures of the Metabolist Group during the 1960s – required on the one hand a strong conceptual identity to cope with their antagonistic environments and, on the other hand, careful treatment of details to maintain comfort in inferior circumstances.

It was not by chance that Isozaki and Shinohara became the most influential architects of this period. Their work revealed strong and highly personal visions – but in different ways. Isozaki produced his most important public buildings during this period, but none of these projects showed his concern for society and the public realm – his main subject of concern during the 1960s. Shinohara never actually designed non-residential buildings during this period, but he had a decisive influence on several of his young students, such as Kazunari Sakamoto, Itsuko Hasegawa and Kei-Ichi Irie. Toyo Ito also redefined his own way of working by shifting his affiliation from Kiyonori Kikutake (the ex-Metabolist for whom he had been working) to Shinohara.

In the 1980s, Japan's economic situation rapidly improved, and provided a background to the fertile production of architectural activities. During the latter half of the decade, younger architects (and their Western counterparts) received increasing numbers of commissions from private enterprises – particularly the fashion industry with its sophisticated taste for design. The most typical and successful

Opposite: Obiyama housing project; Elevated skywalks

architect of this period is Tadao Ando. The limited concerns of Japanese architecture during this period developed from very specific and unique phenomena. What was lacking was consideration of, or relationship to, the public realm. ArtPolis seeks to re-establish this relationship.

In the mid-1970s Arata Isozaki suggested – quite appropriately at that time – that architects had no 'subject' as such, but instead had a 'subject of absence'. All norms and social consensus had been lost. This kind of apocalyptic view of architecture, and of its relationship with society, might have been common to serious architects in the highly developed societies of the West and Japan. The worldwide political events of 1968 must have cast shadows on it. It was *l'architecture dans le boudoir*, as Manfredo Tafuri put it. But young Japanese architects accepted this view so readily for a specific reason. In Japan notions of 'public' and 'public space' have been weak since ancient times. Japanese towns and cities had neither public plazas nor public parks in the Western sense. The words 'public realm' did not even have a counterpart in the Japanese language. The civic activities which took place in Western public plazas had been done, in more ambiguous and less open ways, in traditional Japanese cities. As Max Weber has comprehensively analysed, the typology of the Asian city was totally different from its Western counterpart. Even the Meiji Government which after the restoration of 1868 was the driving force of Japanese modernisation, still preserved the sense of *okami*, which signifies the heavenly power associated with the Shogunates. It was only after World War II that the Japanese political body developed a democratic structure in the Western sense, and it is apparent that the forty years following the war were not long enough to change the social structure in a significant way, despite the change in the political system.

It was symptomatic that the first great achievement of Japanese public architecture after the war was Kenzo Tange's modern translation of the Acropolis in Athens (A House of God) for Hiroshima's Peace Centre. Most of the city halls built in this period by Japanese disciples of Le Corbusier (Mayekawa, Tange, Sakakura) and others inspired by Chandigarh showed naive ideas about the public, mixing the concepts of *pilotis* accessible to the public with the flavour of *okami* (buildings raised above the ground are easily associated with ancient buildings for the nobility). This kind of archetypal public building was one of the hypotheses that were lost after the first economic crisis of 1973, putting the optimistic convictions of the *apres-guerre* social system to an end.

The absence of definitive 'public space' in Japanese cities raised an obstacle, either positively or negatively, to the creation of post-modern urbanism in Japan. In contrast to their European colleagues, Japanese avant-garde architects had no interest in urbanism and no reliable norms. During the late 1970s, they only saw Japanese contemporary cities as hostile environments, while during the 1980s the cities became the *loci* for an individual play of differentiation. 'Chaos' became a fashionable subject for discussions – not in the negative way that it had been for architects and planners of previous periods – but in a positive sense. This play with chaos may be intellectual or masochistic (to borrow a word from Rem Koolhaas, commenting on the specificity of Japanese urbanism) but it was, and still is, a common subject for Japanese architectural activities. It could also be regarded as a Japanese version of deconstructivism – but, in the worst cases, it produced nothing but a superficial play with novel forms which were totally devoid of any social responsibility.

An enormous wave of city-restructuring has been continuing since the Japanese economic recovery and the rapid economic development of the 1980s. Koolhaas, who was among the invited panellists at the Kumamoto symposium, explained that his EuroLille project was a form of 'modernisation' rather than the task of normal urban design. For him, it is proof of the European challenge to modern society and to urban landscape, which he compared to the task of Promethius. But however gigantic the EuroLille project might be, Japan has dozens of such mega-projects, far larger than EuroLille, especially in the bay areas around Tokyo and Osaka, although in Japan it is rather exceptional for an architect of quality and philosophy to be involved in such a process. In scale, this modernisation already exceeds Europe. However the projects reveal the unknown reality and dimension of such huge developments – which is exciting – mixed with an outdated vulgarity which is nothing but discouraging.

The ArtPolis project was launched in this 'air-pocket' situation, caused by the too rapid ultra-modernisation of Japanese society and cities, with its tremendous local and pre-modern bias. Being confined within an existing system of Japanese bureaucracy, which had been so rigidly controlled by central government, ArtPolis does have its apparent limits. Unlike the 'Promethian' undertaking of Koolhaas, ArtPolis is a rather modest programme. It is a series of independent projects which are to be realised throughout the provincial Prefecture of Kumamoto (1.6 million population). Some projects are of minimal scale, such as public toilets in parks.

Except for the two joint housing projects in Shinchi and Takuma, the projects are not of sufficient dimension to form a distinctive area. They are 'dots', not 'planes'. Perhaps it seems ridiculous to claim that ArtPolis will change the urban structure. In fact, some of the buildings are located in beautiful countryside far from the chaotic cities – one of the basic philosophies of Mr Hosokawa is to create garden settlements with a high cultural standard in Kumamoto Prefecture. Even Kumamoto, the central city, has a population of only 600,000, and the second city, Yatsushiro, no more than 100,000. It is a small and fragile vessel for a 'Promethian' experi

ment. But the programme is as ambitious as any other experiment in Europe, however limited its scope, since this is the first breakthrough into the public domain of Japanese experimental architecture, previously restricted to a more limited field.

At the initiation of the projects, Isozaki and I were required by the Prefectural Government to present a 'guideline' for all the projects – but no effective 'guideline' was appropriate. Even in Kumamoto – which lacks the extraordinary density of buildings and human associations which characterise the contemporary Japanese metropolis – we felt that the society was too 'pluralistic' for the projects to be guided by a single major principle. Since the projects were to be built at times and at locations independent from each other, we could also not conceive any physical masterplan. In contrast to Western cities, it was extremely (if not totally) difficult to create guidelines for establishing a reasonable and effective network of public spaces. To let the architects build spontaneously the philosophy of *laissez faire* seemed to be the only possibility, with the condition that the buildings be designed by architects of our choice.

We wanted to see what would develop after the construction of thirty to forty projects. It was, with all the risks of *laissez faire*, the strategy (or even non-strategy) to rely on the flexible and spontaneous nature of Japanese cities. Koji Taki, an influential critic, mentioned this problem in an enlightening interview about ArtPolis:

> Japanese cities have no grid or radial order, but are rather something closer to natural generation. In a place as dense as Tokyo, that tends to look chaotic. While I have my reservations about overusing this concept of 'chaos', we have to admit that short of destroying these existing conditions all at once, the slow search for new structures, shifting step-by-step, is probably our state of urban development. At the present stage we see ArtPolis buildings beginning to dot the urban landscape – not as individual buildings, but as on-going urban growth. Maybe only ten or twenty dots at first, but the next stage brings more dots – and these dots gradually build up an open network structure among themselves. Only by going through this process can we begin to programatically conceptualise density.

As Taki put it, this is a deliberate approach of 'detour'. It seemed unrealistic to us to believe that cities could even be rationally categorised and regularised – except partially. We might refer to the proposition of Friedlich Hayek who attacked the modernist beliefs of both Keynsians and Marxists in the rational control of the economy as 'the pretence of knowledge' or 'the abuse of reason'. We should also admit that, at least in the Japanese context, we have no dependable criteria for establishing an order for the city. The solution should be conceived individually in each case.

For Toyo Ito, as he wrote of his Yatsushiro Museum, the notion of 'chaos' is no more than an 'anti-value' which changes our consciousness of cities, and the significance of the ArtPolis projects lies in the fact that the buildings are scattered throughout this chaotic environment. It is true that there are excellent buildings in almost every city in Japan, but, until ArtPolis, no city had sufficient numbers to assess the repertoire of an alternative public landscape.

For this type of approach, the choice of architect for each programme is important. That they are excellent architects is not enough – they should be the best choices for their specific programmes. It is analogous to casting for the cinema. Isozaki and I controlled the selection of architects and, through these choices, were effectively parties to the design. Typical examples are two housing estates, Shinchi and Takuma, both on the outskirts of Kumamoto city. They are of totally contrasting character. Shinchi presents a 'European' sense of scale, with a series of long buildings with simple outlines. It is almost an adoption of European housing, of the heroic period, inserted into a Japanese context. A space with such scale had never before been realised in this country. Takuma housing is achieved with quite complicated articulations and indentations. These differences reflect the geographical conditions of both sites, but were accelerated by our deliberate 'casting' to fit each condition. Our real objective was to present as wide a range of solutions as possible. Sometimes it was necessary for buildings to be in complete contrast to mediocre contexts, and sometimes it was necessary for buildings to harmonise with surroundings of merit. A typical case of the former is the police headquarters by Shinohara, which revolutionised the typical image of police buildings. It would have been disastrous to have Shinohara's striking buildings in a more vulnerable site, as are the agricultural buildings designed by Tom Heneghan, to be mentioned later. A police headquarters is a programme suitable for revolutionary re-definition, while agricultural buildings are of a different nature.

Other examples are the two museums by Tadao Ando and Toyo Ito. Both buildings are located beside historical relics – large prehistoric tombs in the case of Ando's building, and a 'Sukiya-style' villa with a garden formerly owned by a feudal lord, in the case of Ito's. At these sites it was necessary for us to appoint architects whose designs could maintain a delicate harmony with their surroundings while establishing each building's individual identity. These two sites are in a symmetrical position related to Kumamoto City. It is a Japanese tradition to place two sculptures or trees symmetrically around a central object, with the symmetrical objects ideally of contrasting character. In selecting these architects we sought to achieve this contrast. In the design of these two museums, by architects of the same age, this contrast was almost perfectly realised not only in terms of shape (the 'masculine' and powerful building of Ando versus the 'feminine' and elegant building of Ito) – but also in terms of

their treatment of their natural and historic contexts. As a result, these two buildings are among the most impressive works of all the ArtPolis projects.

To break the social custom of the public authorities, it was our aim to give commissions to younger architects.The only architects above the age of fifty were Kazuo Shinohara and Renzo Piano. Shinohara's involvement was almost honorary while Piano's was due to the nature of the project – a bridge of 1,200 metres over one of the most beautiful bays in Japan. In exceptional cases, young architects occasionally obtain such work through public competitions. The success of the open competition for the Shonandai Cultural Centre in Fujisawa, won in 1986 by Itsuko Hasegawa, with other young finalists such as Sakamoto, Hayakawa and Yatsuka, was the beginning of a new phase of competition results, which was followed by several others. However, until ArtPolis, Japan's young architects were not much involved in public projects.

The real importance of the involvement of these architects in public projects lies in the fact that such work significantly affects each architect's individual approach. For example, Toyo Ito was compelled to reconsider an approach which had been successful for small and private projects (such as the 'Silver Hut' – a house for himself), but which could not be applied to his Yatsushiro Museum project. However problematic it may have been to adopt a new dimension which addresses the rather abstract and anonymous concept of 'the public', it was I believe, an indispensable step for his architecture.

Riken Yamamoto, the architect of the Hodakubo-Daiichi housing (later the subject of deep controversy among its inhabitants) mentioned that his work became stronger because his was not an independent project, but was part of ArtPolis and thus associated with the projects of other architects. Faced with the public, architects had to address 'reality'. One of the noticeable characteristics of ArtPolis was the dual character of the architects – accessible to the public (as users) yet part of the cameraderie of the separate architectural community.

Yasumitsu Matsunaga, one of the architects of the Takuma housing estate, commented that the experience of public housing is something totally different from private housing. This might sound 'matter of course' to Western readers, but the experience was unexpected for architects, such as these, who had been accustomed to working in very different (and personal) circumstances. Like infants, they were discovering a new sense of identity.

The wide range of the programme, regardless of its size, is another characteristic of ArtPolis. As mentioned above, the size of each project was unimportant for us. In contrast to the *Grand Projets* of Paris, it was apparent to us that Kumamoto could not be structured by use of monumental and symbolic buildings as *foci*. It was also obvious that we could not compete with the French capital in terms of the size of projects. Our intention was that – as a collectivist – the projects should demonstrate a new alternative. For this reason we included almost every building type, including civil engineering structures such as tunnel ventilation facilities. The most typical repertory are bridges – from the 1,200 metre long bridge by Piano, Okabe and Rice, to the 30-40 metre long bridges by Waro Kishi, the Kyoto based architect, and by Sei-ichi Arai, the former partner of Morphosis. There are also two projects for additions to existing bridges, both of which were commissioned to interior designers – Kazuko Fujie and the late Shiro Kuromata. This 'casting' was particularly interesting because it brought, face to face with the public, interior designers who had previously worked mainly on small and exclusive shops and restaurants, and who had become wearied by the need to provide constantly different diversions for this highly developed consumer society. For the same reason other interior designers were also appointed for ArtPolis – Masanori Umeda for a hilltop park with bell tower, and Kenji Oki for the design of prototype furniture for a children's garden. This provided not only new approaches to this type of programme, but also new phases for the work of each designer.

Public housing which, in Japan, had seen no notable architectural contribution for thirty years, became one of the main subjects of the ArtPolis programme. Another significant housing project, also directed by Isozaki, is NEXUS in Fukouka. However, NEXUS is an international project, a private luxury development. All the Kumamoto housing projects are public low-cost developments, with a unit cost almost half that of the NEXUS project. However within these tight cost constraints, the architects have managed to create new alternatives – each of which is different from the others. Compared to the IBA housing (most of which tended to be purely facade designs, with exceptions such as the Checkpoint Charlie housing by Elia Zenghelis and Matthias Sauerbruch), the Kumamoto projects illustrate that architecture can still give form to society. It is a matter of course in Japan, but still quite significant, that these architects faced this 'classic' subject afresh, and it is interesting to observe the difference of their approach and attitude to public space.

The Hopdakubo-Daiichi housing by Yamamoto has a closed court at its centre. The dwelling units are separated into two parts – the living area facing the court with the bedrooms at the rear – with both parts connected by a semi-open corridor (a reinterpretation of the plan of old country-houses in southern Japan). With large window openings in the living rooms, the central courtyard assumes a strong character as common space. For Yamamoto, collective housing – as opposed to detached houses – should express the positive meaning of living together. The inhabitants are required to express their own identity in this strong collective apparatus.

In Kazunari Sakamoto, architect of Takuma

housing, we see an entirely different attitude to this problem. Under each housing block, a public walk is introduced which connects to entrances and staircases. This is a public area, because it is open not only to the inhabitants but also to neighbours, and in this housing there is no common space, which demonstrates the architect's recognition that the concept of common space has already been lost in Japan's contemporary society.

An even more radical proposition is seen in the only private building in ArtPolis: the Saishunkan women's dormitory by Kazuyo Sejima. In this dormitory, which houses company employees for their first one or two years, the architect designed very small 'cell' bedrooms, each accommodating four people, opening onto a huge, high communal living hall at the centre. In this open interior courtyard there is nowhere to retreat into privacy. In this dormitory, Sejima, who herself acted as a 'model' for Ito's 'Tokyo Nomad Woman' project, appears to take it for granted that women of a contemporary homogeneous society no longer require ordinary privacy. The high, too transparent central space is neither 'common' nor 'public' but looks rather like a prototype space for new human associations. This might be a dangerous hypothesis. The space might become oppressive under some circumstances, but this bold planning was supported, even encouraged by the female president of the Saishunkan company.

The final point to be mentioned about ArtPolis concerns 'internationality' and 'locality'. From the beginning of the project we were asked whether ArtPolis would become universal by its nature of giving commissions to architects from Tokyo, Osaka and even from abroad, or whether it would reveal something unique to Kumamoto. This question was raised because Mr Hosokawa had advocated that the Kumamoto region could be directly linked to the world, and that internationality and regional identity do not contradict each other. Unfortunately, we have only three foreign commissions at this stage: the Ushibuka bridge by Piano, the annexe to the Prefectural Museum by Lapena and Torres (Barcelona) and the sheds of the Grasslands Stockbreeding Research Institute by Tom Heneghan (London) and Inga Dagfinnsdottir (Iceland). The building by Lapena and Torres is the third museum in ArtPolis, and is actually a project for the renovation of the old city library. While essentially utilising the existing structure, they succeeded in achieving the image of a completely new building. It is located at the city centre, in front of Kumamoto Castle – which is famous for its solemn and heavy bastion, and which is a favourite of the film director Akira Kurosawa. The museum, with its latin sense of lightness and elegance, conducts an historically interesting dialogue with the ancient bastion. Ryoji Suzuki, writing about the museum, commented that it is remarkable how these Spanish architects were able to 'salute' the castle in a more relaxed and natural manner than do works by domestic architects. The cow-sheds (actually a complex of eleven buildings) by Heneghan and Dagfinnsdottir are also located in a remarkable site, in beautiful grassland on the outskirts of Mount Aso, the largest volcano in the world. The work of the British architect, now living and working in Tokyo, achieved perfect harmony with its surroundings. It seems that achieving this sense of harmony is rather difficult for Japanese architects who are too accustomed to the chaotic environment of large cities. As a result, these buildings achieved a standard which might be compared to the famous cow-shed in Garkau by Hugo Haaring. These projects are happy 'marriages' of the best Japanese local scenes (either in the city or the countryside) with projects by foreign architects, each with their own identities.

In spite of the apparent preference for internationality by Isozaki and myself, ArtPolis also has several projects which incorporate local images and construction methods. Typical projects are the Seiwa Bunraku (puppet) theatre by Kazuhiro Ishii, the Craftworkshop buildings by Atelier Zo and the Yunomae Cartoon Museum and community centre by the Kumamoto-based architect Hide-aki Katsura. These are all small buildings but, located in small provincial towns and villages, they act as powerful public *foci*. As Katsura explained, these buildings cannot be disconnected from their surroundings. The local districts of Kumamoto still maintain old customs, human associations and pre-modern dimensions. These small settlements are too vulnerable for the introduction of international and universal solutions, regardless of the conditions and programmes. But even in these cases, the solutions by each architect are anything but literally 'traditional'. The Bunraku theatre, by Ishii, is a wooden building, with apparently traditional roofs appropriate to the programme of the ancient Bunraku performance. On closer inspection however, the iconoclastic use of wooden beams in the theatre and the 'rotunda' exhibition hall annex, have no historical precedents in Japan. Katsura's small Cartoon Museum borrowed a formal motif from local children's toys, and uses wooden structure and local timbers – but it also resembles the Leicester Engineering building by Stirling and Gowan.

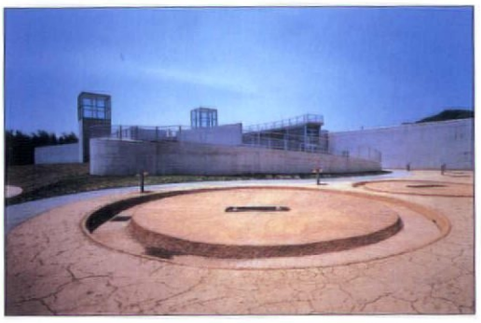
These foreign and local projects show that today we have neither genuine 'internationality' nor genuine 'locality'. As projects in the age of global media, these works can be apparently 'international', but in some cases extremely 'local'. For me, this seems to be a post-modern phenomenon, and it is one of the most interesting aspects of the ArtPolis programme.

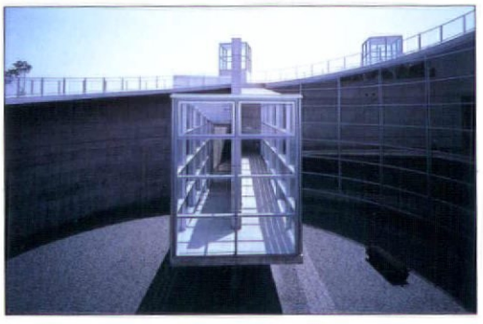
TADAO ANDO

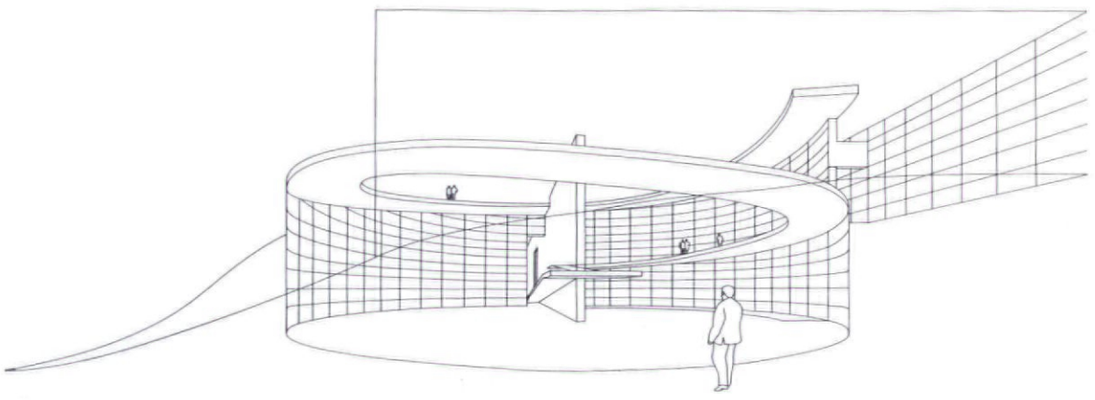
MUSEUM IN KUMAMOTO

This museum was designed for a site in the northern area of the Kumamoto prefecture encompassing the Iwabaru tumulus group, including the Futagozuka 'keyhole' tumulus and eight other circular tumuli. Site conditions required that the building should not be closed in upon itself but opened up to harmonise with the beautiful surrounding natural environment.

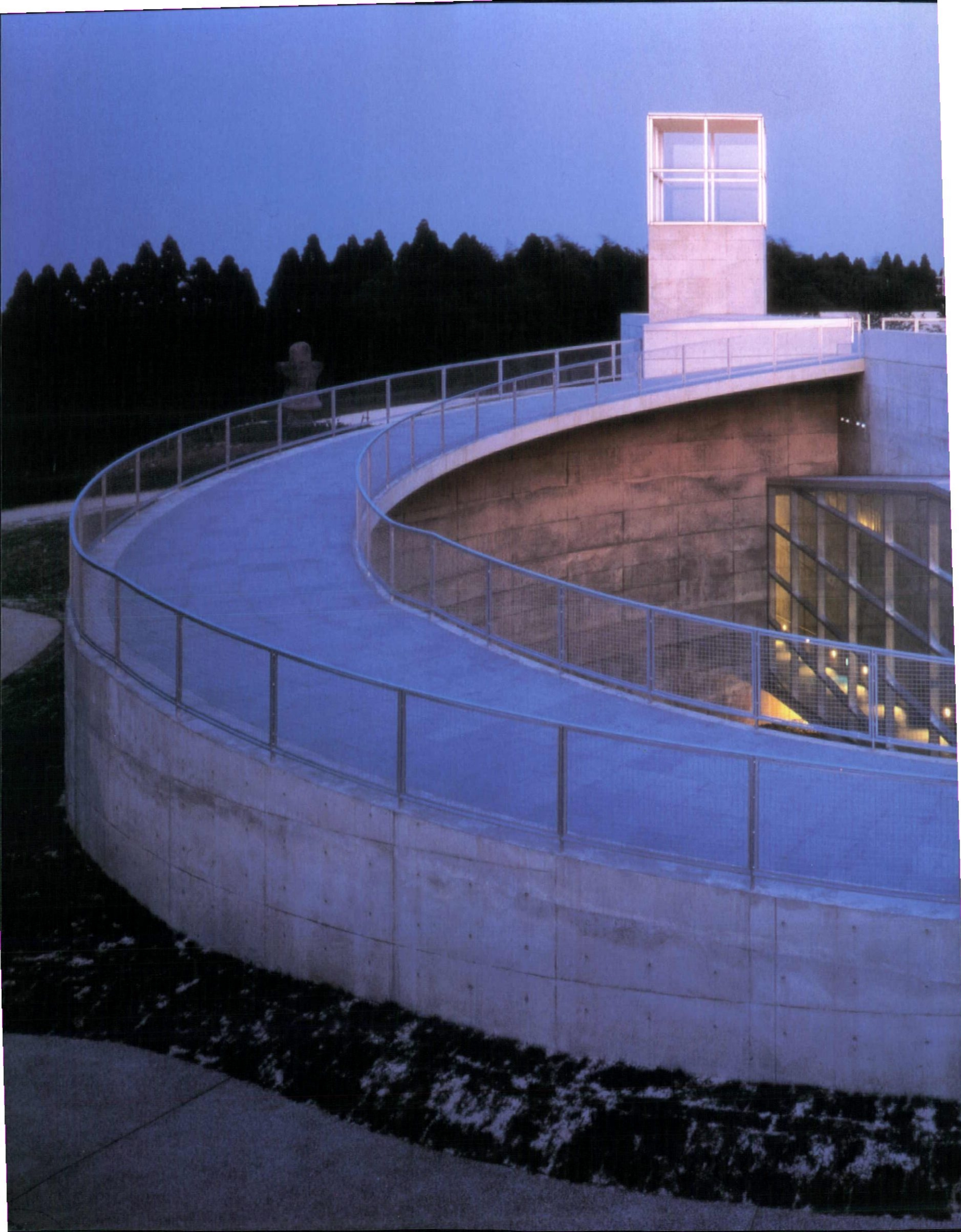
The architecture consists of a circle with a radius of 15.8 metres, a rectangle with the dimensions 26.4 x 79.2 metres, and an L-shaped wall, the long arm of which projects from the centre of the circle. These structures are disposed to achieve symmetry with the Futagozuka keyhole tumulus. In order to avoid a situation where components of the architecture would protrude from the periphery of the site, more than half of the building volume is buried underground. The car park is located some distance away from the museum to provide the visitors with the experience of enjoying the outstanding natural landscape. While approaching the museum entrance, visitors climbing the stairway and looking out over the group of tumuli from the rooftop terrace are guided into the building by the looped ramp. This approach route gives them a sense of the experience of entering the interior space of a tumulus reconstruction filled with artefacts unearthed from ancient burial sites. Itself a member of the tumuli group, the building blends into the landscape, breathing the ancient age into the modern world.







RIGHT: Interior perspective

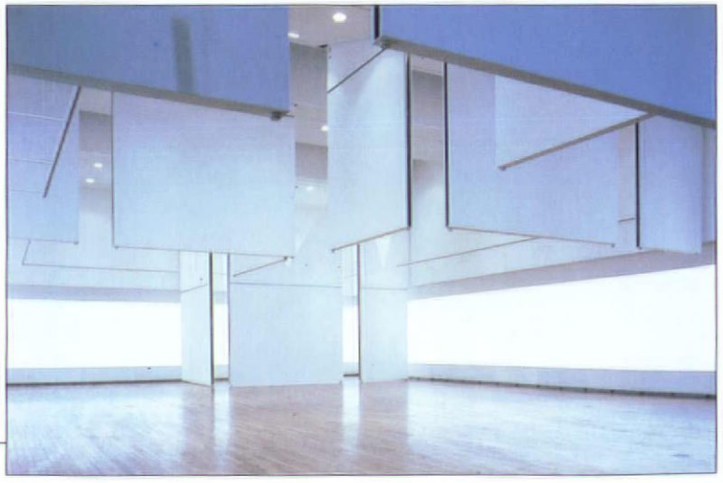


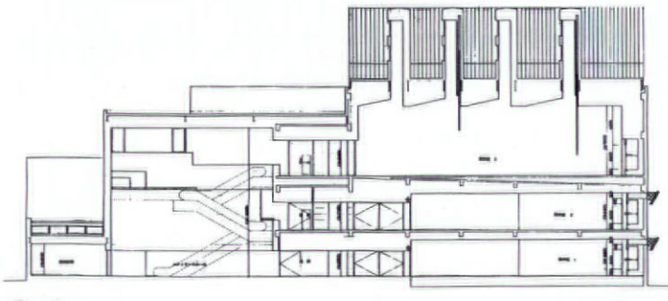
JA MARTINEZ LAPENA & E TORRES TUR & DAIWA

KUMAMOTO MUSEUM OF ART ANNEXE

Our project for the adaptation of a 1959 public library into galleries for temporary exhibitions and auxiliary services for the Kumamoto Museum of Art began with the following considerations: to re-use as many of the structural elements of the existing building as possible, while adding the minimum number of new volumes; and to establish a dialogue between the new image of the building and the ramparts and buildings of Kumamoto Castle, in front of which the project is located.

The image of the exterior of the building is a skin of stones placed at 45 degree angles, dressing the cluster of old and new volumes. The stone facing covers only three of the four facades in front of the castle; the fourth facade, for budgetary reasons, was covered with painted panels. On this facade are located the museum's reception entry, access to the service areas and the emergency stairs. On the main facade are two large openings protected by stout copper-covered canopies. The opening on the ground floor is the main public entry; the other, opening onto the tea room on the third floor, is a window, elongated like the forms of the buildings which rest upon the first of the castle's ramparts. The roof is raised in a comb-like configuration of vertical volumes which allows overhead light to enter. The sculpture area which adjoins the entry hall and the museum reading room are extended by small patios. The first patio is a free interpretation of a Zen rock garden, the second, after the vines have had time to grow, will take the form of a giant set of books. (*Elías Torres*)





Section

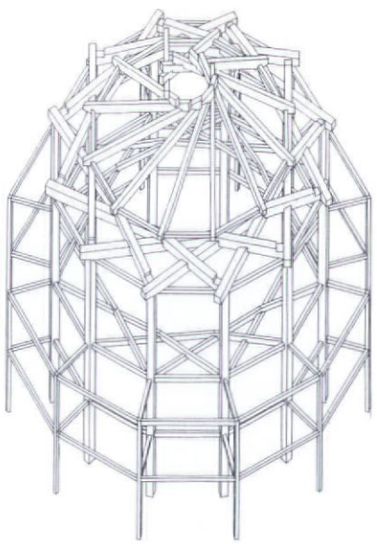
KAZUHIRO ISHII

SEIWA BUNRAKU PUPPET THEATRE

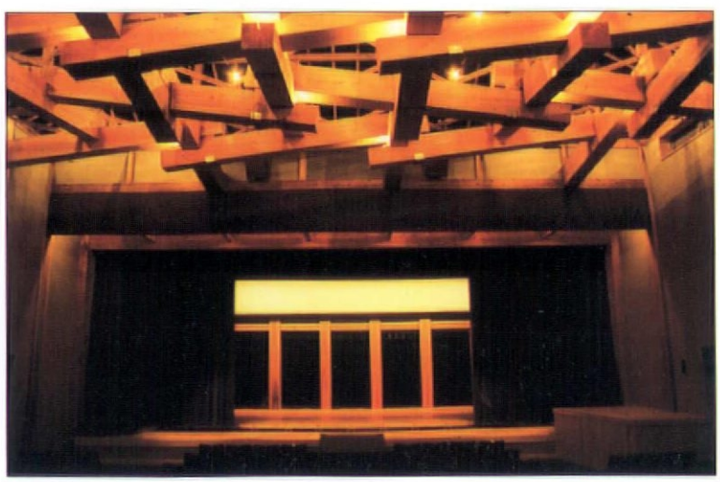
Kamimashiki

Bunraku is the traditional Japanese puppet-play art form which matured in the 17th century. This new theatre building for Bunraku performances was created as the main facility attraction to stimulate business activity in this rural village in Kumamoto, where forestry and agriculture remain the main industries and where depopulation is beginning to undermine the economy. The project consists of three buildings containing an exhibition hall, a seating section and a stage. The covered exterior corridor connects the exhibition hall to the seating area.

Built entirely of wood to help increase consumption of lumber in this region, as specified in the programme, traditional construction techniques have been used in each building. To emphasise the building's symbolic significance as the central facility of the village, the design was based on the temples and shrines in Nara, adopting the spiral layering of wooden beams learned from the techniques established by the Buddhist monk Chogen (1121-1206) in the construction of temples such as the Great South Gate of Todai-ji in Nara and the Jodo Hall of the Jodo-ji in the Hyogo prefecture. Beam configurations are different in each of the three buildings to achieve dynamic and distinct non-ordinary spaces.



Axonometric

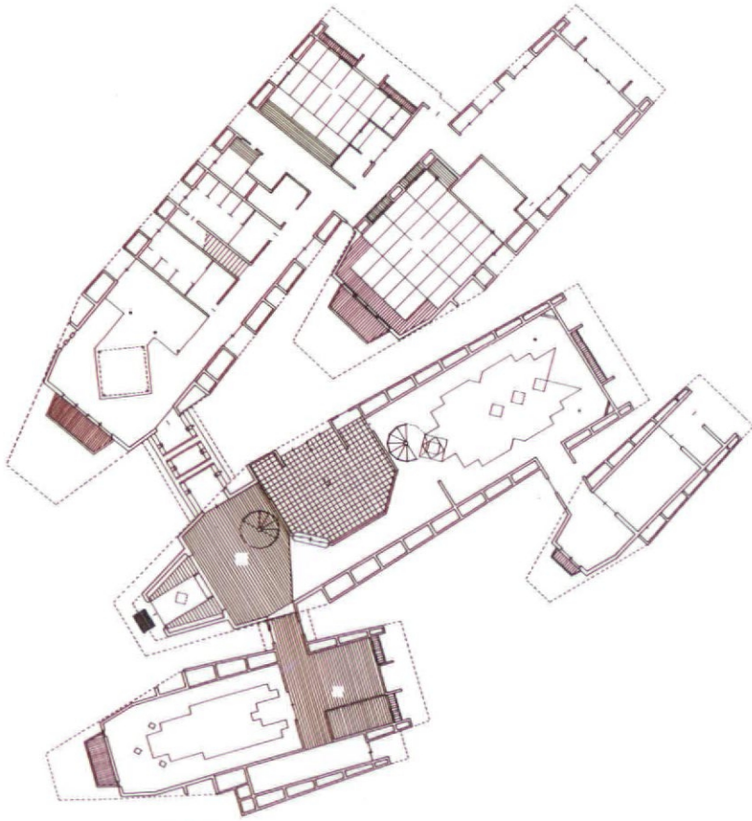


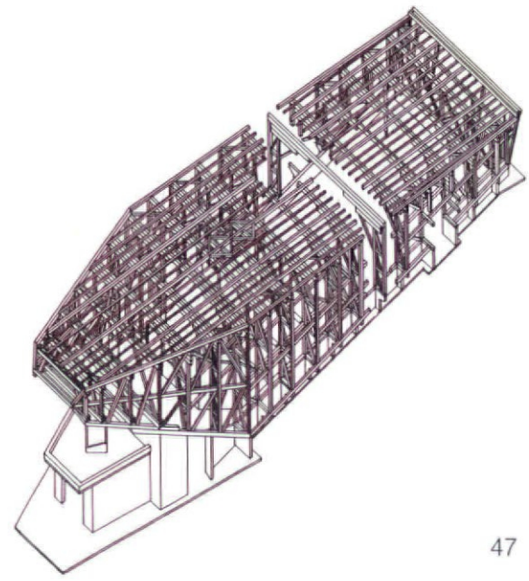
HIDEAKI KATSURA & A•I•R

YUNOMAE CARTOON MUSEUM & COMMUNITY CENTRE

Kuma

This is an exhibition space dedicated to the memory of a well-known comic artist from this town, Ryosuke Nasu, but it also has community centre functions. Yunomae station is a terminus on the local line which is operated by service sector companies. This new facility is next door to the station, linking it to the existing public facility. Located in the centre of the town this project was the centrepiece of revitalisation plans. It is divided into five buildings which are linked by covered walkways and a terrace. As specified by the city government, the main theme of the design was wooden architecture. Thus, wooden trusses forming the eaves protrude on the exterior making a strong visual impact. The motif for the building design is the folk-crafted toy of a wooden horse. Here, the effect can be read as five horses' heads together in a friendly group.





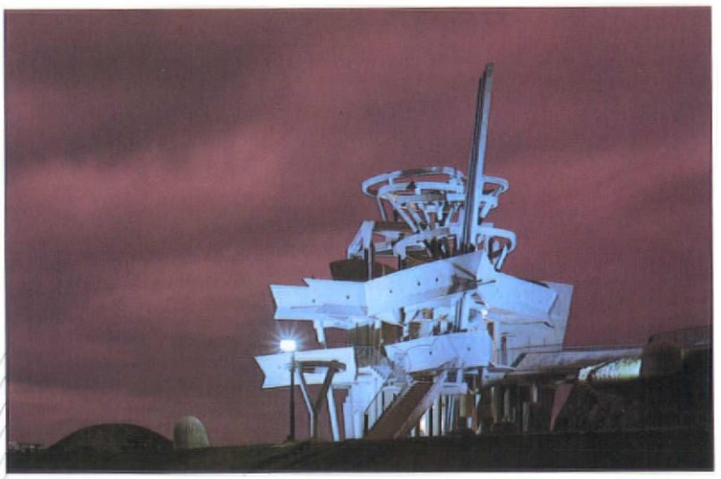
First floor plan; RIGHT: Axonometric of structural system

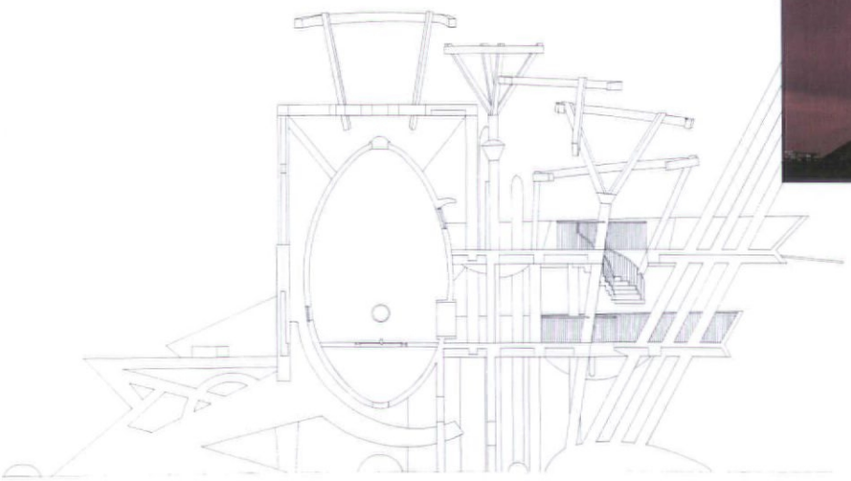
MASAHARU TAKASAKI

TAMANA CITY OBSERVATORY MUSEUM

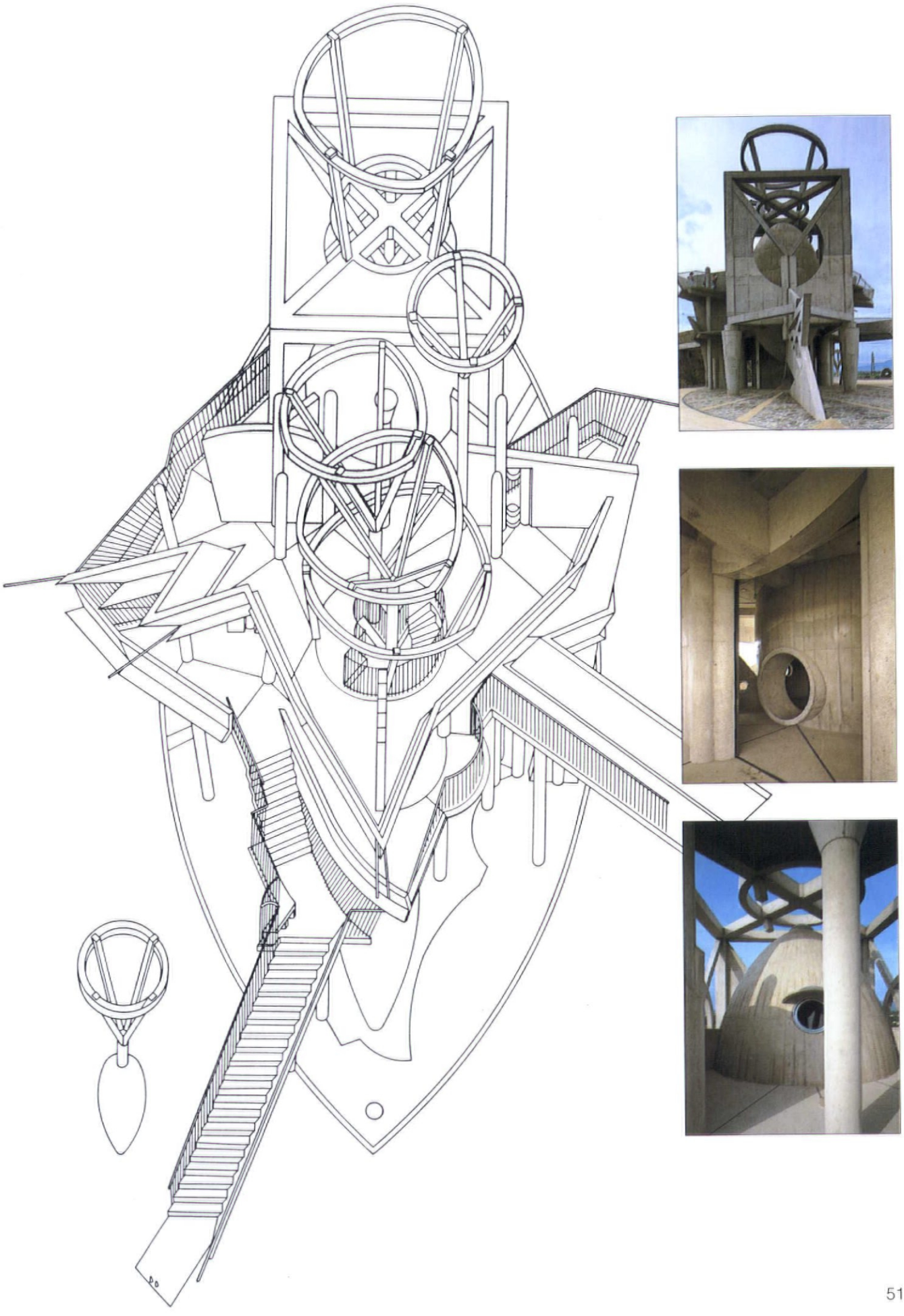
Standing on the top of a hill in the centre of a sports park, this is an exposed concrete observation deck. In both exterior and interior design, 90 degree angles have been avoided almost everywhere, and an organic form has been worked out that responds to minute variations in light, wind and other elements of nature.

The structure can be divided into three phases. The *Chinoza* (earth room) on the first floor is a boat-shaped plaza-type space that responds to both the energy bubbling up from the ground and that falling from the sky. It was designed to be a location where city residents could socialise. On the second floor, the *Kumonoza* (cloud room) is a space designed to give visitors an experience of the attitudes and outlook of residents and the pride expressed in their slogan 'our Tamana'. There are wonderful views looking down onto the Kikuchi river that flows majestically through the urban areas of Tamana city, and in the distance you can see as far as the Ariake Sea. On the third floor, the *Hoshinoza* (star room) is a space for experiencing the portents of the future. A monument on the motif of the lotus flower as the symbol of happiness opens up toward the sky. Also, the symbol of the three arrows appearing to extend into space express the aspirations for the future development of Tamana city.





LEFT: Section
OVERLEAF RIGHT: Axonometric of roof

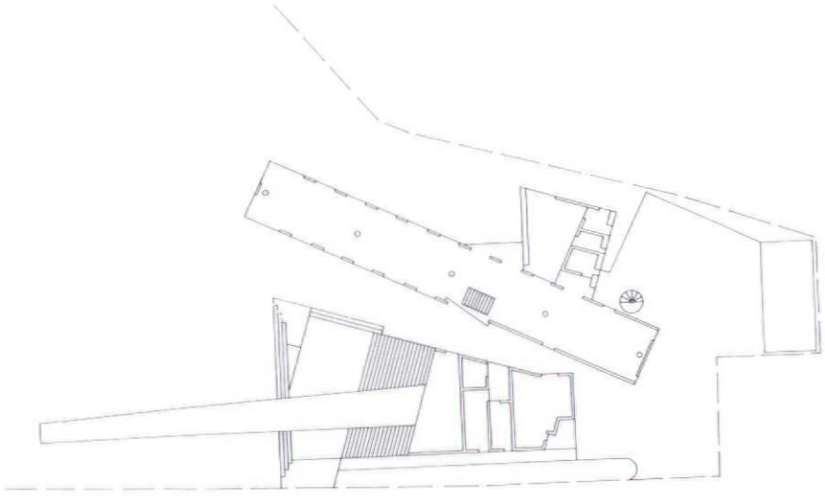


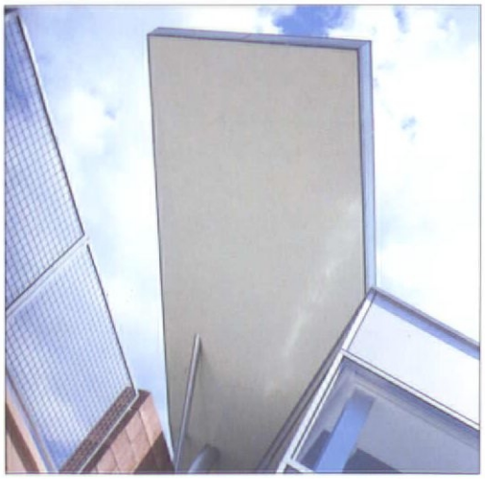
KOJIRO KITAYAMA + K

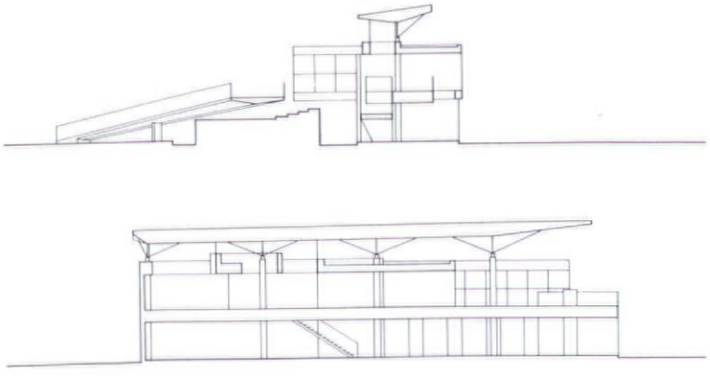
TSUNAGI GALLERY FOR LOCAL PRODUCTS

Ashikita

This building was erected on the site of the old Tsunagi town hall that faces onto the National Highway. There are superb views of the hills of the Maizu castle park, the Tsunagi river and the old Megane bridge. In addition to facilities for selling locally-made products, other functions include a welfare centre and culture hall. One important design feature is the visual and spatial linking of the various landscape elements around the site. It adopts a tour-garden configuration which was designed for the public to enjoy the varying scenes. The result is a social space where people can spend their leisure time.







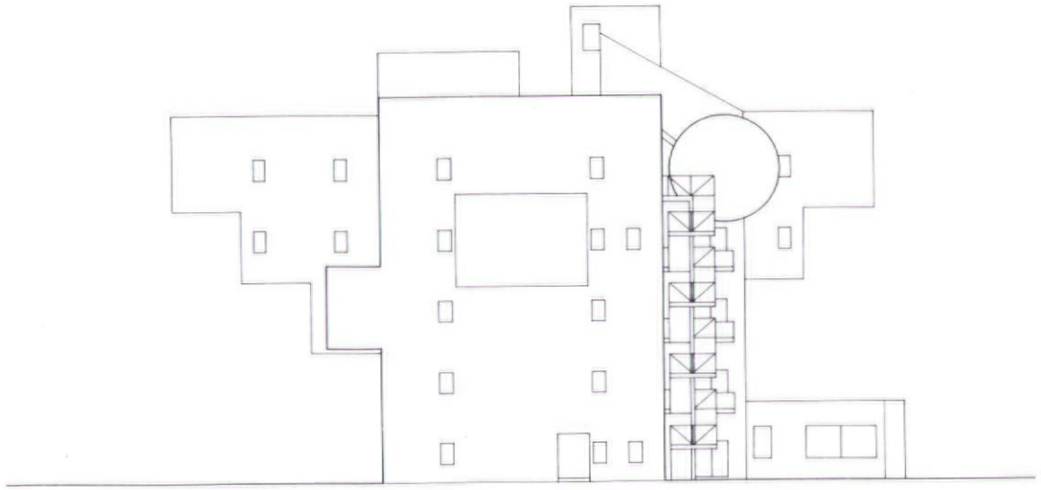
First floor plan; cross section; longitudinal section

KAZUO SHINOHARA ATELIER + TAIKOH

KUMAMOTO KITA POLICE STATION

Located in the centre of Kumamoto city, this police station, which accommodates 300 people with a floor area of 3,700 metres, is the largest police facility in the prefecture. With an extended length in the east-west direction, the site has a slightly expanded facade on the west end, facing a national road. Due to the nature of this site, the west end was treated as the front, and the plan employed an east and a west block symmetrically arranged on an east-west axis. The west block houses a spacious lobby for the business activity connected with daily civic life, including the traffic department and a martial arts hall open to local primary school children. Police functions are grouped in the east block. Different structural systems – a steel frame in the west and reinforced concrete in the east block – reflect the functional differences.

In the cantilevered projection of the west facade a ratio of 10:4, using the widths of the highest and lowest levels, generates a mood of lightness. To make the rooftop suitable for daily life, the air-conditioning equipment was suspended in a horizontal cylinder which gives this side of the building a somewhat whimsical composition. Such considerations in the design result in a police facility that serves as a new kind of urban architecture.



RIGHT: Sketch elevation

KUNIHIKO HAYAKAWA

SHINCHI HOUSING-A

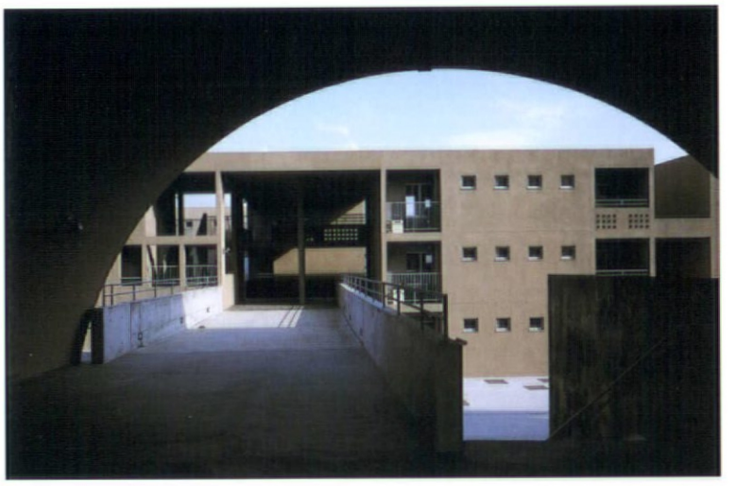
Kumamoto

The masterplan for Shinchi Housing-A called for the rebuilding of a housing development (716 households, built from 1962-67) to enable it to accommodate 1,078 households, or a population of about 4,000 people. Extending over five years, the project was conceived of in urban terms and needed a programme in accordance with this. The masterplan is characterised by a decidedly linear composition of a kind rarely encountered in Japan.

The five participating architects were Kunihiko Hayakawa, Riichiro Ogata, Yuzuru Tominaga, Hiroshi Nishioka and Kenjiro Ueda with the masterplan by Hajime Yatsuka. Each was in charge of an apartment building design for one of five construction phases. The entire group strove to cooperate on the basis of a common concept to provide a rich residential environment by making good use of topographical variety, diverse and individualised apartment buildings and a network of plazas.

Before Phase 1 of Shinchi Housing-A was initiated, 186 wooden row houses had stood on the site. The architect concentrated on creating satisfying, amply-scaled public zones and on ensuring as much diversity and as little repetition and standardisation as is possible in a development of 276 residences.

The buildings in this project are of two types: low-rise blocks (two to three storeys) surrounding courtyards, and linear-form medium-rise blocks (five storeys). The buildings include apartment layouts of 13 types in the medium-rise buildings and ten types including two maisonette types in the low-rise buildings. Amenities provided for communal use include such public spaces as a meeting room, a reflecting pool, courts connecting low-rise blocks and open spaces articulated on five levels that make use of the natural topography. Individualised approaches in the low-rise blocks, and gates and concourses in the medium-rise blocks, establish open connections with the surrounding districts and enhance the theme of diversity.

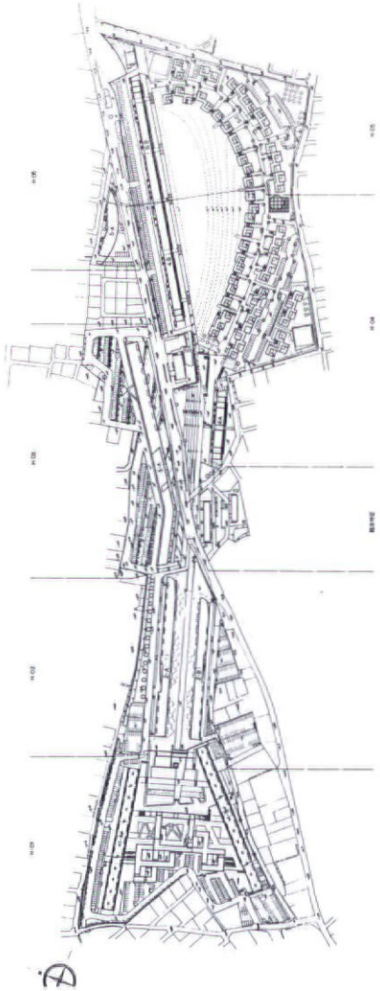


RIICHIRO OGATA

SHINCHI HOUSING-B

Kumamoto

Using Shinchi Housing-B with its east-west longitudinally extended site as the ordering element, an axial line was specified linking two symbolic towers contained within the site. Two massive residential blocks were arranged in parallel with respect to this line. It is, however, the mall between the two residential blocks that gives this complex real character. The mall can be thought of as a stage for the residents' daily lives, and the rhythmic array of staircases and terrace forms can easily be seen as the audience stand. Thus the whole is viewed as a theatre. The intention was to make the project a 'system for bringing people together to have fun'. To this end, all rooms facing onto the mall are public spaces in a plan that also called for concentrating sanitary facilities in the centre.



LEFT: Masterplan

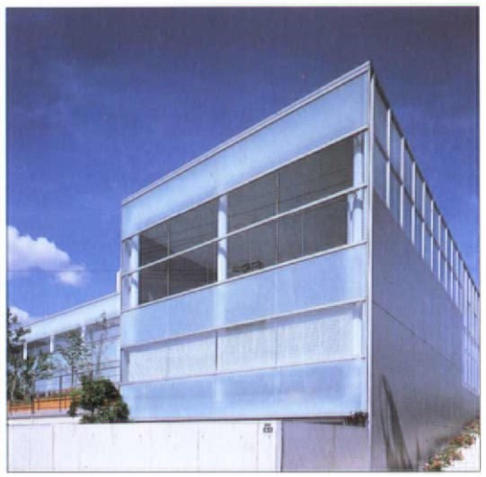
KAZUYO SEJIMA

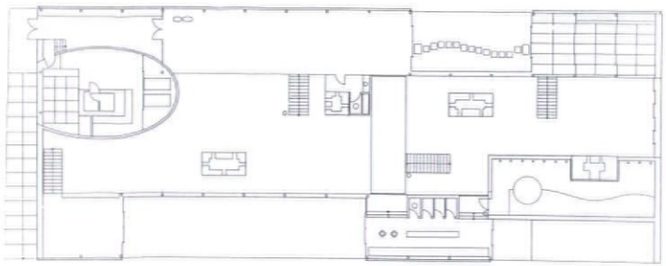
SAISHUNKAN SEIYAKU WOMEN'S DORMITORY

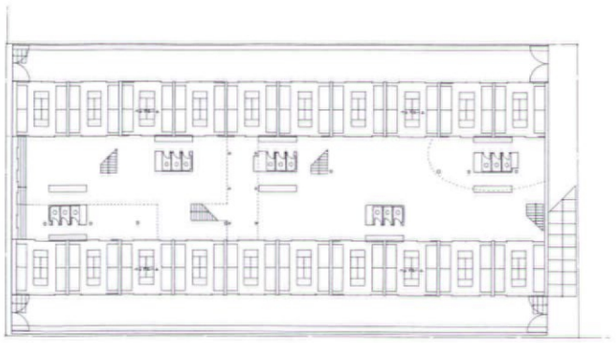
Kumamoto

The Saishunkan is a women's dormitory built for a company in Kumamoto Prefecture for its new employees to live in during their first year of employment. Since this term of residence is not long, and since the residence building will be used as part of a training institute, the architect was directed to devote more care to communal spaces than to private rooms. The final scheme was selected from among many proposals examining the arrangement of functions.

On the first floor, along the longitudinal site axis, are aligned two rows of four-person rooms to accommodate 80 people. Various facilities are placed above them, and the double-height space between the rows of rooms is used as the living zone. In this large space are round steel columns rising out of a concrete slab, with five towers housing toilets on the first level and equipment for air conditioning, lighting, and plumbing above. The feeling of the exterior is admitted into the living space through large openings and skylights. Made possible by bold floor planning, this space illustrates the designer's wish to produce a place of changing moods and an interior-exterior continuity.







Second floor; first floor

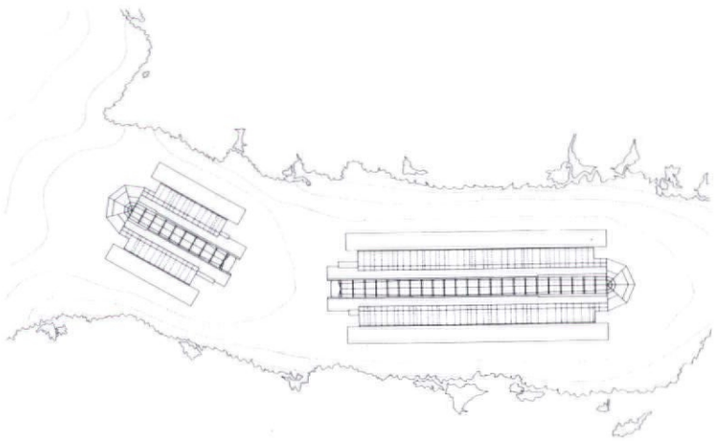
TOM HENEGHAN, INGA DAGFINNSDÖTTIR OJUKAI-FURUKAWA

KUMAMOTO GRASSLANDS AGRICULTURAL INSTITUTE

Aso

The project consists of 11 buildings which extend the research facilities of the existing grasslands institute, and which are dispersed over a 100 hectares of Aso National Park, one of the most impressive landscape settings in Japan. The site is ringed by a number of mountains including Mount Onodake, to the north of the site, and, in the distance, the active Mount Aso volcano. Despite its beauty, the surrounding environment can be hostile with strong sunlight shining through the clear air in the summer, and high temperatures which trouble the cattle more than the winter harshness. The air-borne volcanic ash from Mount Aso is highly acidic, and physically attacks building structures. Thus the architecture must be in balance with its surroundings.

The design attempts to achieve this balance both formally and environmentally. The buildings are emphatically neither of natural nor vernacular form, but are conceived as part of the 'language of the landscape'. This is a working landscape – with the grasslands laid out as identifiably different fields of feed-plants. These are also working buildings in which each part is designed to explicitly identify its functional purpose. The buildings were all conceived as a 'family' of related forms and materials, and are inserted into the landscape using the terrain's existing undulations to create a distinctive setting for each of the two major building groups – which are separated to prevent the transmission of disease between the different animals, and which are located at the centres of their related pasture fields. The principal group is the 'beef area', which consists of four buildings: a hay store, a calf building, a bullock building and a horse building. To visually reduce the scale of the buildings in the landscape, each has been articulated into parts which clearly express their purpose. All are clad in black steel or wood cladding – a monochrome theme which allows the natural colours of the landscape, and its seasonal changes, to dominate. (*Tom Heneghan*)



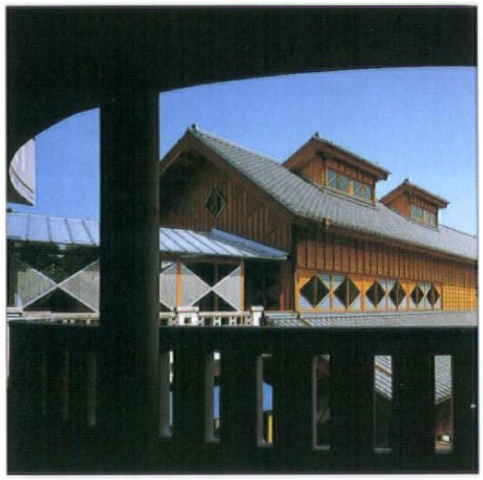
RIGHT: Site plan of beef area

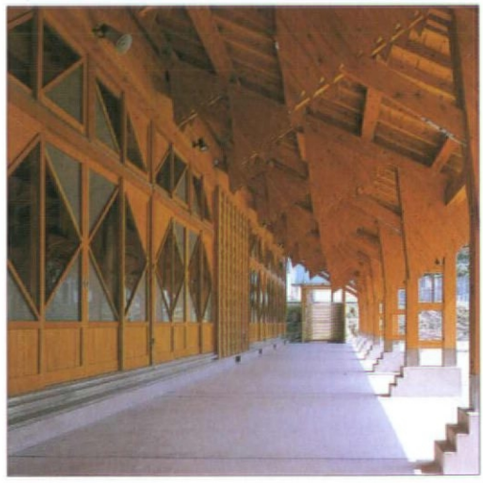
ATELIER ZO

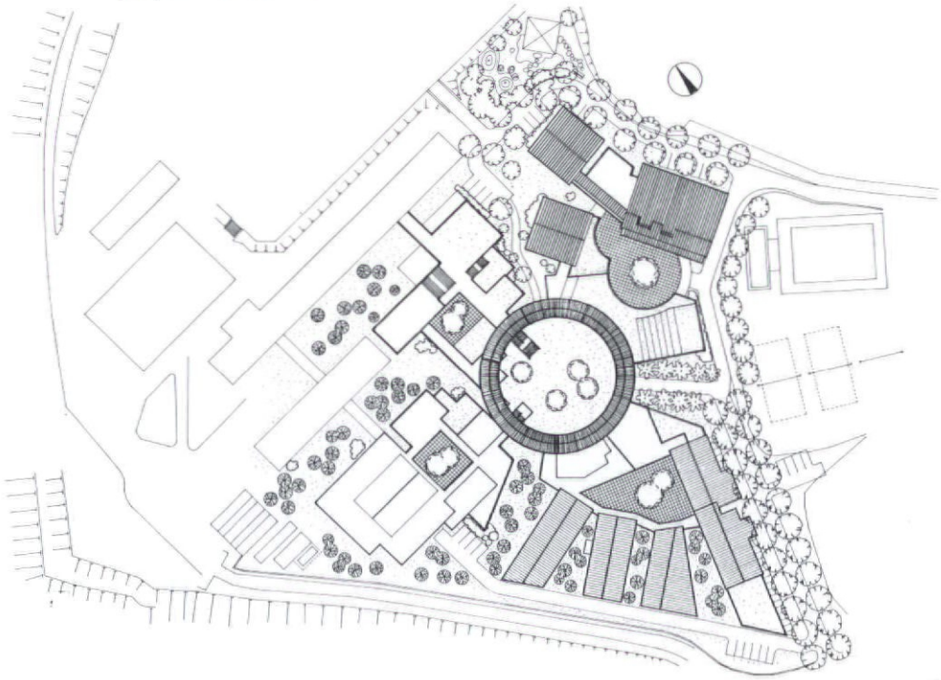
KUMA HIGH SCHOOL OF INDUSTRY, TRADITIONAL ARCHITECTURE WORKSHOP

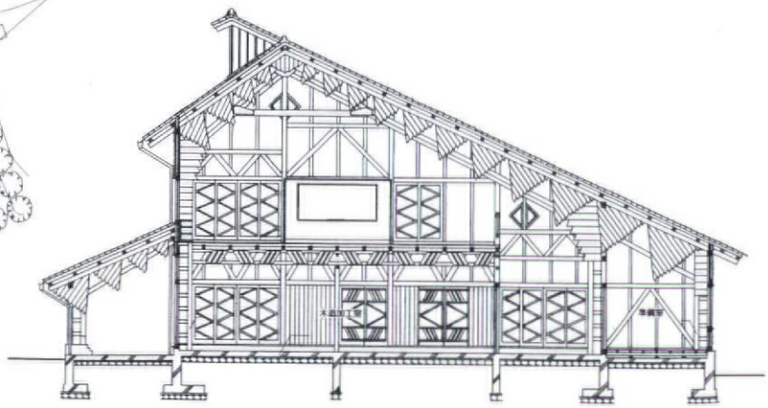
Hitoyoshi

Atelier Zo produced the execution designs for this traditional architecture course training facility as well as the basic design for the entire school in Hitoyoshi. By restricting materials to those required for unprocessed wood construction, they have succeeded in harnessing the warmth of wood to their purposes. A half-size model of a five-storey pagoda can be assembled in this vast space formed with a beautiful wooden frame structure. A marvellous expression is achieved with the influx of light from the high windows. These are just some of the ways in which students are brought into direct contact with the structures and materials. The students find that the building itself is the educational material. By using locally produced cedar wood materials construction time was significantly reduced. Wall finishings will be completed by the students as part of their project course work.









ABOVE: Site plan; RIGHT: Section

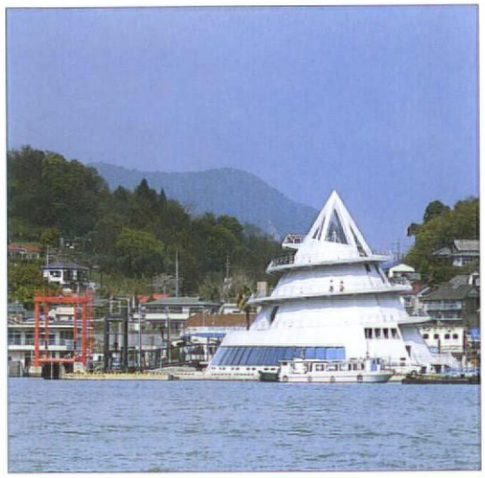
SHOEI YOH + ARCHITECTS

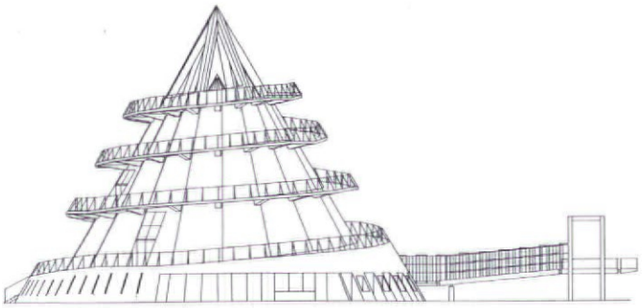
MISUMI FERRY TERMINAL, AQUATIC PYRAMID

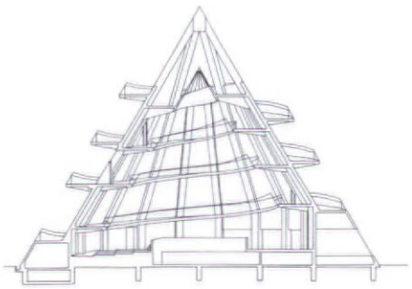
Uto

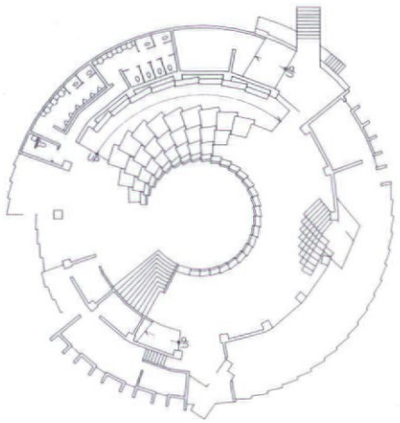
Misumi is a harbour town located at the edge of a small peninsula projecting into the Ariake Sea in Kumamoto Prefecture. Constructed as a symbol to help promote industrial development in this town, the ferry terminal building itself serves as a landmark of this harbour. The literal meaning of the name Misumi, a triangle, which inspired the images of cones and spiral shells, together with the theme 'aquatic pyramid' became the crucial elements in the determination of the building form.

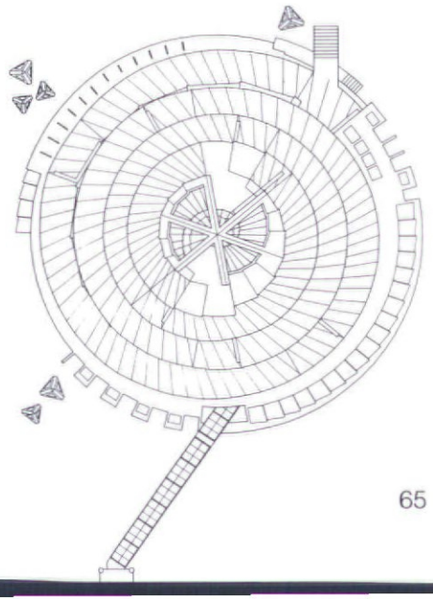
The building consists of a concrete shell structure 34 metres in diameter and 25 metres in height. A pair of spiral ramps loop in opposite directions on the inner and outer surfaces of the conical roof. The observatory on top of the cone allows daylight to enter through the skylight and illuminates the concrete frame at night.









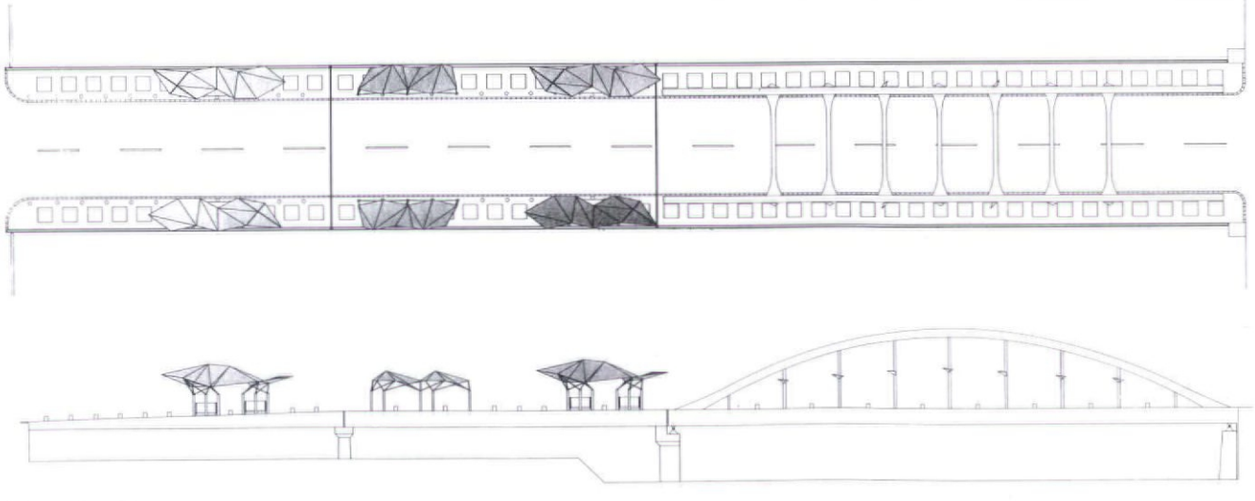


FROM ABOVE: Elevation; section; ground floor plan; site plan

FUJIE KAZUKO AND OSAMU HARAGUCHI

SHIRAKAWA BRIDGE – 'FLYING LIGHT'

Shirakawa Bridge is the central bridge in the city of Kumamoto and extends 150 metres carrying a major city road. In this project everything has been designed anew, from the widths of the roadway and the pavement on the bridge, the flying lights, arch colours, pavement patterns, guardrails and arch bracket lighting to the guardrail elements which are used as substitutes for the benches. There are two types of flying lights, both designer pieces, and six of them have been installed. They not only illuminate the brackets, but also contribute to the night scenery. With all these new features, the bridge has a completely new personality as a major element in the streetscape of Kumamoto.

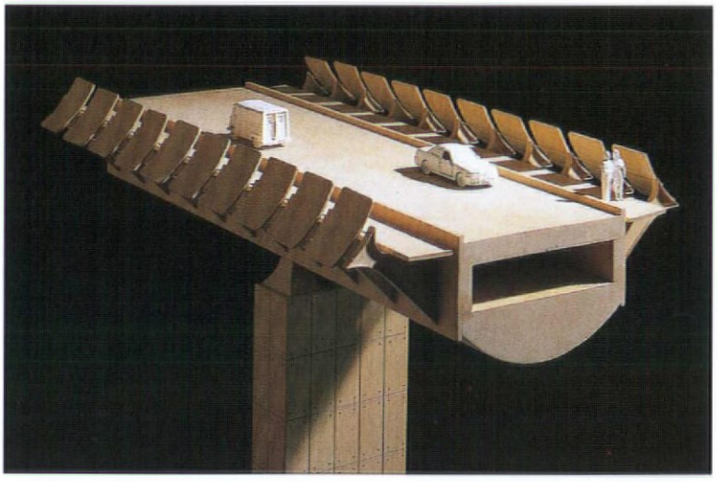


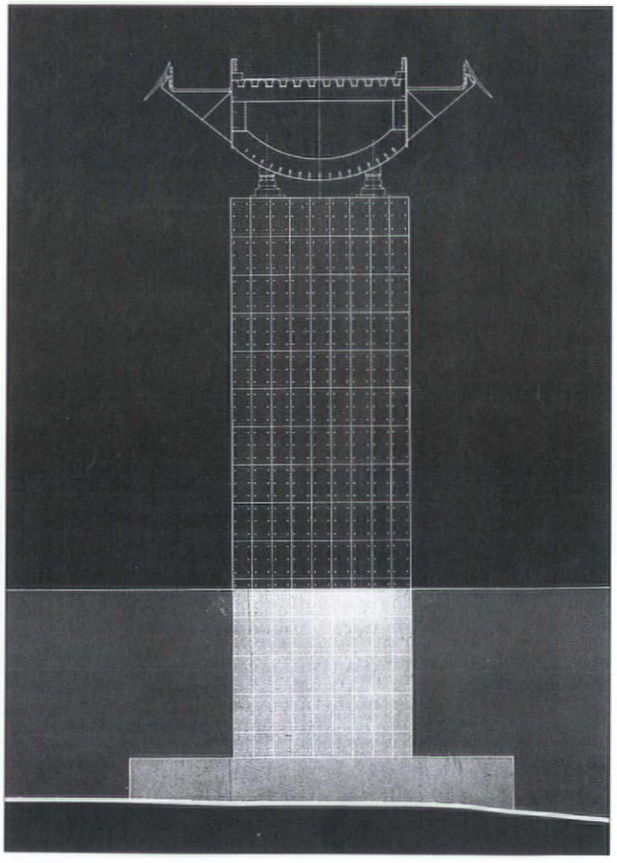
Plan; elevation

RENZO PIANO, NORIAKI OKABE & PETER RICE (RPA) + MEC

USHIBUKA FISHING PORT CONNECTING BRIDGE

Reconciling the teeming natural environment of Amakusa and the delicate scale of Ushibuka, this is a static design that creates an impression almost as if a single continuous line were floating in the landscape. The pedestrian walkways are separated into upper and lower levels both to reduce the effects of wind resistance and to avoid obstructing the views from rear windows. This arrangement imparts special qualities to the cross section of the bridge. Bridge struts are kept to a minimum, so there are only three points of contact for supports elevating the bridge 19 metres above the water surface. The base under each strut was built up and shrubbery planted around. The landscape design here succeeds in achieving a gentle harmony between the bridge and its surroundings.





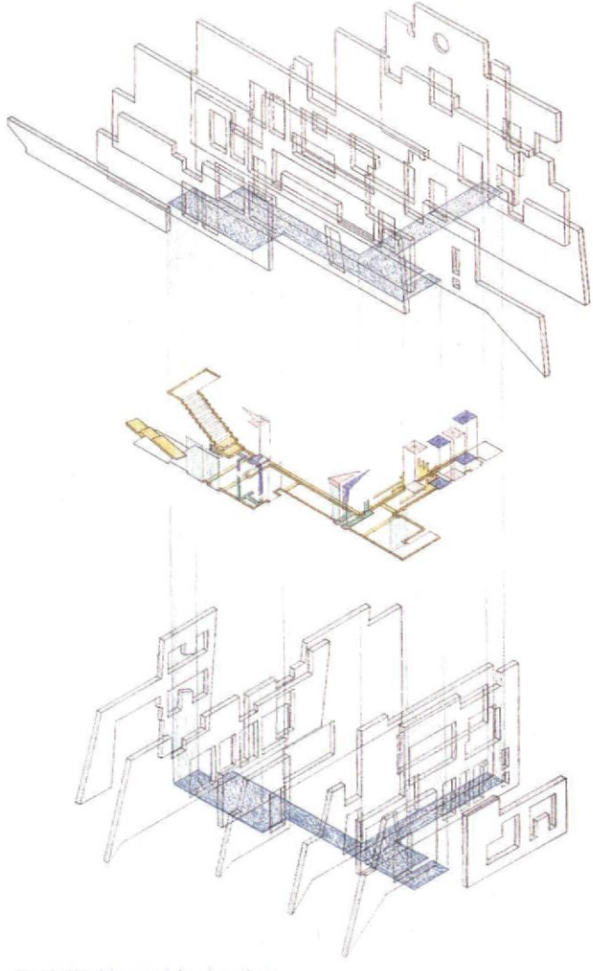
LEFT: Typical section of a bridge strut

SHIGERU AOKI

ISHIUCHI DAM CONTROL FACILITY

Uto

Constructed beside the floodgate of the Ishiuchi Dam and operated only by mechanical systems, this uninhabited control building is composed of a combination of eight concrete walls in both longitudinal and transverse directions, intersecting each other at right angles. The transformation of wall designs from avant-garde to classical represents the various phases of water. The interior spaces are designed to express a theme inspired by a work of art by MC Escher illustrating the global-scaled flow of water. For visitors, the inaccessibility of this interior space may evoke feelings similar to those of former residents of the village they had to leave behind, now sunk beneath water.



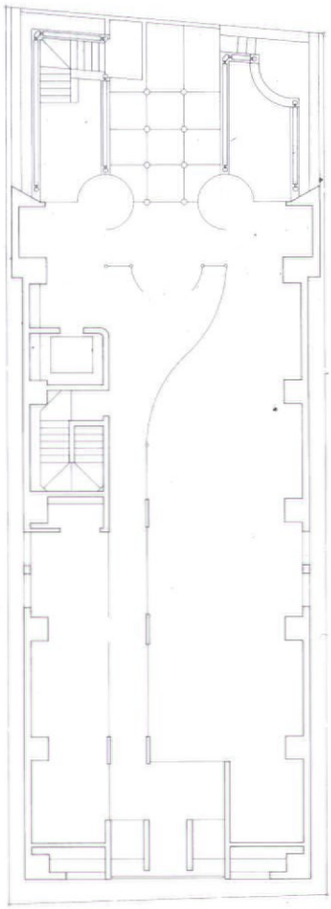
Exploded isometric drawing

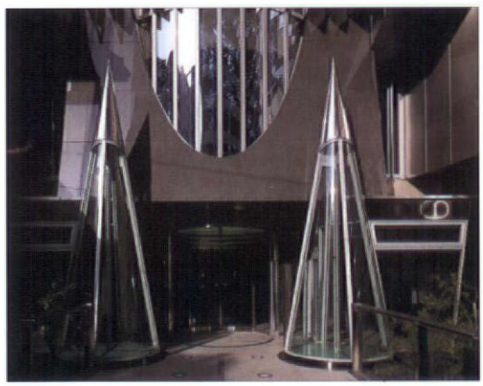
SHIN TAKAMATSU

IMANISHI MOTOAKASAKA

Minato-ku, Tokyo

A narrow fronting street, a narrow frontage, harsh legal restrictions on building height, almost irredeemably unsympathetic neighbouring buildings, the abundant demands of commercial architecture . . . all these factors imposed limitations in varying degrees, and they had to be taken into account in the design work on many occasions. Indeed, in the case of this project, it could be said that these conditions were so severe as to probably never be possible a second time. As a result, the methods selected were almost too completely verified by all previous examples, and the actual design work presented an aspect of having become a composite of the polymerised structure of the excessive results of these methods. Alteration of scale, shrinking and enlargement, the inarticulate articulation of the whole and its parts, the illicit union of details, changes in the centre of gravity, sense of re-floating, tuning resulting from brightness . . . the list goes on and on. A nearly infinite list of solutions has been developed for these kinds of buildings, but such solutions are nothing but methods for making masks. The city and masks, ceremony, mythology, reflected images . . . by sculpting this glittering mask, yet another response was added to these problems, which will forever be architectural topics. Everything was executed with an excessiveness never seen before.
(Shin Takamatsu)



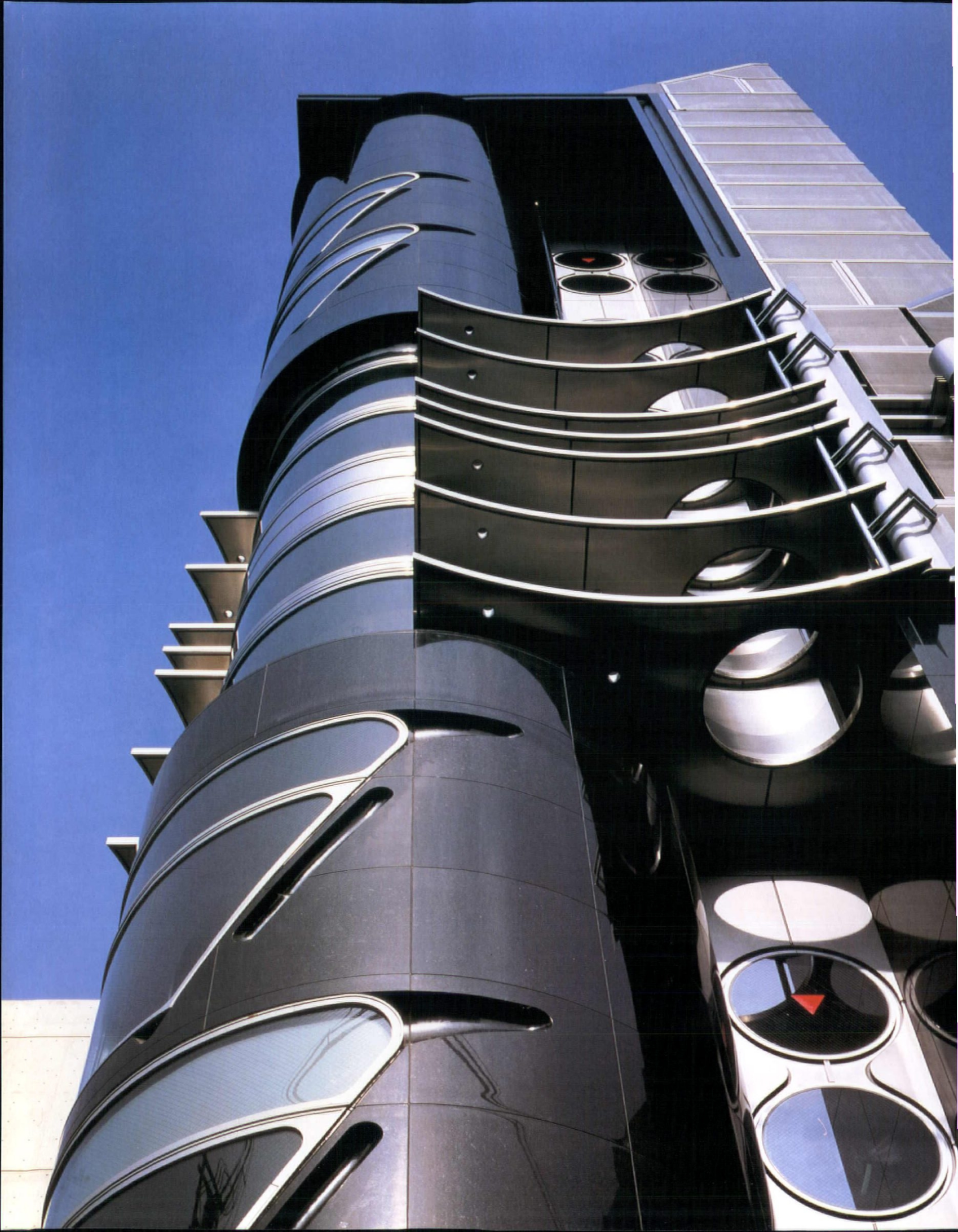


ABOVE: First floor plan

EARTHTECTURE SUB-1
Shibuya-ku, Tokyo

The Shibuya district, while it is located in the heart of Tokyo, is a blend of average small residences and apartments constructed with wood. This project is located in one part of the district which holds no special characteristics and is simply overflowing with buildings. Even so, after careful thought, as long as one focuses on the microscopic aspects of this situation, it could be said that Shibuya is a typical element among the places that can be observed anywhere in the huge metropolis of Tokyo. At any rate, even though Shibuya is more or less filled with possibilities for future activation as a commercial district, the site of this work held a variety of limitations because it is still subject to the legal restrictions of a residential area. Such limitations created catastrophically harsh conditions in the early stages of the programme for this work. The programme may have included the acquisition of the maximum practical volume of space, but it also comprised the more important points of establishing a notably high presence and stressing the individuality of the architecture itself. These factors were the very strong basic intentions of the client and it could also be said that they inititated the client's choice of architect. As a result, agreeing that a clear and ambitious programme would be followed, left the responsibility of leading the way to a new existential form for metropolitan architecture. The result of this programme was the very direct but paradoxical solution of one kind of so-called linear coalition equation with the coefficient of the indistinct environmental characteristics and legal restrictions mentioned above.

One wonders if this work, with only four floors below ground and a tower of light formed in the shape of the wings of a butterfly above ground, can still be called architecture. But even if some of the elements are perhaps too clear, one kind of special solution was developed for the time being, containing a metropolitan intensity. In this case, development of the remaining above ground area as a public space and the symbolism of the new methods responding to environmental considerations – including several experiments that were unable to be fully realised because of the extreme narrowness of the site – point out from a number of aspects a valid part of the present and future possibilities of metropolitan architecture. From this viewpoint, the enormous spatial adventure that took place on such a small site is in the process of becoming a huge presence far surpassing its physical scale. Either way, by exceeding its spatial boundaries, or scale, from the inside, the city acquires its own density and thickness. To aid the action of transgressing such boundaries, this work became a paradoxical experiment developed with no preceding considerations. Perhaps it should be called an experiment in active poverty.

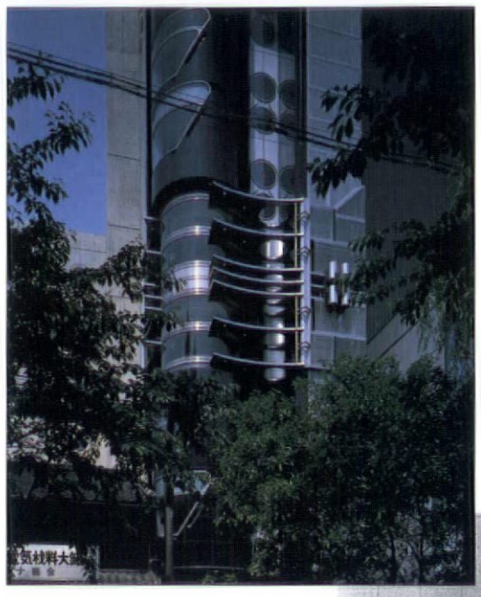


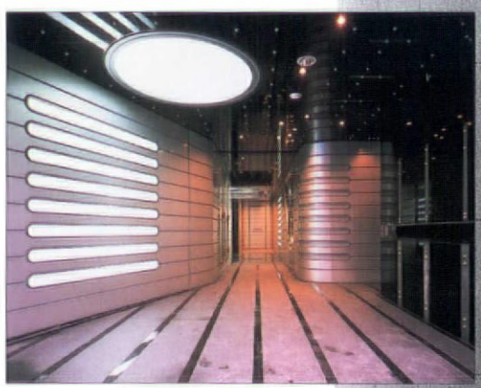
CELLA
Kyoto

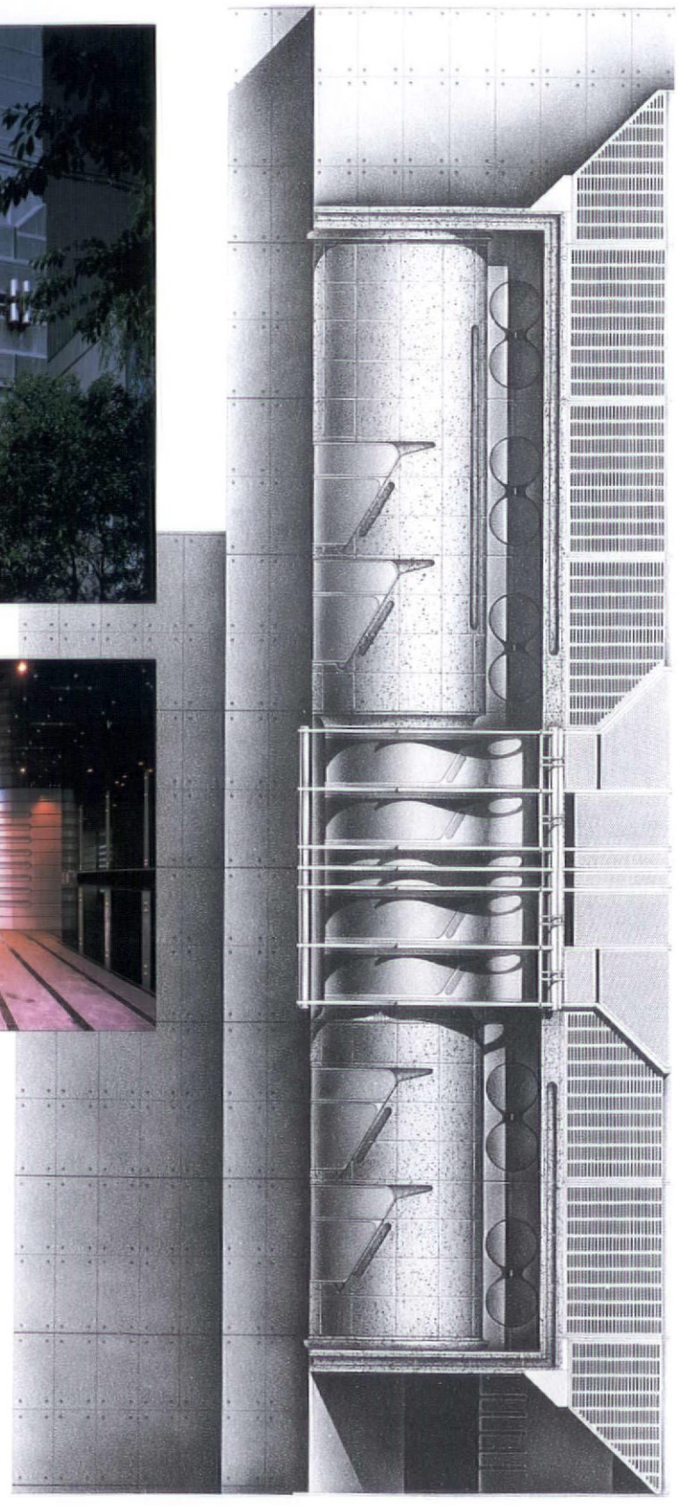
The site is located in the middle of the old centre of Kyoto, between two rivers running through the centre of the city. Here, there are two streets that run next to each other: one maintains the traditional face of Kyoto with its row of old established stores; the other, called Kiyamachi, is filled with the younger generation dressed in trendy fashion. The building is located at the busiest part of the street.

The building design faced many restrictions determined by the new setting in traditional context, such as the narrow entrance to the site, a strict building code, the chaotic state of the adjacent buildings and the complex requirements necessary for commercial buildings.

This sculptural design is intended to express the contemporary condition of the area imbued with traditional quality. The vertically symmetrical facade, composed of placed granite panels, has three-dimensional stone and metal details crafted by stonemasons and metalworkers. The resultant polished cylinder reflects the image of the crowd passing along the street.







TADAO ANDO

THE LOTUS POND HALL OF HONPUKUJI

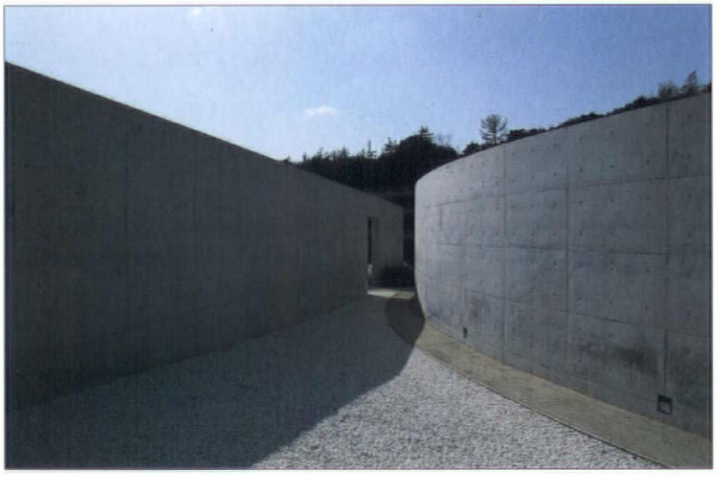
Awaji Island

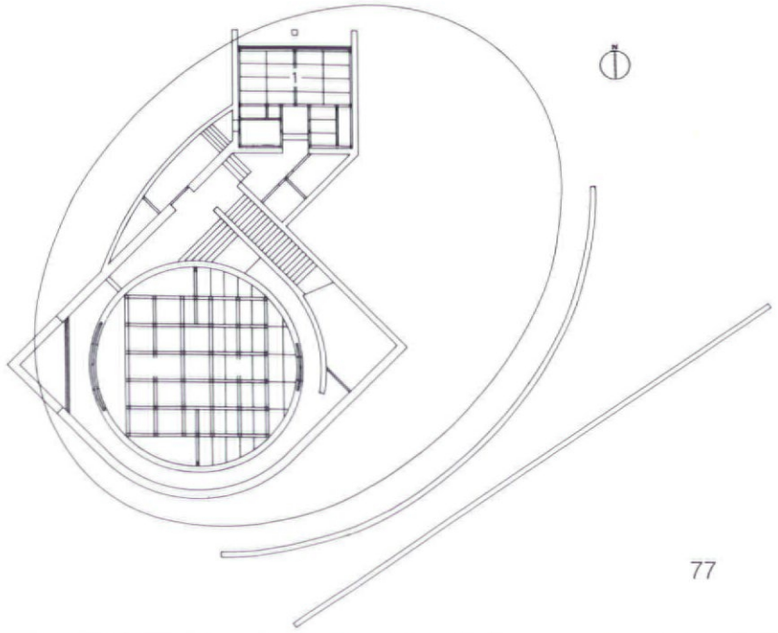
With a revolutionary temple design executed in 1992, Tadao Ando freed Buddhist architecture from some 2,000 years of stylistic shackles (assuming that Chinese palace architecture was more or less fully developed by the Early Han dynasty). Buddhism organised in sects cannot claim to have initiated a great variety of architectural form in its long history. On entering the grounds of the Honpukuji temple on Awaji Island, one has to admit that the adjacent traditional buildings have been reduced by Ando's design to embarrassing relics of an unproductive and uncreative past.

Ando did not take up the traditional axial alignment of the main temple buildings and courtyards of the past. Approaching over a vast open area strewn with white pebbles and facing the first very high, bright concrete wall, recalls the crawl-through gate at Fushinan, for here also one is physically made to feel that one is entering. Even though the gate here is more than large enough to pass through in an upright manner, the proportion of the gate to the size of the wall is even smaller than in the case of Fushinan. Where one enters is not immediately disclosed. Passing over white pebbles along a second, equally high but curved concrete wall, one enters again by suddenly overlooking a bright blue oval lotus pond reflecting the sky. There is no Buddha hall in sight.

The lotus is a venerable symbol in Asia – the channel of origin of all life in Indian cosmogony, and the symbol of self-creation (enlightenment) in Buddhism. A lotus pond spanned by a bridge has long been part of the temple vernacular, but never before has one had to *enter* the lotus pond in order to recall the temple. Not quite literally but experientially the pond is approached by descending the staircase in its centre to access the sanctuary.

In contrast to the vastness of the open sky reflected in the pond, the interior of the hall under the convex ceiling (the bottom of



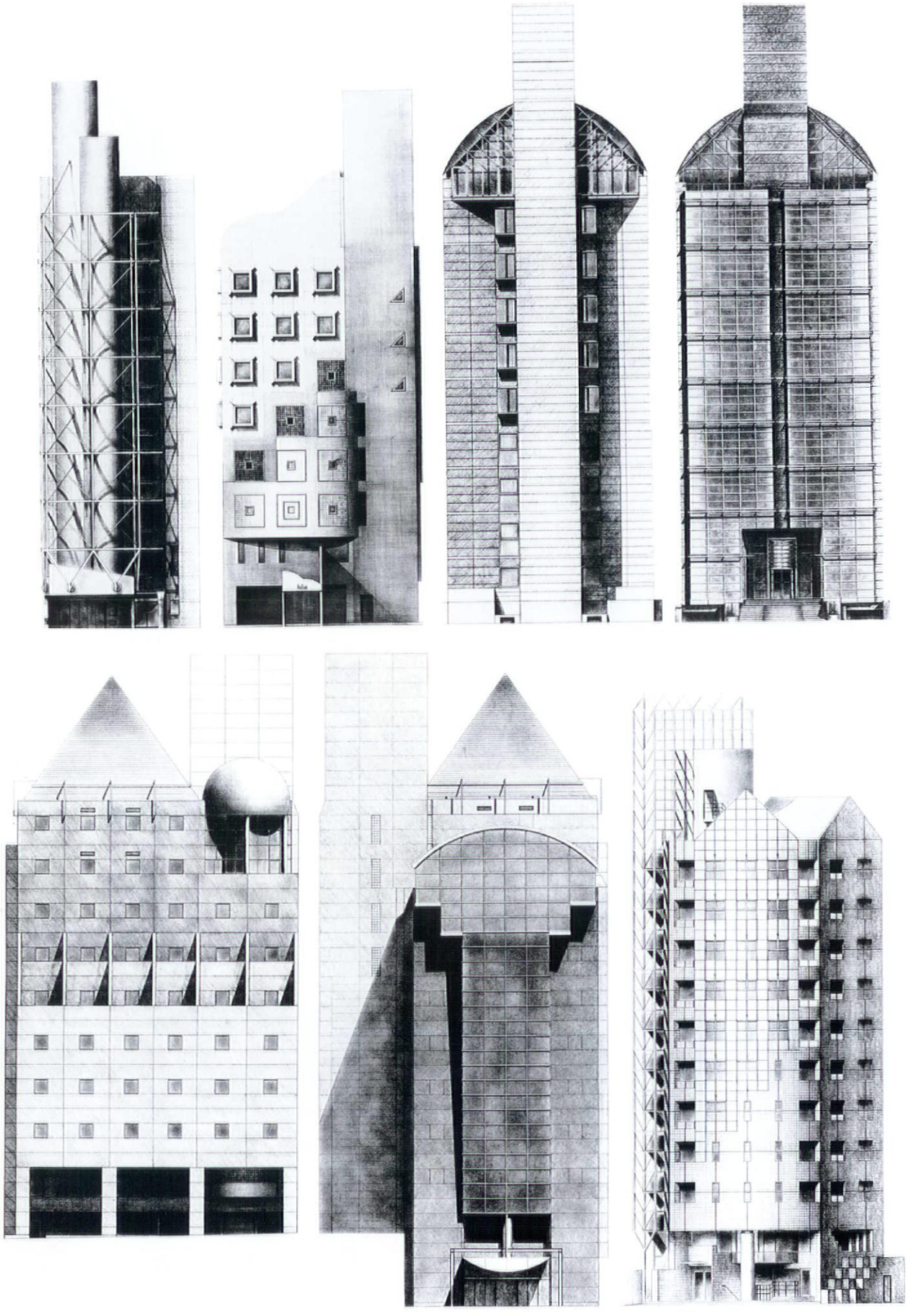


RIGHT: First basement plan

the pond) is kept enclosed and dim. Natural light comes through a light room from due west. At sunset, the reddish decor of the sanctuary is brilliantly deepened, heightening the suggestions that one is in the womb.

Honpukuji is affiliated with Shingon, the oldest sect of Tantric Buddhism in Japan, founded in 815 AD. At the core of its training are techniques of meditation using two mandalas, one representing *kongo-kai*, the world of diamond-like transparent wisdom, and the other *taizo-kai*, the 'world of womb-like phenomenal experience'. Two such mandalas hang on either side of the Buddha statue in the Lotus Pond Hall, reminding one that their traditional geometric language is the superimposition of circle and square. Ultimately, their geometry derives from the plans of ancient Indian castles with gates in the four cardinal directions and the monarch placed in the centre surrounded by his army. As the castle expresses worldly power so the mandala came to express spiritual power. Ando is playing with those two archetypal shapes or rather he is having the visitor play

with them. The circular Buddha hall is opposed to the square reception and tea ceremony rooms laid out with tatami mats. The hall is divided by a square wooden lattice into an outer and an inner realm. Whereas in normal Tantric training one contemplates the two-dimensional surfaces of the two mandalas, Ando immerses the visitor into these two worlds three-dimensionally, forcing him to walk through them and be within them. Standing out in the open beside the lotus pond above, the interior of the hall is sensed via the long slit-like staircase leading down into it; on the other hand, once inside the red enclosed space of the temple, the vastness of the sky is sensed via the spheroid ceiling. The 'transparent' and womb-like worlds of Shingon are brought into experiential union. If Ando has anything to teach Buddhists of this age, it is that the meditative and the intuitive spaces accessible to human experience are the same; they are the source of all creativity, belonging to the *Ursprung*.
(Günter Nitschke)



MINORU TAKEYAMA

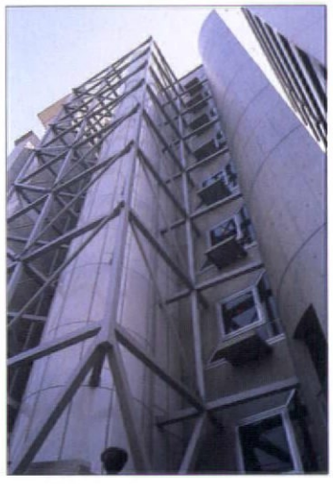
OFFICE TOWERS

Shinjuku, Tokyo

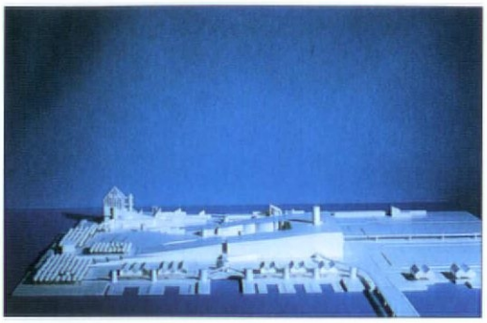
Land ownership in the urban area of Japan is full of uncertainty and mystery due to its long traditional background and the lack of land policy. As a result, one of the most characteristic features is the pattern of sub-division, which is even topological; the size of a sub-divided lot often being fragmented piece-meal even along broad urban streets.

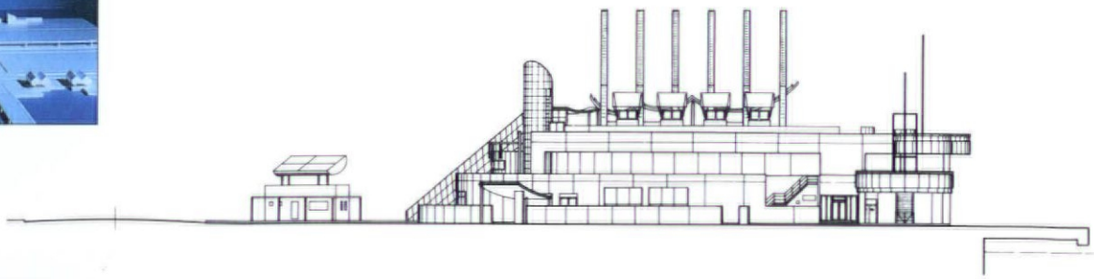
The clearance between the buildings along the main streets is left open and unused. The total sum of these unused in-between spaces along a heavily dense city street accounts for up to five per cent of the total length on average. These unused vacant spaces between buildings, which are mainly caused by the civil law and not by the building code, function to avoid conflicts among neighbours or property owners by creating so-called 'twilight zones' among them. These structural backgrounds, together with the economic reasons related to land, have created the uneven street-scape and heterogeneous frontage of Japanese cities.

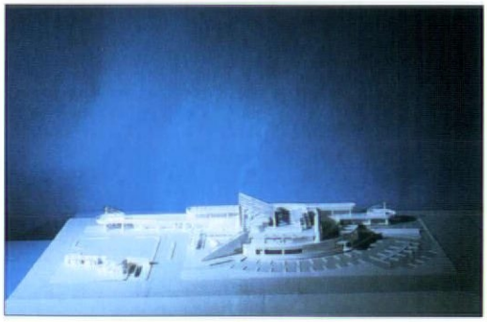
The five office towers (1991) do not stand on the same location, but share the similar site situation as mentioned above. Locally called the 'pencil building', these towers function as rental offices with toilets and kitchenettes on each floor. The buildings have been named respectively by the owners themselves.

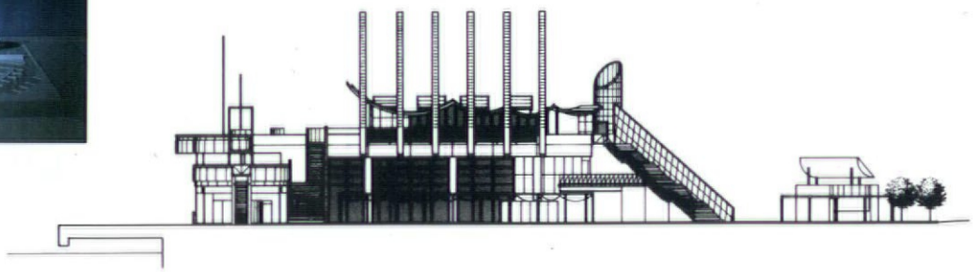


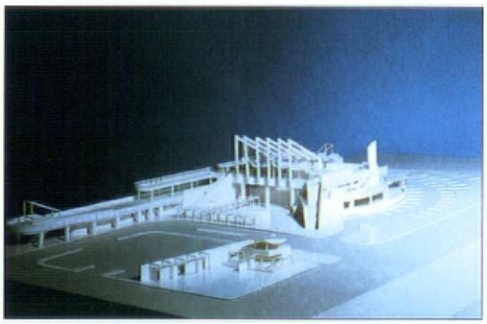
FROM ABOVE L TO R: Neoage Nakameguro; Mikakuto; Canal Tower; Tech Hiroo; Position Building; Position Building interior; OPPOSITE, FROM ABOVE L TO R: Tech Hiroo; Position Building; Canal Tower (x2); Mikakuto (x2); Neoage Nakameguro

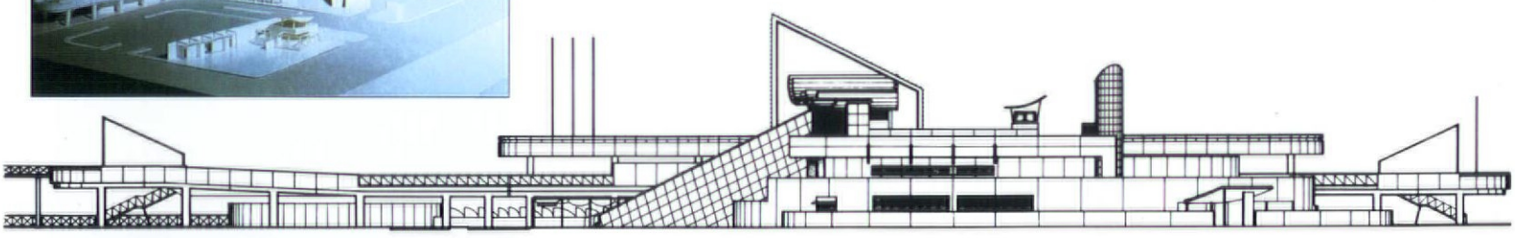


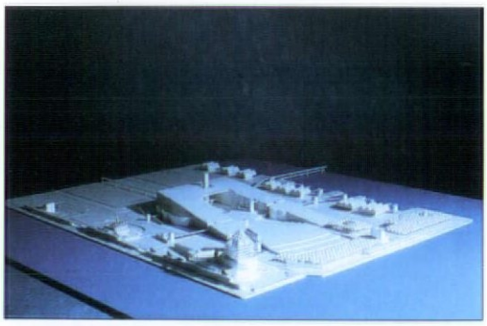


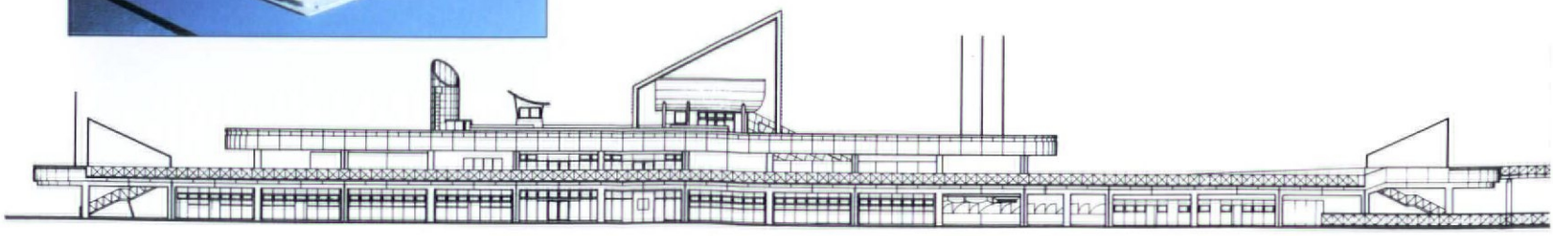






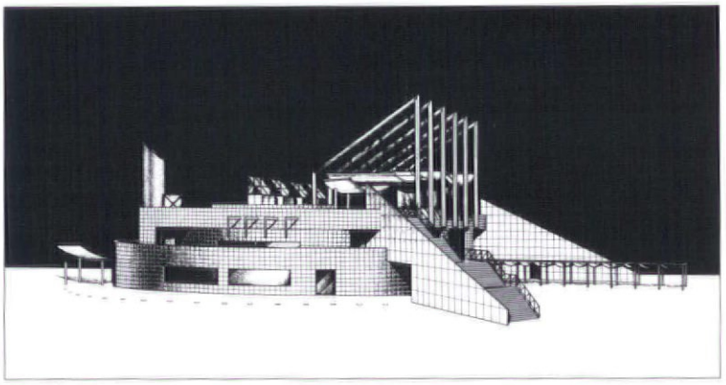


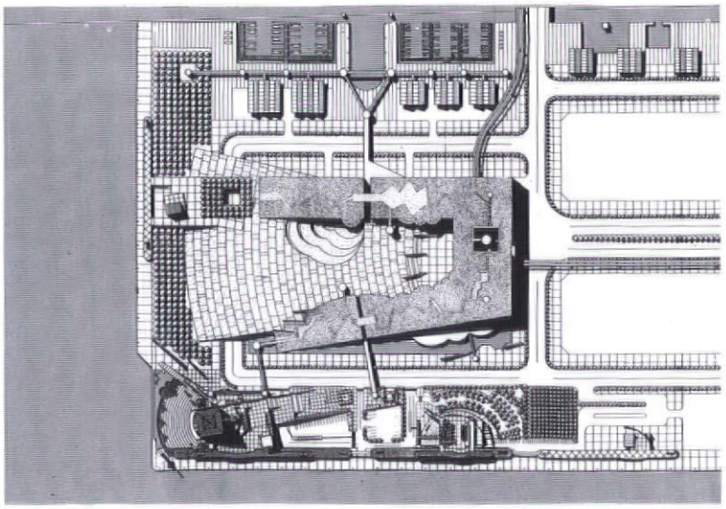




SATELLITE TERMINAL
Harumi, Tokyo

The Satellite Terminal was planned as a supplementary facility to the main Tokyo Port Terminal which was completed in 1991. More than 100 passenger boats visit the Port annually from abroad and new pier facilities are needed. Extending the concourse on the eastern edge of the main terminal, the satellite was designed with similar functions to the main terminal, including waiting lobby, passport and custom inspection, luggage claim and visitors' area. For services such as restaurants and shops the passengers have to depend on the main terminal either by walking on the concourse or by a shuttle bus. Although the satellite belongs to the main terminal functionally, it needs its own visual identity. Our solution may be described as 'homological'. The expression of the satellite is similar to the main terminal in some respects, but different in others. For instance, the open-framed pyramid is one of the dominant features of the main terminal, creating a land- and sea-mark. For the satellite, the shape of the pyramid was cancelled, although the same see-through effect was kept. The concentric form of the main terminal is symbolic and constantly recognisable from all the directions, while the form of the satellite is unevenly one-sided and indicates the way to the main terminal. The interior environment of the satellite is also planned to be homologically different from the main. For example, the white-painted lobby of the main terminal has a large glass wall towards the west where the port bridge was very recently completed. The axis of the whole complex of the suspension building was twisted so that the large opening of the main lobby could face the bridge and enjoy the panoramic harbour view. On the other hand, the lobby and inspection space of the satellite will be enclosed with no view out. Instead of the white interior, it will be coloured with metaphorical graphics and decorations. The intention is to create symbolic associations for the visitors so that they can enjoy their own fantasies far beyond the realistic scenery. In the future, two more satellites will be constructed along the same waterfront.





Proposed masterplan; OPPOSITE LEFT, FROM ABOVE: North elevation; south elevation; west elevation; east elevation

ITSUKO HASEGAWA

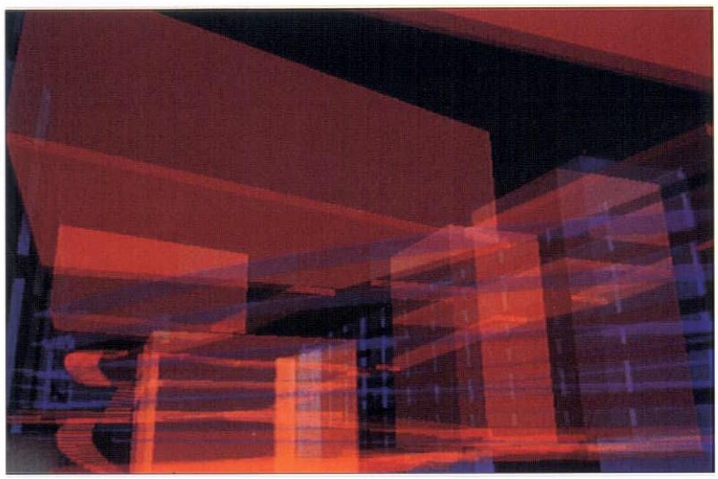
OSHIMA MACHI PICTURE BOOK MUSEUM

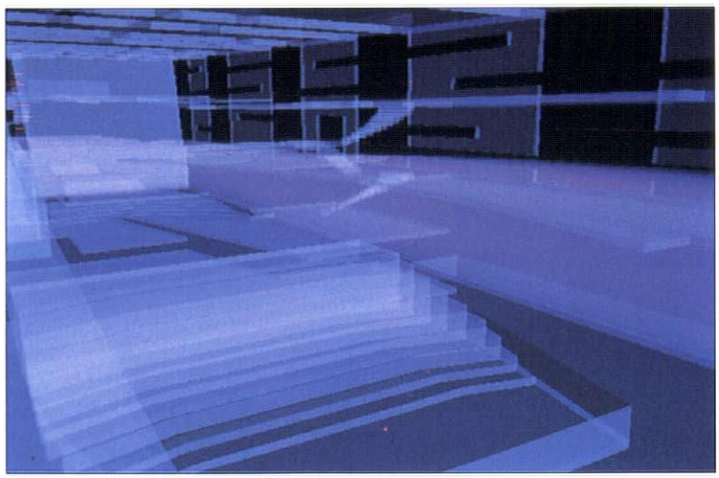
Oshima

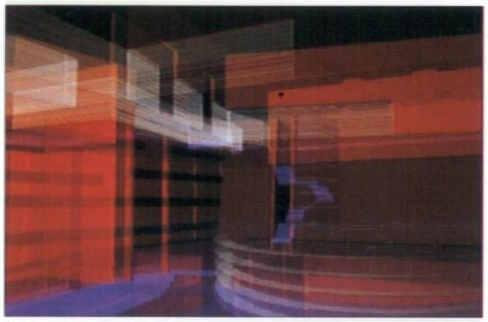
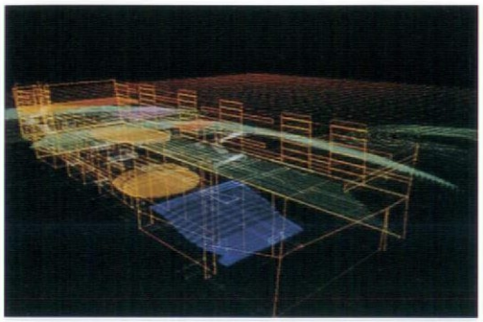
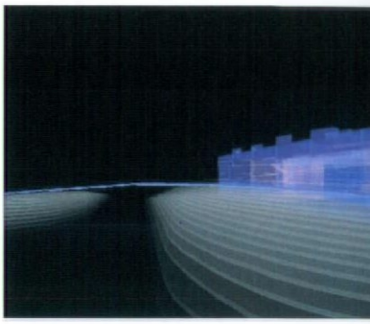
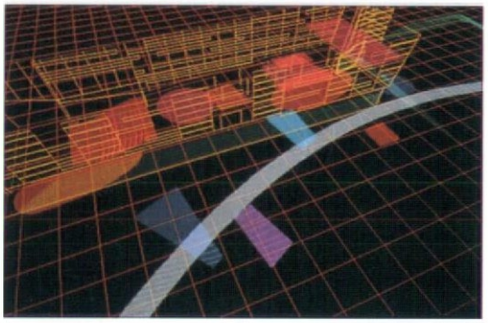
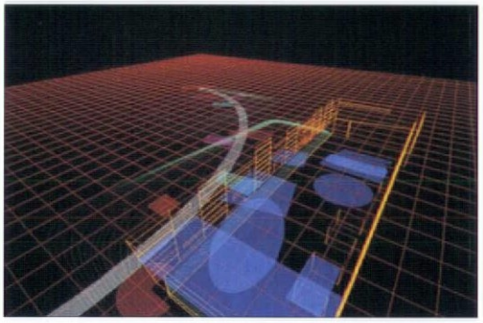
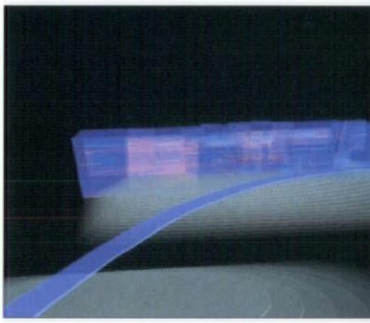
The town of Oshima in Toyama prefecture has been noted for the culture of 'Ehon' (picture books) and has actively organised conferences and workshops on the subject in the past. Now the town has decided to build a museum (1992) to provide a permanent place for this activity. The building's programme encourages citizens' initiative to create their own books; allowing for management of the facility rather than merely providing exhibition space for picture book artists.

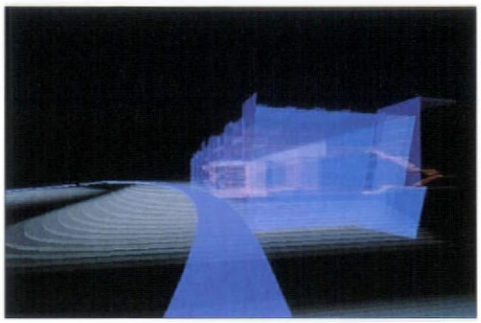
The building takes the form of a simple rectangular box intended to be a refuge for citizens during the long cold winters of Oshima Machi. The interior space of the building is created as an extension of the outdoor space. It contains a large elliptical library, a multi-purpose hall with stepped floors, a perspective wall, a permanent theatre dedicated to performances on the first floor and a trapezoid-shaped computer workshop on the second floor, which appears to be floating above the library. Ramps connect the spaces, each of which offer a different spatial characteristic. The project provides architectural spaces where the creativity of the individual child and adult is encouraged, rather than directing them to perform a specific function or use. The organisation of 'Ehon' transformed into architectural spaces allowed the creation of some unique sequential experiences. The building was designed to be gentle, as if it were a friend to children.

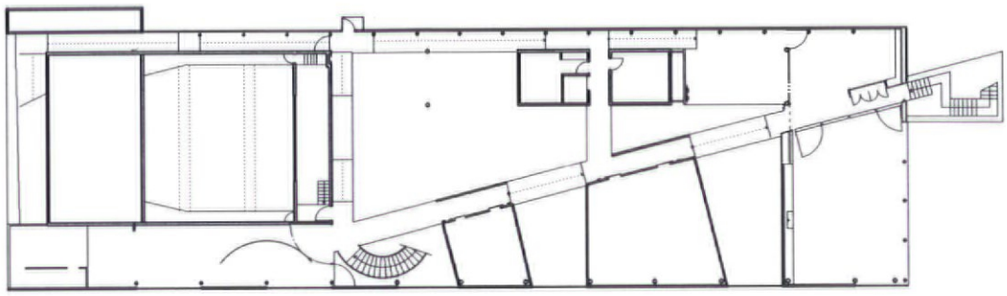
The building is part of a large park project. The park's artificial hill form functions symbolically as a landmark for the citizens' cultural activities in this topographically flat town of only three-metres difference in elevation. Like the museum, the park contains spaces of different characteristics such as a place of water harps, a metallic hill which changes its form in the wind and an amphitheatre at the top of the hill. These places enable people to experience their own sense of place. It is hoped that many new 'Ehon' will be written by children and adults who visit the park and museum.

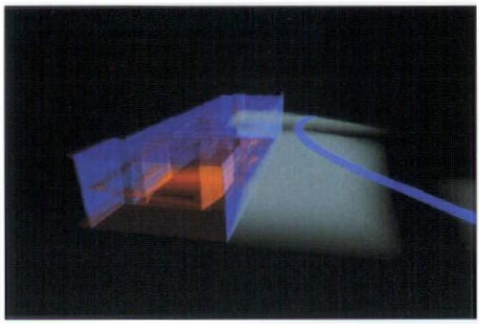


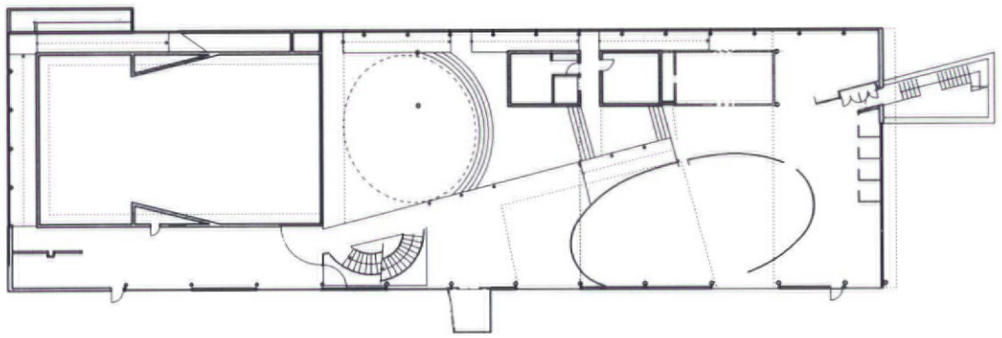


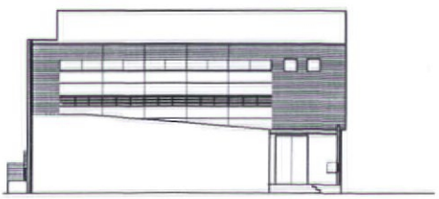







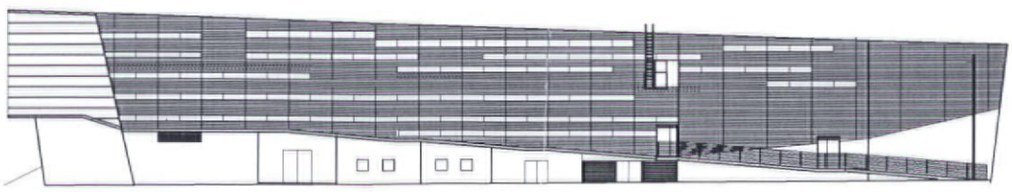












ABOVE RIGHT: Third level; Second level;
BELOW L TO R: South elevation; East elevation;
West elevation; North elevation

ITSUKO HASEGAWA

YAMANASHI MUSEUM OF FRUIT

Yamanashi

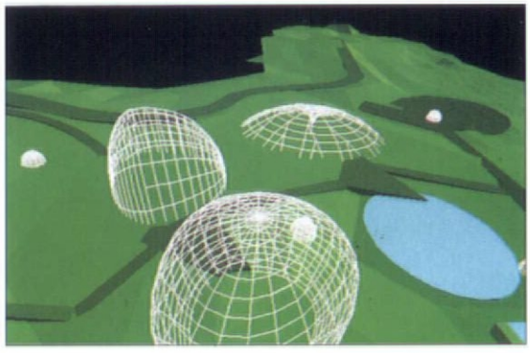
The Museum of Fruit, 1992, is situated in the Park of Fruits by the Fuefuki River in Yamanashi Prefecture. This is a facility that exhibits fruits and fruit culture by exhibiting them both indoors and outdoors. Three structures with differing characteristics are aligned on a shallow south-east slope offering a wonderful view of Mount Fuji. These shelters include a tropical greenhouse, an atrium event space and a building which acts as a workshop for the teaching of hobbies etc.

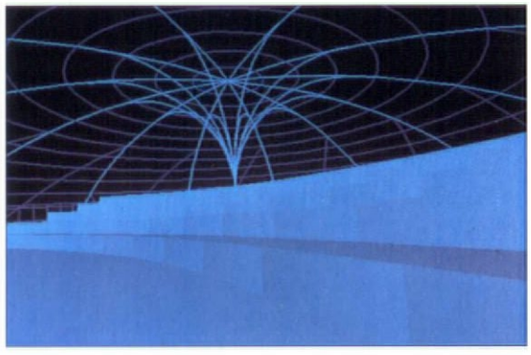
The greenhouse is a shelter in the shape of a deformed globe, while the atrium is a saucer-shaped glass shelter with loose curves that seems to have landed on the ground. For the workshop a transparent rectilinear building is encased in a lop-sided, egg-shaped pergola upon which fruit-bearing lianas crawl freely. Inside the slope there is an exhibition hall connected to the greenhouse and atrium by lifts and a ramp.

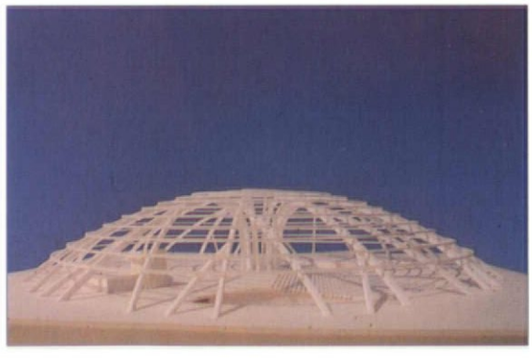
The geometry of the three shelters was studied through three-dimensional data created on a computer. Each shape was created through the rotation of simple bodies into complex volumes. This three-dimensional data was then converted into two-dimensional drawings. The capability to use such complex forms was made possible only with CAD. Starting from an overall image by sketching the basic design, the portions were then carefully and independently considered on the computer. Data was shared among the project team members allowing for numerous individual contributions in a truly joint design venture.

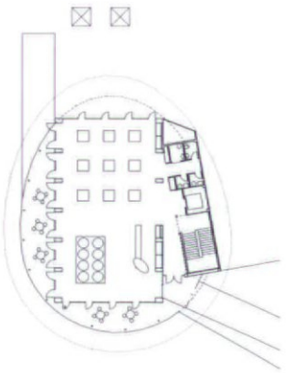
In addition, the office actively promotes a policy of public design through contributions from people from many diverse fields. Architecture is not considered purely in terms of architectonic structures, but as an ephemeral human activity – 'Soft Architecture'.

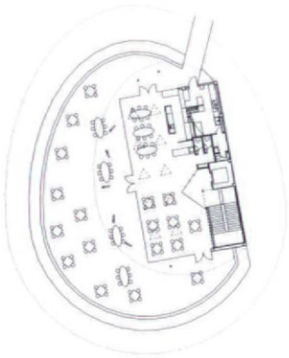
With the Museum of Fruit, we are attempting to create a truly public architecture, by listening to ideas from a wide spectrum of people.

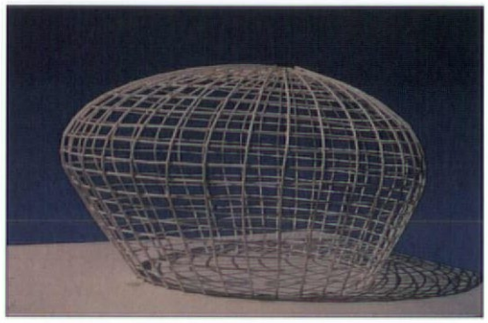


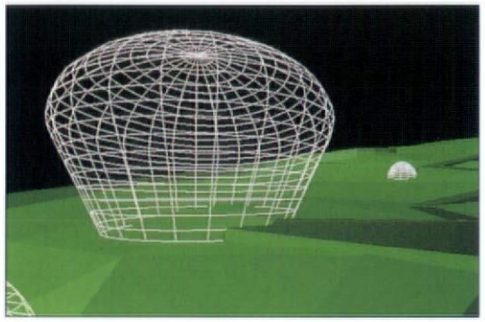


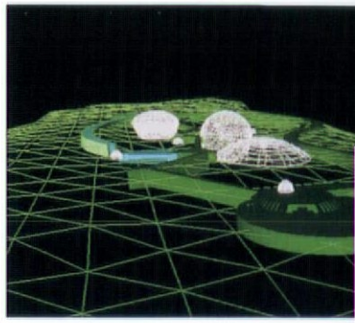


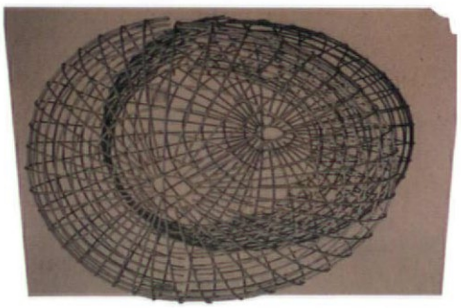


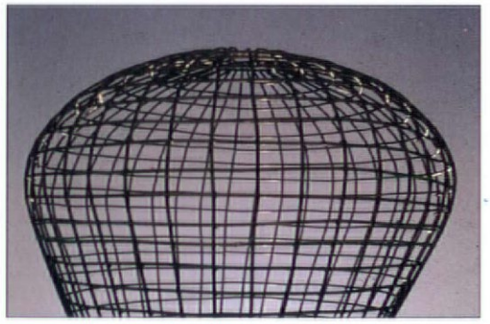


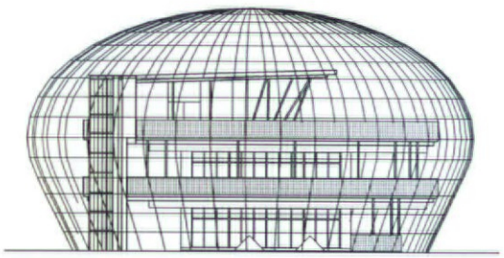


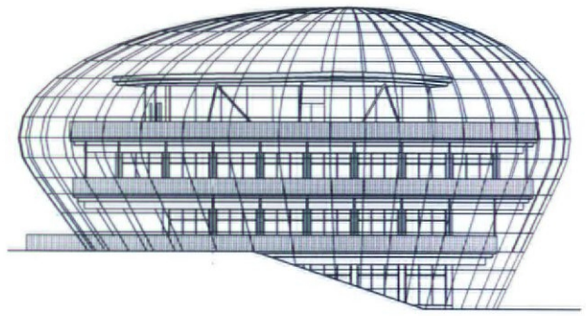


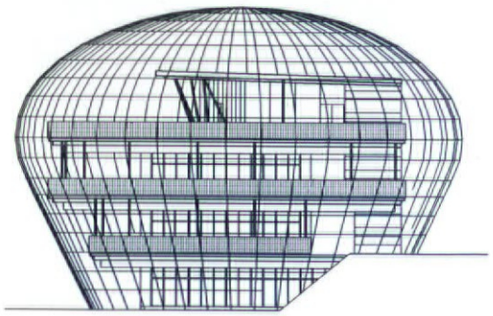


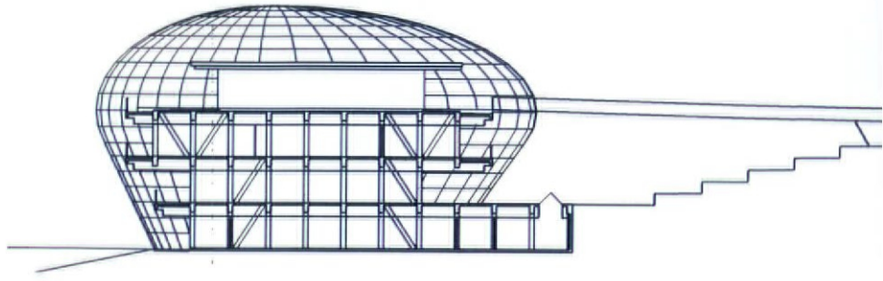


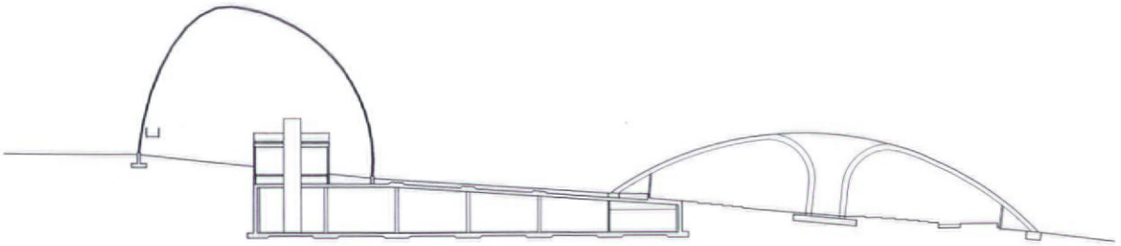


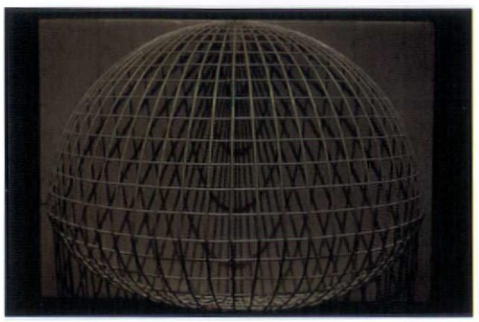


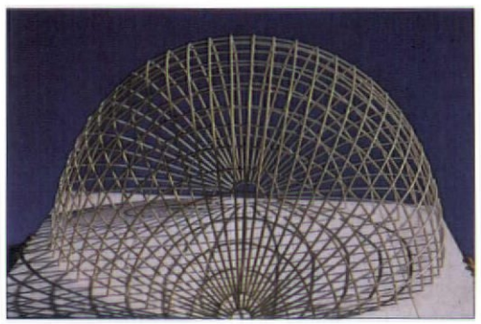


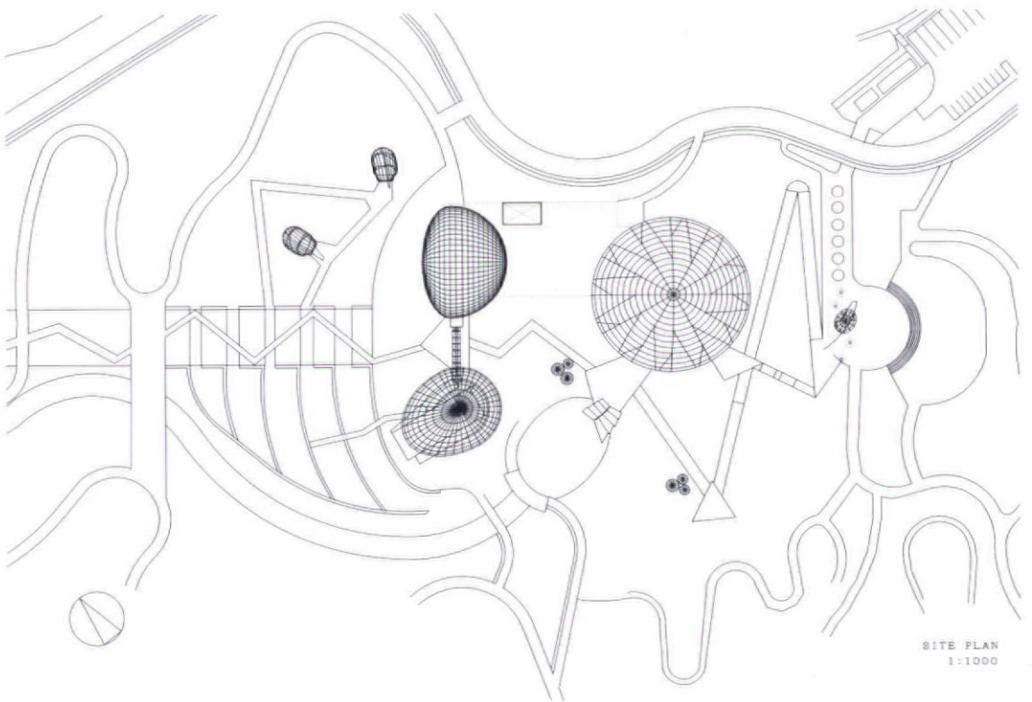


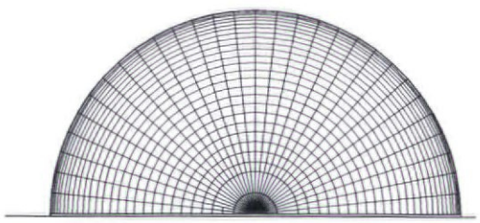


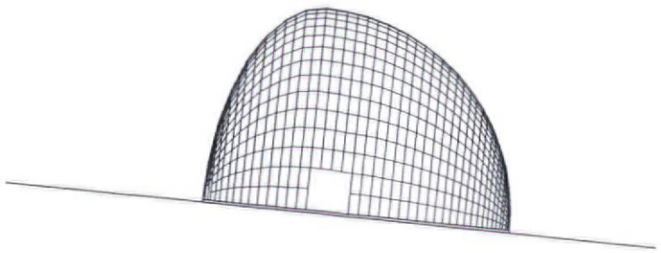




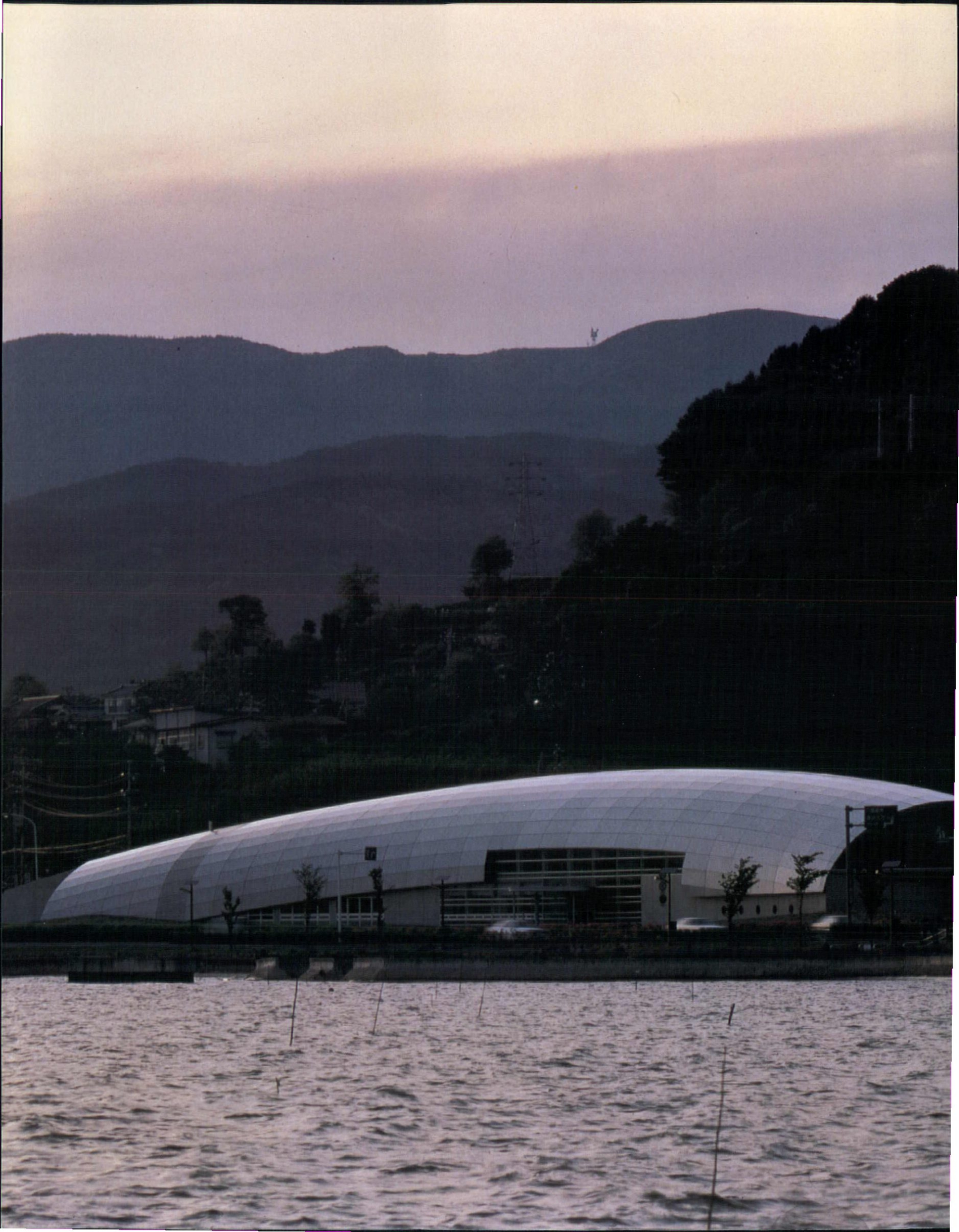








FROM ABOVE: Section through conservatory and plaza; site plan; elevation; side elevation; OPPOSITE FROM ABOVE L TO R: First level; third level; west elevation; south elevation; east elevation; section



TOYO ITO

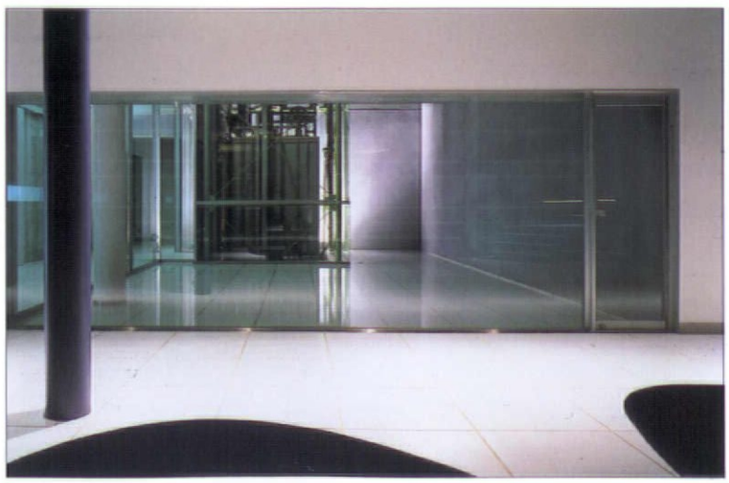
SHIMOSUWA MUNICIPAL MUSEUM

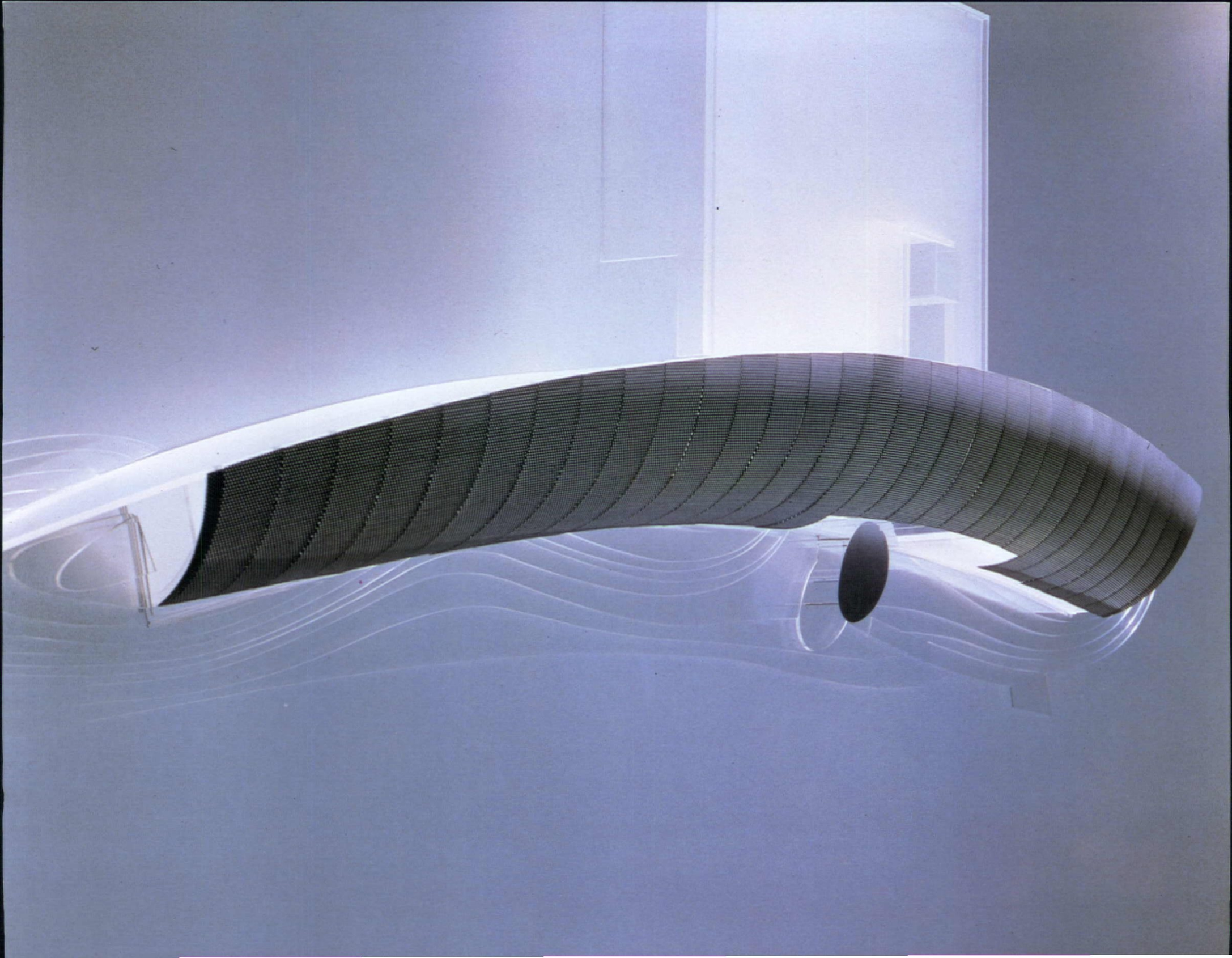
Nagano

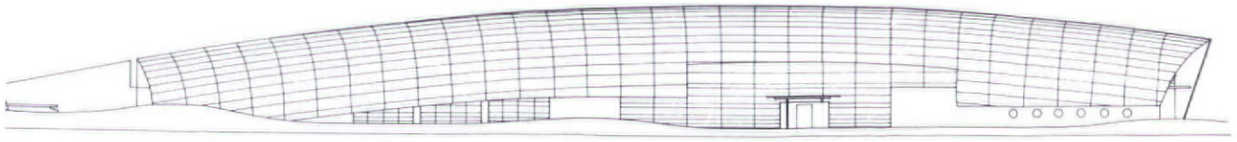
Among the projects commemorating the centennial incorporation of Shimosuwa, a town in the centre of Nagano prefecture, this is a reconstruction of the municipal museum on the shore of Lake Suwa. The design was selected in a designated competition held in June 1990. The new museum had to accommodate two permanent collections: the first consists of materials and artefacts on the history and natural environment of Lake Suwa, while the second is the existing collection of materials from the life of the local poet of the Araragi school, Akahiko Shimaki (1876-1926). Additional space was created to house other planned exhibits, practical educational programmes, research and a repository.

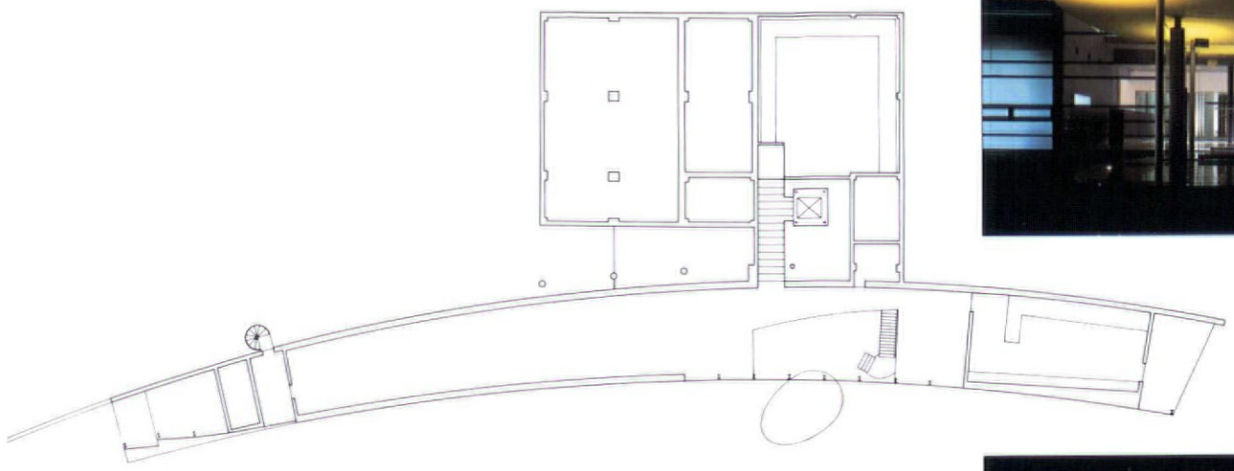
The building, designed in a similar way to the shape of the site, consists of two volumes. On the lakeside, the permanent exhibit spaces are housed in a linear volume, while on the mountain side the special exhibition rooms and storerooms are accommodated in a cubic volume. A distinctive architectural element is the aluminium panel covering the boat-shaped volume at the front. The form of a three-dimensional curved surface is decomposed in order to generalise it into a collection of neutral flat panels.

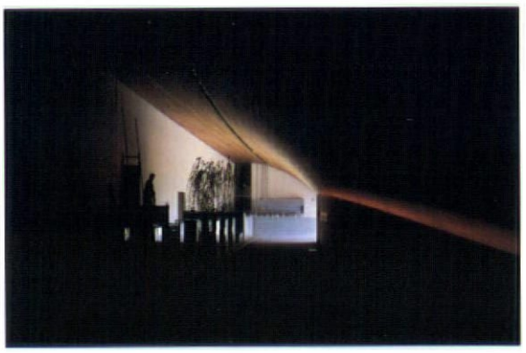
Inside, exhibits are laid out along the flow of space. Fishing implements and *geta* skates, used on the lake, are attractively arranged on bases of frosted glass, suggesting the frozen lake surface. In contrast, blue carpet is used in the showcases holding the manuscripts and photographic materials of Akahiko Shimaki, a ground chosen to suggest the waters of the lake in summer. The scenery of the lake is projected on the glass screen inserted in parallel with this flow and it is reflected on the thin layer of water filled in the courtyard, creating an illusion similar to that of the exterior. Like ripples in a lake, the layers of this illusion on the flow of people, co-ordinated with the spatial flow, generates a tranquil state of balance like an interfered wave, filling the space beneath the membranes. (*Nagisa Kidosaki*)

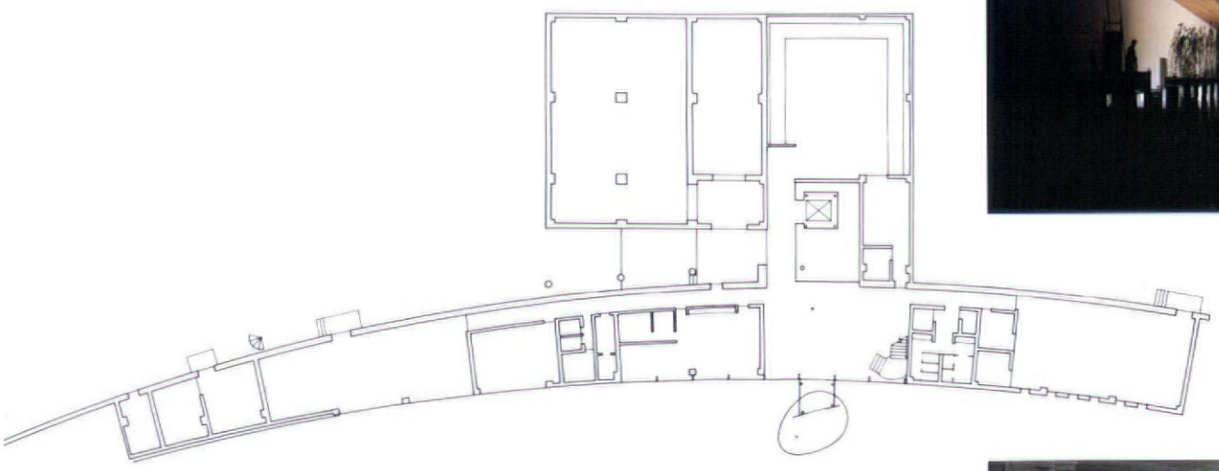


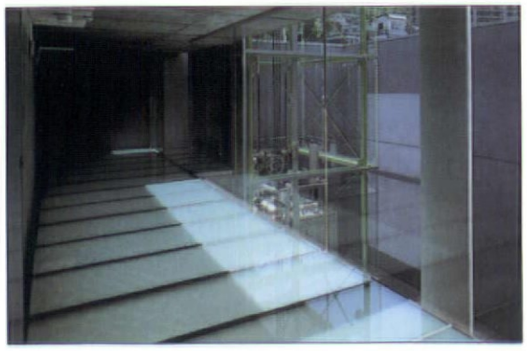












FROM ABOVE: Elevation; Second floor plan; First floor plan