WORLD ARCHITECTURE

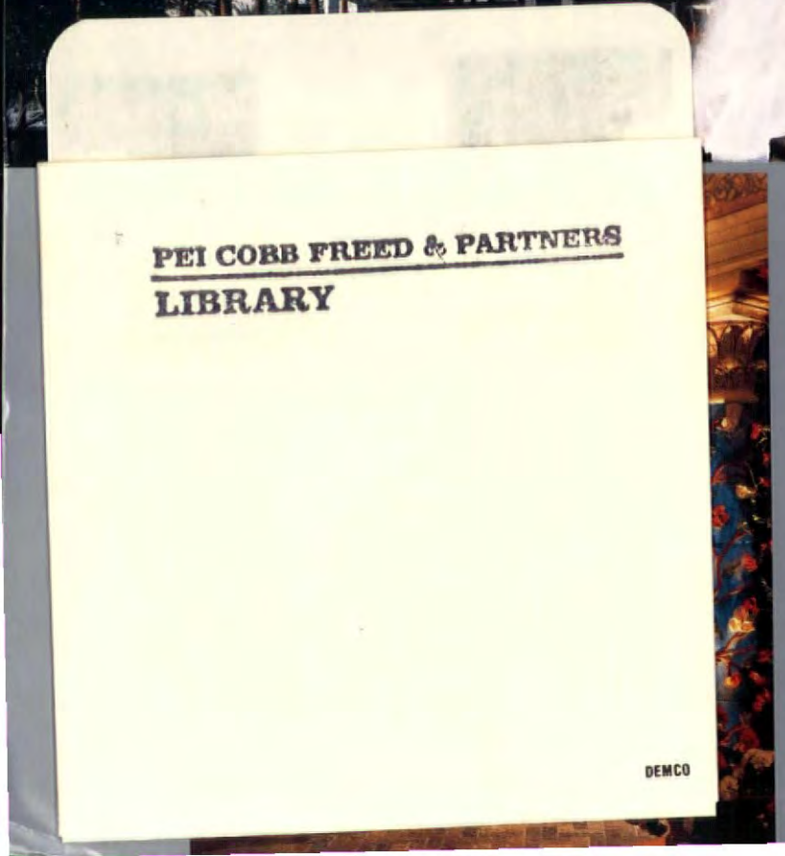
ISSUE NO. 31 US$10 UK£10

JEAN NOUVEL

MUHLBURGER'S FABRIC UNIVERSE
JAPANESE GENESIS
JAN DERWIG PHOTOGRAPHY
DRAWING DOWN THE SUN

THE INTERNATIONAL ACADEMY OF ARCHITECTURE

What has a rainforest, a live volcano and 44 Dover elevators?



THE Mirage shimmers in the Las Vegas sun like an enchanted oasis. Arriving guests are greeted by a volcano that erupts from dusk to dawn. The approach to the reception desk is through a tropical rainforest.

This lavish 3,049-room resort hotel also boasts a Polynesian casino, nine restaurants and a 1500-seat theatre. Guests speed to their deluxe rooms and suites on 44 state-of-the-art Dover elevators.

Built on a miraculous two-year schedule, The Mirage demanded phenomenal turnaround times from Dover. "Impossible" delivery dates were consistently met – and bettered. And paradise opened on time.

From high-rise fantasies to two-floor clinics, Dover's done it. With an expertise that's at your command. Call or write Dover Elevator Systems, Inc., P. O. Box 2177, Memphis, TN 38101, USA. TEL. (601) 393-2110. FAX (601) 342-4349.

The Mirage Hotel/Casino, Las Vegas, Nevada

Owner: Golden Nugget, Inc.

Architects:
A. A. Marnell II, Chtd.
Joel D. Bergman & Associates

Contractors:
Sierra Construction (high-rise construction)
Marnell Corrao Associates (low-rise construction)

Dover Elevators sold and installed by Dover Elevator Company, Las Vegas, Nevada

DOVER ELEVATORS

MAKING MORE ELEVATORS MAKES DOVER NO. 1

WORLD ARCHITECTURE

THE INDEPENDENT MAGAZINE OF THE INTERNATIONAL ACADEMY OF ARCHITECTURE (IAA) NUMBER 31

Brunet and Saunier in Paris

George Fessy

IPL in perspective

Cover: A detail of the roof of the opera house at Lyon, France, by Jean Nouvel. Photograph by Antonio Martinelli

Jan Derwig

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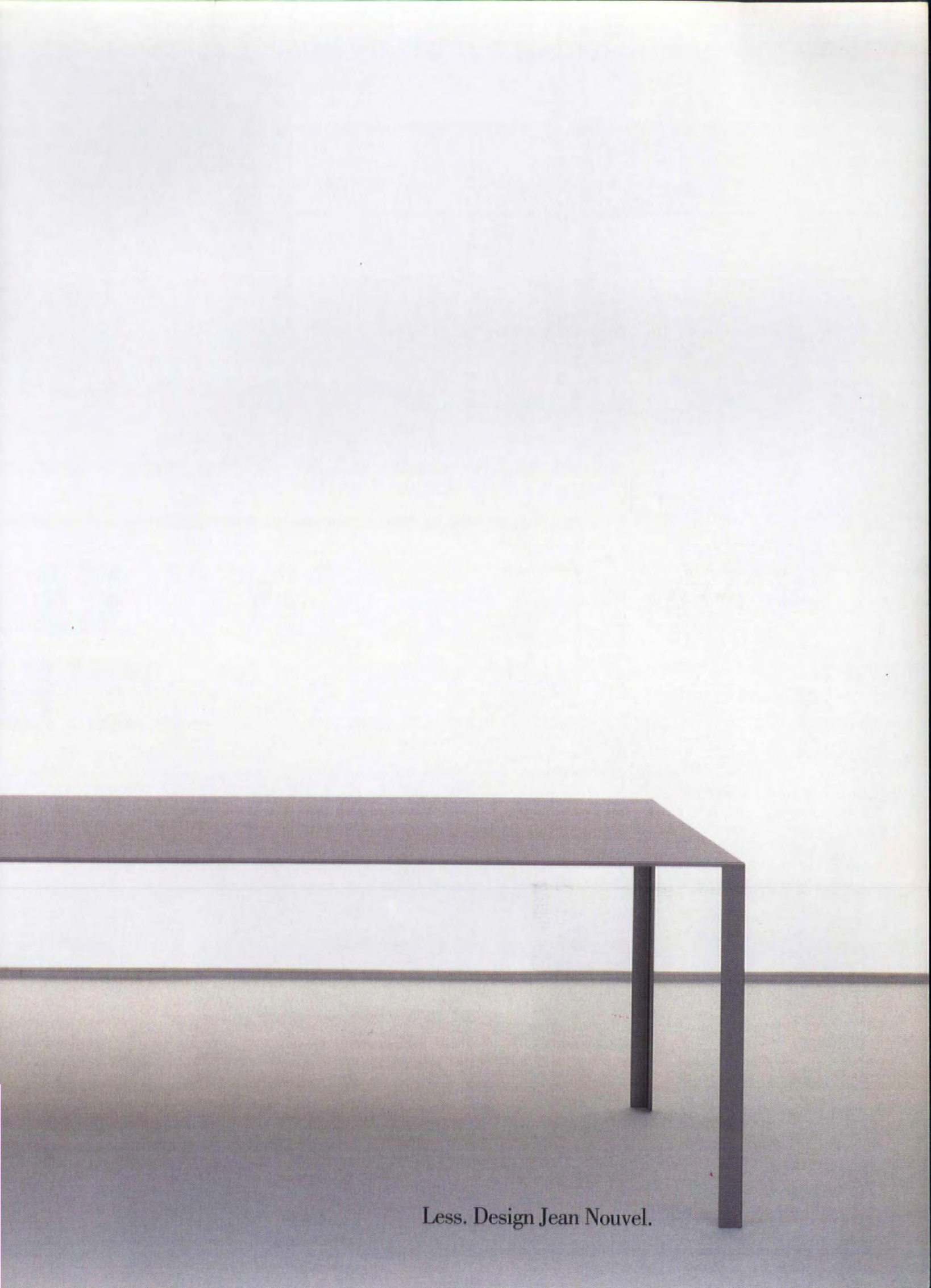
Less. Design Jean Nouvel.

SHERATON HOTEL GENOVA, OASIS OF SILENCE

Project:	*SHERATON HOTEL*
Location:	*GENOVA, ITALY*
Architects:	*ALFREDO CORRADINI* *SANDRO SERRAPIONI*
Product:	*PANORAMI ® SYSTEM* *STRUCTURAL CURTAIN WALLING*

FOCCHI

Project for an Airport Hotel. Due to its peculiar location, the project of an Airport Hotel requires quite a number of thorought details as far noise is concerned.

Everything was an successful thanks to detailed projects, samples and overall to the execution carried by the company which accomplished the Genova Sheraton Hotel.

Alfredo Corradini

Focchi S.p.A.
Curtain walls
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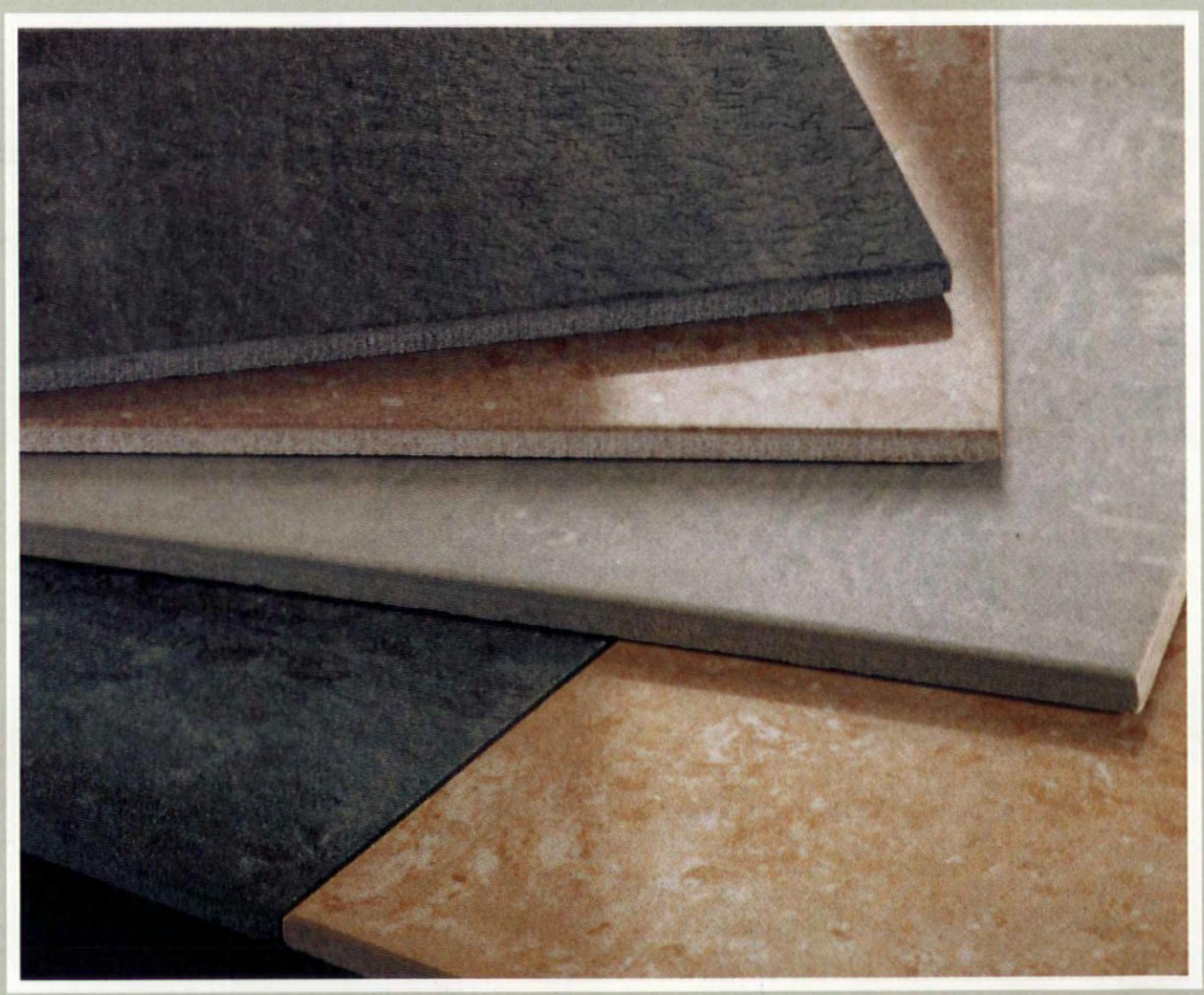
FLOOR GRES PROJECTS

CHROMTECH



Chromtech with its unmatched aesthetical characteristics distinguishes itself from the traditional porcelain tile. It perfectly meets the requirements of commercial centres, banks, hotels, residential homes and all areas where practicality and aspect are equally indispensable. It may be used indoors or outdoors without worrying about any chemical or mechanical damage. Chromtech is available in three finishes (bushhammered, matte and polished), nine colours, three modular sizes (cm 15x15, cm 15x30, cm 30x30), twelve feature strips (Mixage) and trims (cm 15x30 bullnose and cm 30x30 step tread).

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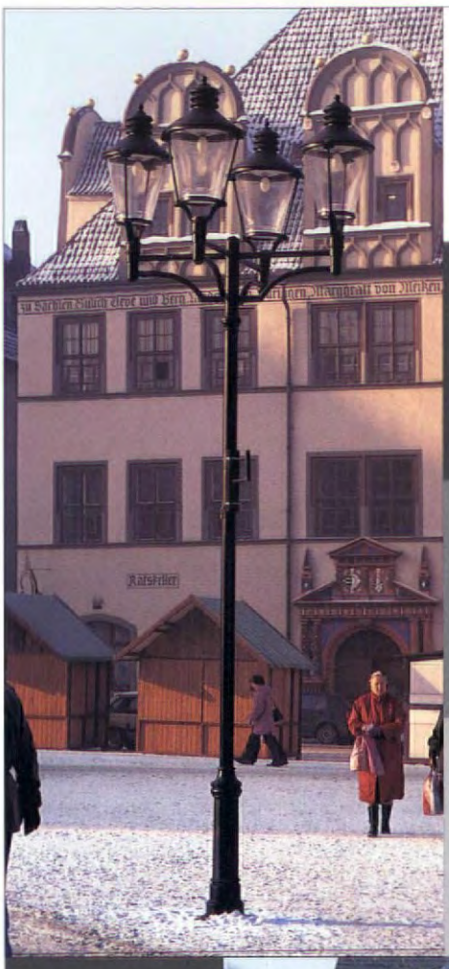

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A WORLD LEADER IN EXTERIOR ARCHITECTURAL LIGHTING

NORAL IN THE LIMELIGHT

Whether historical, contemporary or futurist, architecture and light are inseparable. The highlighting of a facade or a particular architectural detail, the animation of public places by night - street lighting that is as decorative as it is functional, the illumination of a park, the play of light and fountain - are important fields for architects.

Because of such importance and in order to face the restraints of the environment (pollution, weather conditions, safety ...) architects need to make heavy demands of their lighting fixtures suppliers.

NORAL have identified all the architect's requirements and sums them up in three main objectives:

- to obtain an optimal result that is, to reach one's goal through creative technical lighting with specially adapted fixtures
- to benefit from advice from lighting specialists to be sure of creating the best configuration
- to use all technology resources for light sources and for materials that ensure long-term functioning whilst remaining watertight.

The NORAL philosophy satisfies all these requirements. It is summed up in a single word:

HIGHLIGHT

When it comes to giving architecture a "nightlife", Noral Hydrel "build" the light to animate buildings by night, and when conditions require a lower level of illumination, Noral Label create a special atmosphere. All this is done with maximum efficiency, reliability and total safety - principles that form the cornerstone of NORAL.

Expertise, engineering research, the development of new products, high technology tools ... everything at NORAL is focused on one goal: to be (and to stay) world leaders in exterior architectural lighting.

Building on that philosophy and to satisfy the architect's requirements, NORAL has developed two brand names: NORAL LABEL and NORAL HYDREL.

NORAL LABEL SOLUTIONS

The goal governing the design of Noral Label luminaires is the valorization of a building by highlighting its architectural quality night and day. With the wide range available it's a simple matter to select lanterns that feature the same design but are of different sizes and have different brackets. The luminaire Noral Label is not only a light source but a scene component. The design of the luminaire is as important as the quality of the light output.

The Noral Label Compact Line

This range of interior and exterior lighting fixtures is manufactured for any environment. The purity of their design, their resistance, the quality of the materials (cast aluminium, unbreakable polycarbonate lens), their wide choice of colours and their flexibility (there is a large selection of light sources) enable them to cover a wide range of architectural applications.

The Noral Label Park and Street Line

More and more local councils are asking architectural practices to create lighting plans for towns. Such lighting must meet high standards of safety, fulfil aesthetic considerations, valorize public buildings ... and also use economical light sources.

With their technology Noral Label fixtures can fulfil all these conditions. The material used is refined aluminium pure at 99%. The Polyseal process provides the perfect finish and enables Noral Label to guarantee total corrosion proofing.

Moreover all Noral Label fixtures are highly resistant to vandalism and are designed to be installed in any environment.

PERFECT FINISHING AND LONGEVITY

All fixtures and aluminium units are treated with the unique Polyseal process that involves chromatation, powder polyester painting and oven burning. This method gives the products an attractive appearance, effective protection against weather conditions and outstanding guarantees of longevity.

NORAL HYDREL SOLUTIONS

Whether an accent light, a recessed uplighter or an underwater light, NORAL HYDREL luminaires are manufactured to precise specifications of colour, intensity and direction.

Recessed uplighters

Mounted flush to the ground, these luminaires are used to uplight foliage, floral arrangements, monuments and a variety of buildings. The fixtures from the N 9000 series are particularly well adapted for these uses. They have four components (holder, power control module, lamp module and locking door) and are made of high-performance materials.

These fixtures have a new left and right ninety degree rotative lamp module equipped with a twist lens.

This is NORAL's solution to the needs of the exterior architectural lighting professional. Moreover, Noral Hydrel now offer their N 9300 series well lights equipped with a round cast grill and with a thirty degree rotation of the lamp module to give a more precise beam.

All Noral Hydrel's recessed uplighters can be equipped with accessories such as glare shields, rockguards, Lexan domes, Lexan covers, full louvers, and directional or internal louvers.

Accent lights

These fixtures offer versatile performance in lighting, precision and flood distribution. They are mounted close to the ground and aim at accenting or highlighting specific architectural features or vegetation. Used with precise flood distribution reflectors (from 8 to 40 degrees) they may also be used high up in trees or structures to obtain downlighting effects.

In this series, the N4710 product combines performance, technology, density and aesthetics. In architectural applications, it is used as a spot, focal average or wide-angle lens.

Underwater lights

Noral Hydrel have been designing and developing underwater lights for over 40 years. Noral Hydrel supplies all kinds of underwater lighting from simple fixtures to the illumination of famous water features. Professionals from all around the world appreciate the quality of the materials used (bronze and stainless steel), the perfect watertightness provided by silicone seals and Epoxy resin foam together with thermal protection.

NORAL IN THE WORLD

Today, NORAL has

- More than 20 years of light experience
- the most complete range of fixtures
- 3 manufacturing units (Norway, France, USA)
- products that are sold in more than 40 countries
- 9 subsidiaries.

Get out of the Dark

Outdoor Lighting plays an important role in today's architecture.
Light fixtures must combine aesthetic and operational aspects with safety and durability.
These are the qualities which allow NORAL to offer architects one of the widest range of fixtures. From the simplest to the most sophisticated, they all satisfy the demands of the most complex environments.
With 40 distributors in the five continents, NORAL is one of the leaders in Outdoor Lighting.

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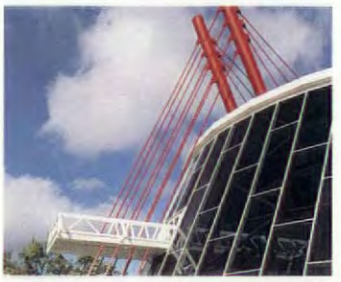

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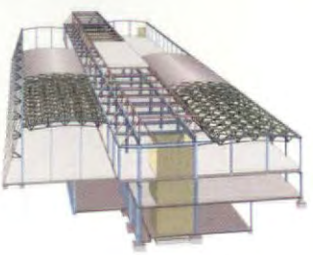
- ☐ lightweight brackets



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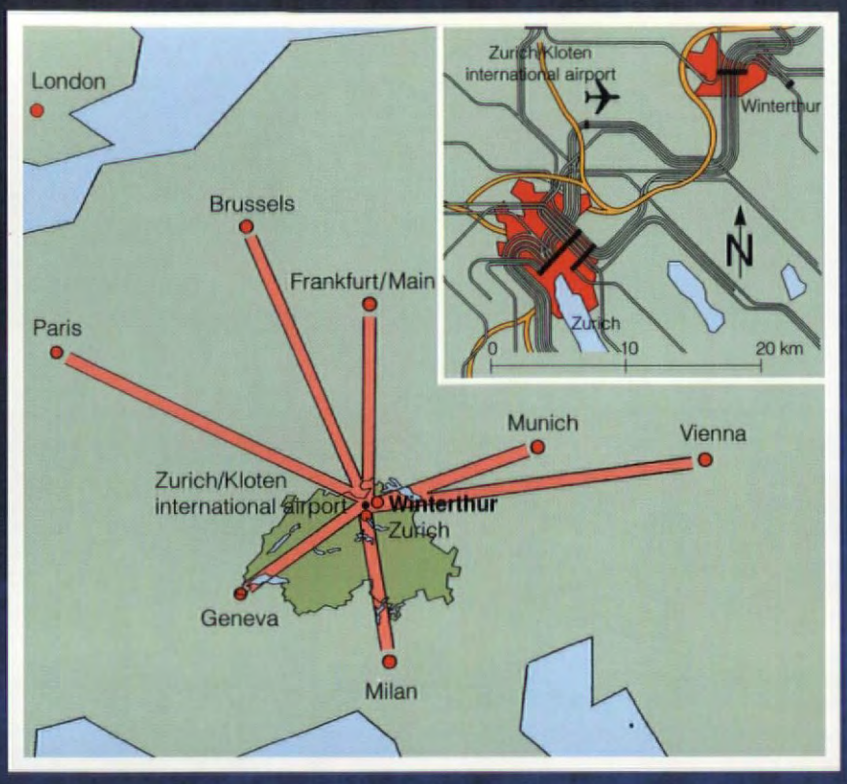

Winterthur, an important city in the greater Zurich area, 10 to 15 minutes from the international Airport Zurich, offers excellent development possibilities.

Near the central railway station of Winterthur, Sulzer, the international group, offers land and buildings for sale and is ready to advise and assist potential building owners with the realization of their plans.

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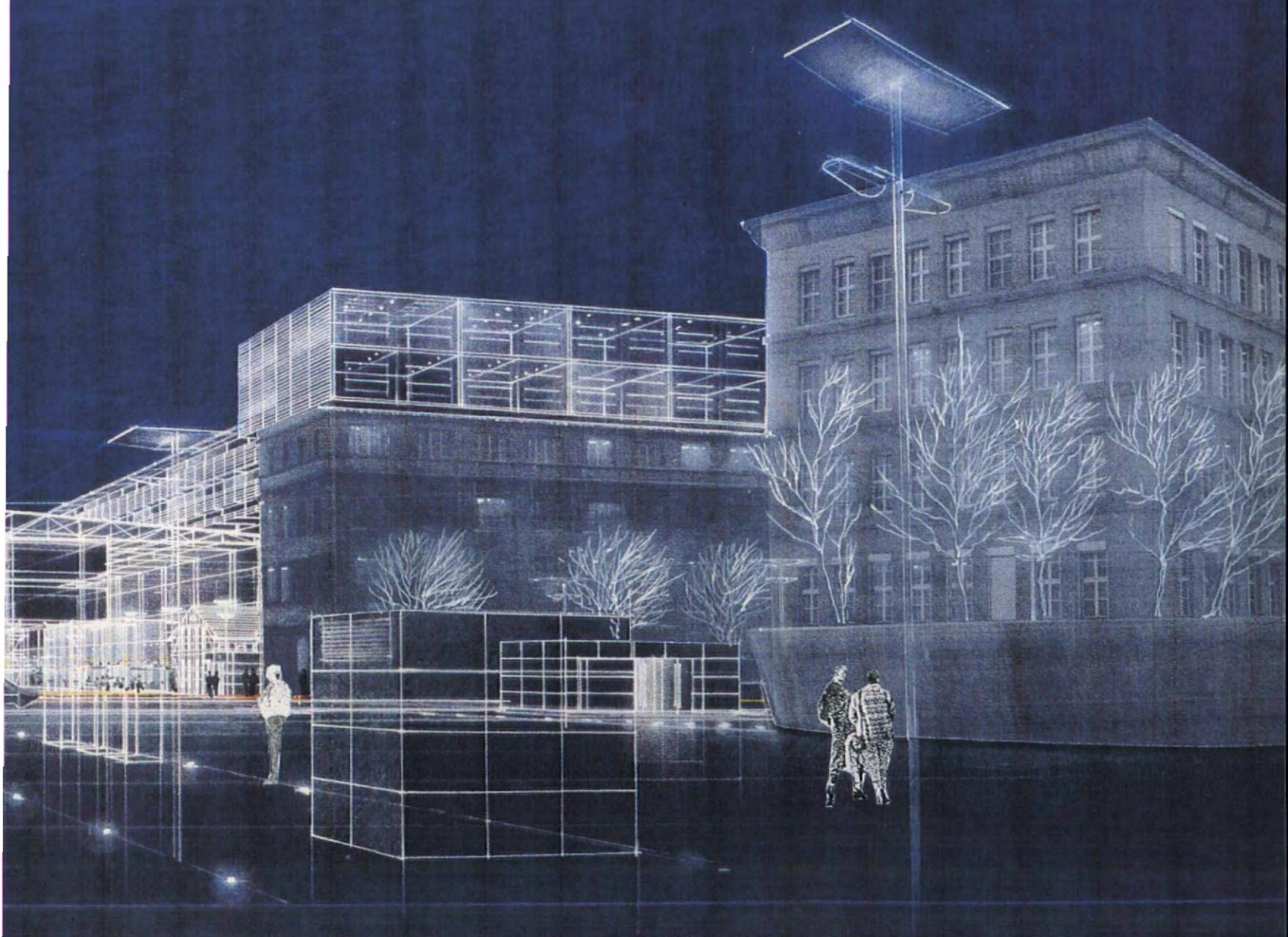

The complete site of 114'000 m² offers numerous possibilities for new usage. Its central location will facilitate the creation of an urban center with a high exploitation quotient of 250%.

The architectual concept of Nouvel/ Cattani is very flexible in terms of usage, layout of basements and parking lots as well as design of the attractive malls. Investors' and tenants' needs can be fully met.

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WATER BASED DECORATIVE-SYSTEM

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This work tool was conceived and developed to offer the most advanced and complete interior design technology in a single compact unit. The selection of colors, designs and finishes is the fruit of many years of experience and on-going research dedicated to devising a unique interior design system. The color samples are all real as life, you can almost reach out and touch them. The 400 possible color combinations, the infinite style options and the 18 different products make the Oikos Book an ideal tool for interior designers. The technical features, the manner of application, the itemized specifications, the photo brochuer illustrating the infinite design possibilities all contribute to making this an indispensable and comprehensive tool for interior design.

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REALIZZATO DA KRONOS sas

DECORSYSTEM

DECORATION COMPUTER GUIDE

IMAGE of applications screen

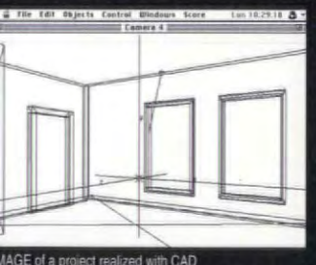

IMAGE of a project realized with CAD

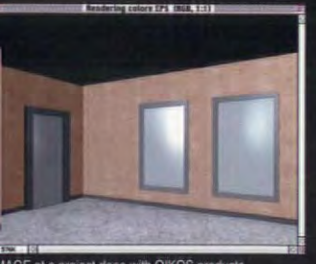

IMAGE at a project done with OIKOS products

CD ROM — AN INTERACTIVE CATALOGUE

Decor System is a multi-media interactive tool with which Oikos, a leading company in the interior design products field, is able to illustrate its vast arrat of products. It's a sort of interactive catalogue that makes possible for the customer to access all the pertinent information about any of Oikos's products by simply keying into the desired category. After initially selecting the appropriate field of application (private houses, hotels-catering, historical structures, public institutions, public works, work environments, commercial buildings, fairs-conventions and furniture-accessories) the customer may proceed to determine which Oikos products best satisfy the specified requirements.
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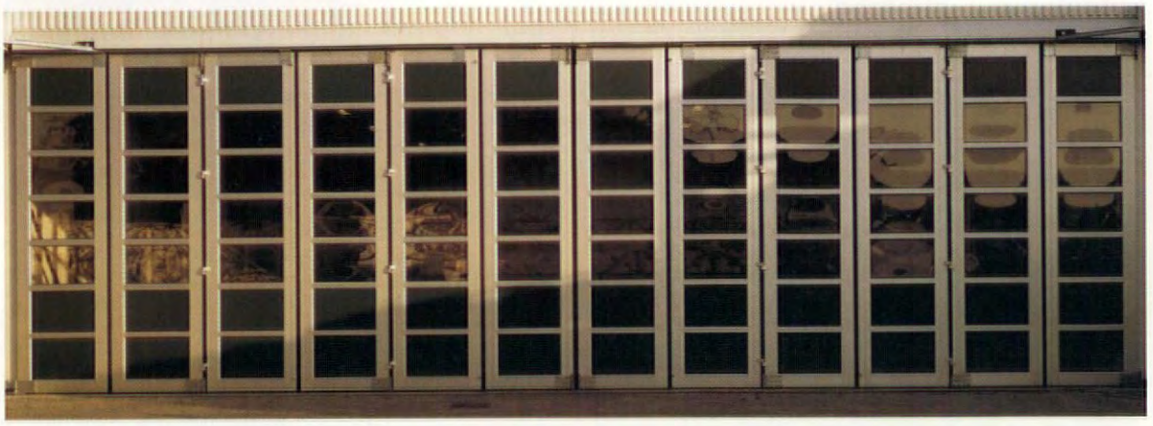

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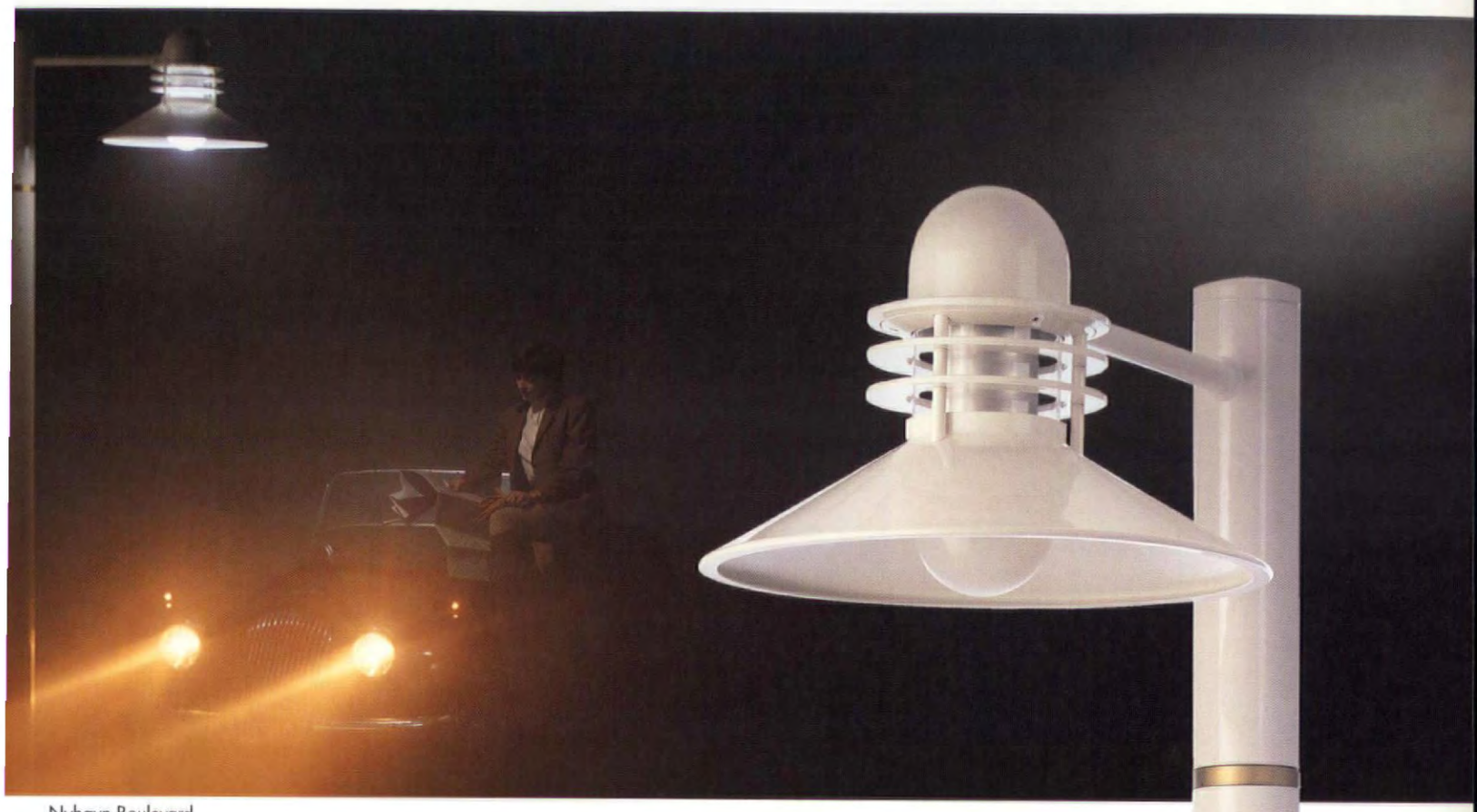
Nyhavn - Innovation and Tradition Combined



Nyhavn Boulevard

The architect Alfred Homann has designed four new fixtures in the popular Nyhavn series, Nyhavn Boulevard, Nyhavn Wall maxi, Nyhavn Bollard and Nyhavn Pendant maxi.
The fixtures are designed and developed on the sound and fundamental principles that characterize the Nyhavn series: timeless and functional lighting in an original and consistent design which provides a shaded, downward light.
All together, the fixtures will provide new options for lighting solutions – indoors and out.
For further information, please contact Louis Poulsen.

louis poulsen

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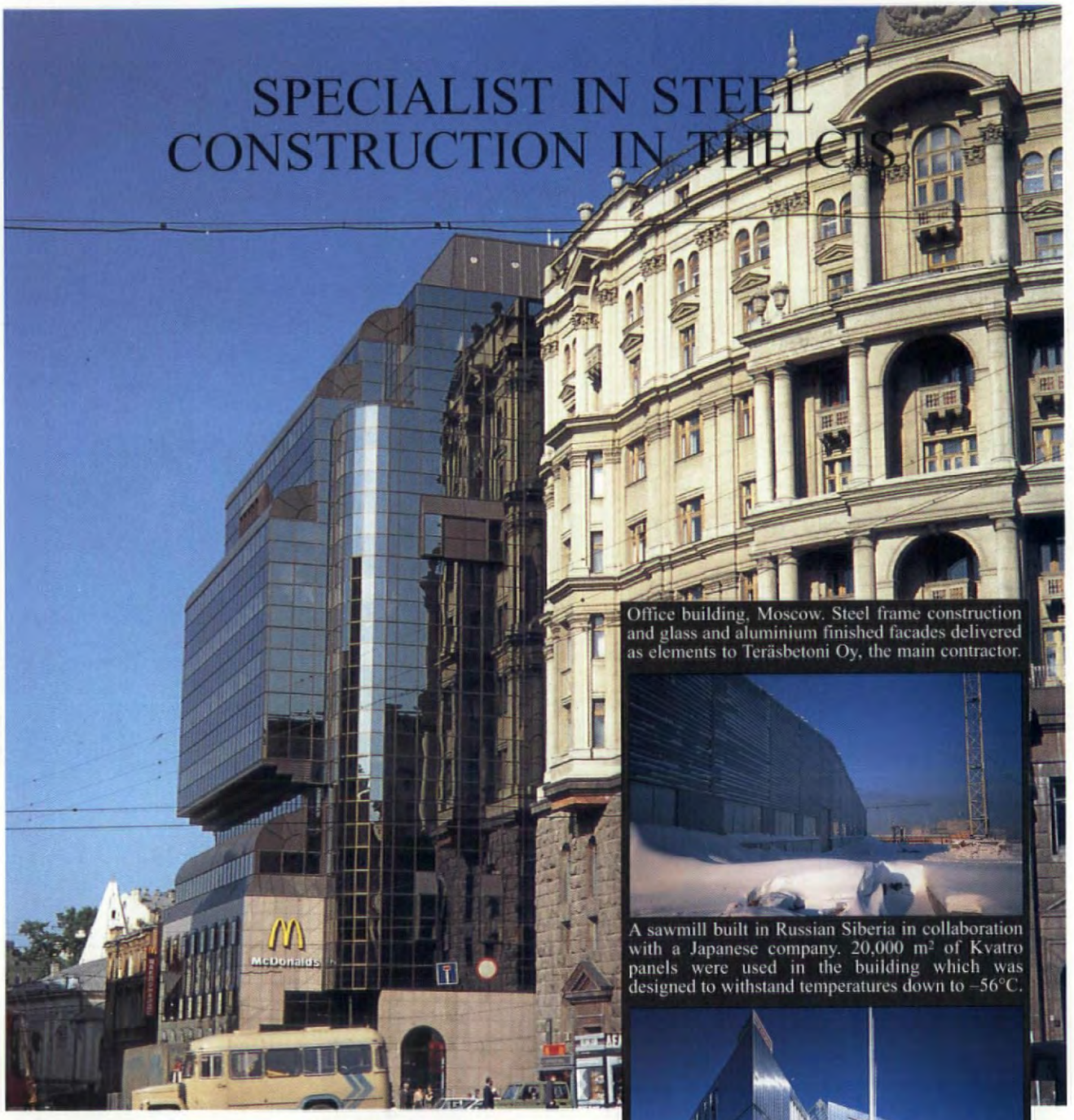

Office building, Moscow. Steel frame construction and glass and aluminium finished facades delivered as elements to Teräsbetoni Oy, the main contractor.

A sawmill built in Russian Siberia in collaboration with a Japanese company. 20,000 m² of Kvatro panels were used in the building which was designed to withstand temperatures down to –56°C.

The Nixdorf office building in Tampere, Finland. Teräselementti Oy was the main contractor for the project.

Teräselementti Oy designs, manufactures and installs steel structures either independently or in collaboration with international building contractors. The proof and guarantee of our expertise is based on 30 years of experience with a client base ranging from the biting frost of Siberia to the scorching heat of the Sahara.

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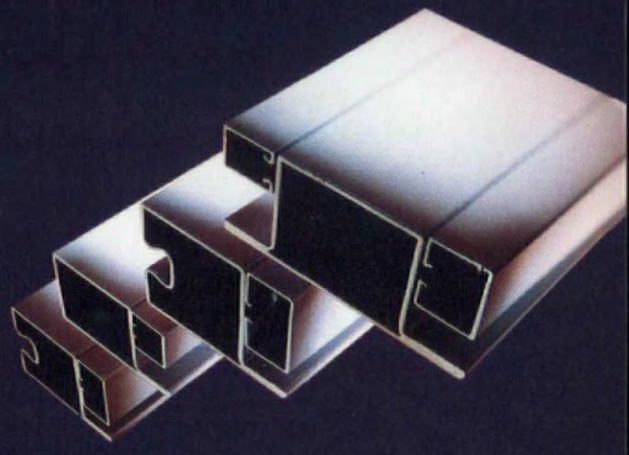

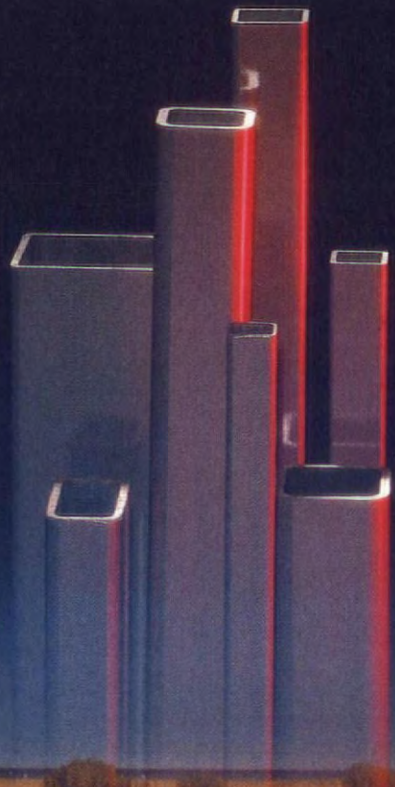

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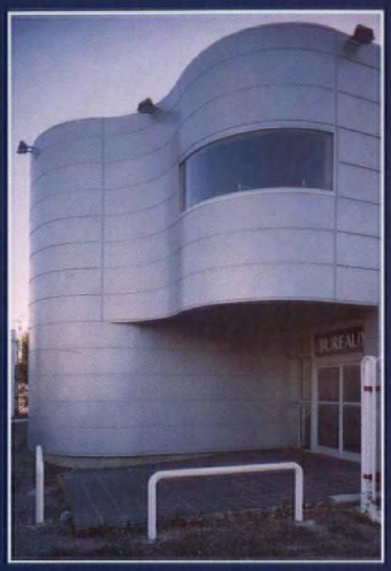

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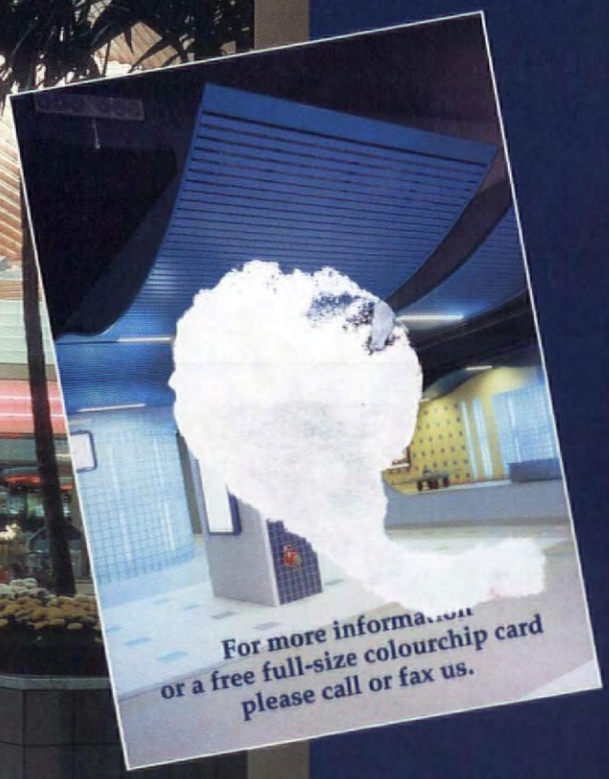

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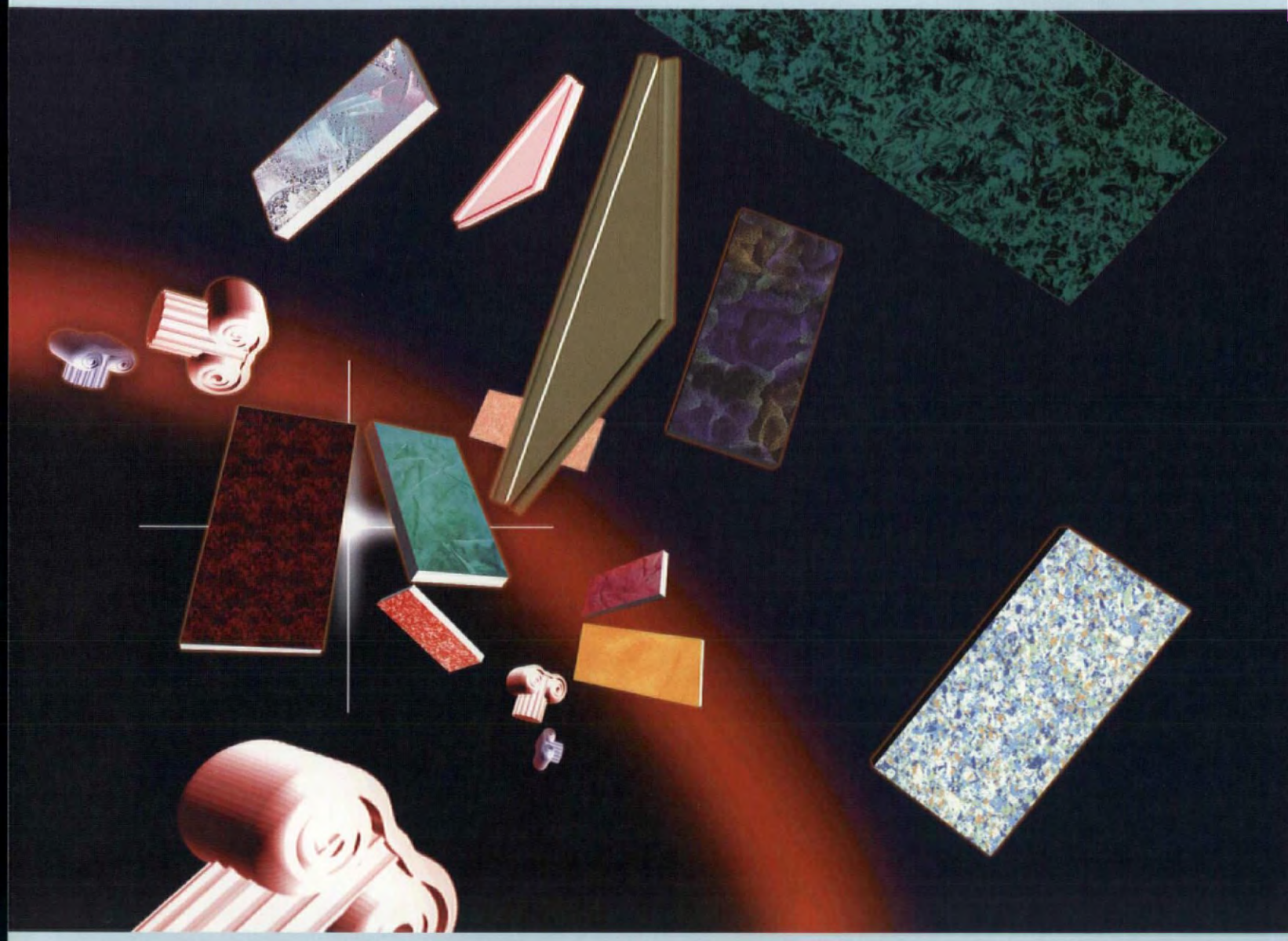

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WORLD ARCHITECTURE

The Century of Architecture to Come

The Futuroscope

"The essence of architecture is the power of adaptation to fresh facts. Above all, it is a realist creed. It has no use for immortal principles in relation to the facts of bread and butter; and it despises the windy rhetoric which ascribes importance to mere formula. The steel creed of an iron age, architecture cuts through the verbiage of illusion to achieve a new reality." So wrote the farsighted Berthold Lubetkin in 1932, when much of the Western World was in the throes of a recession, enslaved by what Marguerite Duras has called "a kind of original disorder".

Today, as we look back over a century dominated by Modernism, it is clear that Lubetkin was right. One activity above all others has come to dominate the shape of our world. Reality is no longer shaped by tradition, it is enabled by architecture. Although it has not yet even begun, we can already say with certainty that the twenty-first century is destined to be the century of architecture.

Two hundred years ago the world was still largely pre-industrial, trapped in a natural agricultural cycle of glut and famine. One hundred years ago the world was about to enter an era of enslaving ideologies. With the coming of the year 2000 we face, in the crises of pollution, anarchy and resource exhaustion, a final confrontation with the limits of human creativity. With all the old ideologies dead or dying, architecture has overtaken politics as the connecting link between human needs and the elastic resources of the earth. By perpetually refining the relationship between humanity and its global resources, architecture will make possible a world of man/machine interfaces that annihilate time, space, force, mass, history, myth and magic. Where once it was despised, design is now embraced as the best hope of mankind.

It is through architecture that economic life in our century has penetrated to cellular levels more profound than anything dreamed of by the most visionary industrialist of the nineteenth century. Ceaseless design and redesign has enabled us to understand that, as Vladimir Ilyich Lenin once said, everything is connected to everything else. From the structural frame to the cladding system, from the electronic workstation to the communications satellite, design is the envelope that encloses the nervous system and musculature of the febrile new global economy. To understand the process of design that enfolds us today and will wholly enclose us tomorrow, we must dissect it and study its component parts: for it is in the act of dissecting something as complex as the simultaneous exercise of intuition, analysis, inspiration, observation and experiment that is architecture in action, that we strip away all superfluities and expose its essential structure. Real architecture, we find, is design on the edge of feasibility, design where, for whatever reason, all resources are lacking, design where nothing can be done but somehow, through genius, something is. It is only at the point where it becomes almost impossible that design becomes architecture and reconciles needs with resources through form.

Martin Pawley

AN ABECEDARIO OF JEAN NOUVEL

Prepared by Paul Jodard, material for this glossary of the wit and wisdom of Jean Nouvel was gleaned from conversations in a Mini Cooper one day in the spring of 1994 (see "Mini"), from published sources and interviews, and with special thanks to Charlotte Kruk.

Architecture
"For me architecture is more than life itself. I would not only die for architecture, I would kill for it. Kill. Kill. Kill for architecture. In my architecture the idea of something lasting is not expressed by the form but the mentality of the building."

Building regulations
"Architects must deploy all possible means to keep us from being bullied into building in absurd conditions; most of the laws and building regulations will have to be changed."

Cities
"The idea of the city has exploded: the historic notion of the city has no sense today, the modern city doesn't meet those kind of definitions. Cities have come into being without us, without architects, without politicians. No-one has planned or sought a city such as we have today, that is a succession of chance economic events, of hurried decision-making, of contradiction."

Dictatorship
"The architect has no right to dictate, like the utopians of the early twentieth century, how people are going to live. The architect's job is to set out a certain number of possibilities. It's in that way that those with a cultural role are true to their obligations."

Film directors
"The architect is like a film director, in that he works with a whole crew of specialists. But the analogy goes further. The evolution of image-making technology and its worldwide expansion stimulate my imagination as much as certain aspects of scientific research."

Graffiti
"Graffiti, billboards, neon - these are all part of the urban reality. I may or may not like them, but that is beside the point. They are there, I cannot change them nor can I ignore them."

Housing
"Housing is not a consumer product, but a cultural product. At St Ouen or at Nemausus the flats offered wide choices, different ways of living. I support utterly such principles of difference, of contextuality. We don't make cars the way we did 30 years ago, so why build houses the way we did 30 years ago?"

Jacques Le Marquet
"Jacques le Marquet often tells me that architects should read fiction the better to understand reality." (Nouvel worked with Le Marquet as his advisor on a number of projects, both for theatres, for example at Belfort, and for general buildings.)

Ka'aba
" 'A whale that has swallowed the Ka'aba' was Philippe Starck's description of our competition entry for the Tokyo Opera." (A better image for this project would be a virtual case or box, constructed from light, containing the different cubic elements of theatres, rehearsal areas, etc.)

LSS
"The furniture collection for the new Cartier building is called LSS: you say 'less' but it's written LSS. I don't like vowels."

Mini
"The Mini is the only true urban car. It's practical, and it's small - you can get it onto the space between parking meters! But the design stops there - it lacks all sorts of features a modern car would have; it's a living fossil."

Normality
"You can make a normal, modern room wholly out-of-date the moment you install the latest television receiver into it. Living spaces have got increasingly to be platforms for additional products, not statements in themselves."

Past
"I don't have any belief at all in trying to restore the balance of society or of archi-

tecture by going back in time, looking for past models: my architecture is for today, not for yesterday, not even for tomorrow."

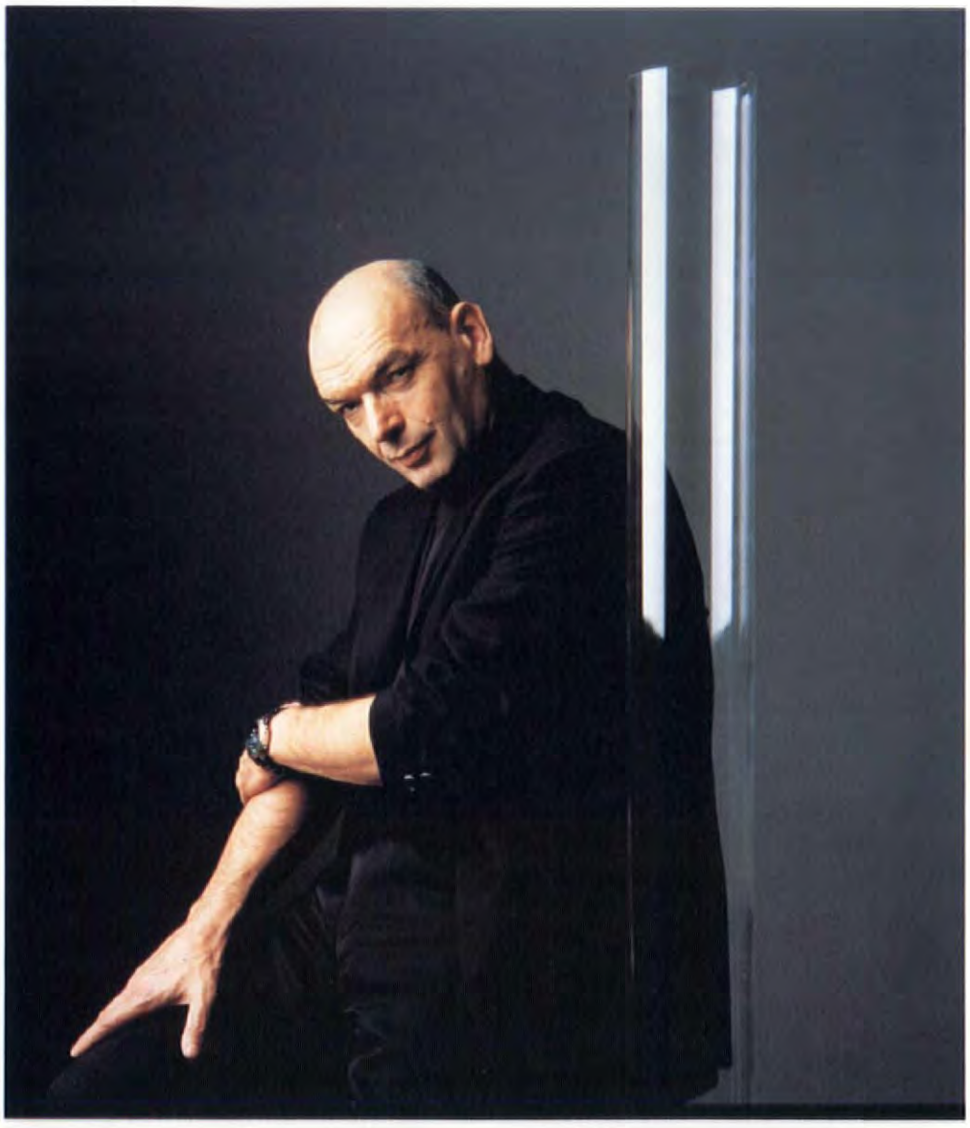
Questions
"Urban design is dead. We can't design cities today, we can't lay out streets as if we still had a royal edict for doing so. The question for urbanism today is how to define strategies based first and foremost on what is to hand, what exists already."

Reality
"Architecture has suffered a great deal from buildings being made that contradict any sense of reality, that have nothing to do with the world as it actually is, as we experience it every day."

Signage
"Signage - even purely practical or security signage - is a source of information on the functional essentials of a building. But it also has a poetic and dynamic role within the complexities of the total image projected. This programme of images on a screen is part of the life of the building. Even the occupants of the building are integrated into this programme, their movement across the building silhouetted onto the facade." (Mediapark, Cologne)

Technology
"I use technology because it is there, because it is available. But the ideas come first; the technology is what enables me to express those ideas. And I use the latest technologies of glass and aluminium because I am building for now."

Verticality
"This proposal (for the Tour Sans Fins) is formulated on the basis of erasing all limits, so as to promote the expression of a purely vertical tension, conceptually infinite, disappearing into the ground and into the sky. Read it as vibration, as tension, as harmony: the abstract vertical statement will be a source of revelation."



Arnaud Baumann

Weather
"At the mid-point between the abstract and the figurative, with natural and artificial light we wanted to create a subtle game, a setting to seduce the viewer, posing questions on what is visible, what is hidden, what is clear, what is dark, what can be understood and what must be felt. Illumination and structure define the architecture itself, in an infinite variation, linked to the weather, the time of day, and to the kind of images programmed." (Galeries Lafayette, Berlin)

X-factor
"Architects adore reducing the city down to a project, and drawing it out and tracing it with crosses on the map. All that is now over. You can't draw the city any more, because the city is only the result of a logistical interlaced network of services and transport, energy flows, economic activity and political action."

Zug
"The Zug factory project! At that time I was endlessly entering competitions, like a boxer getting into training by being knocked out! But the competition system in France, for all its disadvantages (who needs a competition for a two-storey office building!) has created great opportunities for modern architects, both French and European." □

A METHOD ON DISCOURSE

Jean Nouvel was programmed to succeed. Born in 1945, the year Zero of the twentieth century, he took first place in the competition for a place at the Ecole Nationale Superieure des Beaux-Arts in 1966 at the end of the old regime. After 1968 he prospered in the new intellectual ferment. Within a decade he was, as Conway Lloyd Morgan recounts, on his way to fame and fortune.

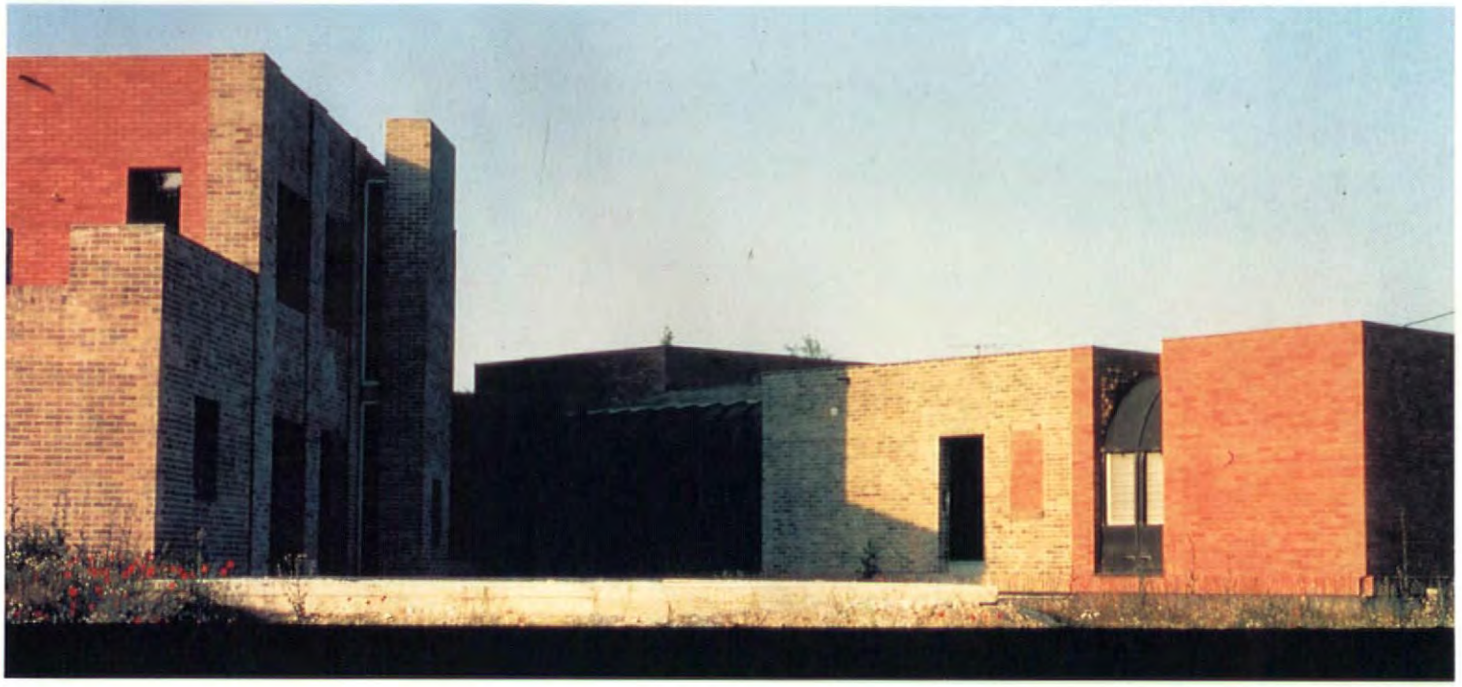
Antonio Marsinelli

"Lyon a un Nouvel Opera": with this sparse piece of municipal word-play the city of Lyon announced last summer the opening of the new Opera House, designed by Jean Nouvel. The poster otherwise carried only a freephone number for information. There was no list of works to be presented, no illustration of the building. Since Jean Nouvel leapt into the public eye seven years ago with his award-winning Institut du Monde Arabe in Paris, he has had a significant number of commissions, and received several public honours. But he is far from being a media personality, linked in the public mind with a particular style. So what quality - apart from novelty - were the Opera House public relations team trying to convey?

To understand this question, we need to bear in mind the sheer quantity of public sector architecture that has been commissioned or built in France in the last 15 years. Since the Centre Pompidou in 1978 there have been two major museums, the Musée d'Orsay and the Grand Louvre, the new TGV stations at Roissy and Lyon Satolas, the Grande Arche and the Tour Sans Fins (itself a Nouvel project) at La Défense, the new Bibliothéque de France, the Bastille Opera, the Médiathéque at Nîmes, and a host of smaller museum, schools, university and municipal buildings and housing projects. Private and commercial patronage has also been active. This has developed a climate of architectural expectation in France unequalled in Europe. (As one wit pointed out - rather unfairly - in the same period in the UK the only event was that the Prince of Wales wrote a book...) But this takes us far from Jean Nouvel. Citing the name of this architect, as the poster does, not only makes a knowing nod to style, but confers a status: "this is an important building," the subtext reads, "and Lyon is an important city, because world-class architects like Jean Nouvel build here." Having a building by Nouvel puts Lyon firmly on the cultural map. And on this map in France contemporary architecture is one of the key defining factors, in ways that it is not elsewhere.

This importance given to architecture by the French is also reflected in the critical storms within the architectural profession that some of Nouvel's buildings have brought about. The Modernists cannot forgive him his insistence on context, the Historicists his insistence on the present, the academics his denial of the autonomy of architectural issues. His original and eclectic approach has, he admits, made him more enemies than friends. Radical architects risk becoming frozen into their own posturings, but Nouvel avoids this temptation by increasingly refining and redefining his own ideas, and by pursuing every opportunity to build. For Nouvel, an architect who does not build is no architect at all. He or she must also accept the social and economic dynamics of the situation in which the building is to occur, and must consider how the building is

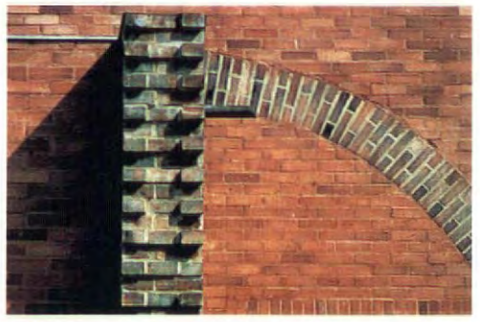
Lyon Opera (far left) and Dick house, (below) showing original outline



to be integrated into and contribute to the culture of its time. Before beginning to design, Nouvel and his colleagues think through the definition of the project, and discuss the meaning and value of the concept, as it emerges, and in the widest possible terms. This collaborative process brings in people from outside the formal ranks of architecture - the artist Daniel Buren worked on one housing project, and the scenographer Jacques Le Marquet was a frequent collaborator as well, not only on theatre projects. This shared process of discourse lies at the start of all of Nouvel's buildings and projects.

The sources of this discourse are not hard to find. Nouvel was born in the Lot et Garonne, in southwest France, in 1945, and won first place in the entry competition to the Ecole des Beaux Arts in Paris in 1966, having decided on architecture rather than painting as a career. He helped pay his way as a student by working in Claude Parent's office. Inevitably, he also became involved in the events of May 1968. The popular image of the May revolution is of cheerful confrontation between students and riot police, taking local advantage of Paris's paved streets, But the true nature of May '68 is in the endless, open debates generated, in universities, in schools, in offices and factories. The agenda of the revolution was to question all aspects of the roles and relationship of the state and its citizens (the 1786 term *citoyen* became a familiar form of address two centuries later): this debate and discourse coloured all social, political and intellectual life. The early built work of his first office (with Claude Seigneur) is paralleled by political activity, against stupid and restrictive building regulations, against absurd planning decisions, and against some of the Ancien Régime prerogatives that still, despite May '68, influenced the architectural profession, notably in excluding from certain commissions some groups of qualified architects, and in creating sinecures for others.

At times the radical dialogue and the building programme coalesced into one: the Dick house, built near Troyes for a private client in 1977 is one example, another is the College Anne Franck, a school at Anthony, on the outskirts of Paris. The Dick house was designed after long discussions with the owners about the kind of living space they wanted, and was to be sited in an area of no particular architectural pretension. The proposal was turned down at planning stage, and no form of appeal, debate or protest would make the planning authority budge. Eventually the plans were modified apparently to suit the authority's whims: in fact red brick lines on the built facade denoted the unnecessary excisions they had requested. Similarly, at the Anthony school Nouvel subverted the requirement to work within an industrialised construction system by only using three elements - floor and facade panels and beam. The resulting building, with its repetitively Constructivist exterior, and interior in pastiche pre-post-Modern is a

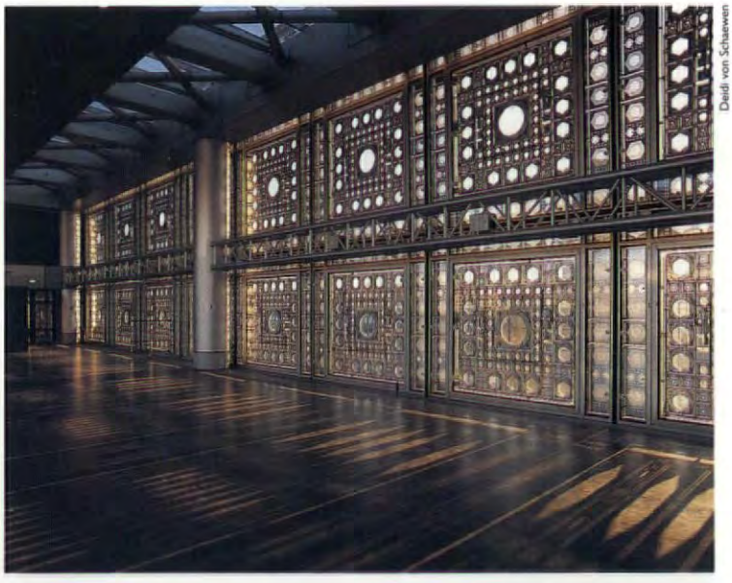


brilliant critique of the absurdities of the rule-book, as well as being the product of long deliberation and analysis. He continued as a radical, his edge honed even further by his natural willingness to question established concepts and ideas. Regular presentations at competitions and projects led to an increasing reputation, crowned by winning the Institut du Monde Arabe competition.

Today, for Nouvel, even driving around Paris in his black Mini-Cooper ("still the only true urban car", he comments, "despite the lack of modern features on it') becomes a discussion on urbanism. "People think of Paris as a small, centralised city, radially organised by Haussmann. In fact Haussmann built over a concentrically organised city, with the state institutions in the middle, on the Seine islands, and the noble quarters around them, and then the artisan and labouring areas outside them." This awareness of boundaries is a recurring feature in his work.

Institute of the Arab World 1987


Georges Fessy


Deidi von Schaewen


Georges Fessy


Georges Fessy

Take for example the Institut du Monde Arabe. It stands on the left bank of the Seine in Paris, just upstream from Notre Dame. On the river side, a curving wall matches the line of the road separating the bank from the Seine, ending in an entrance slot that opens into the interior courtyard of the building. On the landward side a higher, almost rectangular block faces across an open space to the adjacent buildings of the university of Paris-Jussieu. The Seine is one landscape, the university, with its Brutalist concrete blocks, is quite other, and separate solutions are demanded for each facade. The device of the entrance slot appears to be an elegant manoeuvre to create a formal point of arrival, as well as a means of separating the museum and library sections of the building. But from the building, at the fourth level walkway crossing the slot, another logic appears. The slot is aligned precisely on the dome of the Institut de France, the official fountainhead of national intellectual and cultural life, which also lies on the south bank of the Seine. (In turn, the Institut de France is itself placed on the axis of the entrances to the Cour Carré of the Louvre, along the line of the Pont des Arts.) This detail, an elegant homage from one Institut to another, exposes, for me, the intelligence that underlies all Nouvel's architecture.

It is easy to describe the Institut du Monde Arabe as a composition of traditional Arab architectural motifs reformulated in concrete, glass and aluminium, in an astonishingly poised and impressive way. But the building actually achieves far more than this. It creates a synthesis between two cultural traditions, both of which converge and diverge, in a wholly contemporary way. This contemporaneity is not achieved merely by using concrete in place of stone, and pierced aluminium patterns in place of patterned tiles. The articulation of the building too is contemporary, but so, more importantly, is its language. And the syntax of that language is applied with both grace and rigour. This is clear not only in the whole concept of the building but in the smallest details, from the openings in the stair treads to the spacing of the alabaster panels lining the deep inner courtyard. Of course, the discourse set up by the Institut du Monde Arabe is not in any way limited to the elements of the building: the spaces communicate the same special sense of place. The balance between interiority and exteriority is very finely drawn, and not only in the famous motorised wall of photo-electric diaphragms, that control the flow of light into the building, by responding to the outside light levels..

The interface between interior and exterior is a regular pre-occupation of Nouvel's. He claims, rightly, that the volume and density of images and information compressed into the

Köln media park project 1993

Gaston

Gaston

modern city renders the traditional formal definition of the exterior of a building absurd. Entrances and exits, passages from enclosed to open spaces, should relate to levels of experience of the building, not necessarily be statements about its physicality. This idea can be seen in the very dense structure of the Institut du Monde Arabe, for example in the transfer between the interior of the museum and the alabaster-hung court. A row of aluminium columns, then a narrow light slot, then the glass curtain wall, then an airspace, then the square alabaster panels in their steel corner frames, constitute a series of denials of limit. Stepping between the columns up to the glass wall feels like stepping out of the building, odd as that sounds. Jean Nouvel's achievement is to convert, through such small details as much as through the whole of his buildings, a theoretical position into an actual experience.

The contemporary experience of the city does not consist of discrete phases, but of a continuous rescanning of the visual fabric - the city has moved beyond the frame of the cinema into the continuity of video. In this sense, to talk about the independence or permanence of the elements of the fabric is irrelevant, the flyposter or the graffito has as much impact, and often as much content, as the finest classical facade. For Nouvel, this is neither an argument for populism or for pastiche, let alone for the folly of post-Modernism. It is a fact of life with which the architect has to work creatively. For Nouvel, the dematerialisation of architecture that this involves is an acceptable consequence, not just a theoretical position. The parameters of possible architecture are set by the site itself, its social, political and historical environment, the intended function of the building, the economic budget and the available technologies.

The task of the architect is to find an original and creative solution within these parameters, rather than from the architect's pre-conceived theories, according to Nouvel. A successful building will be one that both responds to and stimulates its users, in the widest sense, and makes a valid statement about the present - not a statement about some unidentified future or lost past. The resulting building may even be almost invisible. The Tour sans Fins at la Défense is one such project. Another is Nouvel's most recent building, the Cartier Foundation on the Boulevard Raspail in Paris.

The Foundation is built in a small park, almost a garden, in Montparnasse. The importance of the park is that there 200 years ago Chateaubriand planted a cedar tree as a symbol of liberty, a tree which still stands. The proposed building was to house Cartier's head offices, and the Cartier Foundation, which puts

Pulled apart leaving great gaping wounds. The parallel blocks of Jean Nouvel's housing at Bezons, completed in 1994

All photographs this page by Jan Derwig

on exhibitions, concerts and lectures. The Boulevard Raspail, created by Haussmann at the end of the nineteenth century, is a wide avenue flanked by six and seven storey buildings, but behind and beyond it Montparnasse is mainly low-level building, partly housing, partly light industry and offices. The cafés and theatres of Montparnasse still retain some of their bohemian glamour from the mid-twentieth century, when being seen at the Coupole or the Dôme was part of being an artist or intellectual.

Jean Nouvel's solution is to create a simple cubic structure, transparent over the ground and first storeys which house the Cartier Foundation, and becoming more opaque over the remaining seven storeys of offices, which are housed in a narrower tower centred on the Foundation. The concert and lecture rooms are in the basement, integrated into the whole by floorlights through the ground floor. Access is either by external glass lifts at the back of the building, or by open steel staircases projecting from the office tower on either side. The building is set back from the Boulevard, separated by a ten metre glass wall. The interior finish is largely in greys: Nouvel has designed a set of grey steel office tables and cabinets to furnish the building.

The external glass wall unites the building with the rest of the avenue, while giving visual access to the park (Chateaubriand's tree stands in front of the building, to one side of the entrance). The glass wall also provides the first of a series of layered entrances (all the internal partitions on the ground floor area are transparent). This effect of transparency continues through to the glass lift at the back. Seen in daylight, the building disappears at ground level, present only through the reflections of the trees in successive planes of glass. At night the lit space of the Foundation, transmuted further by the exterior glass wall, forms a subtle cube of light that gently defines the surrounding park.

The quality of light in the Nouvel's buildings is equalled in subtlety by the range of colours created within what is often virtually a monochrome palette. A concern for the lit quality - whether in daylight or by artificial light - is clearly central to his work, as in the Nemausus project at Nîmes, in the Institut du Monde Arabe, or in the Tour sans Fins. This expresses his interest in how his buildings will appear at all times, not just in a good photograph (for Nouvel one mark of a good building is that it looks better in reality than it ever did as a drawing or model, or on a photograph.) The lighting is one of the many ways in which the building is fitted into its context - it is not there to flatter the details of the engineering, as in some High-Tech buildings. In the Mediapark project at Cologne, for example, the lighting system is designed to create an alternative, virtual building at night.

Design for a Lego competition 1994

Deidi von Schaewen

Jean Nouvel's approach to architecture is based on pushing out the envelope of any problem until it is fully understood, and so can be resolved. It is a process that demands time and discussions, contacts and consideration. The definition of the visual aspect of the building only begins once this necessary - even fundamental - intellectual analysis of the building has taken place. The success of Nouvel's buildings lies in the fact that the final vision of the building is not only immensely satisfying in itself in purely architectural terms, but that it also resonates with the intellectual understanding of the needs of the project.

Yet architecture of the quality of Jean Nouvel's is under threat, even in France. Too many clients today expect architects to have instant answers (perhaps too many architects today also have formulaic answers ready for just such clients). But not only do the economic considerations of modern building programmes militate against the considered solution, so do even the rules of engagement of the architectural profession. This is particularly the case in France, where all the architect can charge for is the design, not the thought, time, and breadth of ideas that go into it. The questions that Nouvel's buildings pose about the nature of architecture are both subtle and profound. More importantly, perhaps, his way of working through discourse also present a profound challenge to the whole concept of the role of the architect. It would be a tragedy if the process of architecture itself, in its formal applications, marginalised or condemned as economically unviable the attitudes and vision of such as Jean Nouvel.

The overwhelming quality of Nouvel's building is of their intellectual vigour. In his work, allegory, allusion and reference are no substitute for thought. The density of his designs comes from the transmission of the complexities of thinking that have gone into the solution: one never has the impression that a device serves merely a visual or decorative purpose, it is locked into the animus of the whole. If he pushes contemporary technology to its limits, that is a result of the necessities of the project, not of some pre-conceived theoretical position. What lies behind his approach is a transcendental view of the function of architecture, that, in his famous - or notorious phrase - "the future of architecture will no longer be architectural". In seeking to free architecture from its limitations, through buildings of grace, assurance and power, Jean Nouvel's method of architectural discourse enriches the present. □

Nemausus Housing project, Nîmes, France 1987

This public housing project for 114 dwellings was on a narrow site adjacent to an arboretum. Nouvel decided to use it as a test-bed for his ideas about housing, developed over earlier projects at St. Ouen and for private clients. His first action was to maximise the area of individual apartments and duplexes, by reducing the public spaces to a minimum. The weather in southern France meant that this could in part be achieved by providing large balconies, and in part by using external stairways.

It was also important for Nouvel to provide natural light into all rooms, and to offer as many variants on the plan and layout of flats as possible, to encourage the residents into their own expression of living space. In fact 17 different variations emerged in the final plan.

This was for two buildings (with car parking beneath) parallel to each other and apsidal in end form. Each building has three main levels with balconies, and the lower two main levels each have an additional floor to allow for duplexes. The design vocabulary comes from industrial production: garage-type doors, ribbed aluminium cladding, metal frame stairways. The logic behind this was not only linked to costs and construction problems. It was also part of a wider statement that depreciated the external statement of the building to give added value to the interiors. To read Nemausus as simply "high-tech" is thus to miss part of its central message.

Pierre Bérenger

Boissière

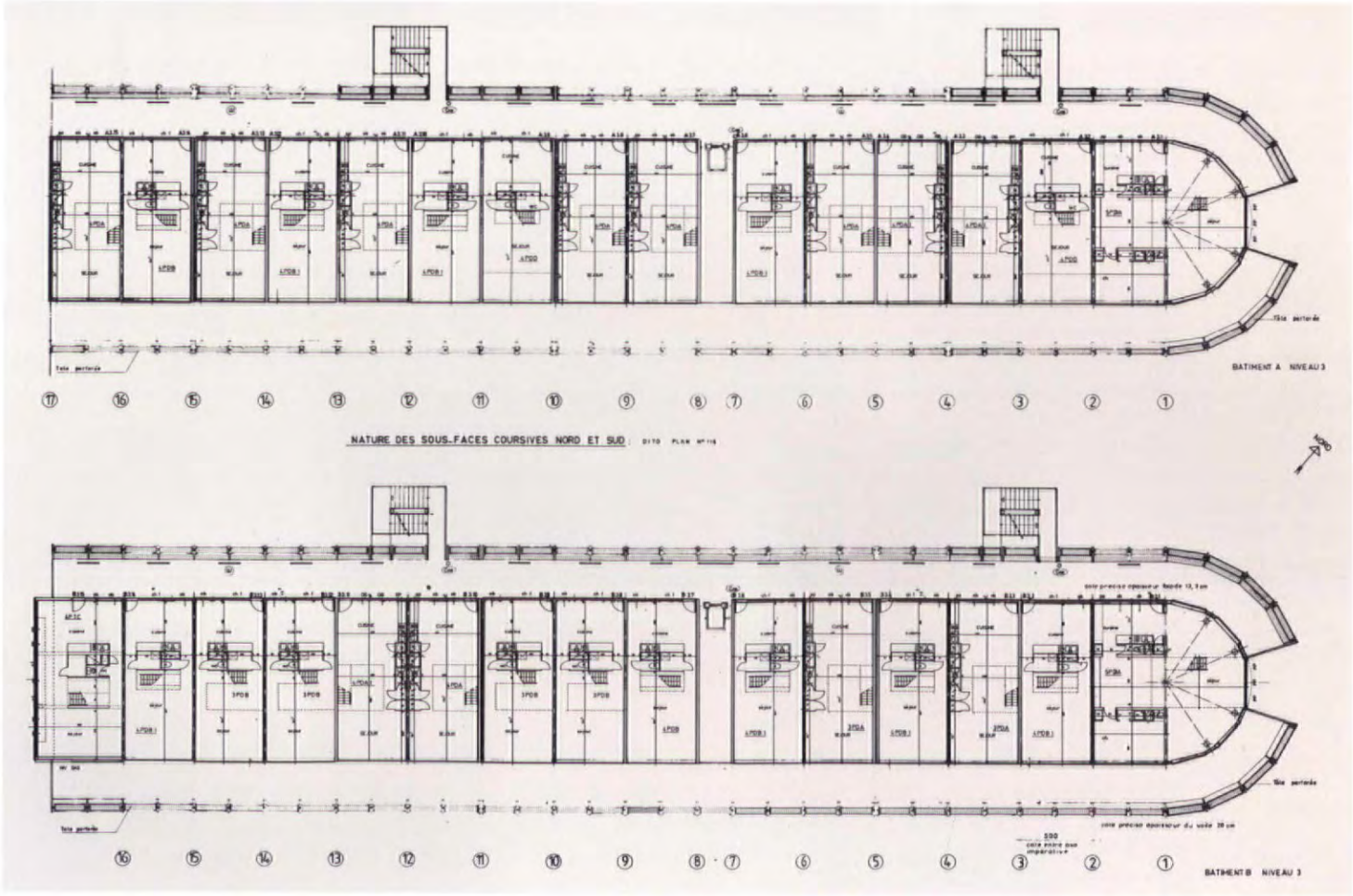
Boissière

Boissière

Boissière

Pierre Bérenger

Staggering profile of Nemausus (far left) conceals essential simplicity. Interiors are bleak and prison-like. Plans (below) show arrangement of apartments



Exterior and two interior views (below). Axonometric (bottom) shows "fortified" character

Gaston

Georges Fessy

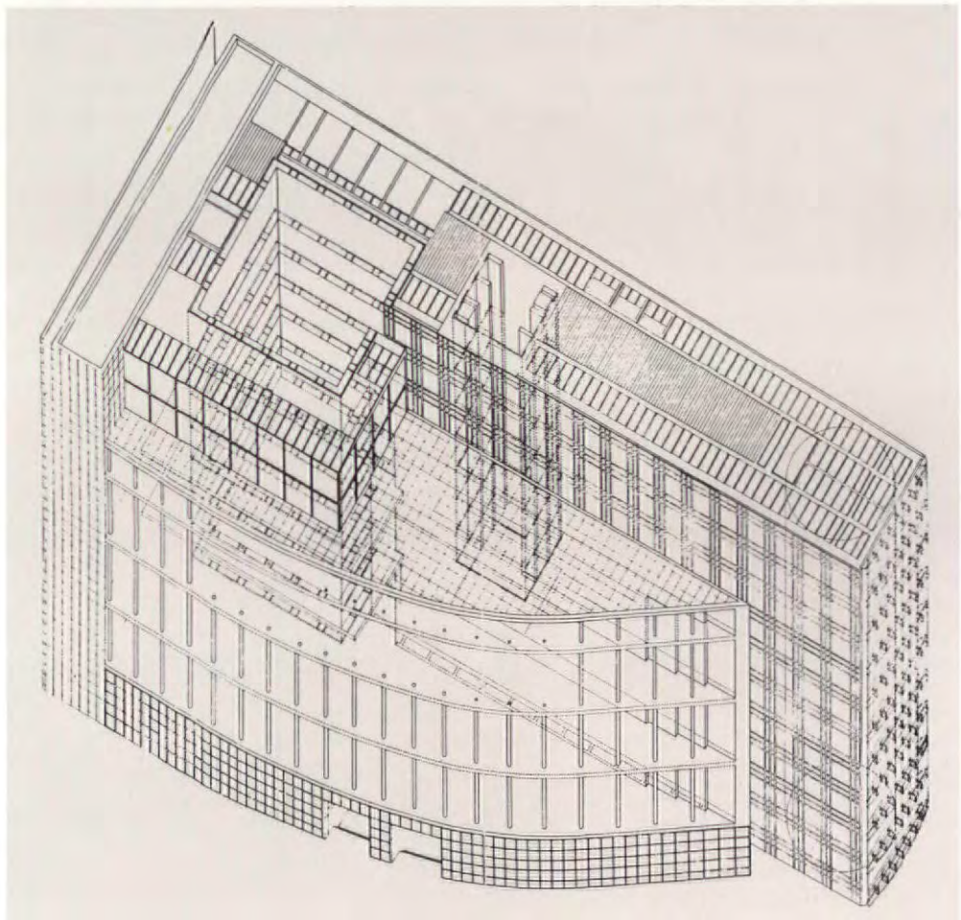
Deidi von Schaewen

The Institut du Monde Arabe, Paris, France 1987

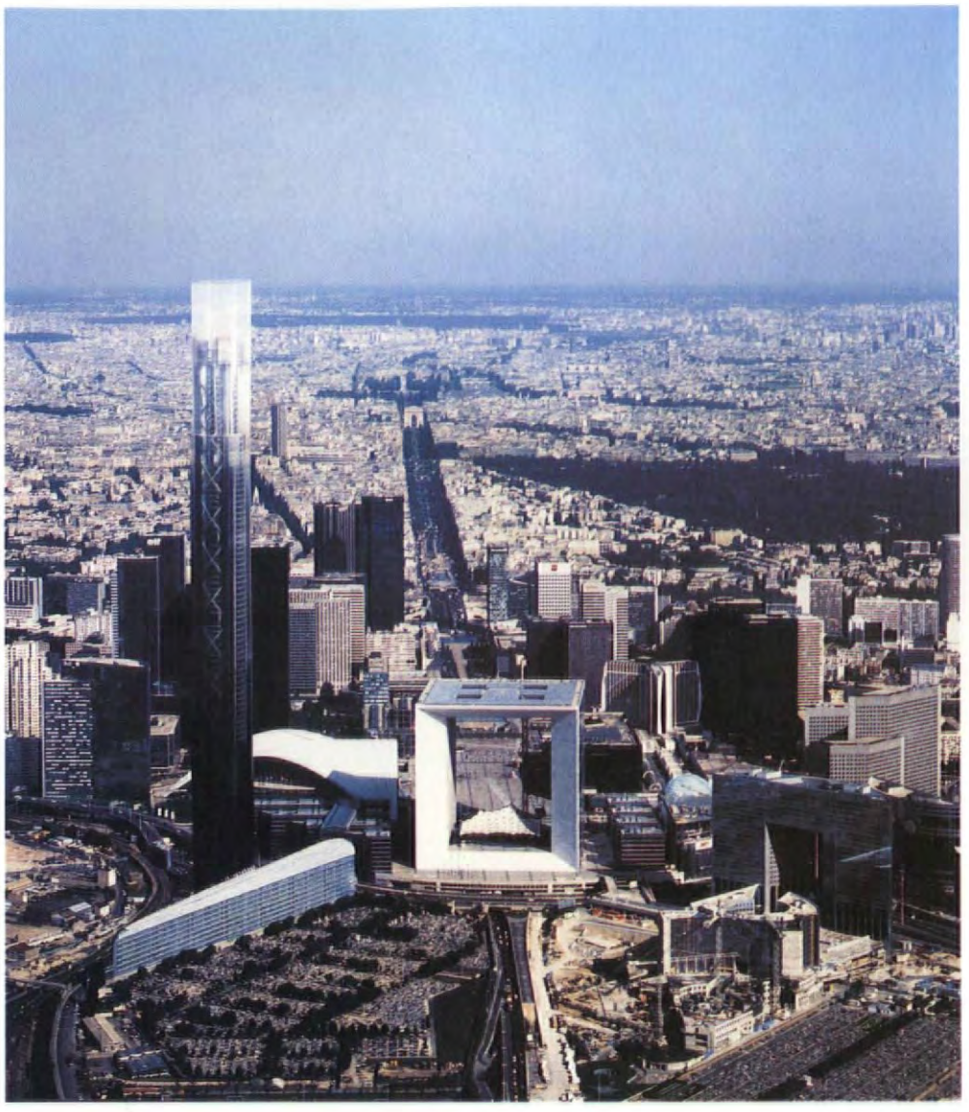
The Institut du Monde Arabe is no stranger to controversy. The original closed competition was annulled, and Nouvel was the winner of the second competition. During the Iran/Iraq War, various Arab states withdrew their financing of the project as a protest. Today the design still remains unfinished, the project for a water garden on the side of the building, and for a moat around it never completed. The building itself still provokes comment, not always favourable, from Parisians.

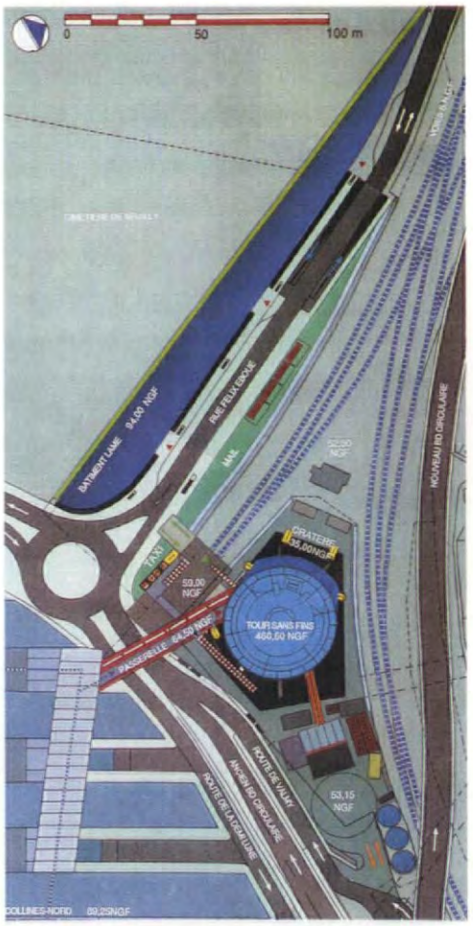
The decision to build it in steel, glass and aluminium was, for Jean Nouvel, a necessary way of bridging the cultural gap between Islam and the West: the materials were a metaphor for the uses of the building. This successful reinterpretation of Arab ideas into Western forms can be seen particularly in the meeting room or mukhara, *a circular space with extensive views, at the top of the main building. The other main elements in the building are the museum, containing both a permanent display on the history of Islamic culture and a space for temporary exhibitions, a library and reading room, meeting rooms and offices, a cinema and a restaurant.*

The IMA has won a number of architectural awards, and can be seen as one of the first steps in the architectural regeneration of the banks of the Seine from Notre Dame, where the new National Library is also being built.

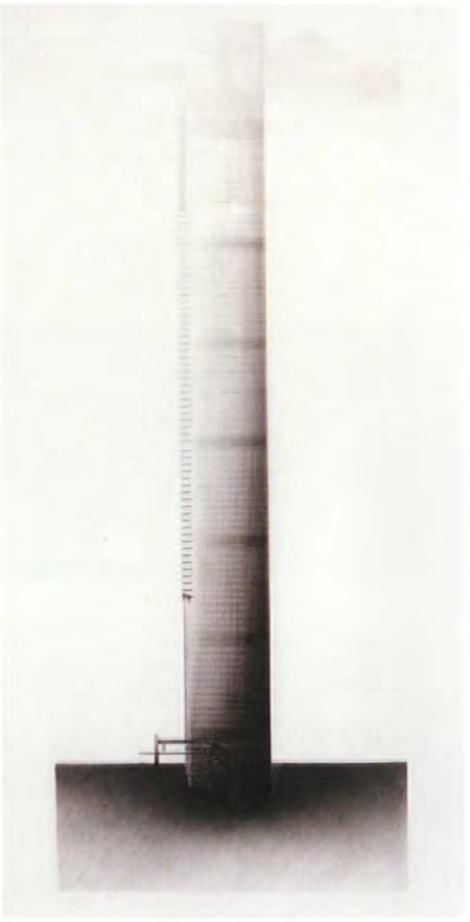


Georges Fessy





V. Lafont



Tour Sans Fins, project, Paris 1993

This competition for a project at La Défense, to the north-east of Paris, was intended to complement la Grande Arche. Jean Nouvel's winning entry is for a tower 420 metres high on a base 43 metres in diameter. It will be the most slender tower building in the world, for its height, and Nouvel's office have worked closely with Tony Fitzpatrick at Ove Arup's to meet the technical requirements of the structure. They have provided a new approach to the engineering of tall towers, using the device of a tuned mass damper. This has also allowed a new arrangement of the floor layouts, by avoiding the normal need for a central core. The building is in two parts, the tower itself, and the "blade" building connecting it to the main entrance, crossing the crater in which the tower is set.

The building is intended to disappear into the sky through a progressive lightening of the facade: the top floors will be wholly transparent. This recalls Nouvel's original competition project for the Grande Arche, which used a system of programmed reflective panels to create a "sky in the sky" as well as leaving the central axis of the building empty behind the frame of the facade. This interest in the invisible building is one aspect of Nouvel's concern with the dematerialisation of architecture.

The Tour Sans Fins is now scheduled for construction in 1996: administrative and funding delays have delayed the start. Rising from a pierced concrete base through reinforced cross-braces to a final glass viewing platform, the Tour looks set to be the first Modern building of the twenty-first century.

Awesome aerial view (top) shows how tower will complete composition around La Grande Arche. Plan and rendering show "dematerialization" at work

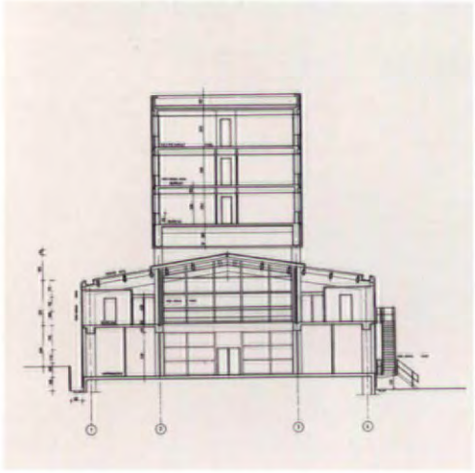
INIST, Nancy, France 1985-1989

The Institut National de l'Information Scientifique et Technique is a national resource centre for storing, collating and diffusing scientific and technological data. The term library hardly begins to describe its function; to call it a data-factory or data-warehouse might be more appropriate. For the architect, however, it posed a double problem.

The first was the technical one of providing shelter for the different types and arrays of data that the institute needs to process. The second problem was the ideological one of integrating these different activities into a coherent whole. Just as the institute's aim is to transcend different media, so the final architecture needed to unify this complexity. In addition the site only permitted a low-level building, and the budget was very tight.

Nouvel's reply was to build the metaphor, to create a factory-type building, placing the different elements in linked "boxes" according to the flow of

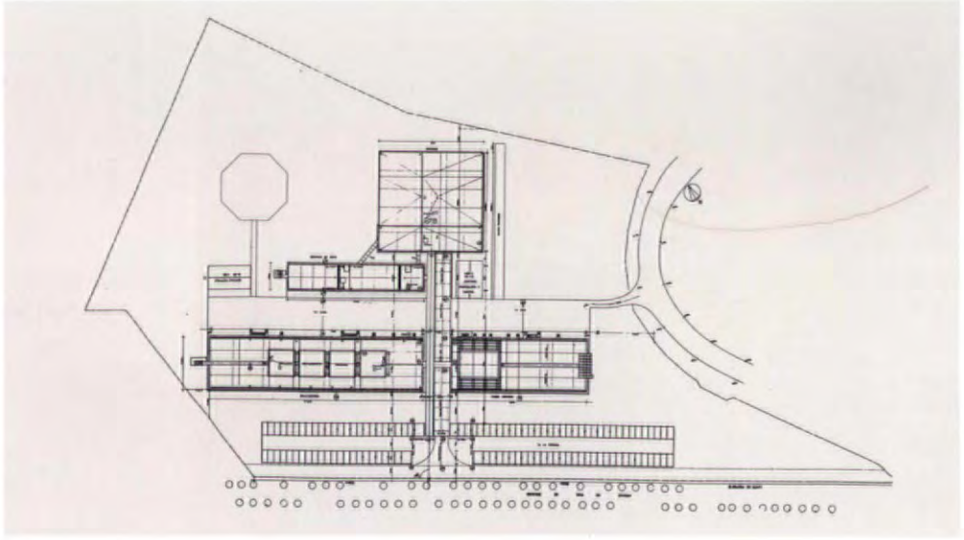

Gaston



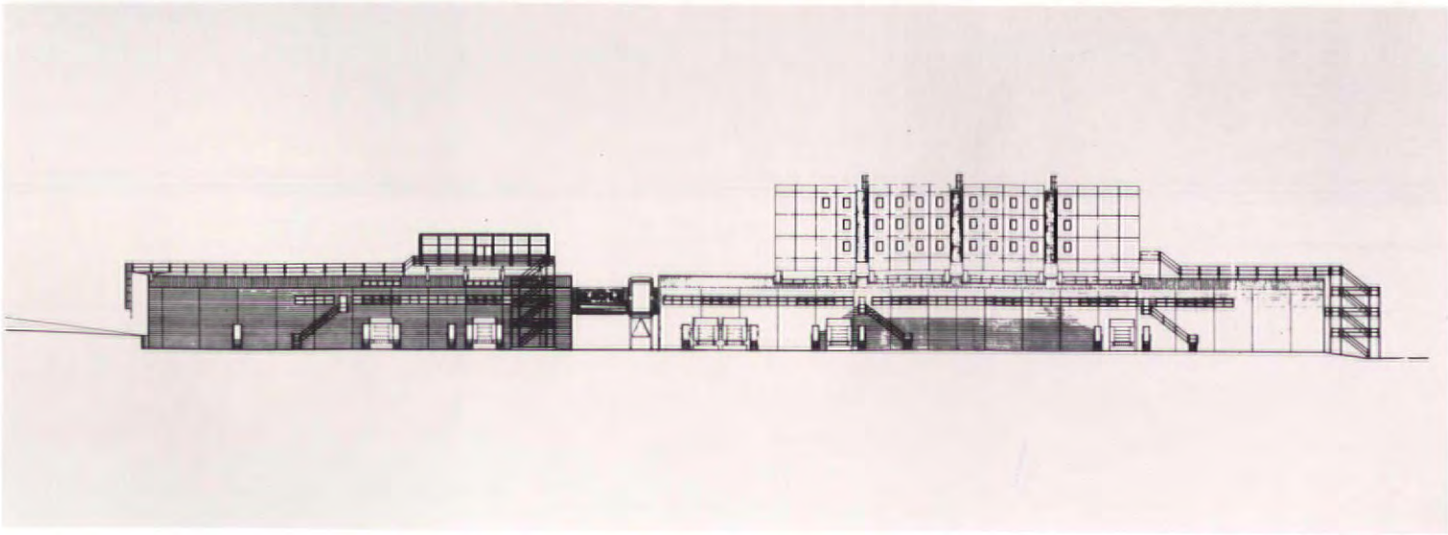
Gaston


Gaston

product/information through the site. Cladding the exteriors in industrial materials - mainly sheet aluminium - only reinforces this solution. The same design vocabulary is carried through into the interior spaces, be they offices, library or data-banks. External views are also angled to bring with them awareness of the activity within.



Exterior views show industrial character. Section (above) and plan (right) show data store. Elevation (far right) shows scale of institute



Hotel St James, Bouliac, France 1989

For Brillat-Savarin, the eighteenth-century gastronome, "the host is responsible for his guest for all the time the guest is with him". When the highly-rated restaurant at Bouliac, near Bordeaux, called on Jean Nouvel to build a small hotel as well as extending the restaurant, they perhaps had this precept in mind. Nouvel's solution certainly integrates the two aspects, while conceding the individual integrity of the guest: no two room plans in the hotel are the same. Also, respecting the sentiment of Brillat-Savarin, if not two centuries of grand hotellerie, the hotel rooms are sparse and simple, focusing attention on the delights of the food.

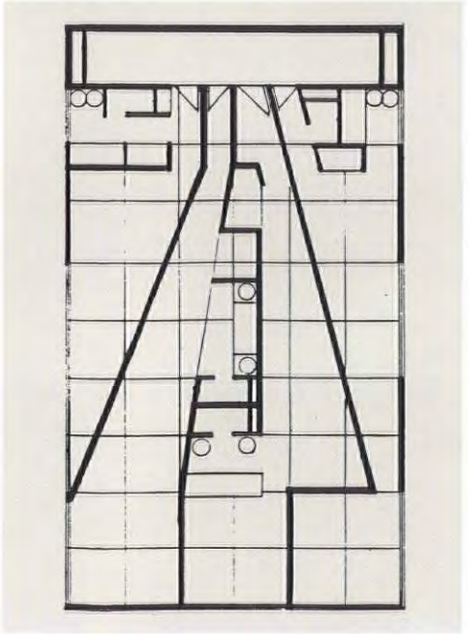
The hotel is in a tiny village, near a square-towered church, and looking out over the vineyards of the Garonne valley. The hotel consists of four small buildings, at most three storeys high. This is perhaps the only one of Nouvel's recent projects that is not placed in a dense urban setting.

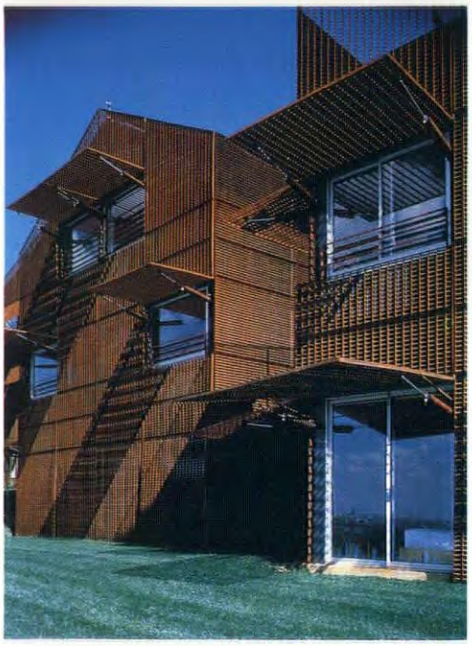
Instead, the facades of the buildings create a density of their own. The interiors have plain concrete floors and waxed plaster walls. The ample windows are framed in grey metal, also used for cladding unwindowed areas. Beyond these are metal duckboards, some fixed, some mobile, which can be raised or tilted to admit the light and the view. This layering is also appreciated from the exterior. The outer duckboards have a deliberate rusted colour - reminiscent of the tobacco-drying sheds found in the region - which reveals beneath the different texture and colour of the grey cladding, or glass giving onto the stripped interiors. The exterior shapes of the buildings are traditional, comprising simple roofs without eaves, or, in one case, a flat roof terrace, appreciated through the mesh of duckboarding. This "fractal vision", in Olivier Boissiére's phrase, is all the stronger for being encapsulated in such a small frame.

Gaston

Stephane Couturier

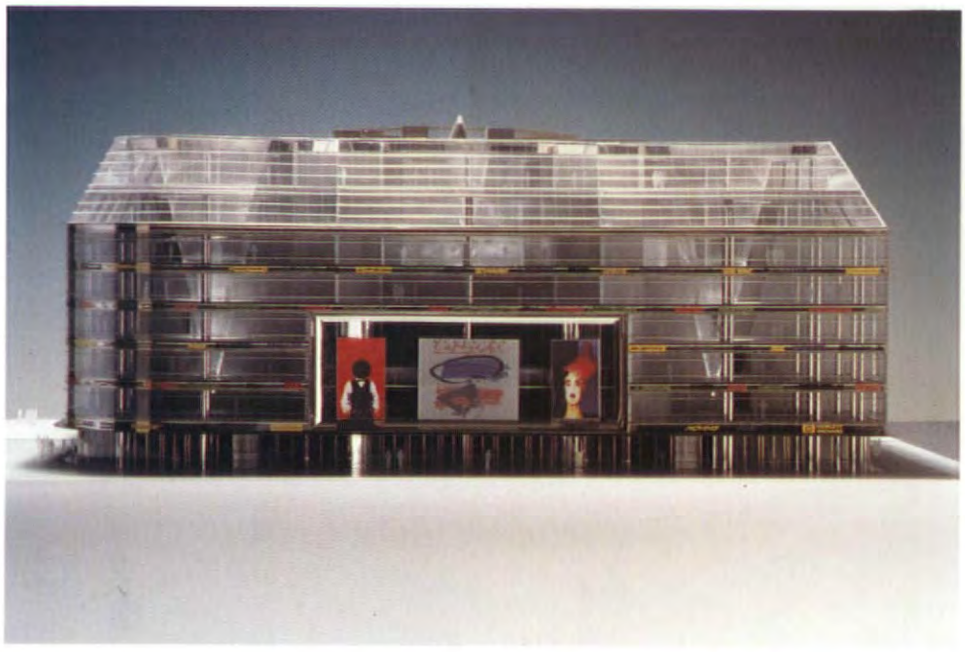
Stephane Couturier





Boissière

"Deliberate rust" effect is evident in exterior shot (top). Waxed plaster walls give interior unusual glow. Plan (right) of room is not typical

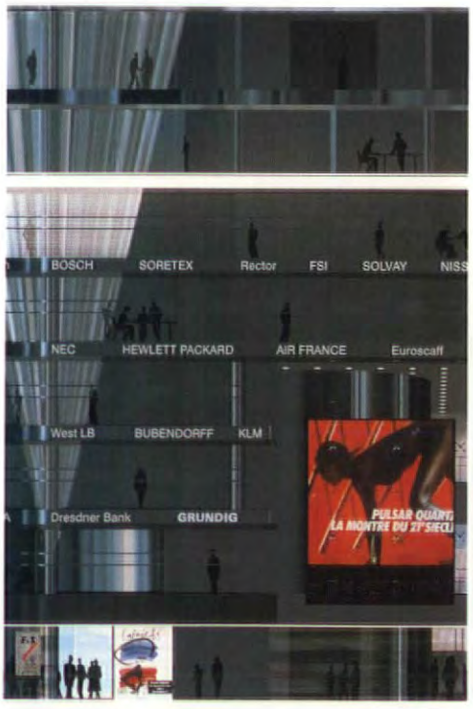


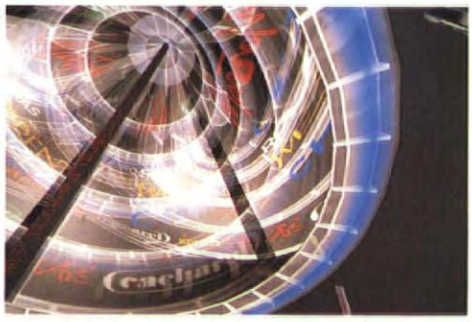
Galeries Lafayette project, Berlin 1991

This building, on an almost square corner site, will function both as a department store and as offices for the company. The corner site posed an interesting problem of adjacent facade, resolved by turning the corner between them through a series of arcs. A similar theme is developed in the interior, where conical light-wells cut through the office levels of the building down to the first floor. This motif is repeated, literally in reverse, in the store area, where a large interior cone functions both as a light-well, lit by daylight from the apex, and as a continuous point of reference for shoppers.

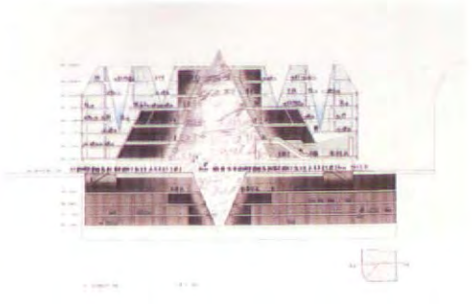
The cones also function as an emblem for the building. Because the street level has an entirely glazed exterior, people passing by have a clear view into it. More subtly, the interior surfaces of the main upward cone are to be used as a projection screen. In conventional anamorphosis, distorted images are restored to correct perspective by being projected onto curved or conical surfaces. Here the opposite is true: 'correct' images are deliberately distorted. This image is again reversed at night, when the exterior facades at store level become screens for displaying images and messages.

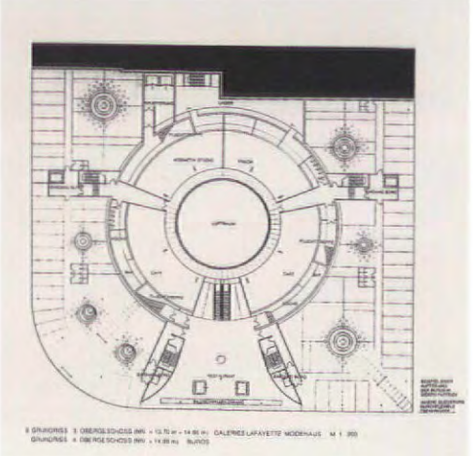
The dematerialisation of buildings has been a valuable theoretical concept in recent architecture, a means of redefining concepts of space, structure, presence and volume. Here the concept approaches physical incarnation, the building becoming a virtual shell for a changing series of perceptions of its immanence.





"Dematerialization" applied to a deceptively traditional form (top). Model and synthetic image shots show scheme. Plan (below, right) reveals unexpected subtleties





Hotel les Thermes, Dax, France 1993

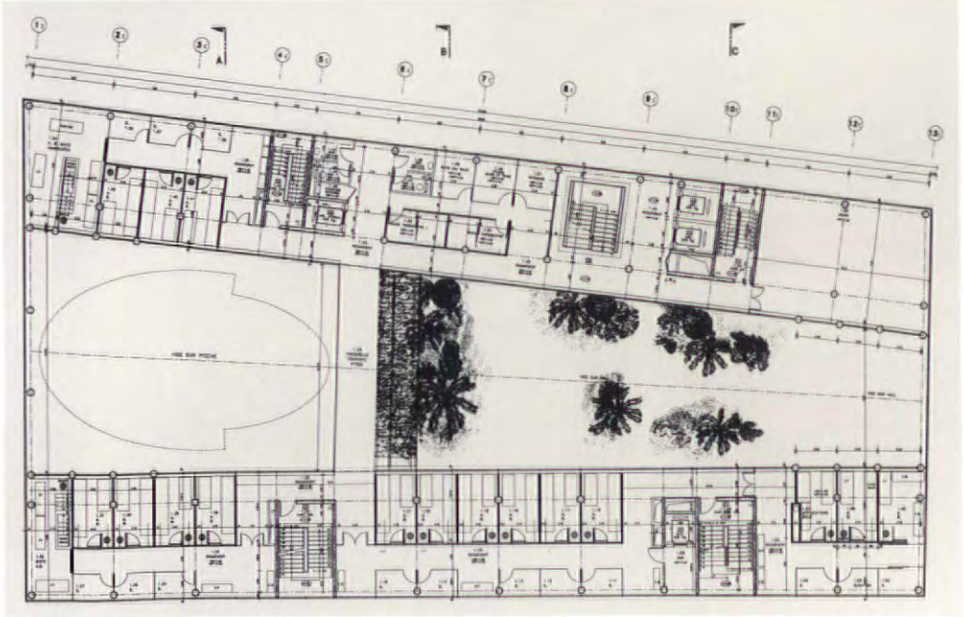
This luxury hotel in the spa town of Dax, in south-west France, was a competition win. The six storey building contains over 90 guest rooms, as well as a heated pool and a floor of treatment rooms - Dax's mud baths are particularly famous. The accommodation is set in two wings flanking a three-storey atrium with enclosed garden, and the main pool.

The exterior recalls the frontages of southern French buildings, with narrow cedarwood-framed shutters masking all the facades above the ground floor, where unbleached canvas awnings keep out the sun. The glass roof of the atrium is also overlaid with cedarwood sunshades, and a projecting line of them act as sunshades over the terrace on the roof of the building. In time these sunshades will be overgrown with greenery, softening the line of the roof-terrace, while the narrow shutter-openings provide an animated geometry to the facades.

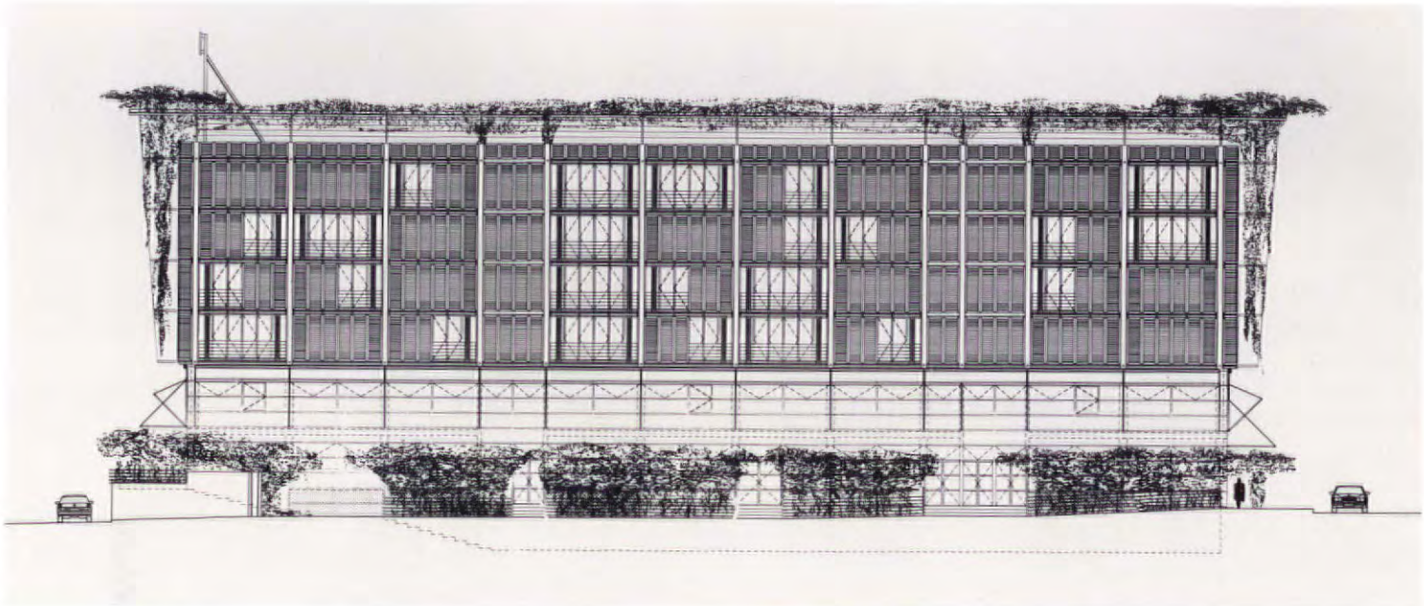
If the exterior plays a rigorous game within tradition, the interior is uncompromisingly contemporary, with steel framed landings and stairways. The landings form balconies on to the atrium, and the same vocabulary is used for the inner serre covering the pool. The dominant colour in the pool area is a Klein blue, which is also picked up in the landing lighting, and in the decoration of the rooms. Here Jean Nouvel has designed simple slab beds and brushed aluminium furniture.

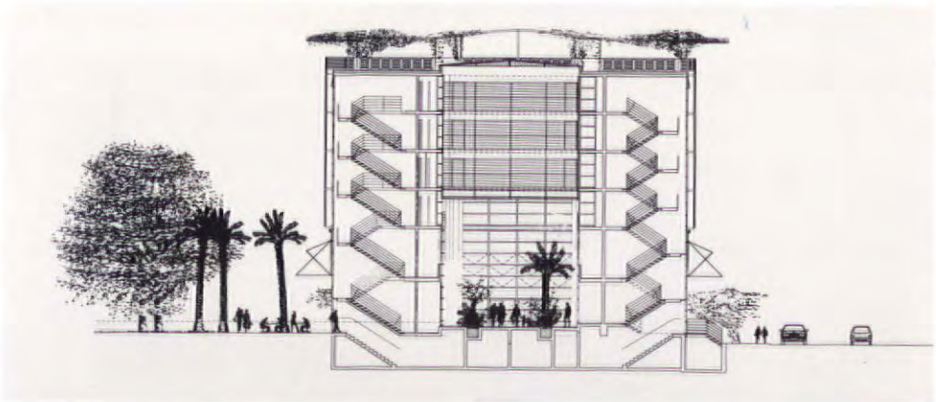
The simple materials of the exterior are used effectively to match the grandeur of the adjoining Hotel Splendide, built some years ago. The play of natural and artificial light over the dense facade marks the Hotel Les Thermes out as a major architectural statement.

Stephane Couturier

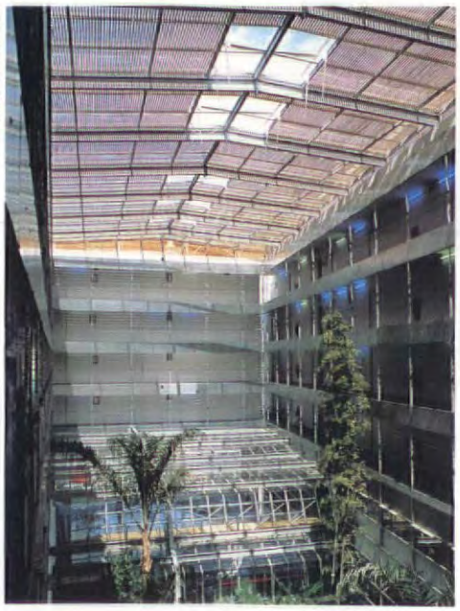


Christophe Demonfaucon





Street elevations (far left) show awnings and rooftop pergolas. Plan shows pool and courty. Elevation (above) and section (left) show char istic Nouvel design features. Interiors (below) size of atrium

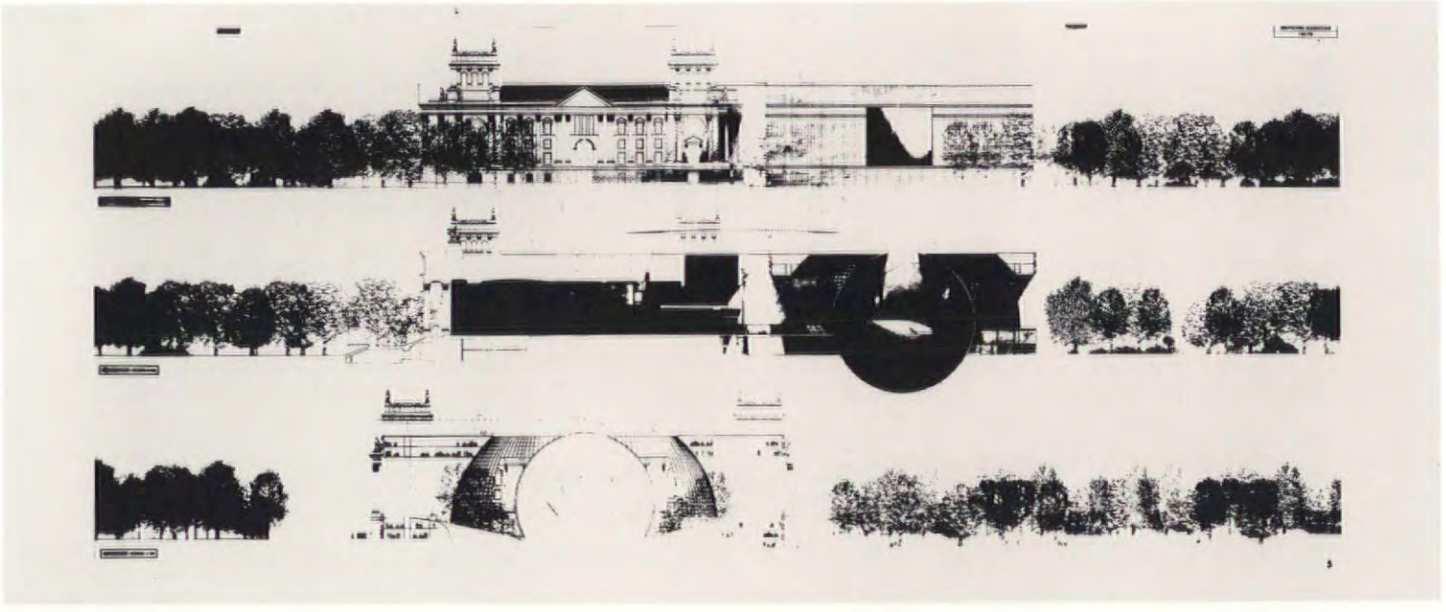


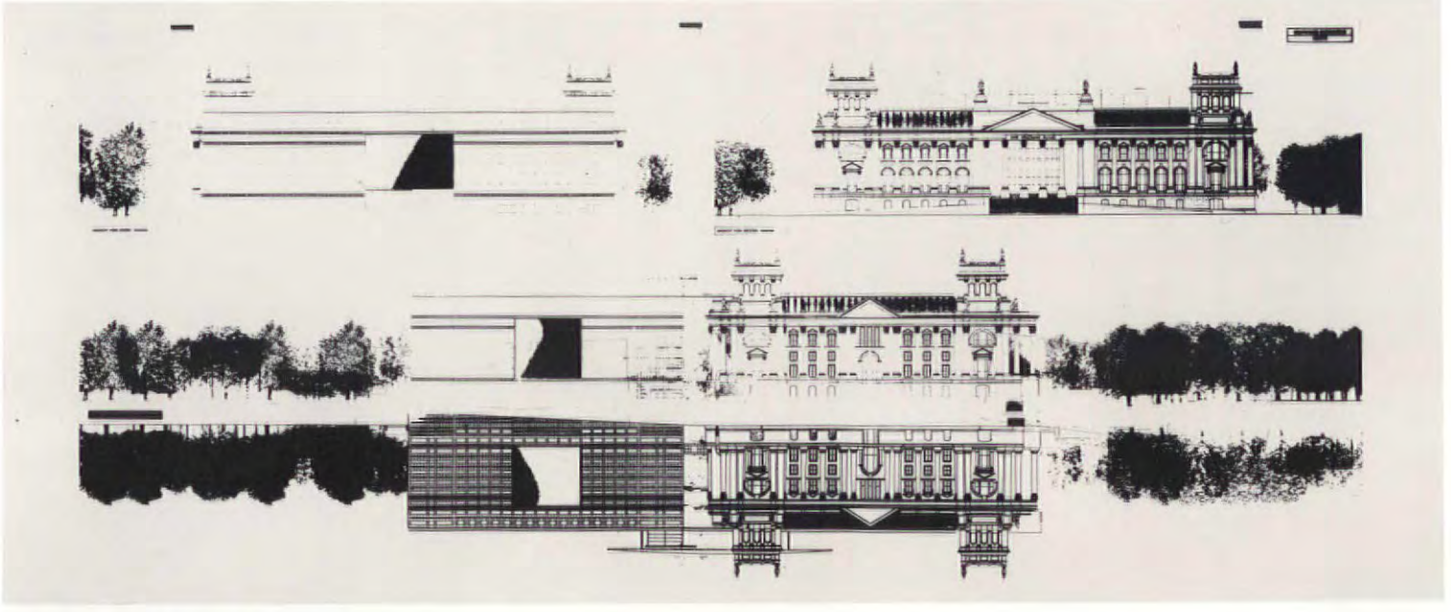
Christophe Demonfaucon

Christophe Demonfaucon

Stephane Couturier

Dramatic Beaux-Arts style presentation drawings show spherical chamber





Reichstag Building, Berlin, competition project 1992

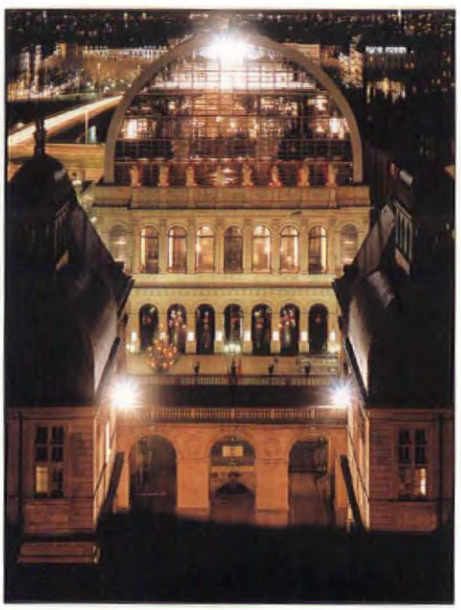
With the transfer of the capital of united Germany to Berlin, the question of rebuilding the Reichstag became important. Because of its historical connections - not least with the 1933 fire and dissolution - something more than a monumental statement was needed. In Nouvel's words what was called for was "an architectural act which implies both consciousness of the situation, and historical and cultural responsibility... The Reichstag is loaded with memory: confronting it dooms one both to memory and projection into the future."

This involved creating a building that would be parliament and memorial, containing as well as the chamber and its services a museum and library. The new building would be twin to the old: respecting its rhythm and proportions. It would be set in a park cleared around the paired buildings.

For the form of the chamber, Nouvel seems to draw his inspiration from one of the key images of eighteenth century European rationalism and democracy, Boullée's Tomb of Newton, which takes the form of a hollow sphere set on a low plinth. Nouvel translates this image into his building, making the parliament chamber spherical, within a larger conic section, contained within the rectilinear outer frame, and perceived from the exterior as a play of light and shade through a massive square opening. This symbolic gesture links the new Germany firmly to the tradition of Western European enlightenment.

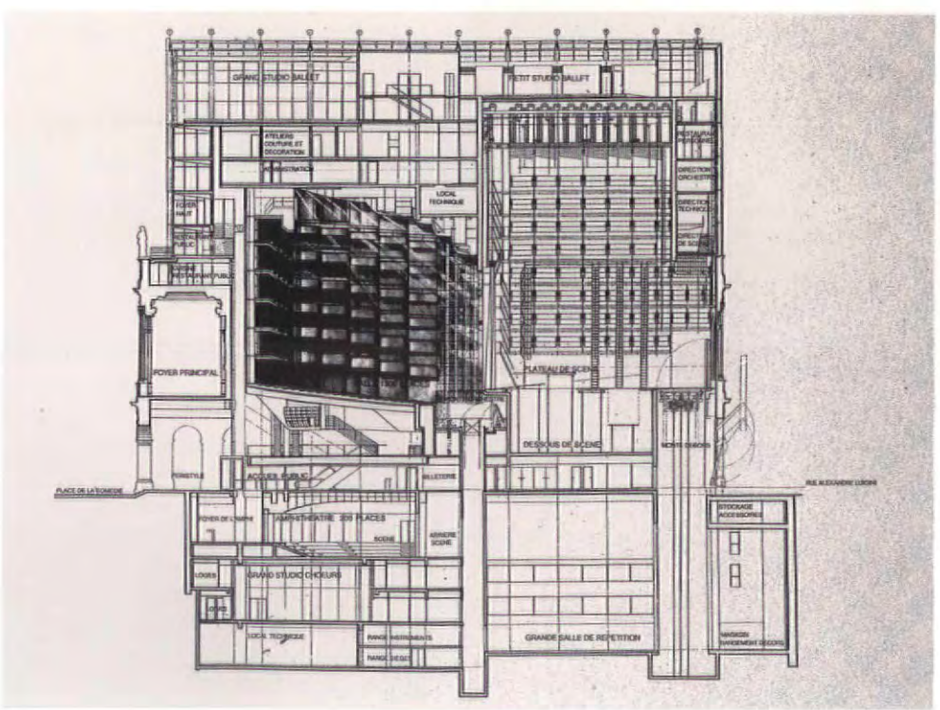
Philippe Ruault

Georges Fessy



Philippe Ruault

Old and new facades day and night (above). Vast vault is visible (right). and section (below)

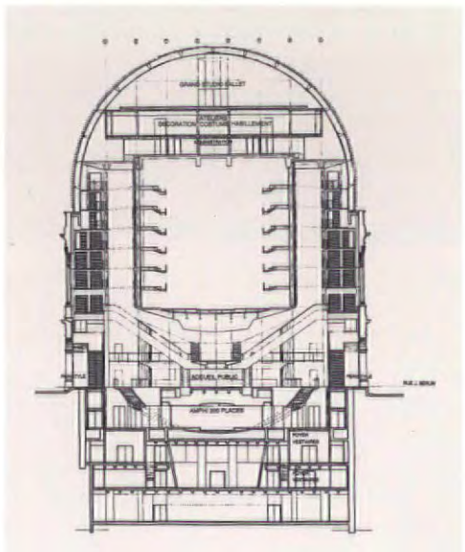


Lyon Opera House, 1993

The competition to extend and renovate the Opera House in Lyon, the second largest city in France, was won by Jean Nouvel, with a project that used the old building, particularly its grand facade, as a point of departure and reference for the new. This had to provide an increased auditorium, new public spaces, including a restaurant, a 200 seat amphitheatre in the basement, and new rehearsal facilities and fly tower.

The rhythm and spacing of the old facade are mirrored in the proportions of the new glass wall that is the entrance to the new. The theatre proper appears suspended in the 30 metre high vault of the entry hall, where a series of escalators, hanging platforms and passageways takes the public up to the entry levels of the main salle. The lighting in this space is clear and soft: as so often in Nouvel's buildings, the interior is visible from the exterior, especially at street level. The entry to the actual theatre is through short corridors, with double doors for soundproofing, and bathed in red light, to create a complete contrast between the spare and formally-engineered architecture outside and the more grandiose, Italianate interior of the salle. A similar contrast is found in the public foyers, where in one case the original ceiling and fittings have been restored in all their gilt splendour, but with a modern mirrored floor, and in another where a wholly contemporary solution has been found.

The same red light is used to light the exterior at night, particularly the drum of the arch enclosing the new rehearsal rooms, behind and above the peristyle of the facade. So both by night and by day this dense and complex building forms a new landmark for the city.



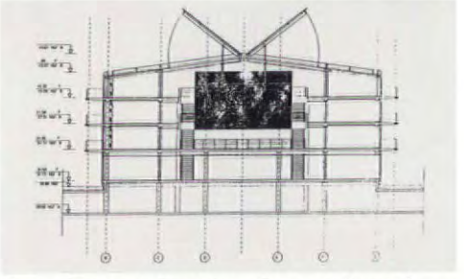
CLM/BBDO Offices, Paris, private commission 1994

A site by the side of the Seine immediately suggested the metaphor of a river barge for these offices for a major French advertising agency. The four storey building is set in an artificial pool, the rounded bow pointing downstream. The building is entered by a gangplank at the stern, and the roof sections open like hatches in fine weather. On the sides of the building the company logo appears, like a ship's name. Appropriately, the director's offices are situated in the bow.

The exterior is finished in bitumenized metal, presenting an immediately weathered grey and brown appearance: Philippe Michel, the late head of the agency, wanted to avoid an obvious external statement about the nature of the business. The arrangement of the interior, however, was deliberately dedicated to the function of the company. The provision of two open atria, with their hatches opening under automatic control for wind and rain, were intended to foster spontaneous meetings, cross-overs and communication. By the same token, the office doors are plain glass sliding panels, allowing for a range of access or closure. The key terms in the brief were openness, pleasure, conviviality and encounter.

The contrast between interior and exterior Nouvel likens to an oyster (with a pearl in it, bien entendu*), in that the dark, crusty exterior gives way to a luminous space within, clad in pale beechwood and grey painted metal. A new material, holosheen, which uses holography to create solarised, prismatic reflections, is also used extensively to extend a bright and welcoming atmosphere. The occasional seating, simple, rounded shapes in red leather, designed by Nouvel, functions both as armchairs and workpoints, the low backs wide enough to support a notepad or laptop. This reinforces the informal approach central to CLM/BBDO.*

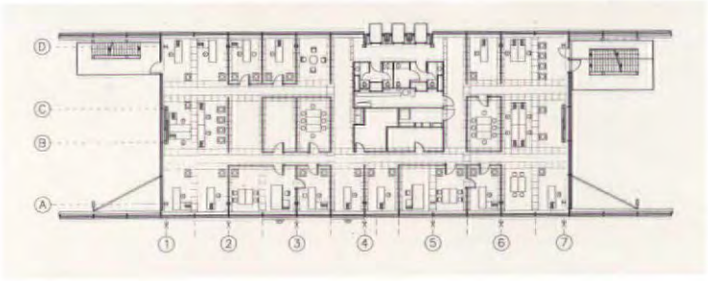
All photographs on this page by Philippe Ruault

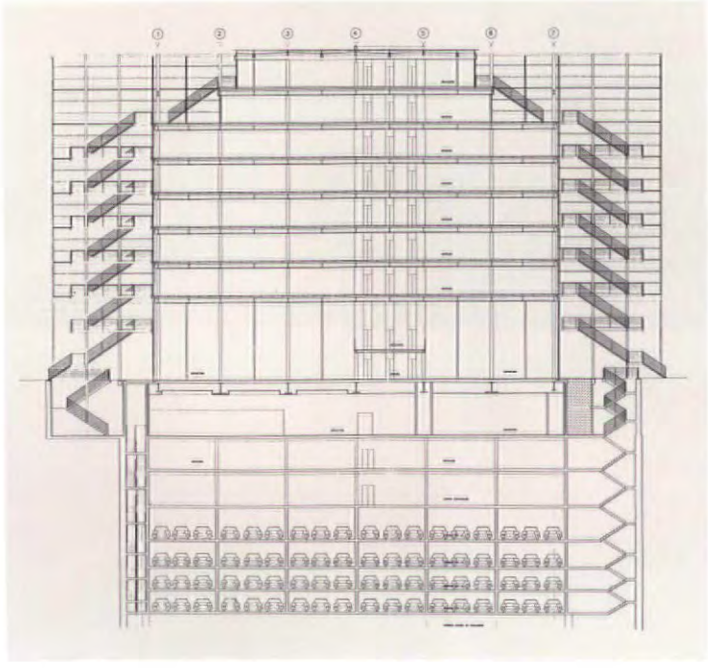


General views and interiors. Section (above) shows roof hatches open

General views show transparency of concept. Plan and section (bottom) shows simple composition

All photographs on this page by Philippe Ruault





Cartier Foundation, Paris, France 1994

The new building for the Cartier watch and jewellery company on the Boulevard Raspail in Paris does not represent Nouvel's first involvement with the company. He has designed offices and factories for them in Switzerland: there are several parallels between the factory buildings and the Hotel les Thermes in Dax, in their use of metal frames as sunshades, particularly on the roofline.

The Cartier Foundation has a strong reputation in France, particularly for their exhibitions of work by young contemporary artists. For many years the Foundation was based in Poussec, south of Paris. Jean Nouvel, together with the specialist museum architect Jean-François Bodin, put forward a proposal for a new building, incorporating an office tower. The site was a sloping one, with entrances to the museum and offices at the top of the slope along a horizontal walkway to the top of the office tower. However, this proposal failed to convince the planning authorities.

When the site in the Boulevard Raspail became vacant - it had previously been an American cultural centre - Cartier decided to move the Foundation to the metropolis, and also establish their head office for France there. The site contained a historic "Tree of Liberty" planted by Chateaubriand over 200 years ago, and the plan for the building needed to respect this. The result is a building almost wholly transparent, framing the tree between the exterior glass wall and the receding planes of the building itself.

Nouvel has also designed the office furniture (excluding the chair), creating thin grey steel desks and cabinets He has also designed furniture for other projects, including the CLM/BBDO building. His chair for the St James restaurant is already a French design classic, and he was named Designer of the Year at the 1991 Salon du Meuble in Paris.

Conference Centre, Tours, France 1994

The Tourains have already baptised their new conference and cultural centre "la casquette", the cap, an interesting misreading of the shape of the building. The form of the building is in fact derived from its urban context, near to the nineteenth-century Prefecture and railway station , and fitted between a narrow street, and the Prefecture garden. The competition brief was to provide three auditoria (seating 2000, 700 and 350 respectively), as well as a space for trade exhibitions, offices, shops and restaurants: the site area was 29,000 square metres, of which 22,000 are used in the final building. The centre, in deliberate antithesis to the received idea of placing conference facilities on the urban perimeter, forms part of a more general regeneration of the centre of the city, which is now linked to Paris by the TGV Atlantique line.

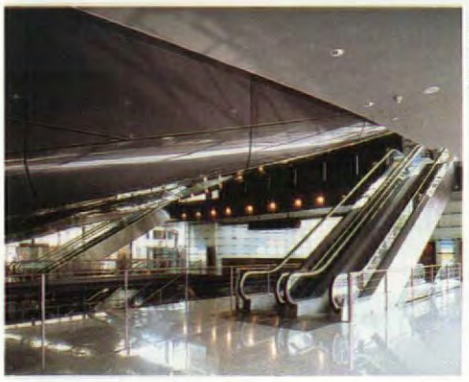
The section shows how the three auditoria are arranged in descending order from the front to the back of the building, allowing access to other facilities underneath them from the main entrance. The shape of the end auditorium wall dictated the front end of the building, with the grey metal skin of the peak suggested by the local slate roofing. On the ground floor level glass walls are extensively used, to create transparency and invitation between the exterior - park and street - and the interior.

Within the interior, both in the public spaces and the auditoria, the overall colours are grey, silver and black, with occasional detailed hight-points of primary colours, for example in the seating in the larger auditoria, in the birch-ply walls of the smallest auditorium, and in the nocturnal illumination.

For Jean Nouvel, the key themes at Tours were coherence and access. The building needed to synthesize with the surrounding formal architecture, and yet be an open door to the activities and facilities within.

Christophe Demonfaucon

General views and interiors (left and below). Elevation (top right) and section (middle right). Plans (below right) show three auditoriums



Philippe Ruault

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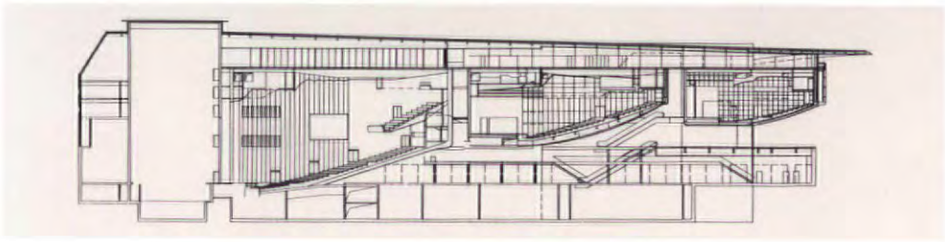
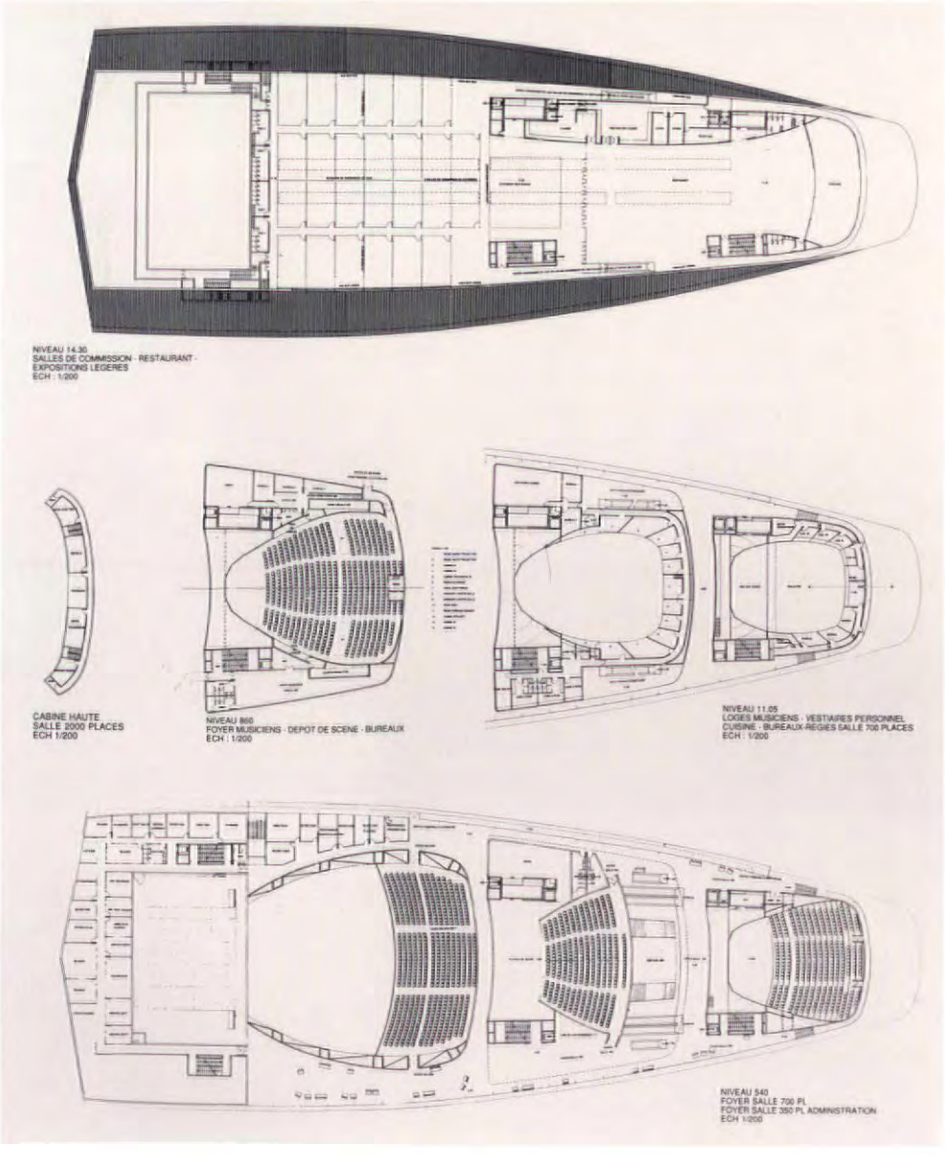


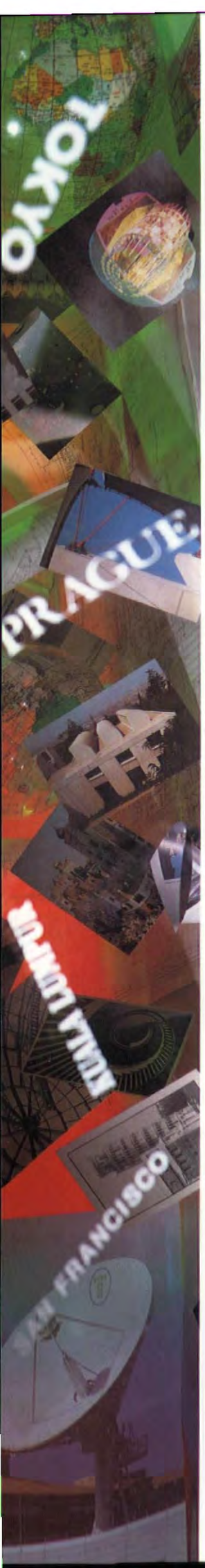


Jean Nouvel: a biography

Jean Nouvel was born in Fumel, France, in 1945. He entered the Ecole Nationale Superieure des Beaux-Arts in 1966 and graduated in 1971 after he had opened his first office. He was a co-founder of the revolutionary "March 1976 Movement" of young French architects and one of the main organisers of the international action group formed to direct the redevelopment of the Les Halles quarter of Paris. He is the holder of the Doctor Honoris of the University of Buenos Aires, a Chevalier of the Order of Arts and Letters and of the Order of Merit, and vice-president of the French Institute of Architecture. He established his practice, Jean Nouvel, Emmanuel Cattani and Associates, in 1988.

Selected Projects

1987	Institut du monde Arabe, Paris, France
1987	Nemausus housing project, Nîmes, France
1989	INIST, Nancy, France
1989	Hotel St James, Bouliac, France
1991	Galeries Lafayette, Berlin, Germany
1992	Reichstag Building, Berlin, competition project
1992	Cartier factory, Villeret, Czechoslovakia
1993	Hotel les Thermes, Dax, France
1993	Opera House, Lyon, France
1988	Solid State Logic development and production building, Oxford
1993	Tour sans Fins, La Défense, Paris, France project)
1994	CLM/BBDO Offices, Paris
1994	Cartier Foundation, Paris, France
1994	Conference Centre, Tours, France



GLOBAL REVIEW

ANALYSIS: PAN-EUROPEAN ARCHITECTURAL COMPETITIONS

It has just started to become noticeable: if an architectural competition of any size for a public project is launched, then – according to European "harmonisation" laws operating within the Single Market – architects of other nations within the European Union must be allowed to take part. Also those from six of the seven European-area nations outside the EU known as EFTA: Switzerland is the odd one out.

There is, of course, enormous confusion about this as about most other European directives in the run-in period before it is known whether they have successfully 'taken' or not. The first question any architect is likely to ask is: do all countries within the European Economic area apply the directive with equal vigour and, if not, who polices it? More important, perhaps, is question number two: where do I find out about the competition? How do I know if a town in Germany is running a contest for a theatre, or a Spanish municipality is seeking an architect for a new railway station?

The answer is as bureaucratic as you might expect. There is a daily organ with the snappy title of The Official Journal of the European Communities. It has a daily supplement, equally imaginatively titled the Supplement to the Official Journal. Almost every major contract (which includes competitions as well as building contracts) must be advertised in the Supplement before it is publicised anywhere else. Notice of the competition is carried in full in its original language in the appropriate language version of the OJ, as it is known, and summarised for translation into the other European languages.

Competitions are only a small part of the whole Europe-wide business of public purchasing, which makes finding out about the particular rules governing architectural competitions rather difficult. It is thought by some, for instance, that European legislation demands that competitions be anonymous, with the client running the contest judging the entries purely on design merit, without knowing the names of the entrants. This is a time-honoured practice throughout the world: it was, for instance, the method whereby Renzo Piano and Richard Rogers won the competition for the Pompidou Centre in Paris in 1970. However, there are increasing numbers of so-called competitions that are, in reality, selection processes for an architect rather than attempts to find definitive designs. In which case, it is a positive advantage for the client to be able to meet and talk with the contenders, for how else is he or she meant to be able to find out if one architect's approach is preferable to another's?

Those who take the straight European line on public procurement also find themselves in difficulty when the competition/selection process is for a masterplanner rather than for a particular building design. Does a masterplanning commission involve capital expenditure? Arguably not, for it is the procurement of individual buildings within that masterplan that involve the big expenditure, and that is usually in the province of other architects, perhaps as the result of further competitions. So there are plenty of grey areas.

Despite the existence of the new legislation since July 1993 it is still widely thought, for instance, that in some European countries (Germany and Portugal, for instance) a foreign archi-

tect must forge a link with a local practice in order to qualify to enter. In theory, this is no longer the case: practice, however, may be different. It is possible that countries may get round the open-door aspect of the legislation by declaring their right (equally enshrined in the various directives) to lay down conditions and criteria (unspecified) for those applying.

"It may be the case that you need to be on an official pre-qualification list in order to be able to bid for a contract. The existence of such lists is quite permissible but access to them must be unrestricted and the qualification process clear and fair," says one guide to European public purchasing. Lawyers, readers will not be surprised to hear, are doing rather well out of interpreting the legislation for baffled public-sector clients across Europe.

Questions rear their heads constantly. Is the notion of the restricted public-sector competition dead? Is it no longer possible for a public body in Europe simply to ask six architects to enter a competition, name them, and talk them all through the process without flinging the competition open to all and sundry?

Where there are genuine open-to-all competitions, is there any way for the client to get round the anonymity rule? One university client in Britain, for instance, regarding its competition as more of a selection process, is seriously considering interviewing its shortlist of candidates by closed-circuit television on the grounds that this may satisfy the European laws which seem to suggest that no face-to-face contact between client and competing architects is allowed.

What, also, is the cost threshold above which public-sector competitions have to be advertised Europe-wide? Comparatively low, is the answer: any project that will yield professional fees of more than 200,000 ECUs (European currency units, roughly equivalent to £141,000) is the given threshold for "services" contracts, which is what an architectural commission is thought to be. A job of around £3 million might be expected to yield at least that kind of money in fees (on a rather low five per cent fee calculation), and in many circumstances commissions of much lower capital value but with a higher fee percentage would also qualify. It seems that a publicly-funded competition for any building of the size of a municipal ice rink or above will probably have to be flung open to architects of all European nations.

Complexities clearly abound here. If you, as a publicly-accountable body, choose not to go through all this, then who will find out and punish you, and what will the punishment be? It seems to be possible for an aggrieved architect, who would have liked to enter a competition but who did not know about it because it was not properly advertised, to take the public body concerned to court – so long as he is sharp enough to spot the omission within three months. WA has heard of no examples of this occurring. And finding out how the legislation governs the shifts between architect and masterplanner, design competition or selection process is a task worthy of Kafka. But enough of all that: assuming that those running a particular compassion are advised that they must advertise it throughout the EEA, and duly notify it in the supplement to the Official Journal of the European Communities, how do you set about finding that announcement?

Watersports 2000: see Games of '94

This is not easy. The OJ and its supplement are bulky daily volumes, not readily obtained, cluttered with invited tenders for sewage systems, computer databases and the like. Ploughing through the hundreds of thousands of words pumped out daily would be a superhuman task, even if you could find copies. Various services are available in many European countries which do the searching for you. Architects' professional bodies are however unlikely to offer this service as its would involve a lot of expensive manpower. The best bet is to try the computerised system known as Tenders Electronic Daily or TED (contact numbers given at the foot of this piece).

Has this pan-European legislation had the desired effect of pulling in architects from other countries? You have to discount those competitions that set out in the first place to be international, and look instead at those which would more usually be nationalistic. In the United Kingdom – a country where architects from other countries seldom impinge – three big architect-led open competitions have been launched under the new directives: for a hospital, for a university college, and for a visual arts centre. Of the 150-200 practices registering on average for each, maybe half a dozen in each case were from outside the UK. Did they scan the official bulletins, or did they find out through the international grapevine? We shall probably never know.

Tenders Electronic Daily (TED), a computerised system providing information on European contract notices, is available through sundry European organisation.

Information from:
ECHO Customer Service, BP 2373, 1023 Luxembourg.
Tel: 010 352 3498 1200.
Fax: 010 352 3498 1234.

GAMES OF '94

Architects Philip Cox, Richardson, Taylor and Partner is designing the Sydney International Aquatic Centre, the watersports venue for the Year 2000 Olympic Games.

The Centre, a semicircular building housing three 'serious' pools and one palm-fringed 'fun' pool for the pre-and-aftermath of the Games, will be completed by the end of 1994, proof that Sydney intended to build many of its sports facilities irrespective of whether it won the Olympics. The centre will house 2000 spectators. Pool ceramics are by the German company Gail-Inax AG from Giessen.

HERITAGE DOOM

ICOMOS, the International Council on Monuments and Sites, is having a bit of trouble staying solvent. Urgent measures are being taken in an attempt to stave off dire warnings of impending bankruptcy for the global conservation group.

However, the Council has for so long been used to existing on a shoestring that it proceeds calmly on its way towards its next General Assembly in Sofia in 1996 while its governing body thinks up ways to increase its subscription revenue, reduce its rents, make money from publishing and suchlike.

Plans are being laid to move the Paris headquarters of ICOMOS from its central location in the Marais to what is currently a dilapidated stable-block at Versailles. As to the work of the organisation, two things are notable. One is its conclusion, after inspection, that Nepal's Kathmandu Valley World Heritage Site is being spoiled and should officially be put on the list of 'world heritage in danger" (this was due to be decided at a meeting of the World Heritage Bureau in Paris in July); the other is that ICOMOS should tackle the difficult problem of cultural tourism. Should there be a globally-agreed way to recognise and deal with the wear, tear and general overwhelming nature of world tourism on sensitive sites – particularly aimed at certain leaders in Eastern Europe who appear to be unaware of the problem? No doubt many a conference in exotic locations will arise from this particular concern.

HERITAGE DOOM II

You might wonder, in view of the ICOMOS activities (see above) just where everyone stands on the sometimes puzzling business of World Heritage sites. Here's the situation thus far:

It all began in 1972, when the General Assembly of UNESCO adopted an International Convention to do with the protection of what was called 'World Cultural and Natural Heritage'. For conventions to work, nations throughout the world must sign up to them: so far 129 countries have done so.

There are, to date, 378 sites listed around the world. Of these, 276 are regarded as 'cultural' (The Taj Mahal and the cathedral and castle in complex in Durham, for instance), 87 are 'natural sites' (the Grand Canyon, the Kathmandu Valley) and 15 are deemed to be 'mixed'.

Just as ICOMOS is worried about the effects of the collapse of communism on some of the sites, so are conservation groups elsewhere. A course "On Conservation and Management of World Heritage Sites in co-operation with the United Nations Development Programme" taking place at the internationally-oriented Amsterdam Summer University this year between July 25 and September 10 will address this problem.

The course agenda suggests that thanks to the economic crisis in the former Eastern Europe, "cultural activities have been stripped of their former prestige and given a lower status...Eastern European artists and scientists need intellectual stimulation, but they also need support, a sense that they are not alone in their efforts."

Scholarships to the Summer University (whose courses cover other topics ranging from medical science to symbolism in art and jazz improvisation) are therefore given to some Eastern European students working in conservation.

The Amsterdam Summer University. P.O. Box 53066, 1007 RB Amsterdam, the Netherlands. Tel: +31 20 6200225. Fax: +31 20 6249368.

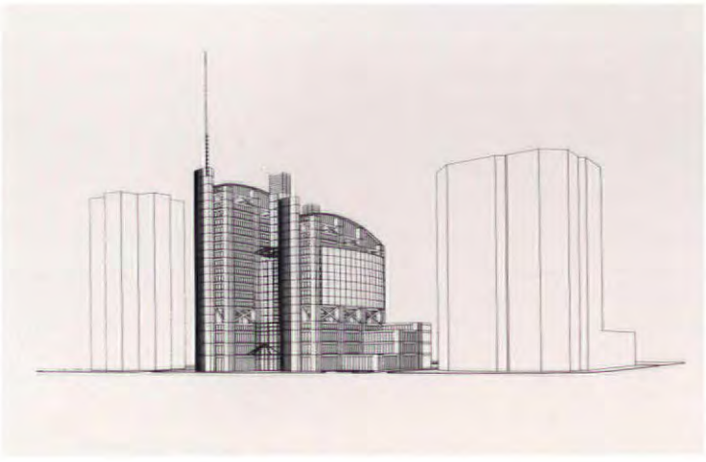
Project for China Textiles, by Albert C. Martin

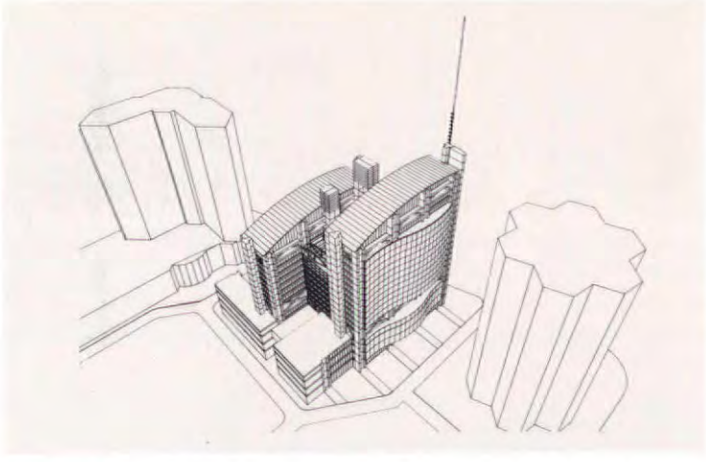
FEARLESS CHINA

If it is possible to gauge, if not the strength, then at any rate the confidence, of a regime by the precocity of its buildings, then the People's Republic of China (subject of warnings in previous issues of WA concerning its too-hot-to-touch economy) is the most confident in the world.

Malaysia, Hong Kong and Taiwan may run it close, but China has more of the really seriously large projects cumulatively than any of its three main non-Japanese rivals on the Pacific rim. Skyscrapers such as the planned Jin Mao building in Shanghai and the Chongqing Tower, neither of huge architectural merit but both, in global terms, very tall indeed, are in the pipeline. The fact that Shanghai can also dream about a complete new city quarter designed by Sir Richard Rogers (even if that dream is now fading), demonstrates how big Chinese thinking has now become.

Such schemes, rather than political rhetoric, demonstrate that Hong Kong has little to fear economically when it is returned to Chinese ownership in a few years: so many Chinese cities are now trying hard to be like Hong Kong that the republic will seem quite like home to entrepreneurs in the British colony when it merges with the mainland. Human rights, of course, are another matter that we shall not go into here.





As well as such flagship projects, it is the volume of more bread-and-butter building that gives a flavour of what is going on. Architects from the United States are particularly prominent in the hell-for-leather Chinese building boom, and not just building for American companies. One example is the design shown here (model and computer perspective) for the China Textile Company headquarters in Shanghai, by Los Angeles-based architects Albert C. Martin and Associates.

Martin's firm has already designed the HQs for two other state enterprises in Shanghai: the China Shipbuilding Company and the China Petroleum Company. The projects work on the basis of representatives of the enterprise in question going over to help work on the projects in Martin's LA offices.

The competition entry for the Textile Company HQ is a now-familiar Westernised building morphology in the Far East: twin towers linked by bridges (vide Cesar Pelli's Petronas Towers project in Kuala Lumpur, soon to be the world's tallest, revealed in an earlier WA). Here, however, the linking is done via bridges through an atrium. The whole is interestingly reminiscent of schemes produced by the English high-tech school during the late 1980s. American architects, however, tend to shy away from the overt technological aesthetic in the finishes of their buildings, so it will be instructive to see how such designs develop through the construction phase.

NO MORE OCCIDENTS

When an architect of the calibre of Bombay-based Charles Correa can be sufficiently misunderstood in the media as to be dubbed "India's Richard Rogers", then clearly the notion of internationalism has some way to go. This western-based way of looking at things is being challenged by a new organisation, The Institute of New International Visual Arts, or INIVA.

As constituted, INIVA is concerned with interpreting the international arts for a British audience (it is based in London and is funded by England's Arts Council). However, its remit is very wide. Its first symposium, held at London's Tate Gallery in April, brought together participants from around the globe to discuss what might crudely be termed 'world art', rather as one might refer to 'world music' or even (radical stuff, this) 'World Architecture'.

At the root of the argument was the problem of the West, how the West perceives art and presents it through its museums and galleries. Just as the "International Style" in architecture was the product of a small number of Western, originally European, architects, and was never international in the global sense, so what is being called the "new internationalism" in the visual arts is coming to look suspiciously like what has been described as "a post-colonial invention of the West".

The shifting of the world's power and economic bases from west to east would suggest, if history is anything to go by, that a similar shift in the power bases of art is taking place. This is, however, largely ignored by the art establishment: unsurprisingly given the westernised nature of art history as taught.

There is a post-modern trend in visual arts in which difference and "otherness" rather than homogeneity are prized. This topic was the subject of contributions from artists Gordon Bennett (Australia), Jimmie Durham (USA, Mexico-based), Everlyn Nicodemus (Tanzania/Belgium) and Gilane Tawadros (Egyptian, British-based, who is also the director of INIVA). If art becomes just a branch of ethnography, anthropology or nationalism, then things are looking bleak.

INIVA, then, is a body to watch, not least because of its declared aim to look beyond the attitudes of the Eurocentric art establishment and bring forward artists from previously overlooked nations and races. Any consensus it may come to on what constitutes the new international mainstream will have interesting implications for architecture.

The Institute of New International Visual Arts (INIVA): development manager David Powell, Tel +44 (0)71 976 7091. Fax +44 (0)71 976 7102.

FRANK LLOYD WRONG

Frank Lloyd Wright: Architect was the title of the 1994 exhibition in New York from last February-May. Frank Lloyd Wright: Architect. Note the portentous title, presumably intended to make it crystal clear that MoMA would not commemorate the achievements of Frank Lloyd Wright: Steeplejack or Frank Lloyd Wright: Insurance Salesman. In fact this whole enterprise rather suffers from solemn virtues – worthiness, comprehensiveness and gravitas, to name but a few.

On the other hand, this ambitious two-floor assemblage of drawings, photographs, models and fragments is both thorough and highly detailed for those with

The Empress Place building, Singapore 1864

Empress Place Building, Singapore

the motivation or stamina to absorb it all. However, at events like this MoMA's notable commercial strengths – aggressive marketing and military-style throughput of the subsequently large numbers of visitors – tend to work against the quiet assimilation of dense information. Thus one is frog-marched onwards by the pressure of punters through chambers that advertise no re-admission should you inadvertently stray outside.

In roughly chronological order, 190 buildings and projects are dealt with, mainly through the medium of drawings. There are 350 of these and over 120 photographs. So what can such an exhibition do that a book cannot? In this case it can throw in a few fragments, a lot of models and half a dozen full-scale wall constructions. But to what real effect?

In the end all this effort amounts to a dissection rather than an animation. For the committed aficionado there are insights to be had, but for the general visitor, liberally courted with videos, audio tours and "Step Wright Up" Family Gathering Programs (!) it is hard to see how the spirit of architecture could be evoked by this elaborate kit of parts.

Meanwhile, a few blocks uptown, the permanent Frank Lloyd Wright room at the Metropolitan Museum has always, by virtue of being a real space, suggested more of what the man was about. And while you are in that part of town you can see the Guggenheim too – not a model or a drawing or a fragment, but the real thing, life size.

COLONIAL RELIC

Singapore, building as assiduously high as many of its Pacific Rim neighbours, is now turning to conservation work as well. The city's Empress Place Building, a relic of the colonial era, was built in 1864 as a courthouse, later extended as government offices. In 1988 it became an art gallery and is now earmarked as a Museum of Chinese Cultural Relics. It is, however, falling to pieces in the tropical climate.

Old ties still bind, and the Singapore Government requested advice from English Heritage on restoration. An Oxford-based conservation practice, Clews Architects, was appointed, together with structural engineers Acer. The first stage of the work – monitoring the dampness and salt concentration of the building's fabric – will be done remotely, from sensors via satellite link to the UK. Major renovation begins in 1995.

MIPIM MAN

Not long ago, you wouldn't have expected to find such an allegedly enfant terrible architect as Will Alsop at such a business-oriented affair as the annual European property conference, MIPIM in Cannes. MIPIM is traditionally the preserve of developers, agents, and architects of conventional commercial centres. But Alsop was there, exploring business opportunities, his nearly-completed Hôtel du Département in nearby Marseilles giving him a usefully high profile.

Alsop, who with his Hamburg-based partner Jan Störmer is starting to gain commissions in former Eastern Europe and Russia, may be highly business-minded these days but is still one for the avant-garde idea. Addressing a MIPIM seminar at the conference, he predicted an end to the dominance of the large office building, arguing that larger firms would increasingly prefer the ecomomic flexibility of having several small buildings that could be leased out if necessary. Expect a sharp rise in interest in 2,000 square metre buildings, he predicted.

Another Alsop call – to reverse usual city planning policies by putting homes in the centre near leisure facilities, and his favoured small office buildings in the suburbs, so removing the need to journey to play as well as the journey to work – will take rather longer to come into effect, one suspects.

Rumours of the death of the 'dinosaur' office block were given added impetus by another speaker at Cannes, surveyor Christopher Jonas of Drivers Jonas. Taking the technological line, Jonas argued that home-working using advanced telecommunications will mean that there will be less and less need for the administrative support offered by the conventional office centre.

Alsop, in the meantime, has designed a complex of small office buildings for a site outside Warsaw that are relocatable: the three-storey blocks, forming a small business park, are designed to be moved elsewhere if a more desirable location beckons.

AIA CONVENTION

"Finally a group that can appreciate what we've done with the place!" So welcomed a billboard the American Institute of Architects' 1994 National Convention. The new Los Angeles Convention Center, showpiece of the architectural firms Pei, Cobb, Freed & Partners and Gruen Associates, hosted some nine thousand colleagues May 13-16.

The AIA national and local staffs filled the calendar with seminars and multiple tours of architecturally important homes designed by Frank Lloyd Wright, Charles Eames, Richard Neutra, R. M. Schindler and Greene and Greene. Other tours explored the beach houses of Venice and Malibu, L.A.'s inner-city and the Watts Towers as well as the massive Getty Center, still under construction. Hundreds of vendors met thousands of architects through the Expo 1994 held in the exhibition hall adjacent to the general session.

The AIA, urging its members

to participate in the continuing education programme, offered conventioneers opportunities to enhance their skills in many areas. From how to hire qualified staff to new developments in building codes; computer technology to historic preservations – a variety of seminars provided focussed themes from which to learn. In 1996 one condition of AIA membership will be continuing education; attendance at the 1994 seminars gave members needed credits they can apply in two years.

Keynote speakers included architects Frank Gehry, who opened the convention and Sir Norman Foster, who was awarded the 1994 AIA Gold Medal. Both architects showed examples of their projects via slide presentations to the general assembly. Gehry featured his latest project, the Disney Concert Hall in downtown Los Angeles, by allowing viewers to see "behind the scenes" as models of various sizes were constructed and studied. He also talked about how design elements such as the organ and acoustics were implemented.

Sir Norman Foster described various projects and how other interests can influence architectural design. His approach to the Stanstead Airport included reviewing the simplicity of design of the first airport in Atlanta, Georgia, and a study of aerodynamics in plane design and how it could be implemented in a building.

HERE COMES ROBOMOP

Yet another field of human activity falls prey to the robot invasion with the announcement of ARCOW, described by its manufacturers OCS as the world's first robot window cleaner to equal the performance of experienced "shiners".

OCS say that the ARCOW system, conceived by cybernetics consultant Richard Pawson and developed at the University of Newcastle-upon-Tyne, can be adapted to suit new or existing multi-storey buildings. For a typical 30 storey office tower (100% glazed, 45 m wide by 18 m deep), the additional cost compared with a conventional cradle system is about £75,000; however OCS claim that once the cost of monthly conventional cleaning is taken into account, clients can expect the additional cost to be recovered within only four years.

They also claim that ARCOW completely eliminates threats to security and privacy posed by human window cleaners and, because of its adaptability, it need not greatly influence the architectural design of a building. The current design is guided by metal tracks between bays; but the system can also be adapted to run on Planar glazing with only slightly raised screwheads. In principle cladding panels and even returns can be cleaned.

Before cleaning a window, ARCOW's trapezium-shaped cleaning head automatically gauges the size and distance of the window, before following a path very similar to that used by a human cleaner's squeegee. The head is used both to deliver and remove (by vacuum) the cleaning fluid, which is then filtered and recycled.

KOOLHAAS STEPS ON THE GAS

Lille, Northern France, 3rd June 1994. All of Euralille's Centre and the Business park - continue to progress well. Following the launch of the metro and tramway stations and the official inauguration of the Lille-Europe TGV station on 6 May, the Grand Palais will be opened to the public by Euralille on 3rd June.

Lille Grand Palais, with its complex of exhibition, conference and event halls, will offer city centre facilities which few European cities could match. It will be op ening its doors to the general public for the first time, for two open days on the 3rd and 4th of June.

Robomop: on a screen near you

The elliptical Lille Grand Palais was designed by architect Rem Koolhaas, with his Lille associate François Delhay. Its conference halls offer three amphitheatres seating 1,500, 500 and 300 respectively, with 12 meeting rooms as well as a mdular space with room for up to 400. The amphitheatres all have siultaneous translation equipment, video, projection rooms and broadcast facilities. They can all be fitted with an electronic voting system.

The arena space is of "Zenith" proportions, able to accommodate up to 5,500 people with space for a stage of up to 800 square metres.

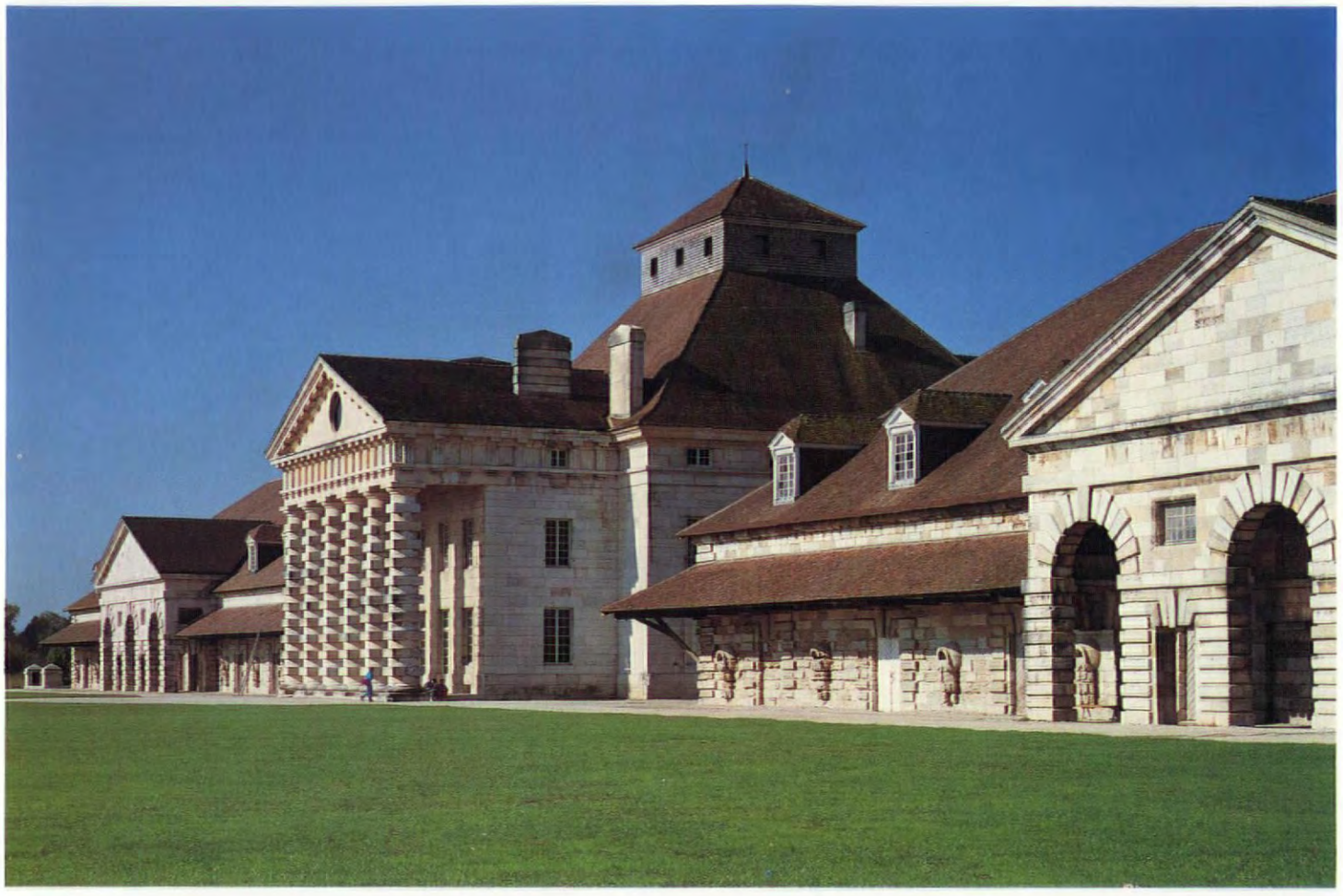
The 18,000 square metre exhibition hall can be divided into three sections and is directly accessible for deliveries.

Lille Grand Palais also has a restaurant space accessible from all three zones. It has a banqueting hall which can seat up to 1,100 guests, a 400 seater cafeteria adn an à la carte restaurant with 80 to 100 covers. A 1, 250 space basement car park will ensure complete accessibility to the whole complex.

Booking has already begun, with 300,000 delegate days already having been reserved for forthcoming events. There has been strong interest from foreign delegates, particularly from Britain and the rest of Northern Europe.

Lille Grand Palais, conceived under the auspices of the City of Lille and Euralille, completes the high standard of the city's planned infrastructure and provides a major centre for international economic and cultural exchange.

For more information contact: Laura McLelland/Nigel Kennedy, The Grayling Company, 4 Bedford Square, London WC1B 3RA. Tel: (071) 255 1100, fax: (071) 631 0602. □



JAN DERWIG

Jan Derwig is a Dutch architect who has been dedicating himself to architectural photography for the last ten years. He is one of Holland's most prominent photographers, working in collaboration with many different architects in Holland and the rest of Europe.

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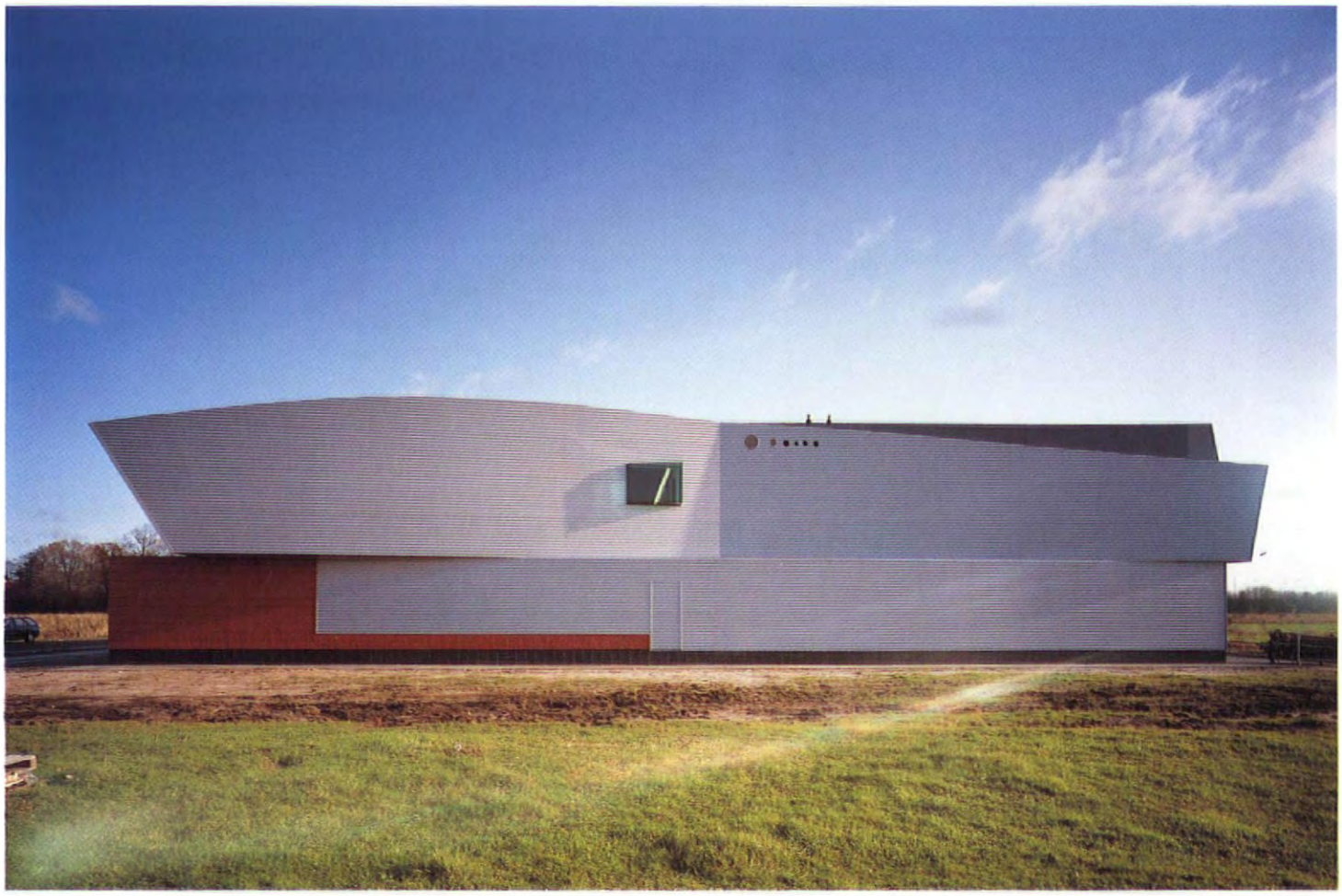
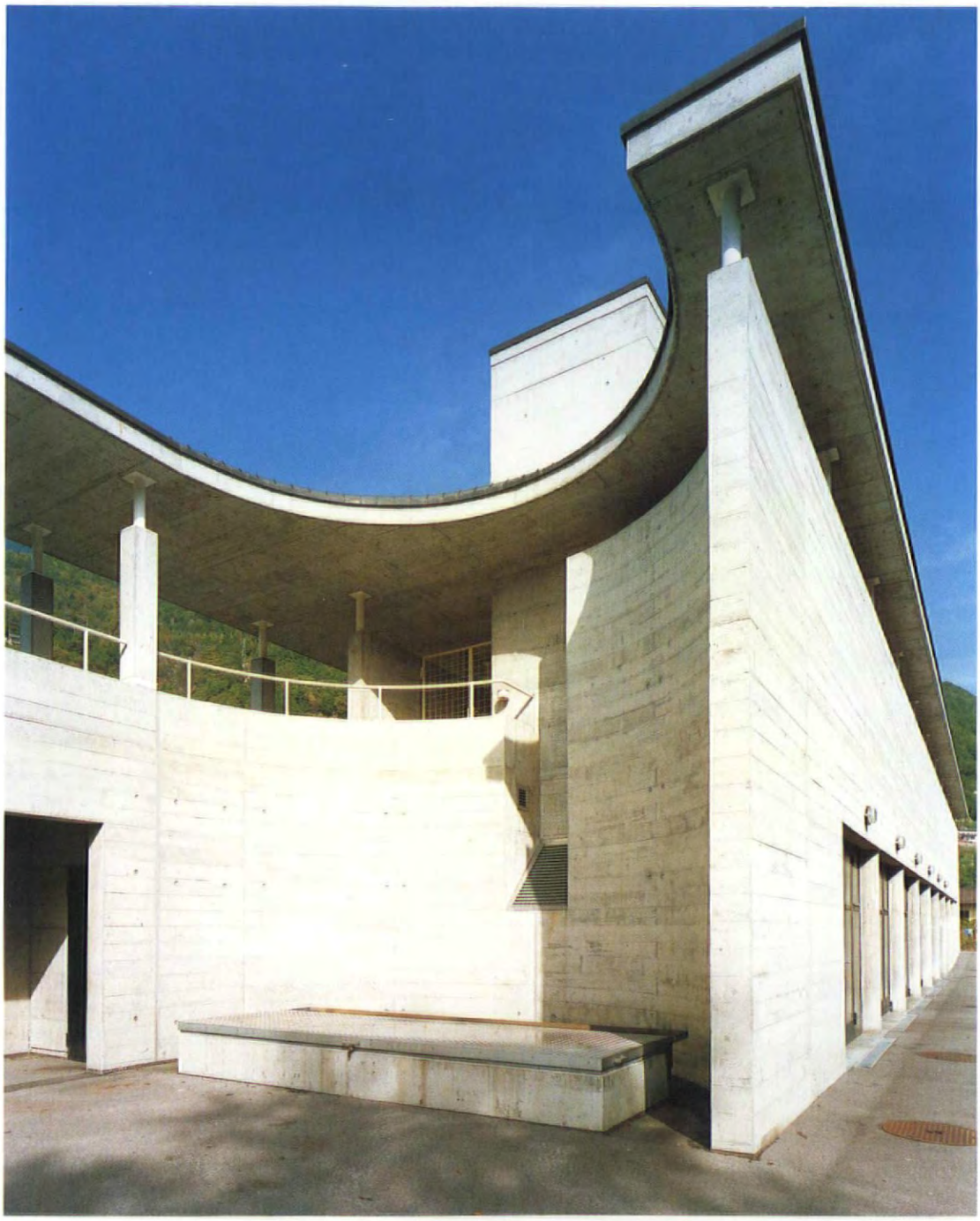
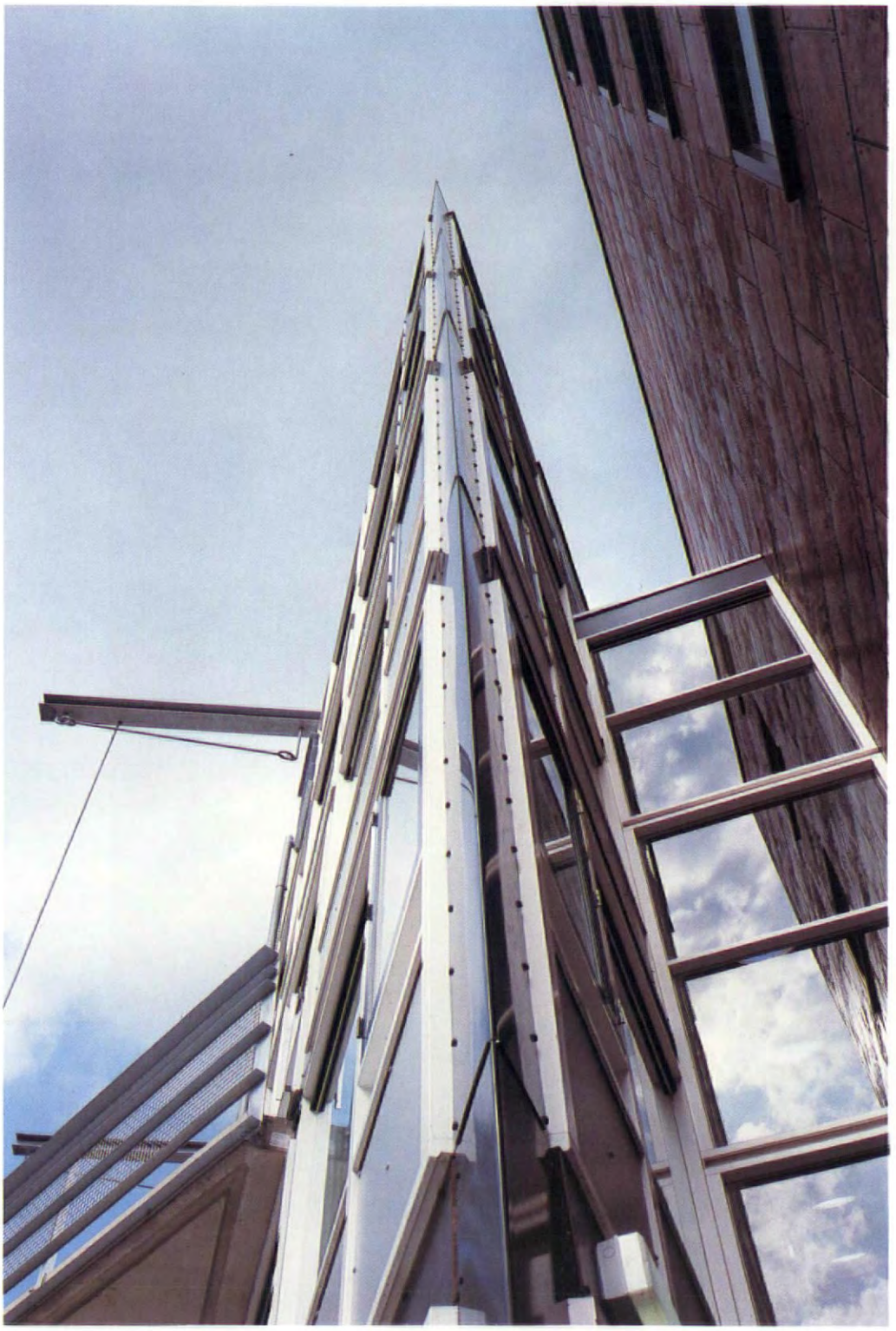
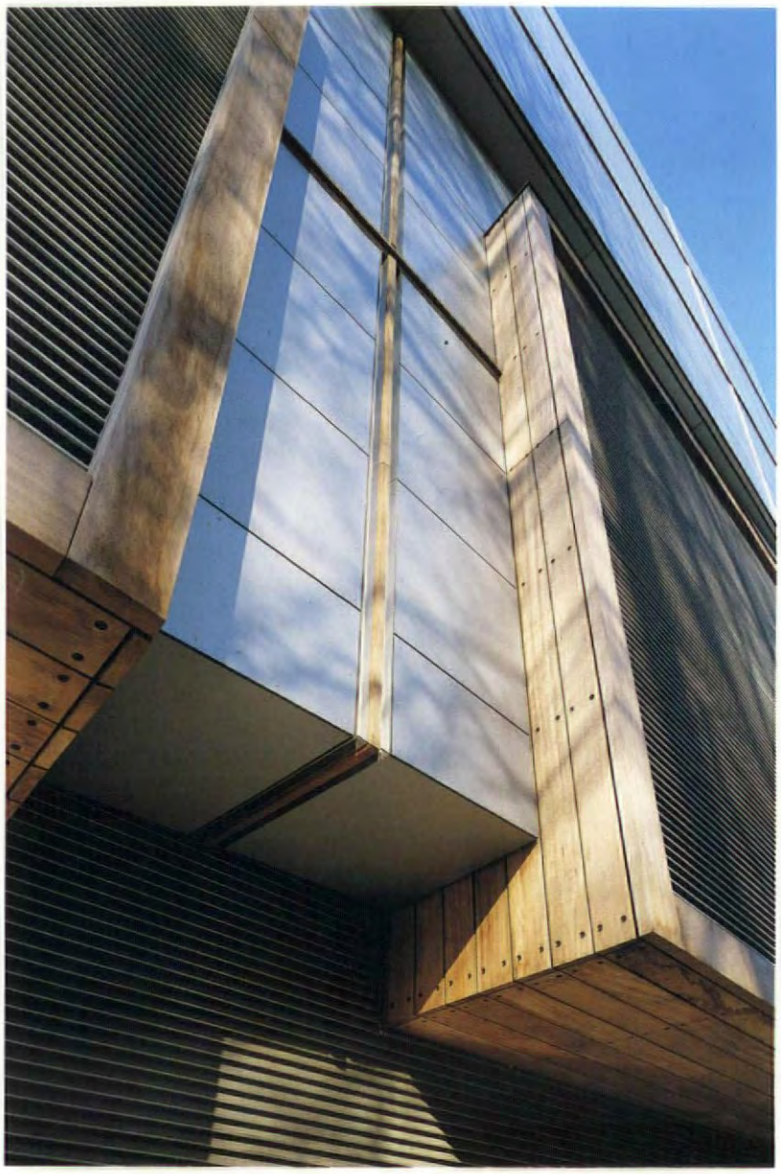








JAPANESE GENESIS

One of the most under-researched relationships in architectural history is the progression from Victorian engineering, through Modern architecture, to High-Tech, or "technologically expressive" architecture. In the West, Modern architecture is supposed to antecede High-Tech, but what if High-Tech is actually related to an even older tradition? Here American architect Scot di Stefano explores parallels between such buildings as the Hongkong and Shanghai Bank and Lloyds, and the Japanese traditional house and Zen Buddhist thinking dating from the fifth century AD.

Buddhism, like most religions, is a response to chaos; it is a search for an explanation of existence and for order. To a certain extent, the same can be said of Modern architecture, which attempted to give expression to the spirit of an age. There are several differences between Zen Buddhism and Modern architecture, primarily because the former is a philosophy and a religion, and the latter is a philosophy and a technological movement. Perhaps the most obvious differences between Zen and Modern architecture concerns time and place. Zen Buddhism evolved through centuries of thought in the far East; Modern architecture evolved in considerably less time in the West. Setting these differences aside, I wish to deal here with the parallels between the two doctrines, specifically those relating to the ideals of Modern architecture as they evolved during the period from the early 1850s to the 1970s,

Japanese traditional house (far left) and Hongkong & Shanghai Bank detail, Foster Associates 1986 (below)

Martin Pawley

a century during which technological change became an ideology in itself.

The mystics of India and China evolved Buddhist philosophy in intentionally isolated contexts. Furthermore, they had a specific goal, salvation, and they proceeded logically to achieve this. While it can be suggested that Modern architecture too was messianic in its development, it was international in its breadth and concentrated on salvation through "a new architecture".

The question of materialism could be considered the most significant difference between Zen Buddhist and Modern ideals, but it can also be considered the most important parallel. For example, traditional Japanese architectural space differs greatly from the prevalent spatial concepts that have developed in the West. This is due to the adaptations made for physical comfort and convenience in the West in the form of objects and devices like telephones, electric lights, air conditioning, furniture, art objects, etc., as well as a new structural technology. These adaptions, in Western architecture, tend to set up an object/space contradiction since they are usually not considered intimately during spatial conception. This has also occurred in contemporary Japanese architecture as a result of Western influence. The simplicity as well as the psychological quality of traditional Japanese space is attributable, in part, to the absence of furniture and other objects and devices (which are in essence material possessions and as such not part of the Zen Way). In the development of contemporary architecture a Zen attitude would have suggested that spatial and psychological qualities should not be sacrificed in the name of physical comfort and convenience through contemporary objects and devices.

In order to retain the psychological quality and simplicity of traditional Japanese building in contemporary architecture, the architect must consider appliances and fittings as integral parts of the whole. Their object nature must be eliminated. It is the belief of this author, as the following comparison will show, that High-Tech, or Technologically Expressive architecture, a refined derivative of Modernism, has accomplished this and more. In fact, Technologically Expressive Architecture can be interpreted as a contemporary Western version of Zen Buddhist architecture

The Basis of Comparison

Zen Buddhism and Modern architecture can be compared at two levels; first, in terms of their conception of a "universal law"; and second, in terms of other characteristics. Fundamental to the first comparison is the relationship of the Modern movement to its own engineering tradition. For the purposes of this argument, the Modern movement and the engineering tradition should be understood as one.

Buddhist knowledge, and the Buddhist perception of the "universal", are different to that of the Western architect or engineer. The

Buddhist's focus is mental while the engineer's focus is technical, however, there is a relationship and it can be expressed through the following analogy:

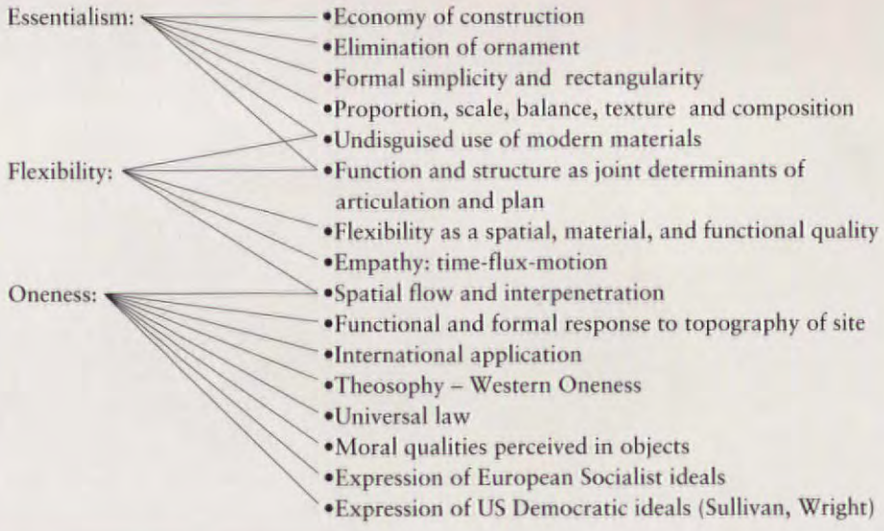
The Buddhist attempts to place himself and his fellows in harmony with ultimate reality. The architect-engineer attempts to put himself and others into a framework of structural perfection, a kind of universal law. The Buddhist seeks the ultimate state and the architect-engineer seeks perfection. Both attempt to achieve harmony.

Both traditions are rooted in conceptions of the basics of the universe, and the meaning of these basics. In Zen Buddhism the basic conception is of Oneness: approaching life with an understanding of its ultimate reality. In Modern architecture, "Oneness" is derived from the engineering tradition. Without this engineering tradition expressed in the technological advances of the Industrial Revolution, as well as the ideological concerns that accompanied these advances, the development of Modern architecture would have been impossible.

It is also possible to discuss the relationship of Zen Buddhism to Modern architecture in terms of major characteristics. There are 16 major characteristics of Modern architecture that can be considered less articulated versions of the three major characteristics of Zen.

Theosophy is perhaps the most clear and significant establishment of common ideological ground between Zen Buddhism and Modern architecture – for in the work of Mondrian and De Stijl lies a Western artistic manifestation of Eastern religious-philosophic ideals: Universalism is synonymous with Oneness, abstraction is synonymous with Essentialism, and (like the Zen Buddhists) Mondrian considered these qualities to be flexible and inexhaustible. It is interesting that Theosophy and its Eastern origins are seldom cited by Western architectural historians. If reasons for the limited acknowledgement of the influence of Oriental philosophy on Modern architecture are to be cited, one might start with the acceptance of modern symbols. Endell suggested searching for forms "which symbolise nothing", but even Modern masters like Gropius and Le Corbusier searched for a symbolic content in the mechanised world. This is perhaps most clearly stated in Le Corbusier's *Towards a New Architecture*. In fact symbolism was not necessary as far as the original intentions of Modernism are concerned since characteristics such as Oneness and Essentialism are primarily psychological and rich in material variations. In the end symbolism inhibited the creative process by instilling dangerous preconceptions.

The three major characteristics of Zen Buddhism shown relative to their 16 equivalents in Modern architecture.



One could even suggest that the demise of the Modern movement was in part a result of the failure of twentieth century architects to implement its arguments more fully. More than 150 years ago Viollet-le-Duc suggested that a mutally influential relationship between architects and engineers was necessary for the evolution of both. In 1923 Le Corbusier opened the text of *Towards a New Architecture* with the same argument: "The Engineer's aesthetic, and Architecture are two things that march together and follow one from the other..."

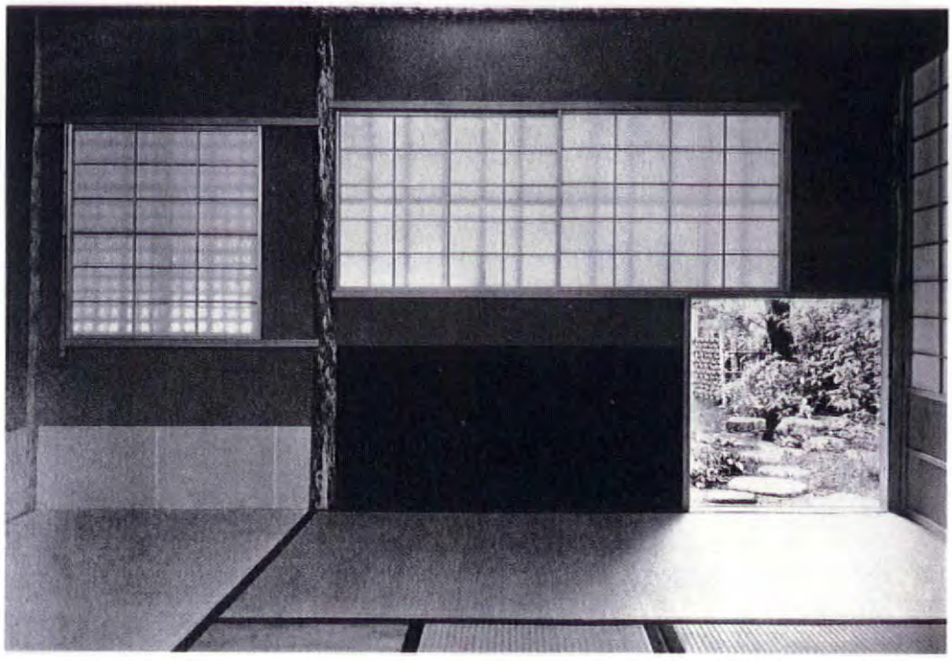
Unfortunately though, Le Corbusier focused his attention primarily on the new images being created by the engineering tradition, and less on the new technology itself. While he employed new materials and techniques, these were not the primary generators of his designs. A Zen critique would suggest that his error was his differentiation between the architect and engineer – a Zen Buddhist would not have made this distinction.

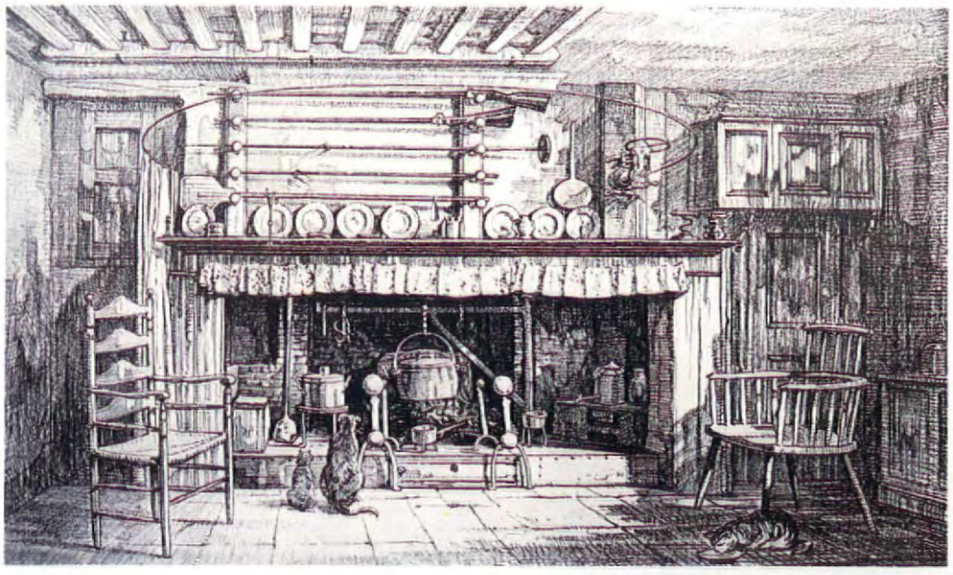
So it can be argued that once the symbols of the mechanised world were agreed upon, the significance of the engineering tradition to architects waned. That some sort of agreement was reached in regard to the symbols of the mechanised age is evidenced by the residential designs at the 1927 Weissenhof exhibition at Stuttgart and this can be regarded as a symbolic stopping point for Modernism.

From some historians' point of view, the Technologically Expressive movement is an extension of the modern tradition. The work of Richard Rogers, Norman Foster, and Renzo Piano in particular can be seen as characteristic both of Zen Buddhism and Modern architecture. These architects are important for three reasons. First, they have all, at one time or another collaborated as partners. Rogers and Foster met at Yale in 1961 where they developed several post-graduate projects together. After graduating they formed Team 4 and designed several buildings and projects from 1963 to 1967. In 1971 the Piano + Rogers partnership was formed, and this relationship continued until 1977. Second, they remain the backbone of the movement that is still exploring the architectural potential of technology. Third, their work comprises significant commissions that are of interest in their own right.

All three of these architects early recognised the shortcomings of practising as individuals. All of their projects, from the most simple to the most complex, were achieved

Two different traditions. The Japanese house (below) and the English house (bottom)





through team efforts. At the same time all three recognised that engineering alone is not able to consistently give shape to architecture; but that architecture cannot evade advancing technology. In other words, they practice in the manner suggested by the early Modernists: one which includes a mutally influential relationship between the architect and engineer.

Renzo Piano cites Jean Prouvé when the question of architect versus engineer is posed: "Architect? Engineer? Why raise the question, why debate it? The important thing is to build. Why can't the builders of aeroplanes, of dams, etc. ... be called architects? It immediately makes one realise that the architect has to be an engineer otherwise there is no defendable idea. My opinion is precisely this: that the question should not arise in the first place."

Piano follows this with another argument that supports the Zen Buddhist idea of Oneness: that architectural creativity is not divisible into parts. All three architects believe that it is impossible to separate the initial moment of conception, the process of technological verification and documentation, and the construction process – and still realise a unified whole (Piano, 1983, p.26). They insist on the importance of following a project through the construction process. For example, during the construction of the Pompidou Centre, Piano and Rogers' site architects resolved the majority of details as the situations arose.

Oneness

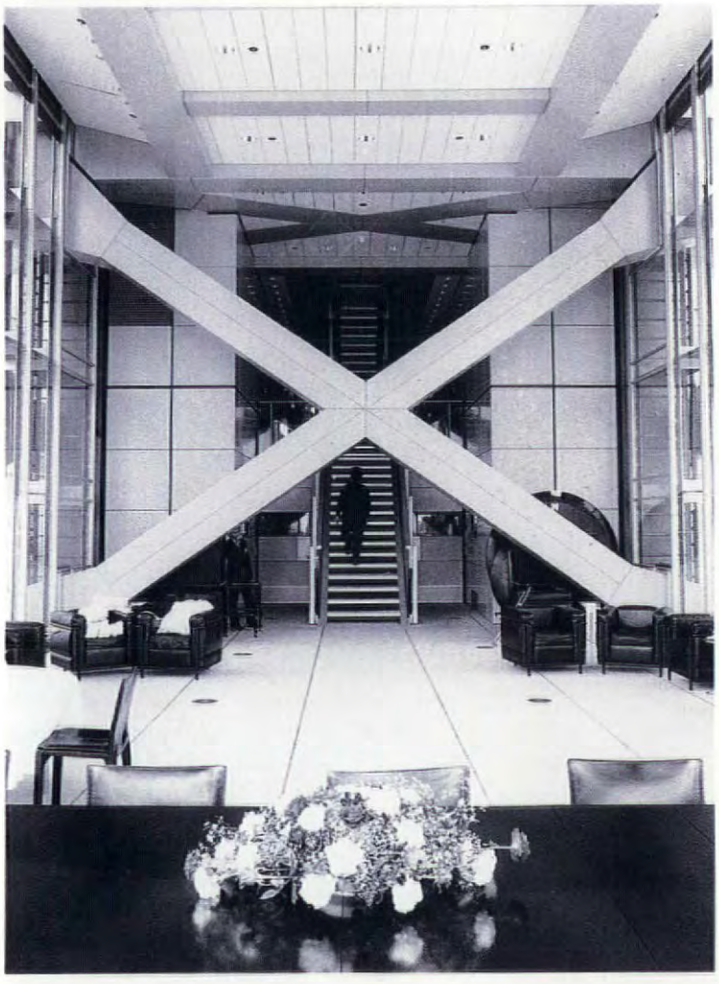
The relationship of subjective to objective in architecture represents a manifestation of Oneness. In Technologically Expressive architecture, this relationship can be considered apparent in every detail of construction since Foster, Rogers, and Piano consider the options provided by technology to be objective and the selection of particular options to include some degree of subjectivity.

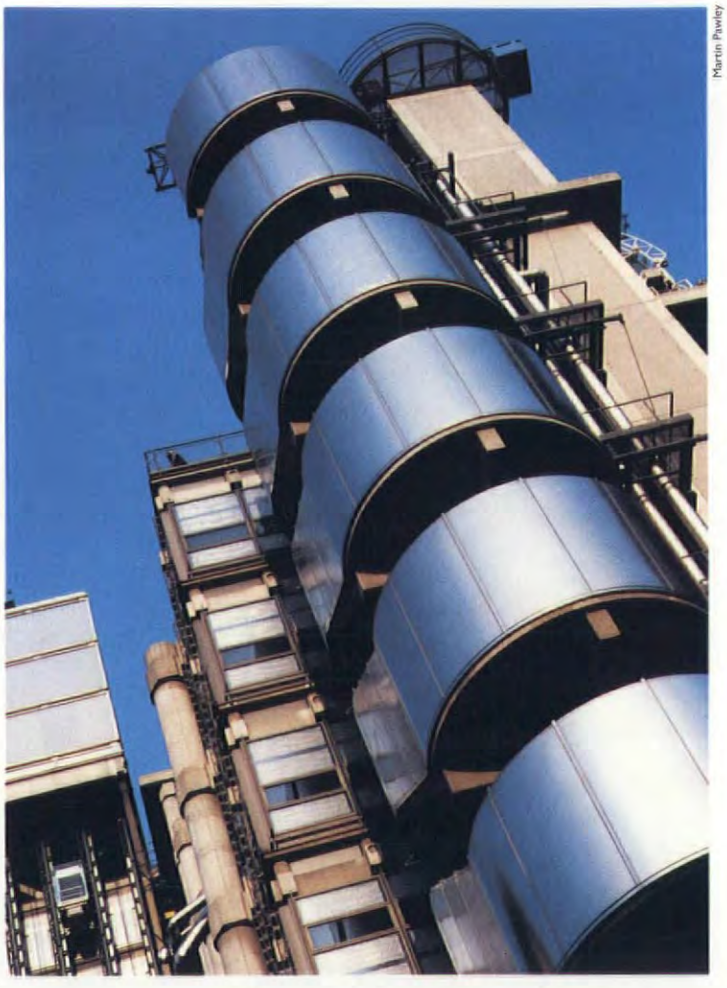
Further examples of Oneness in Technologically Expressive architecture can be found in the articulation of spatial penetration between interior and exterior. The importance of the garden as a mediating space (for the technical and organic, geometric and natural, human and infinite) in Japanese and Buddhist architecture can be explained as a variant of penetrating space. Similar ideas are pursued in Technologically Expressive architecture through a variety of techniques.

At the Pompidou Centre, the facades are layered to obscure the division between interior and exterior. The barrier is obscured to de-emphasise this separation. The intention was to stress the importance of activities on both sides and to eliminate the formality and other social distinctions typically associated with cultural centres. The most literal manifestation of spatial penetration occurs at Foster's Hong Kong and Shanghai Bank. An important circulation route is maintained by lifting the mass of the building off the ground such that street level pedestrian space flows beneath the building. This experience is further enhanced by the glass enclosure at the base of the atrium. The resulting effect is such that street level pedestrians enter the atrium space without having entered the building.

Another parallel characteristic of Oneness is the importance of the building-user relationship. Presentation drawings and models produced by the Technologically Expressive architects include a prominent representation of the human factor. The positive effect of these concerns is apparent in the finished

Hongkong & Shanghai bank, Foster 1986 (left), Lloyds building 1986 (right)





Martin Pawley

product. The importance of the user is further stressed in the use of the people mover systems and atriums which enhance activity and a synoptic view.

The Hongkong and Shanghai Bank, and Lloyds of London both use atriums to create a sense of oneness linking offices on either side and at different levels. This recalls the Buddhist and Japanese use of the garden as a mediating space.

Essentialism

A common attitude of the Zen Buddhist, traditional Japanese, and Technologically Expressive architect occurs through "Essentialism", what can be called a "less is more" attitude toward the application and efficiency of materials. Given its greater technological capabilities, this idea has been carried further in Technology Expressive architecture than in Buddhist, Japanese, or even early Modern architecture. In all three traditions, however, simplification is used in the same way to eliminate that which is unnecessary.

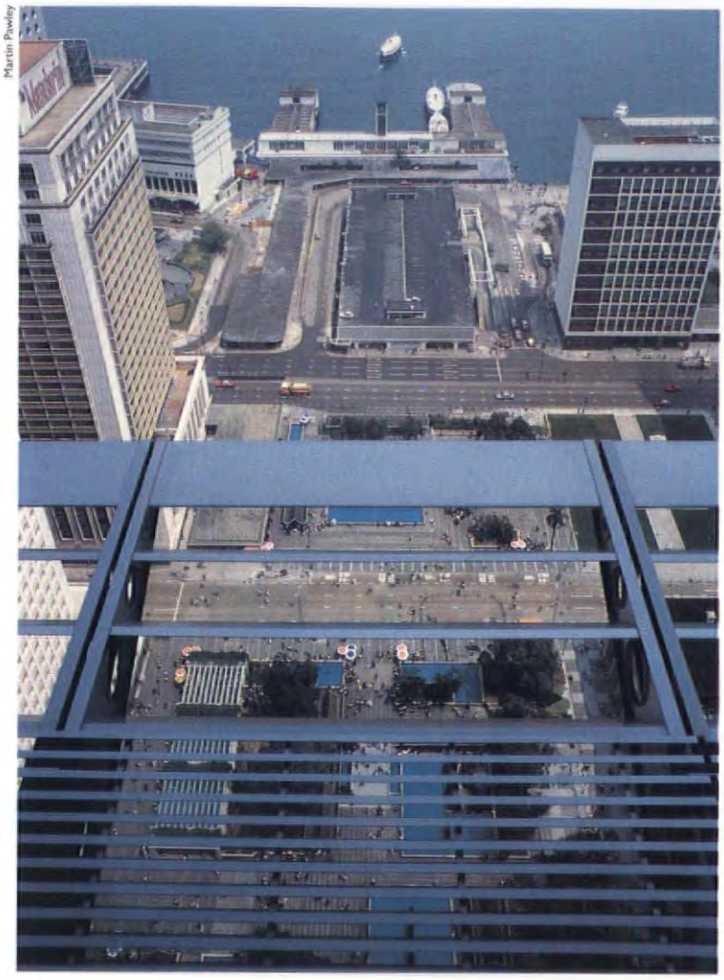
This attitude, shared by Rogers, Foster, and Piano, is a derivation of Buckminster Fuller's ideal of a world saved by the efficiency of its use of new materials and design. That this is a conscious goal is supported by Rogers: "Technology cannot be an end in itself, but must aim at solving long term social and ecological problems. This is impossible in a world where short term profit for the 'haves' is seen as a goal at the expense of developing more efficient technology for the 'have nots'."

An argument could be posed as to whether or not the Essentialism of Zen is similar to that of the Technologically Expressive architects in ecological terms. The Essentialism of Zen employed natural, simple, sustainable and economical concepts; the Essentialism of Technologically Expressive architecture can be interpreted as environmentally degrading, energy intensive, and labour intensive.

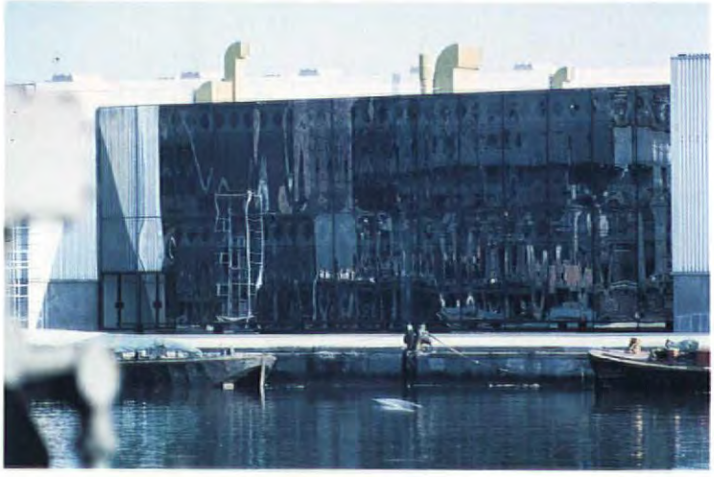
In considering this argument one must keep in mind several points. First, those materials used by the Technologically Expressive architects are extremely efficient relative to those of the past. For example the development from a wrought iron beam, to a steel beam, to an open-web bar joist represents the evolution of a new structural element over time. The history of technology suggests that this tendency will continue in the same direction until the ultimate essential state of structural attenuation is reached. Second, traditional Japanese Essentialism was the result of restrictions imposed on building because of economic and environmental burdens. Zen Buddhist Essentialism was derived by choice. While all three scenarios are of different origin, they are all Essentialist in nature.

Norman Foster was able to take the idea of Essentialism to an extreme with the Hongkong and Shanghai Bank. Sufficient financial backing allowed for full scale mock-ups of many of the major components

Norman Foster and High-Tech minimalist form. Hongkong & Shanghai bank (left), Bousquet house 1993 (below) and Fred Olsen Line building 1971 (bottom)



Martin Pawley



as well as research into the application of the latest in material technology. Renzo Piano utilises a mobile workshop to both explore material technology and explain technology to the users. He is probably the most adamant in regard to this attitude. He perceives himself as an "artisan of technology" and is not far from stating all that is not justifiable is useless. While he has been criticised for this preoccupation, he does not consider his focus on the process of research and verification to be a shortcoming.

Essentialism serves as both a means and an end in Technologically Expressive architecture – it represents an elimination of completely arbitrary design and a striving toward pure form. All three architects are opposed to ornamentation. Essentialism provides an ordering system, that of science and engineering, for their efforts towards Oneness.

The power of Essentialism as a generator in Technologically Expressive architecture is evident in the variety of final products and the extremes represented. The Reliance Controls Factory (1967) and the Pompidou Centre (1976) serve as examples of these extremes. Reliance embodies the idea of Essentialism achieved through minimising the number of different materials and their connections, as well as an extremely simplified floor plan. Here, beauty is found in the aesthetics of simplicity.

The Pompidou Centre is also founded in a simplified plan. Essentialism here is achieved through meticulous studies into the potential of each piece to realise the potential of the whole. This building, much like the Buddhist attitude towards the universe, consists of many simple parts making a complex whole. This description recalls the Buddhist attitude toward the relationship of the individual to community and society: the potential of each person to realise the potential of the whole, and the powerful simplicity of conception and sureness of touch that results when there is no wasted motion.

Flexibility

The ability to provide columnless, flexible space is not unique to Technologically Expressive architecture, but it is a consistent feature of its buildings. Long-span technology has its roots in the earliest frame systems and was first explored in the design of bridges. Several buildings by Rogers, Foster, and Piano give architectural expression to this engineering feat. The Pompidou Centre is perhaps the most significant. Specially designed trusses, 48 metres in length, are used to create a vast flexible internal exhibition space. Within this flexible space, art and other displays are mounted on moveable/removable partitions. These are organised as required for each particular exhibition.

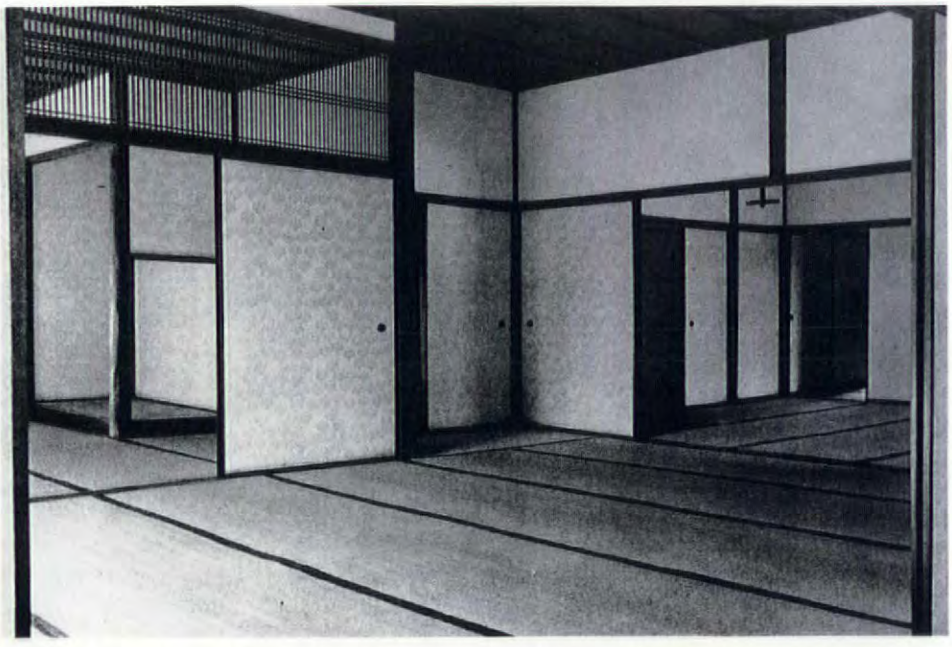
Flexibility is also approached from a component standpoint. Standardised, mass produced parts are frequently used in Technologically Expressive architecture. Such products provide ready availability and offer extensive

compositional potential. When components are specifically developed for a project they are often intended to be interchangeable. For example the cladding system at the INMOS Microprocessor Factory consists of interchangeable solid and viewing panels and the components comprising the mechanical system support structure at the PA Technology Laboratories are "off the shelf" steel angles, I-beams, C-channels and brackets. The latter uses both a specifically designed long-span structural system (to meet the programmatic requirements) and standardised, mass-produced parts.

As previously suggested, the technical capabilities available to such architects as Richard Rogers, Norman Foster, and Renzo Piano exceed those available to Buddhists, traditional Japanese, and early Modern architects. For example IRCAM (the Institute for Research and Co-ordination in Acoustics and Music, located below ground at the Pompidou Centre) includes a version of the Japanese movable partition applied to all planes of enclosure. As originally conceived, the design included a three part, variable height ceiling, and a floor system capable of articulation for specific functions (the floor system was never realised). Even the acoustical qualities of the enclosing planes can be mechanically altered, their appearance changing accordingly. This space represents perhaps the extreme of flexibility – volume, texture, lighting, acoustics, and shape can be altered as desired or required.

On a more pragmatic level, the Technologically Expressive architects assert that the inevitable future transformation of existing spaces and the replacement of obsolete mechanical support systems should be facilitated by grouping service functions and moving them to the exterior of the building. This increases the flexibility of the interior space. To further facilitate this quality, they frequently provide access to internalised portions of support systems through the floor as opposed to through the ceiling. In addition to facilitating component replacement, locating service functions along the exterior also establishes a potential for expandability and, as a derivative of Flexibility, the desire and capability to expand is perhaps the second most important quality of Technologically Expressive architecture. Designing for the potential of expansion reflects an understanding, similar to a Zen understanding, of the metabolic quality of technology, society, and the world. In addition to providing the capability for component replacement and building expansion, the cranes perched atop several buildings within the Technologically Expressive tradition reinforce the notion of the transformable nature of our culture and its architecture.

Sparse, but possibly comfortable. Interior of a traditional Japanese house



It is the belief of this author that the ideals and aspects of Technologically Expressive architecture: Oneness, Essentialism, and Flexibility, include substantial commonalities with the ideals of Zen Buddhism.

The term "substantial" carries great significance here, since it could be suggested that in Technologically Expressive architecture, the Zen attitude has been diluted to the point of compromise. There are several key points that one must keep in mind when considering this argument. First, that we are dealing with extreme cultural and technological differences. Second, that one must understand the goal of Zen Buddhism. Many people confuse the goal of Zen Buddhism to be Nirvana – this is not the goal but rather the highest metaphysical state of being. The goal of Zen is the goal of Siddhartha Gautama. He saw that people were subject to suffering and concluded that the answer was, not to change the world, but rather to change one's attitude. It followed that the world would then change, automatically and effortlessly. In Hindu mythology this is known as *wu wei wu*: to do without doing. So the focus of Zen Buddhism is the individual and its goal is the self-betterment of the individual. It is the long term effect of the correct application of Zen ideals that is Nirvana. Third, the word "compromise" suggests negative connotations. A Zen attitude would suggest that, if one understands the metabolic system of the world, then nothing has been compromised since everything is subject to change until it reaches its ultimate state – even Zen. Zen philosophy must evolve just as culture and technology evolve. A Zen Master would not argue that Zen is perfect. So it can be suggested that manifestations of Zen in Western culture presuppose modifications, a kind of evolution.

But the question of materialism in Western culture remains. Buddhism suggests the absence of materialism and an ultimate end to progress. Conversely, architecture tends to be materialistic and progress oriented. In other words, buildings can be considered material possessions and as such are in contradiction to Zen teaching. The flaw in this argument lies in the perception of buildings as material possessions. They are not. Buildings, and hence architecture, are material necessities of contemporary life, but they are also in part works of art and, as such, an expression of the attitudes of those responsible for their construction. Zen teaches the importance of active participation in society as opposed to withdrawal into mysticism as advocated by other Buddhist schools. This

IBM Greenford (top). Hongkong & Shanghai bank (below left). Lloyds building detail (bottom right)

Ken Kirkwood

includes all business functions as aspects of contemporary life including the practice of art and architecture. Through involvement in contemporary society one can experience and acknowledge universal truth just as effectively as the ancients did.

Another argument is that technology is considered to be "inhumane". This was one of Robert Pirsig's inspirations for writing *Zen and the Art of Motorcycle Maintenance*. So the question arises as to whether or not there is an artistic side to technology that can be exploited to bridge the schism between its emotional and logical appeal. The answer is evident in Technologically Expressive architecture. It is not a style – it is a tool; as such it is not a noun, but a verb. Space is an experience; not a noun but a verb. Life is an experience, not a noun but a verb. One must keep these Zen-Tech Expressive interpretations in mind, as well as Pirsig's suggestion that neither subjective (emotional) nor objective (logical) modes are pure or without certain facets of the other. As an example of this relationship, the Yin-Yang symbol represents the holistic quality of the universe with two opposite but equal and interdependent components, each containing the seed of the other. Within technology lies the spirit of mankind, and to ignore it, or worse, to avoid it, is to avoid peace of mind and promote entropy. Technology, as part of the human experience, must be understood, accepted, and instilled so that, holistically, technology and mankind advance together. Architecture, like life, can never be an exact science (for not such thing exists) but within Technologically Expressive architecture the difficulty of aesthetic choice is displayed in every detail through the reconciliation of the subjective and objective. Technologically Expressive architecture is an attempt to combine the subjective nature of human existence with the objectivity of science and technology. This assertion is based on the reliance placed, by the Technologically Expressive architects, on science and engineering as ordering systems while retaining an awareness of their own aesthetic subjectivity.

Perhaps the significance of Zen Buddhism and traditional Japanese architecture is best stated in Fritz Engel's 1964 book *The Japanese House.*

Engel opens with the following statements: "The characteristic phenomenon of the contemporary epoch is this: Scientific-technical advancement is no longer anteceded, even less induced, by new spiritual-philosophic cognitions as in previous ages. Instead, science and technique advance autonomously, without the moral control and intellectual preparation that religion and philosophy provide. Each new phase in the rapid transformation of the physical environment meets man unprepared and hence remains outside his full control. As a result, new scientific-technical achievements no longer address human sentiment. Consequently, they no longer assume the role of art in previous ages, when all creative manifestations of man were within popular conception. That is to say, science and technique – the two major forces that shape contemporary environment – are without art and the humanising force that art gives."

True though they are, Engel's statements were made in 1964, before the Technologically Expressive architects made their contributions to the history of architecture. Perhaps their contribution since might justify a reassessment of the human potential to master scientific-technical advancement again. □

MASTERS OF THE FABRIC UNIVERSE

On Saturday April 2nd 1994, one month after the interview with World Architecture *upon which this article is based, Harald Mühlberger was killed in a motor accident on the autobahn between Stuttgart and Radolfzell. The founder and dynamic force behind IPL, one of the world's leading consultancies on fabric structures, Mühlberger will be sorely missed in the world of architecture and construction. His achievements over the last 20 years, and his vision of what is possible in the future using tensile fabrics, both of which are described here, command the highest respect from his contemporaries all over the world.*

IPL at Seville 1992

Before the Great War there was a tent manufacturer in Konstanz called Peter Stromeyer. His firm made camping and circus tents, marquees, army tents, even portable tents for Zeppelins. The name Stromeyer survived all the vicissitudes of the first half of the twentieth century and continued to make what by the 1960s had become known as fabric structures. Right to the end of its life the firm retained a high profile. It provided the fabric for the German pavilion at Expo Montreal in 1967 and sponsored the Frei Otto consultancy group at the Technical University of Stuttgart that produced the famous fabric sails for the 1972 Munich Olympics.

Harald Mühlberger trained as a structural engineer and joined Stromeyer in 1971. Dismayed by the state of the company, two years later he moved to Frei Otto's consultancy research group, just after the Olympics. He had made the right move. In the following year, in the last of a number of vertiginous cash flow crises caused by fluctuations in the dollar exchange rate, Stromeyer went down for the last time. Undeterred, at the height of the energy crisis, Mühlberger launched his own "Ingenieur Plannung Leichtbau GmBH" (Light Structures Design and Engineering Limited) as a two-man operation, determined to sink or swim with light structures as its sole product. The company was based in Radolfzell, not far from Konstanz, with a population of about 25,000 and a reputation for manufacturing underwear and pumps. Radolfzell was an unlikely location for what was to become a global operation but not, as Mühlberger insists today, an illogical one. This part of South West Germany is strategically very well sited for the new European development landscape — only 100 kilometres from France and even closer to Switzerland, with Italy only a few hours drive away. Today it is the commute to Italy that features large, for Cannobbio is the manufacturer of many of the space age fabrics used in the structures that IPL designs.

Are there any other reasons for being in such a small town?

"Besides everything else," Mühlberger smiles, "I like residential areas. That is why I built our discreet little suburban office building in 1987. Before that we worked from my own house next door."

IPL's offices are certainly discreet. They are located in a pitched-roof, steel-framed

bungalow with three storeys that look like two, located off a narrow semi-rural access road with villas either side. Only very close examination, and perhaps the number of cars parked outside, reveals that Mühlberger's original staff of two has grown to 15, and a sizeable business is conducted from inside. Even then, no outside observer could possibly guess at the tremendous computer-aided productivity achieved by IPL within. For Mühlberger, heavy investment in computer aided design and drafting equipment started in the early 1980s and on that front he has never looked back. To this day he sees the principal difference between himself and Frei Otto as lying in his rejection of the intuitive and artistic in favour of the calculable and technical. As though to underline this difference a deep concrete service duct links the computer systems in the office with back-up systems in Mühlberger's own house.

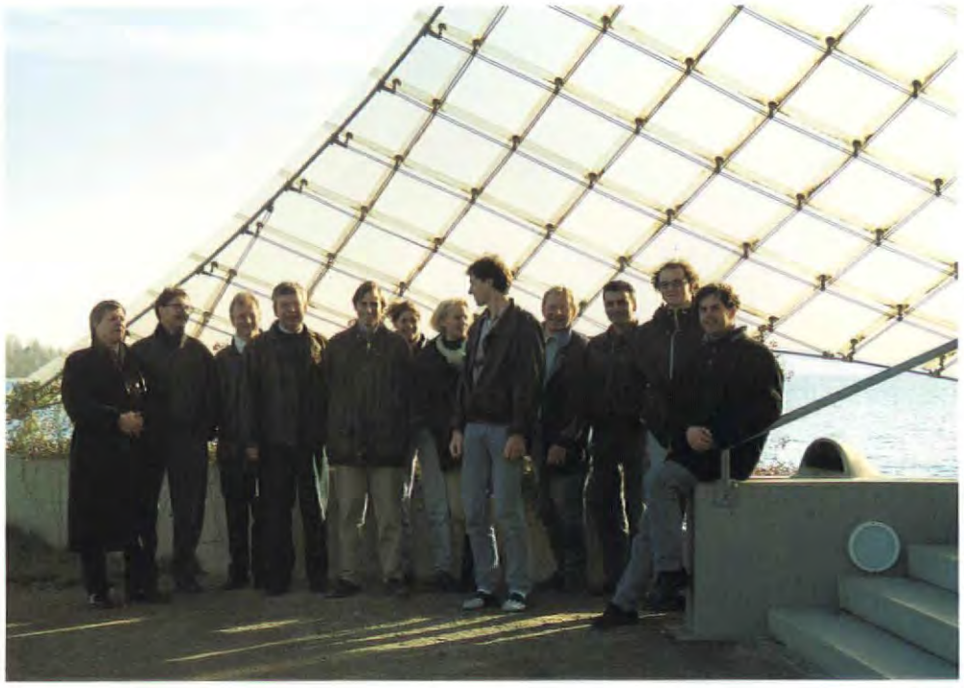
"Computer analysis is vital today. There is no turning back to the old ways. Computers alone make it possible to simulate every influence upon a membrane. We don't need need physical models, not like 20 years ago. Today we can simulate at ultra speed. When we started doing it we needed an air-conditioned computer the size of a house. Today everything is miniaturised and far more powerful. We take benefit from astronauts."

Mühlberger waves his hand at a battery of Apple Macintoshes, whose operators are studying their screens with an intensity of concentration that never falters.

"Today I suppose there are 12 organisations in the whole world that deal with fabric structures on the scale that we do. SOM keeps a fabric structures division, so does Arup, but they are much larger organisations that do not concentrate solely on this work. Besides, we try to avoid the role of being consultants only. We are really executors. We take an idea and push it towards realisation. We think that knowing exactly how to make something is more important than trying to suggest how it might be done by someone else."

How does IPL get its clients? Apart from invitations to tender, at the height of the 1980s boom the company received up to 300 cold calls a year and succeeded in turning nearly 30 per cent of them into jobs. Under present economic conditions inquiries have settled down somewhere between 50 and

The IPL team 1993. Harald Mühlberger far left



100. "But not one of them," cautions Mühlberger, "is a repeat order. Everything we do here is original. There is a market for repeat fabric structures but we are not in it."

What then is the IPL in? Surprisingly it turns out to range from the German pavilion at Seville in 1992 to a local mobile theatre, a clinic in the former DDR, a bus station and part of Terry Farrell's Edinburgh Conference Centre, to staggeringly ambitious and advanced structures on the very leading edge of fabric technology. These mega-projects of which a typical example is a proposed 10 metre by 50 metre fabric drinking water reservoir, as big as a container ship and designed to be towed behind one, that will be supported in use by the sea itself. This project, supported by the United Nations, is intended to store rainwater in estuarial waters on the coastal regions of Third World countries where desalination plants, with their tremendous energy consumption, are out of the question, but water shortages occur every year. As the scale of this project illustrates, the size of fabric structures, strengthened as they have been in recent years by the addition of numerous artificial fibres and membranes, is now limited only by the size of the fabric manufacturing equipment, and the difficulties that arise due to weight and bulk in transportation, rather than by any conceptual limitations.

Closer to home than the developing world is an even more gigantic IPL project. This is a 250 by 650 metre low-level roof covering for a toxic waste site near the city of Bielefeld. An enormous inflatable envelope, this enclosure is designed to crawl over the landscape hermetically sealing the toxic waste into lagoons from which no leakage into the surrounding environment is possible. Its "movement" will be achieved by continually dismantling and rebuilding its perimeter. Made of PVC polyester on a 20 by 20 metre air-supported grid of steelwork, this vast £90 million plastic bubble will be fitted with airlocks big enough to drive trucks through and emergency exits that will open automatically in the event of fabric damage or air pump failure. The performance of the whole membrane will be monitored 24 hours a day by built-in stress guages that will alert the management to impending failures. In this sense it will be the prototype of a new kind of architectural organism rather than a building, a structure constantly on the move. Over the next 30 years the inflatable will make eight phased movements over the whole site allocated to toxic waste disposal. When construction begins in 1995 the Bielefeld project will become the largest air structure in the world, four times the size of the present record-holding Pontiac stadium in the United States.

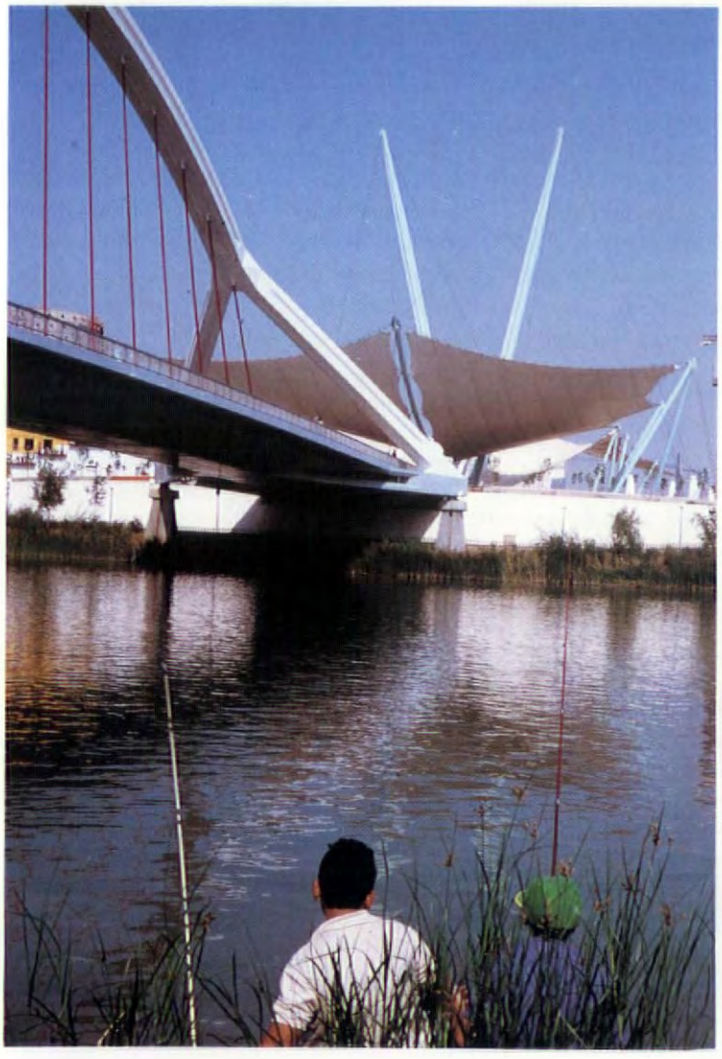
Working on a combination of relatively conventional fabric structures and such Buckminster Fullerian twenty-first century enterprises, gives Harald Mühlberger, and his chief architect Hartmut Ayrle, an unusual outlook. Their thinking is a mixture of the practical and visionary, the businessman and the philosopher. Although neither of them mentions such parallels a visitor is reminded of the words of Jean-Paul Sartre who said "When we are doing nothing we think ourselves to be responsible for everything." Mühlberger and Ayrle are clearly exceptions to this rule. Mühlberger in particular is a man who works flat out 18 hours a day for his business and yet thinks constantly of the future, the world and the environment as though he were a professor. In conversation he mentions more than once that he has allowed himself ten years before retirement and wants to cover a lot of ground in that time.

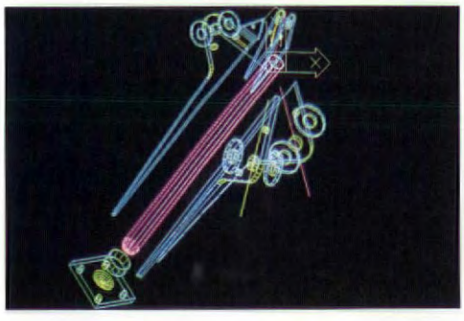
"This," he insists urgently of the IPL operation, "is more than just a business. We are doing things today that make more sense than the things we did yesterday. I always say that if I do something with my life that brings the world two seconds closer to survival, then I have not wasted my time. It is in that context that you should see our rainwater conservation and safe waste disposal projects, and others that are still on the secret list.

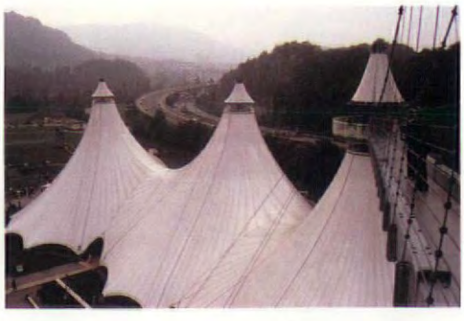
"In 50 years time our descendants will not thank us for having done so little to save the environment when there was still so much time. For them there will be less time, and they will wonder why we, with all our technology and our brains, did nothing to protect our children. To be able to do things at the right time, that is the luck of life!" □

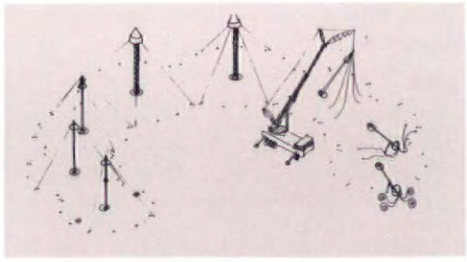
Expo '92, Seville

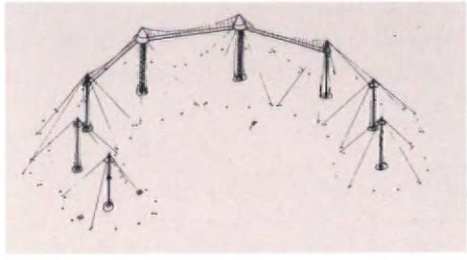
IPL produced several structures for the 1992 Seville Expo including shading devices (above), canopies (below left) and the roof of the German pavilion (below)

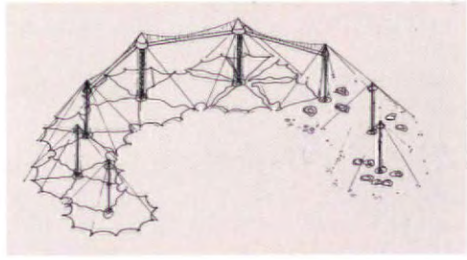


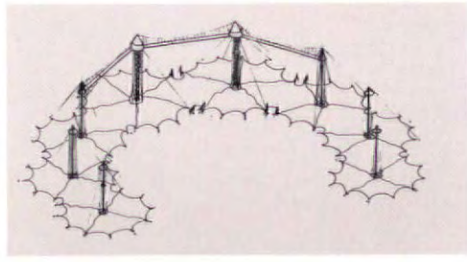


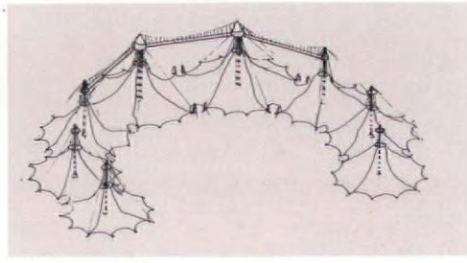


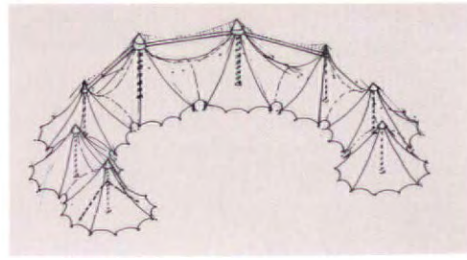










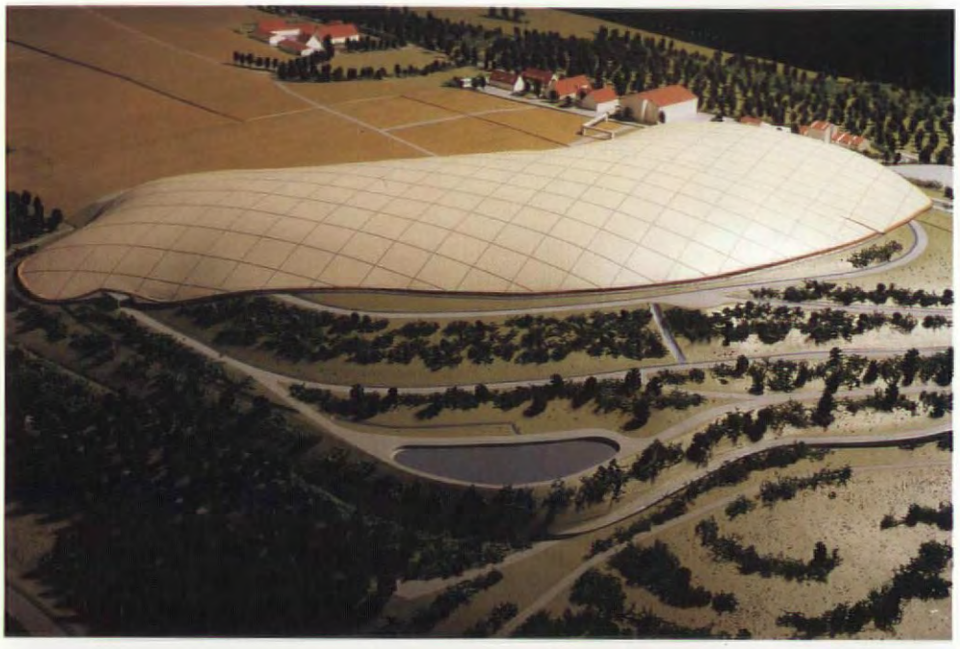


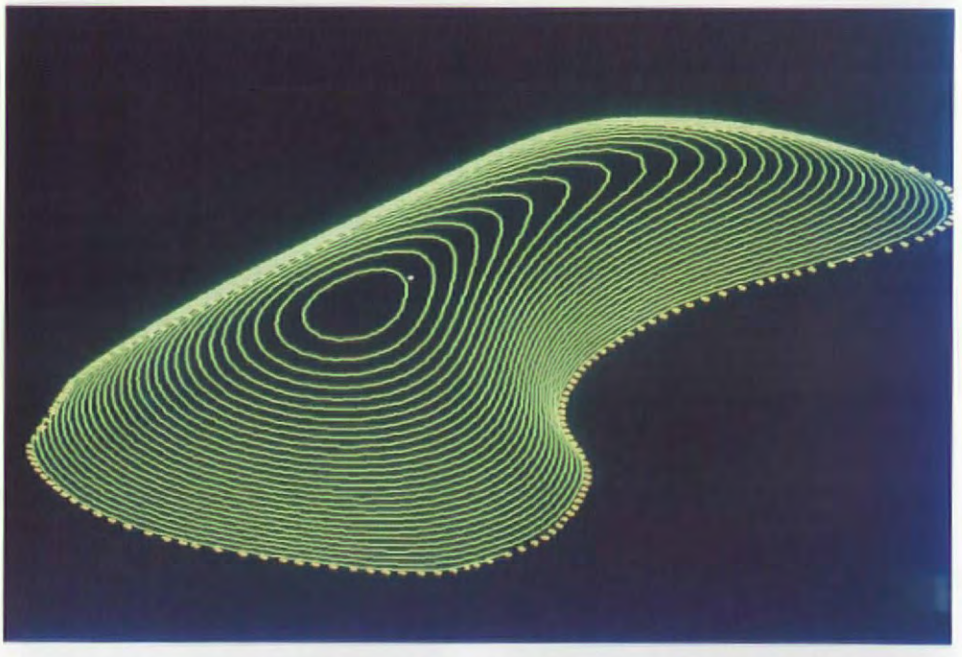
Heureka, Zurich

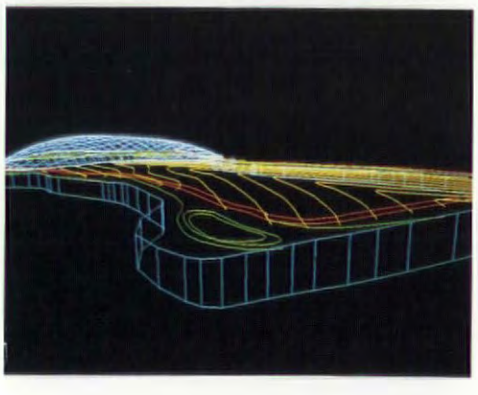
Membrane structures for the 700th anniversary of the state of Switzerland. Computer graphic (top) and detail (above). Finished membrane (above right and middle) and assembly sequence drawings (right)

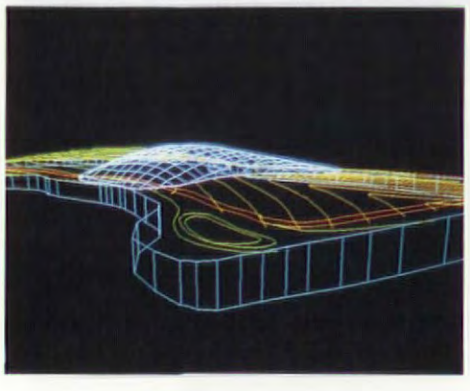
Waste disposal facility, Bielefeld, Herford

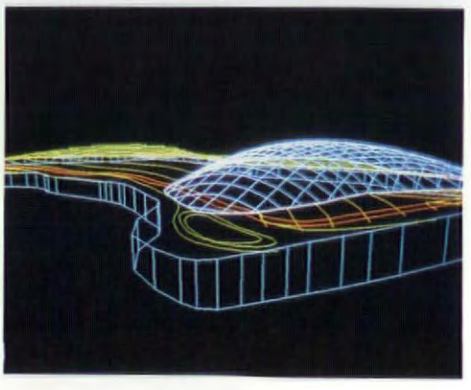
The 120,000 m² membrane visualized (right) and computer generated (below right) crawls across the landscape over a period of 30 years. The movement pattern is simulated below. Eighty-five per cent of the membrane panels are reusable. Cutaway model and bridging system, together with total movement pattern over life are visualised (far right). Project on site in 1994

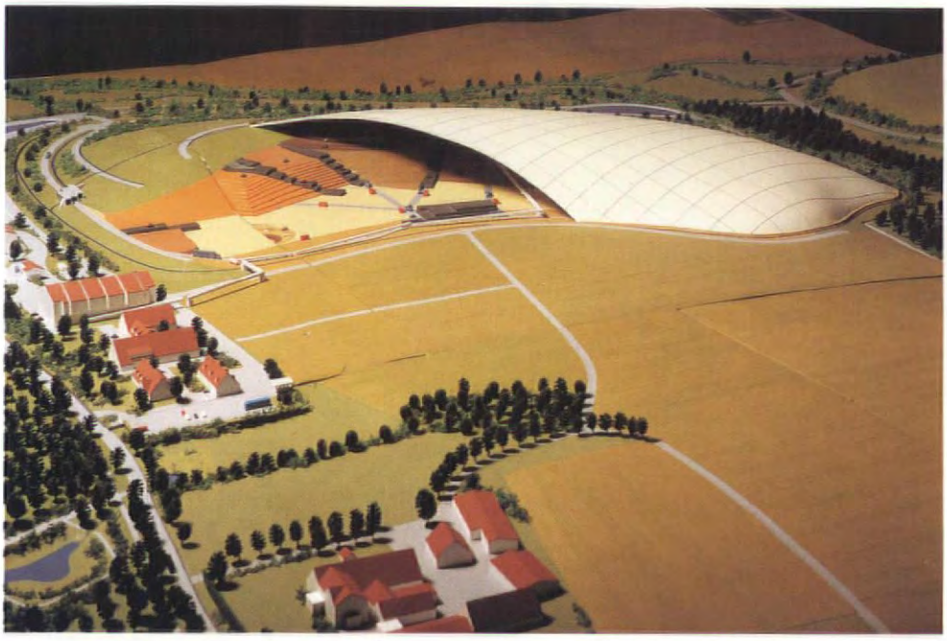


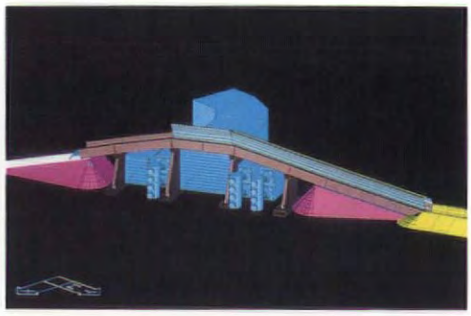












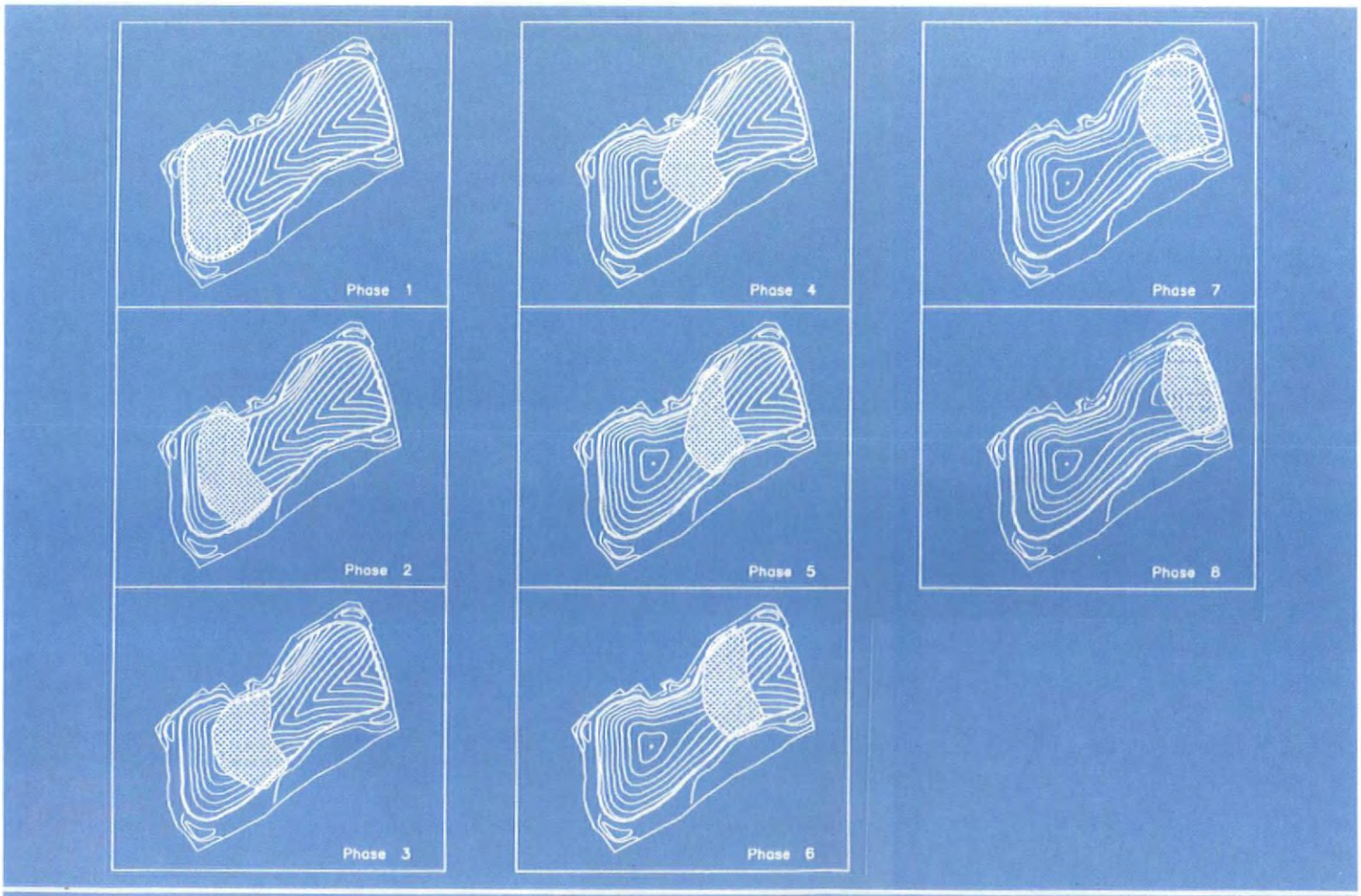
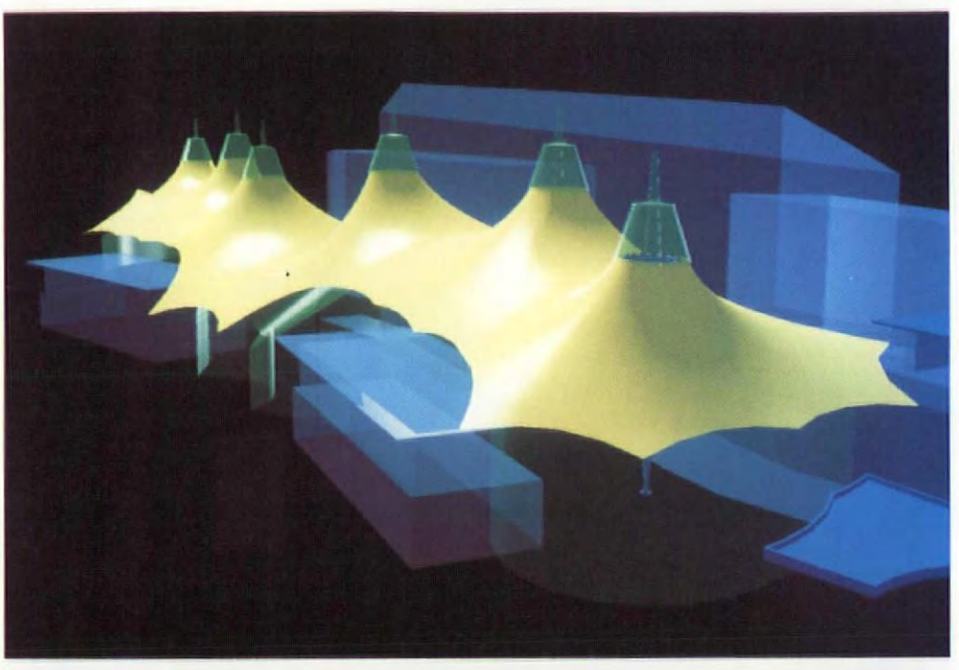
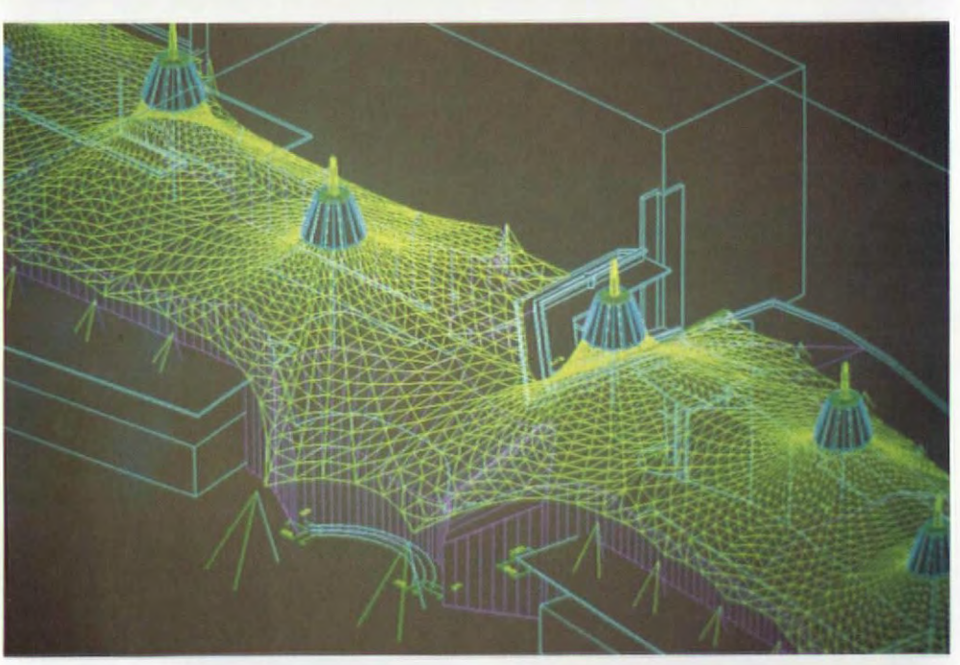


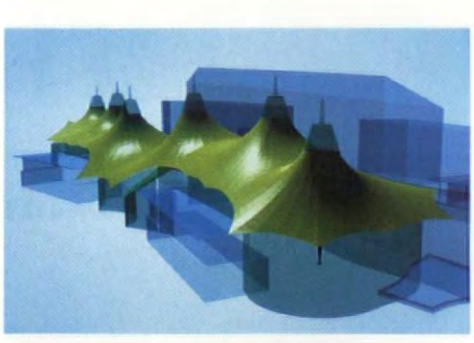
BILD 4: Einlagerungsphasen 1 - 8

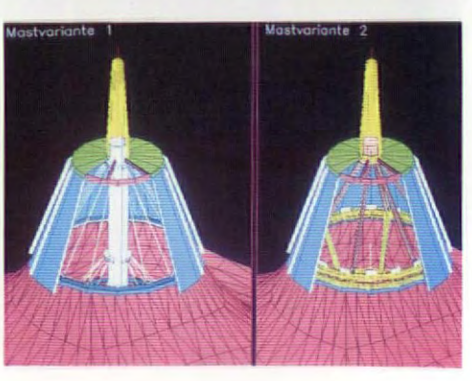
Masserburg Atrium project, Erfurt

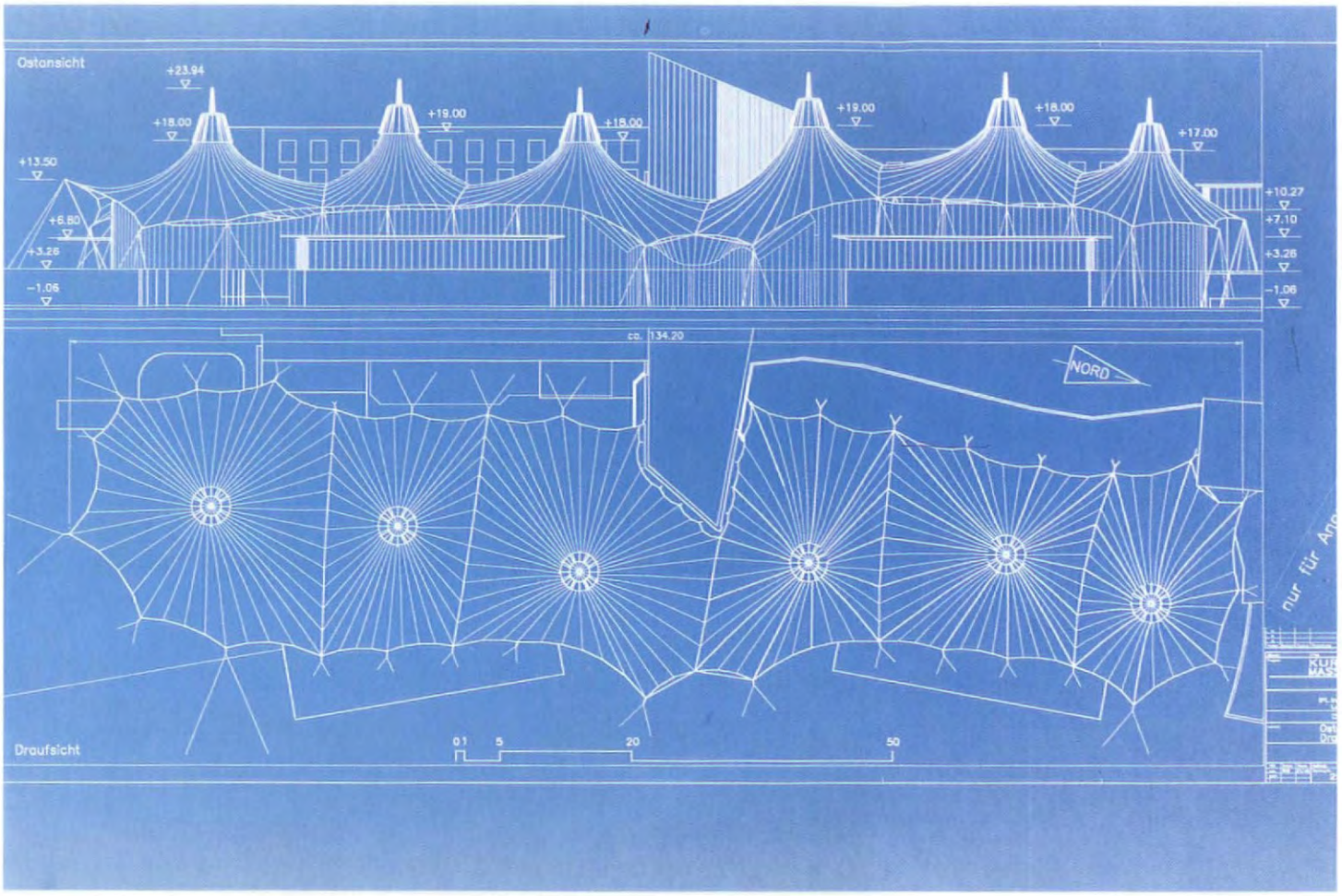
Computer simulations of a membrane enclosure designed to cover 4,000 m² of pools, recreation areas and auditoriums at a clinic in the Thuringian forest. The two-layer membrance permits a high level of insulation. Plan (far right) and computer graphic show scale of structure. Drawing shows masthead detail







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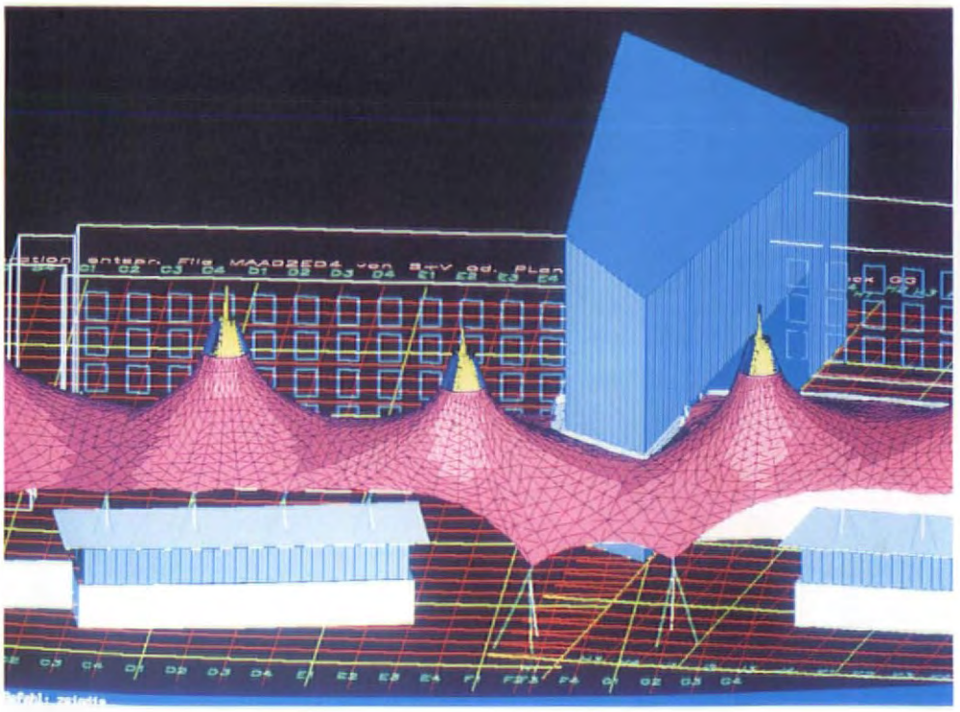

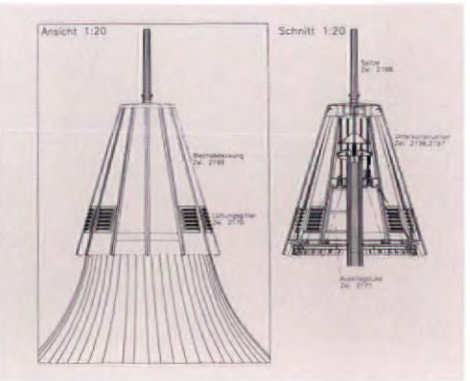
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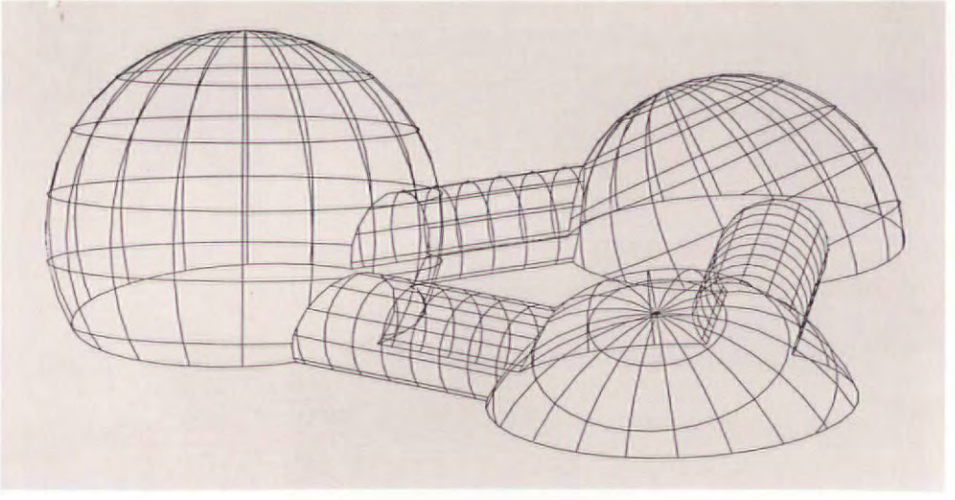
PTT exhibition domes, Netherlands 1987

Three interconnected domes, air stabilized, which served to promote the Netherlands Postal Network. The decorative colouring gives the impression of partly buried spheres



Statue of Liberty 1987

High pressure pneumatic sculpture of the Statue of Liberty for KLM airlines (above)

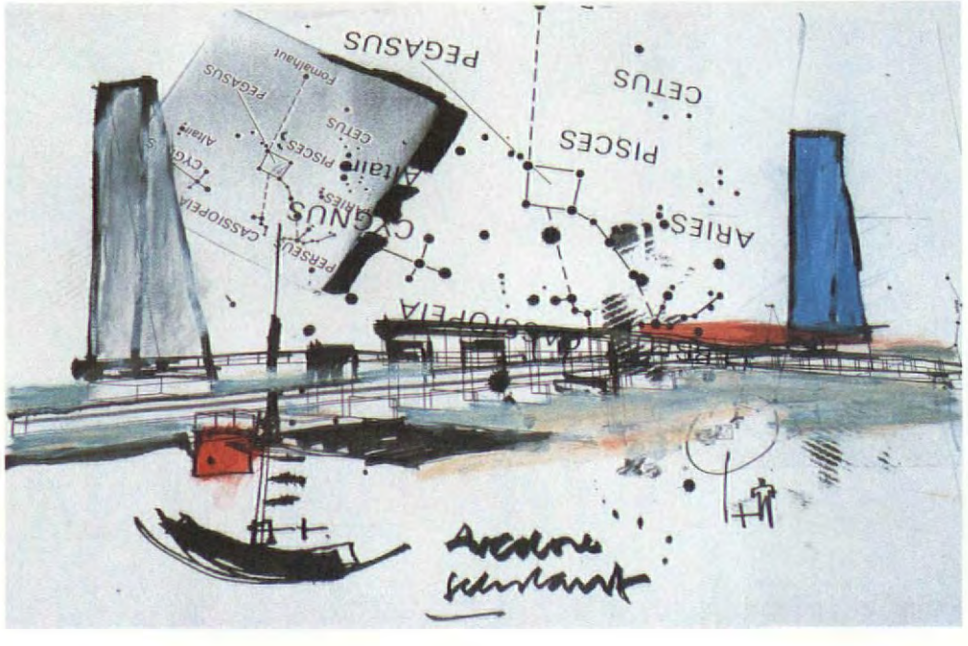
German Industry Fair, Tokyo 1984

A system of side and top elements of identical design enclosing 9,000 m² of floorspace. The membrane is tensioned over a steel frame

Editor:
Georgi Stanishev

The team work of Thomas Wiesner and Merete Ahnfeldt-Mollerup outlines a vast territory of experiments ranging from sculpture to theatre scenography, and from conceptual architecture to performance techniques. But each of these axes, traced between polar "genres", seems to trespass through architecture. Here interviewed by Georgi Stanishev the young team from Copenhagen argues that architecture could be taken as a "point of equilibrium" between all the directions of their work.

TERRITORIES OF ARCHITECTURE



G.S. What is the role of architecture in relation to the other fields of your work: an ordering principle, a genetic code of basic spatial relations, a Mother of the Arts?
T.W. Certainly architecture is at the core of the different considerations and the conceptual approaches in our projects. But our approaches are always more oblique and meditative than straightforward "architectural". This derives from the fact that for each work we research how to make the inherent but latent conditions visible and even tangible. In that sense, each new project, of whatever genre, starts with a basic question: how to short circuit the mental state of fixed programme positions with new angles of considerations. To uncover hidden potentials, to create spaces and conditions for spatial experiments, to discover unusual approaches in the possibilities that the different limitations of the project briefs set out from the beginning. The "architectural" point of equilibrium, as you put it, is thus a sort of sieve, through which the formal aspects are distilled, ordered and positioned so as to create the solution.

So in a way I cannot classify the thought processes as being different in different artistic expressions which we exploit. It is more a matter of permanent awareness of the same

basic tasks. Taken, or seen, through different complex angles of approach, they always generate unexpected potentialities to be explored.

Can we say that the research of the latent potentials hidden in the problem is the way you extrapolate "architecturalness" towards other categories of arts?

M. A-M. We may say that we are doing the same thing all the time, but in different contexts. In fact all our projects are within the realm of architecture in the Vitruvian sense, where the term architecture comprises the building of cities, construction of bridges and fortification, the making of theatrical machines, measures and clocks, as well as buildings.

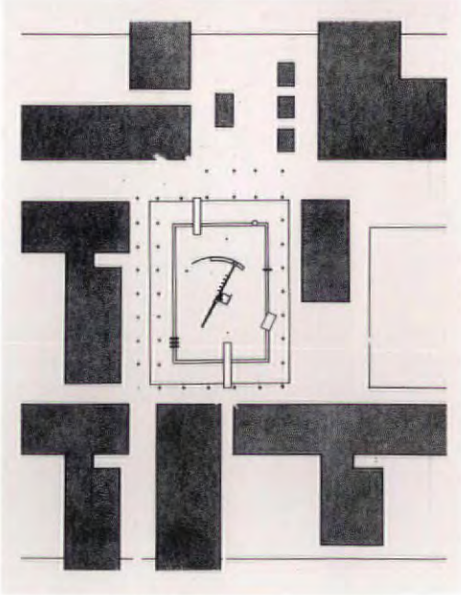
But, what all these points of departure have in common is, of course, the question of conceptual order – order as a base for some sort of agreement, that isn't nearly as important an issue in the pictorial arts. I would describe the issue as a reinvention of order in each project, in contrast to the application of "order", that one sees in most architectural work. Thus "order", in our work can be described as the mode of anchoring ideas to the senses.

What ideas are anchored in your Sekstant installation? How can the inhabitants "use" the object?

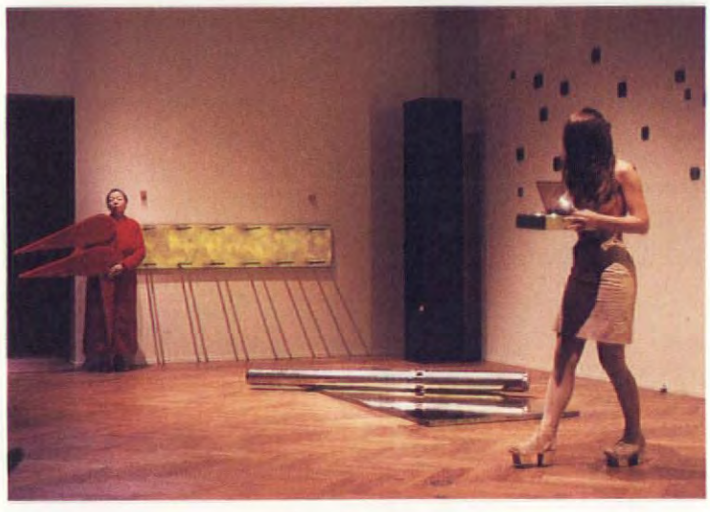
M. A-M. The "Sekstant" in Avedore is the materialisation of an idea to simulate memory of a new town. The installation can be felt, moved, used by the inhabitants as they like, practically or conceptually.

T.W. For the "Sekstant" installation the main consideration was to establish a large scheme of mental points of focus, that could function as tangible facts one might be tempted to explore. I.e. the orientation of the installation had two references outside its own premises: the Hermitage Castle, North to Copenhagen, and the Liselund Pavilion south of Copenhagen. Both are crucial and beautiful parts of Danish architectural history, as well as popular spots for sightseeing. The social housing into which the installation is inserted is a low income settlement, where the inhabitants might not have the impulse or daily possibilities to take outings outside their realm.

The installation thus becomes a kind of centre, anchored into the inhabitants' context, from which one can make excursions to the outside. But it is also the catalyst of an inner game, where various new artworks will in the future be inserted into the scheme, according to the stellar diagrams. And lastly, it functions as a simple playground, where children can play and give the installation



"Sekstanten", 1992
Plaza renewal, installation and master plan for the future integration of artworks in the social housing neighbourhood of Avedore Syd, Copenhagen. The installation is formed as an allegory of a sextant, acting both as a playground and a sculpture to be activated. The installation is positioned with respect to two important Danish architectural works on Seeland: the Hermitage Cottage and the Liselung Castle



"Fact. Arte Fact", 1991
Concept and stenography for performance by Hotel Pro Forma Theatre. National Art Gallery, Copenhagen. The theme of the project was modern genetic manipulation and ancient alchemy. All set elements are minimalistic sculptural forms in wood, metal and polycarbon

their own invented meaning, as its machine or device appearance is weird enough to trigger childish imaginations. Thus we have already heard several translations from the inhabitants, as to the nature of the installation as a sort of low-tech stellar pedagogical instrument. In this way the architectural conditions give way to ever new translations. It acts as a catalyst for peoples' own senses and imagination.

But when various genres are explored simultaneously the problem of methodological compatibility usually arises. Do both strategies – those used in your conceptual projects and those in the very realistic housing schemes – have a common denominator?

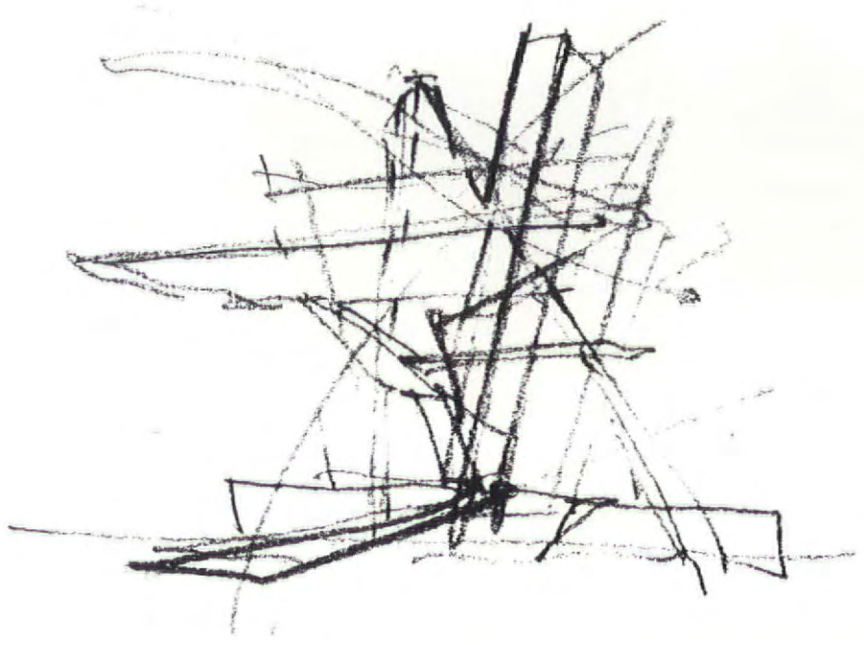
T.W. Certainly a hybridisation occurs often in our work. But it becomes obvious later, when one has to ask oneself what the results seem to become. The Revolution Tower for the celebration of the 200th anniversary of the French Revolution resulted in a very sculptural composition, which gave rise to certain associations with, say, Bocconi's work. But this was not intentional.

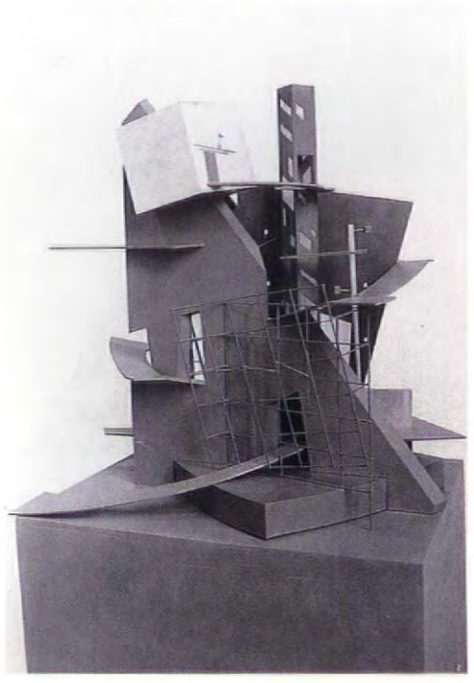
From the start we try to connect loose ends to achieve meaningful and innovative solutions. Maybe the method applied is like the eminent Houdini's struggle to emerge delivered, not from the chains and locks he has imposed on himself, but on the mental barriers he has erected.

M. A-M. In my view if there is an interaction between conventional and conceptual schemes, it is that they all derive from the same bank of knowledge; all the projects contain some reference to a basic mind-complex, wherein there are architectural, philosophical and scientific understandings. And misunderstandings. This "bank" is expanding with every project, so you can't even say the projects are different images of the same idea. All this may seem very elusive. But we are on the contrary trying to be extremely straightforward, as one can see from every project. We are in the business of making things visible, not of hiding ideas. The apparent elusiveness comes from our chosen imperative. In the housing projects we have not been discussing style or form or even building regulations, but dwelling as such, and we have been very suspicious of our own preconceptions. So when the different forms start to appear, a reference from art or theatre is absolutely on a par with any architectural reference. Architecture is in itself a theatre of architectural forms.

Is it possible to establish the reverse metaphor – transforming the real theatre play of actors' bodies into an architectural composition, i.e. thinking of it as "architecture of the human poses" in the Hotel Pro Forma action? What was the role of your design in these performances?

"Cet Etrange Objet de Revolution", 1987
Competition proposal (Special Prize) for the 200th anniversary of the French Revolution. A complex network of small towers to be erected in various capitals of the world with a "mother tower" structure to be placed at La Villette Park in Paris as continuation of the existing "follies" of Bernard Tschumi





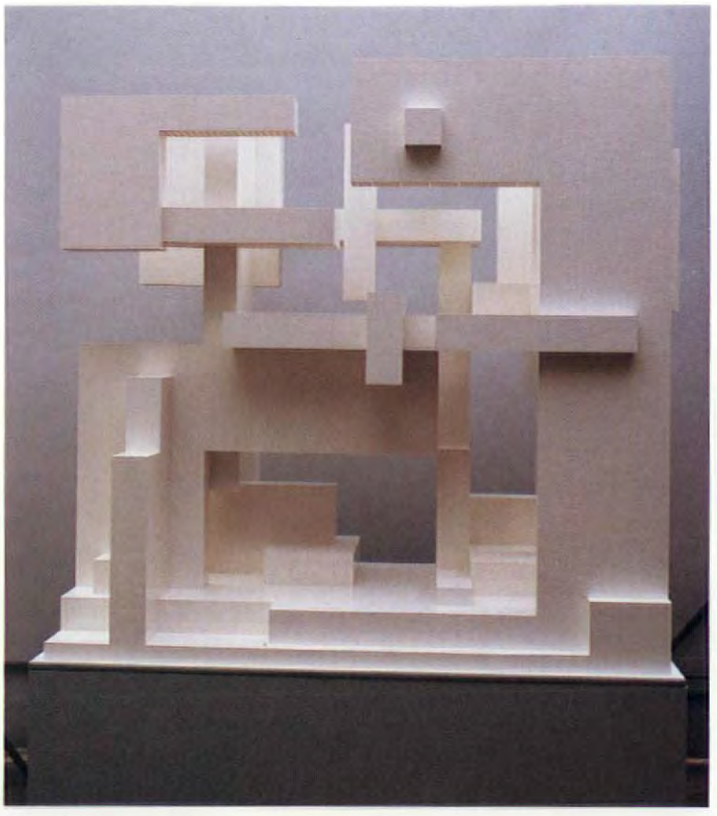
T.W. The conceptional and scenographic work for Hotel Pro Forma acts as very crucial experimental ground for later architectural works. The simultaneity of all involved is here again functioning on many levels at once. Great care is given to establishing the artefact .... and performers positioned in space with ambiguous multi-coding of forms and poses. It is in the end up to the viewer to develop his own story and translation. We try to incorporate these qualities into our different works. Our part as architects is to have the privilege of making something as a useful gift to the client or users. The consideration of statements and imposed architectural or artistic point of view comes second.

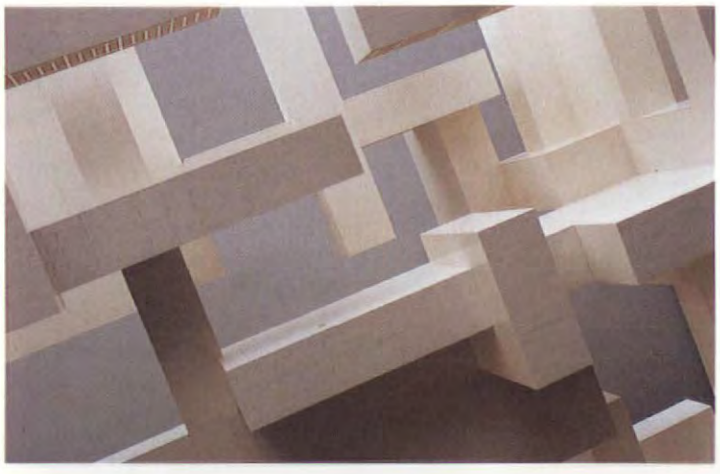
What are both plays in the Hotel Pro Forma theatre about? What is your role in the performance?

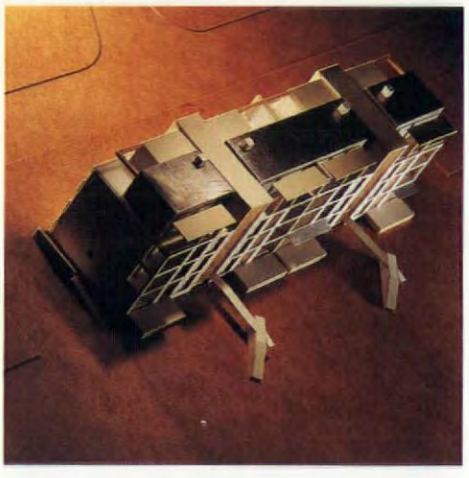
T.W. The Hotel Pro Forma Theatre group has as its main topic the cross fertilisation of different artist groups, with a strong emphasis on exploration of architectural themes, such as the effect of performers on public spatial relations. *Fact. Arte Fact.* was about modern genetic manipulation, mirrored with alchemical procedures and ancient wisdom; it was performed by seven sets of identical twins in nine "chambers" at the National Art Gallery in Copenhagen. Thus being both an art exhibition and a performance.

Der Die Das was a small dance production

Right and below: "The Gate of the Present", 1992
International invited project for LEGO for which 25 international young architects submitted proposals for their vision of a gate to be built in LEGO bricks (130x130x70cm). The projects deal with simultaneous conditions of space/time







Above: Experimental Housing, 1990
Competition proposal for new urban housing for EUROPAN 1 competition and Deutsche Transportbeton competition. First prizes in both. A variable system of components enabling construction in various urban situations. Integration of landscape, shops and common facilities in the buildings, including the use of roof terraces. Perplexing transformation of Corbusian and Miesian spatial vocabulary

Above centre: " The Polyphylus House", Wiesbaden, 1990
Proposal for an international invited competition for a one family house in Wiesbaden, Germany. Approx. 300 square metres. The brief was to accommodate a family of two adults and two children, on a triangular site in the suburbs of Wiesbaden. The theme of a medieval text was to be included and transformed in the proposal

Above right: Social Housing in Alt-Glienicke, Berlin, 1992
Project for a block containing 12 social housing apartments. Elaborated from a fixed condition, the proposal nevertheless succeeds in establishing a clear and functional qualitative architectural statement of simplicity and grandeur

performed in the Kunstverein in Munich at the international dance festival. The main concept was a transformation of the grammatical rules of the German language, acting as a formalised structure for the action. The libretto excerpts from sentences of a Danish textbook on German grammatical rules.

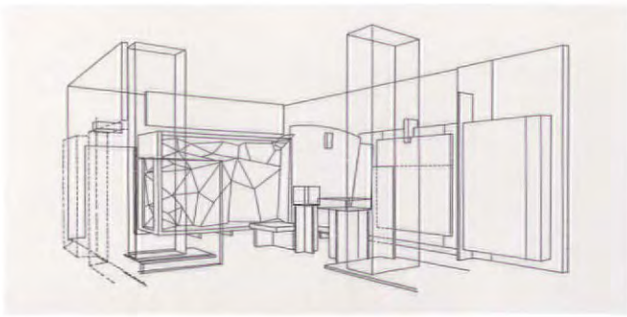
For the moment I am co-operating for the next performance of HPF on the theme of Grimm's *Snow White* fairy tale, hybridised with Wilde's *A Picture of Dorian Gray*. A theme of the existential conditions of being in the casket of one's fateful body, and the situation of narcissism. Eight dwarfs and the giant Snow White are performers.

Basically the work is a creative chaotic co-operation between all involved, from performance to performance: sculptors, artists, architects, writers, technicians and the director Kristen Dehlholm.

Your work obviously refers also to concrete historical precedents – trends, schools, even persons: Suprematism, Russian Constructivism, De Stijl, Malevich, Rietveld, all stopping places in your referential field, these may be playing the role of "roots" in your work. How do you use these sources of inspiration?

T.W. Well, these references mean much more than purely retinal reflections. The affinity with the earlier works of Modern architecture deals more with redeveloping or rearranging spatial ideas. Our relation to them is aimed to somehow distil and blend the powerful poetics and the underlying universalities back to today's world. It is not a nostalgia, but a will for a balance and dialogue. A reworking and rediscovering of architectural potentials in their works on a renewed conceptual basis. Le Corbusier and Mies are certainly among our references too.

M. A-M. The names you mention constitute a key to the place the Modern masters have in our body of reference. Malevich, Rietveld, Le Corbusier and Mies van der Rohe all had the common goal of creating a spiritual vocabulary for modern Man. The emphasis is on



The Ethnographic Collection, Danish National Museum, Copenhagen, 1991-93
Remodelling and structuring of the ethnographical collection in the renovated national museum in Copenhagen. The main concept is anchored on a "light wall" running around the whole floor. Minimalistic new display cases are contrasted by the renewed use of wood. Interactive video information panels in the "wall" permit the visitors to immerse themselves in various information levels of the exhibition

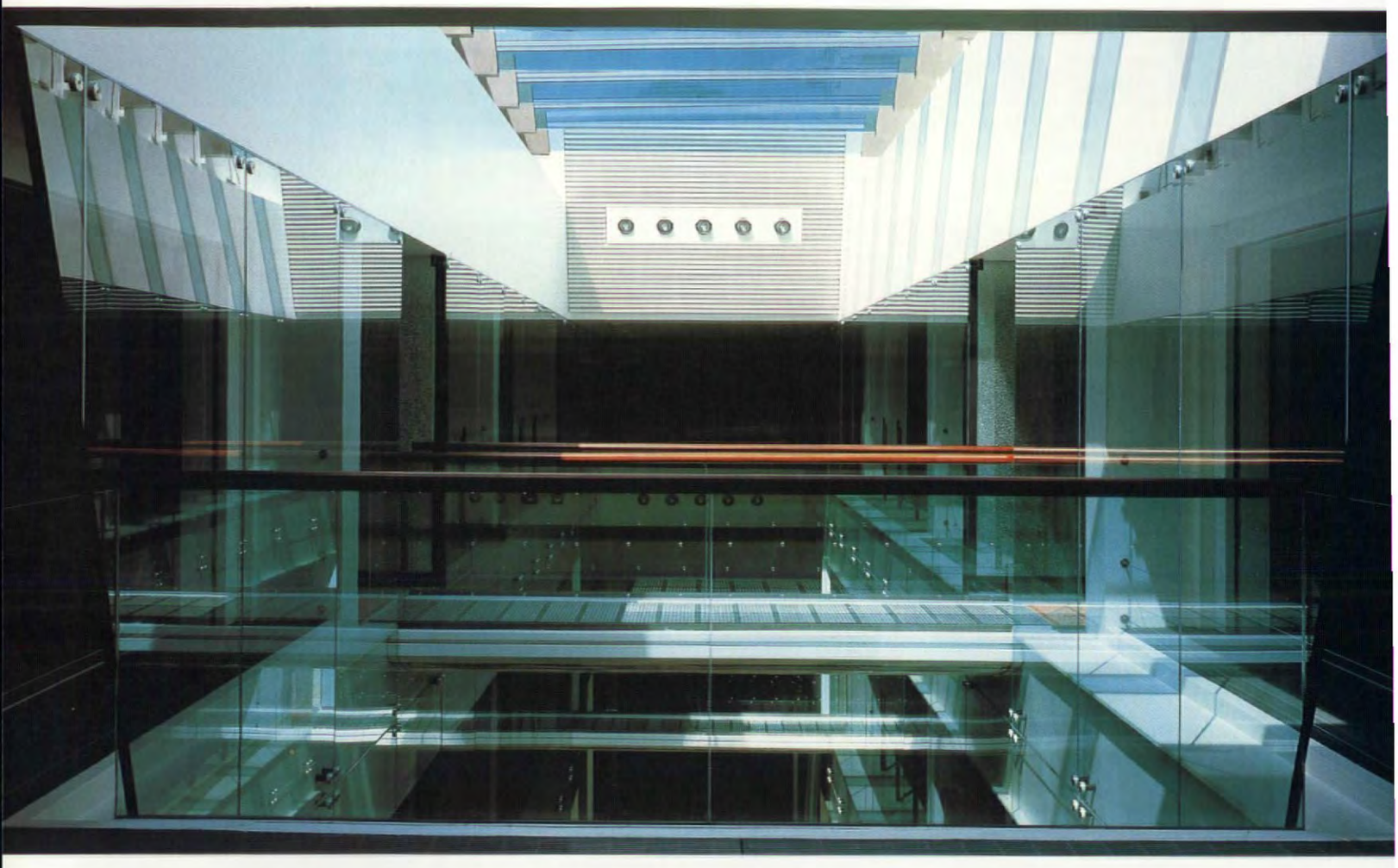
spiritual and modern. I don't think this conflict has been resolved universally today – or that is has even been acknowledged. By studying certain buildings, and by taking them as a point of departure when addressing the problems of today, we might take a step further, instead of backward.

For these architects and other Modernists as well, the point was to express the spiritual possibilities that are exactly as open to the modern world as to the ancients. This is not a question of religion – it has more to do with the Nietzcheian idea, that the spiritual is a potential within every human. A potential wasted in an architecture without ideas.

Do you consider yourself as a part of the wider process of revitalisation of the Modernist ideology? Do you find it is relevant because you lack a strong system of beliefs?

M.A.-M. The big difference between the situation in 1918 and today is ideology. After World War One everyone was looking for a meaning, everywhere. So the original Modern architecture is closely tied up with all kinds of dogma, spiritual or political. One might as well acknowledge this for what it is. On the other hand, after World War Two there was the opposite situation, and Western architecture was antiseptically cleaned of ideas. Today we have a far more open situation, which is really good and I think should be protected. Right now, it is possible to express an engagement in peoples' quality of life, in the environment, or in aesthetics, without subscribing to some grand ideology, or as in The Cold War – denouncing meaning in architecture. From the historical point of view, this is a great opportunity.

I believe the point of using a Modern vocabulary, or rather, beginning from a Modern understanding of space, is that the fundamental circumstances that created Modern architecture are still extant. We still have industrialised building, we still know alienation. There is no way you can go back to Classical forms. □



DRAWING DOWN THE SUN

Architects Jérôme Brunet and Eric Saunier have brought light into the lives of 150 workers at the new Research Laboratories of the Museums of France. Using glass as a structural element, natural light has been drawn down into the depths of a concrete sarcophagus embedded beneath the Carrousel Gardens at the Louvre. Their solution was - for the first time in France - to use glass as a structural element.

In 1989 a competition was launched to design the Research Laboratories of the Museums of France within a concrete shell already installed at the foot of the Flore Pavilion, at the western end of the Louvre Palace. The brief was to draw natural light down 12 metres into the third basement level of the building, with a design that would be strong enough to be in keeping with the rest of the Grand Louvre and that would reflect the highly technical nature of the laboratories.

The winning design was that of architects Jérôme Brunet and Eric Saunier and comprises a giant glass prism, a virtual parallelopiped invisible from the outside which seems to slide down into the basements, being simultaneously a luminous landmark and an interior street. This prism is pierced by footbridges which act as a link between levels enclosed by shattered glass dividing panels. The glass interior partitions disperse borrowed daylight through to the blind circulation and access

(Opposite page and below) View across prism showing footbridges. (Below right) View of a laboratory

areas whilst ensuring the privacy of the other enclosed spaces.

The glass roof needed to support a load of 500 kg/m². It took more than a year of study and experiment to solve the issue of the elasticity and fragility of glass, to calculate its mechanical resistance capacity and durability regarding fire security regulations, and to assess its reaction to thermal and mechanical shock.

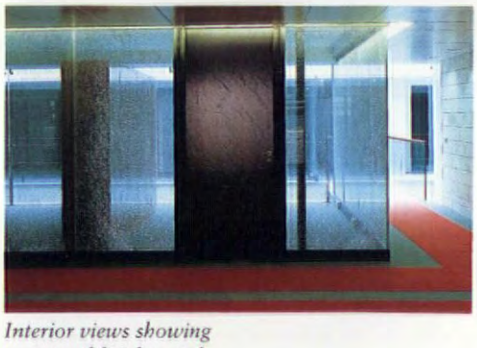
These experiments were carried out at a research centre and resulted in the choice of a layer glass assembled by Macocco. This product is made up of four 15 mm glass sheets interspersed with three sheets of polyvinyl. The load trials demonstrated its good resistance - the glass withstood a load of 14 tons whereas empiric reckonings had forecast a breaking point between 3 and 5 tons. Eleven glass beams of 4.60 by 0.60 metres thus support the 16 by 4 metre glass roof, which has a slant of less than 3 degrees and is divided into 12 glass panels measuring 4. 60 by 1. 40 metres. In the office partitions, each glass panel is composed of three sheets of glass, the intermediate one being crazed. The 2.40 by 1.20 metre modules are secured in rebates at the top and bottom with vertical butt joints. Emergency smoke ventilation is ensured by vertical vents situated on either side of the glass roof and fitted with invisible integrated pneumatic opening mechanisms.

The reception hall is reached from the *saut du loup* (sunken fence). It has a crypt-like appearance: steps lead down to it, there is concealed lighting, and latticed metalwork covers the glass door of the documentation room. The hall opens on to the conference, meeting and documentation rooms, and provides controlled access to the laboratory levels.

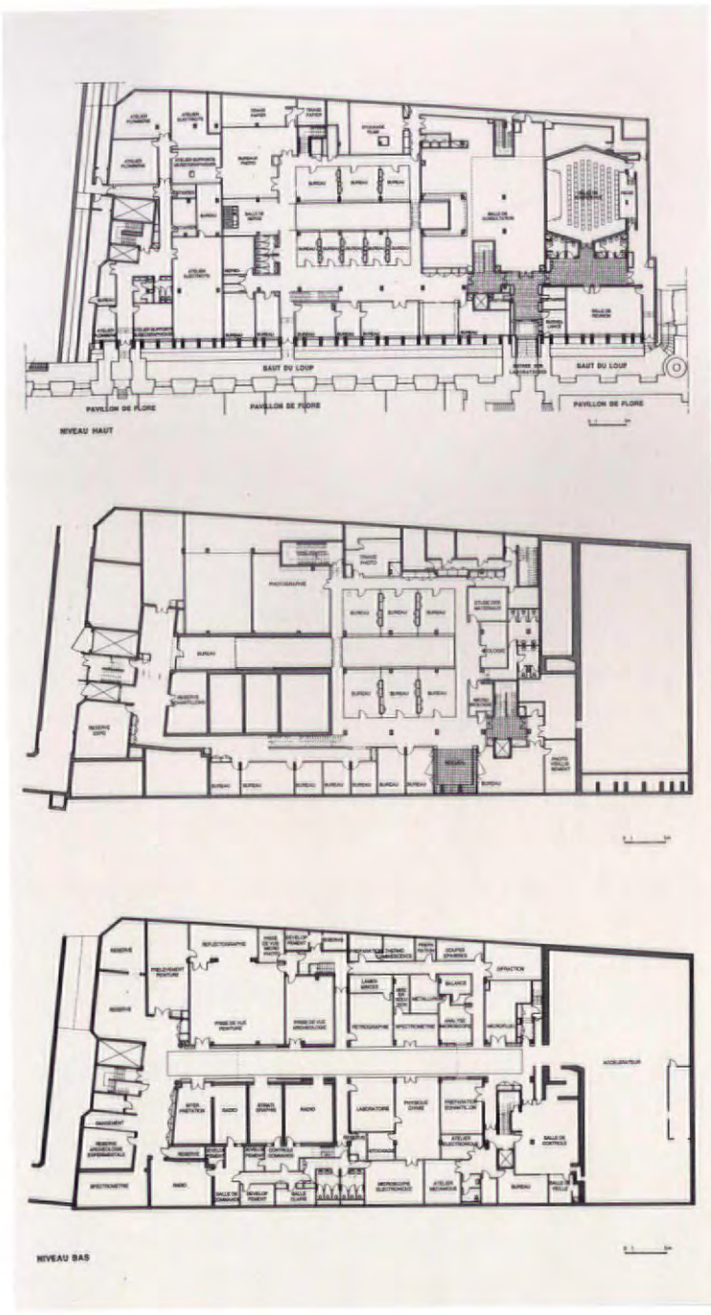
On the upper level, which may be reached through the hall, a long gallery is punctuated by a series of columns and lateral corridors leading to various departments - administration, computer, image research, photography, the documentation, conference and meeting rooms. An existing lightwell for a garden at intermediate level with stone facades accentuates the contrast between the natural light flooding in from the *saut du loup* and the light dispersed by the glass prism.

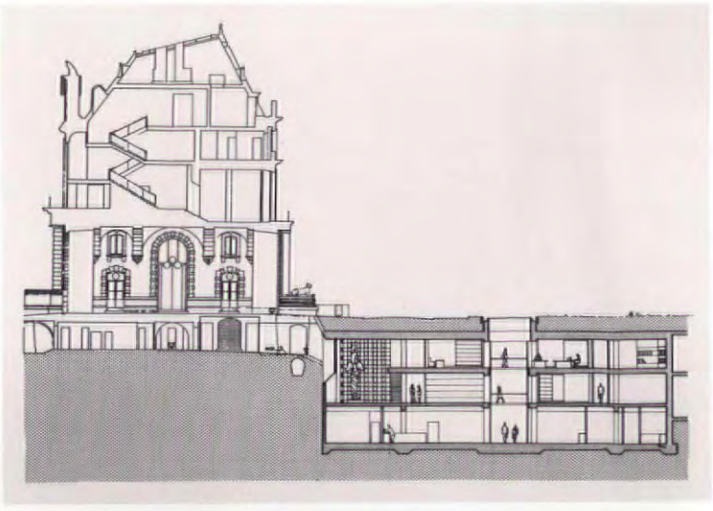
The intermediate level is organized along the same lines as the upper level. A gallery of smaller dimensions connects the offices and the conservation and ageing laboratory. The double height reception zone, formerly the interior garden, houses large scale works, while other common areas, including the perimeter of the cloister, are used as hanging areas and exhibition space.

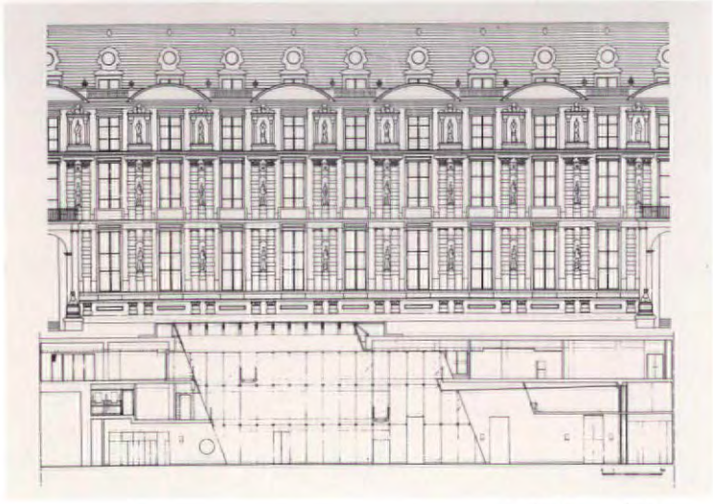
The lower level is made up of a high central "nave" which opens on to laboratories and connects the interior access links to the particle accelerator, the centrepiece of this high technology laboratory. □



Interior views showing variety of finishes and textures and use of fractured glass







(Left) Plans of upper, intermediate and lower levels, with sections (above)

SITE:	Palais du Louvre
CLIENT:	Grand Louvre Public Institution
ARCHITECTS:	Jérôme Brunet/Eric Saunier, architects DPLG Isabelle Vasseur, assistant architect
CONTRACTOR:	OTH
SURFACE AREA:	5,000 m²
WORK SCHEDULE:	Competition - November 1989. Construction - October 1991 to May 1993
BUILDING COSTS:	44,000,000 French Francs Net (1991)

SUBCONTRACTORS

Structural walls, foundations:	Bouygues
Glass roofs, glass facades:	Sitraba
Interior joinery:	Orquin
Tiling, stonework:	France Sols
Plasterwork:	Soe Stuc et Staff
Sheet floor coverings:	Pasini
Paint work:	SPR
Metal work:	Sitraba
Suspended ceilings:	TIA
Climatic engineering:	Lefort Francheteau
Plumbing, laboratory fittings:	Galozzi-Sauvaget
Electricity, fire safety:	Satelec
Lifts:	Otis

MATERIALS

Circulation Area	Walls:	Chassagne rough-cut stone, smooth and perforated plaster work
	Doors:	Polyrey gun metal laminate
	Door handles:	D line
	Lighting:	Erco-Sammode-Legrand
	Electrical fittings:	Legrand
	Flooring:	Fitted carpets - Udirev Taradale Timber flooring - iroko
Offices	Facades:	Patch fitted glazing
	Partitions:	Crazed glass on row steel frames
	Cupboards:	Pear wood
	Floorings:	Fitted carpeting - Udirev
	Lighting:	Erco-Mazda
	Electrical fittings:	Télémécanique
	Doors:	Polyrey gun metal laminate
Laboratories	Draining boards:	UTB
	Floors:	Resin - Servatex
	Lighting:	fire protection - Sammode
Nave	Facades:	Patch Fitted glazing
	Flooring:	Parquet laid on edge - Briatte
Toilet facilities:	Toilet appliances, mirrors, taps:	Sopha-Vola
	Lighting:	Erco

JT=RR

Design and Build is a contentious matter amongst architects. Though most of them denounce the practice of working for contractors, virtually all of them have Design and Build work on their drawing boards and computer screens. In Britain 40 per cent of new construction is already Design and Build and the total proportion may reach 80 per cent by the turn of the century. Peter Wislocki looks at the people and methods at JT Design Build, the architectural practice that put Design and Build on the map.

"A Rolls Royce, not a Ford," retorts Roy Paramor, Chief Executive of JT Design Build, when faced with the suggestion that his firm supply competent, but seldom outstanding products. The automotive analogy seems appropriate. In the early days of car making, numerous workshops produced individually crafted machines, evolving as much through trial and error as rigorous research and development. Today, even the most successful manufacturers are forced to pool resources, maintaining – and often increasing – product ranges, but rationalising the number of components requiring significant new design inputs. The same engines can be found under the bonnets of a wide range of Hondas and Rovers; identical gearboxes drive Fiats, Lancias and Saabs. In the building industry the trends are analogous, even if the tangible qualities of materials and components differ. All architects know that specifying standard windows saves money, time and the risk of technical failure (or at least liability for that failure). Increasingly, buildings are seen as flexible shells, regardless of function. Decorated sheds, as Venturi defined them 30 years ago, are packaged to appease planning authorities, and fitted out to satisfy user requirements.

Design and Build has flourished in this context. About 40 per cent of new buildings in the UK are currently supplied by this

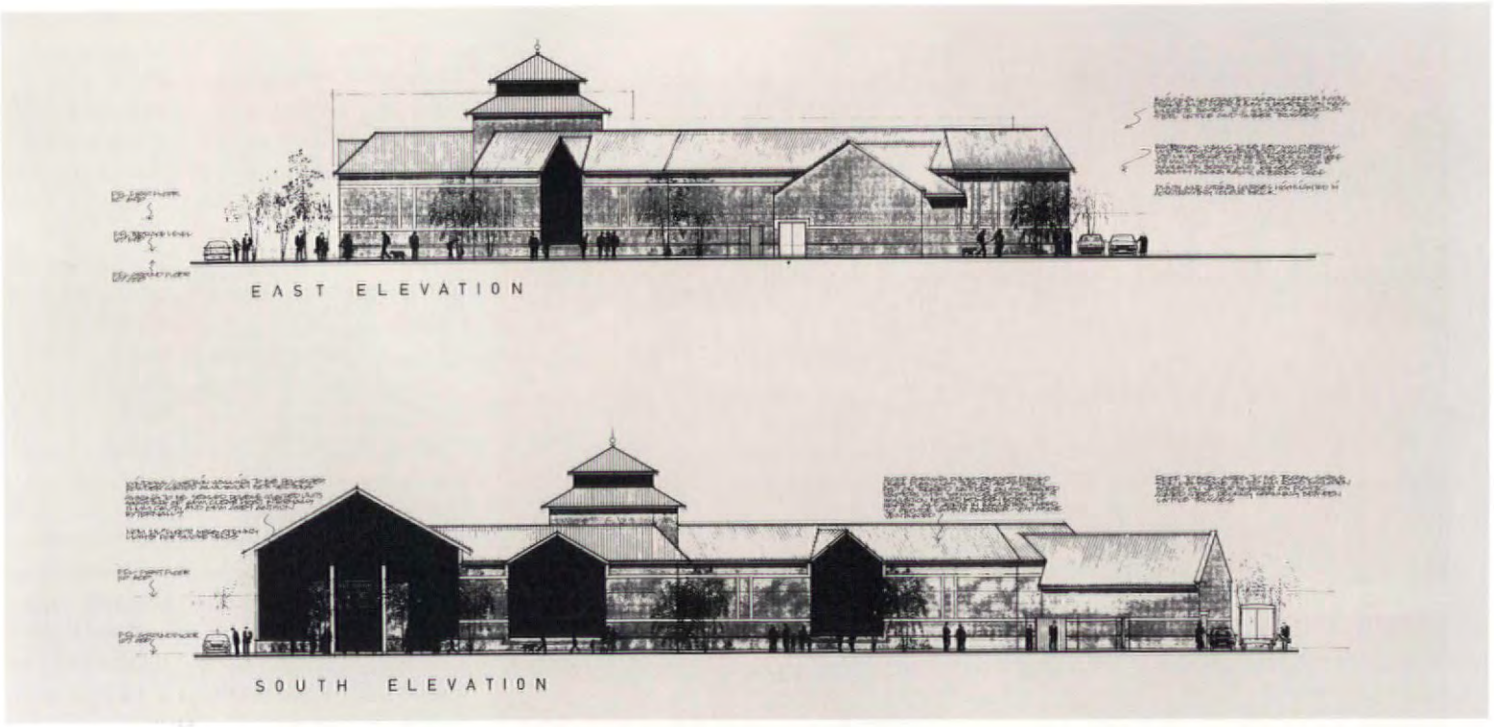
Tandridge leisure pool (left) and District Council offices (below). BAA building (bottom)

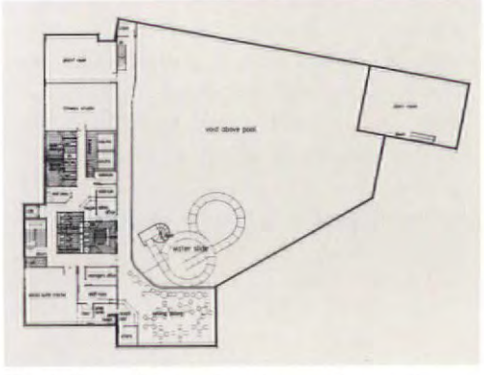
method, and JT believe that their sector will grow to command something approaching 70 per cent of the construction market by the end of the decade. Is this a prospect the architectural profession should be frightened of? Design and Build's reputation for mediocrity is no more (or less) deserved, generally speaking, than that of less distinguished buildings procured by more "traditional" methods. Architects who criticise Design and Build don't always produce better buildings themselves; but can't compete with D & B's guarantees of fixed prices and completion dates. In a market where so many clients want essentially the same product – sensible, mainstream, adaptable buildings, delivered on time and within agreed budgets – bespoke designs are the exception, never the rule. Fords sell well because they may be (culturally, at least) unadventurous. The fashion-conscious minority who scoff at them seldom drive technologically more sophisticated vehicles, merely more distinctively styled ones. Design and Build provides buildings which are functionally and technologically as good as many architect-designed alternatives; and often look little different. And as Adolf Loos observed in 1898 in his commentary *On Gentlemen's Fashion*, good taste (and an appreciation of good design) can be "...a question of being dressed in a way that one is least noticeable." Ready-to-wear suits have set a standard of socially acceptable clothing since the turn of the century; so why not ready-to-use buildings?

Large D & B contractors offer building purchasers much the same as volume car makers offer motorists. Loos wrote his most celebrated critiques of design and society in the same decades as Henry Ford was transforming cultural expectations through the mass production of his Model T. The achievements of Loos and Ford are now largely admired. But Roy Paramor sees JT as a Rolls Royce amongst D & B contractors, not a Ford.

JT stand apart from other Design and Build contractors in several respects. Architects first (historically) and builders second, they argue that their method of building procurement is not a recent innovation, but a return to a traditional norm which was only widely questioned since the rise of professional specialisations in the nineteenth century. Nash, amongst many other celebrated architects, could have been categorised as a design-builder. After 33 years in the Design Build business, JT believe that they provide a level of service which clients demand – a belief supported by the number of repeat commissions they continue to receive. BAA plc, owners of six of the UK's biggest airports, have over the last decade commissioned a steady stream of buildings from JT, always competitively tendered, up to a cumulative value of about £50 million. Whilst problems inevitably arise from time to time, David Williams, BAA's Project Director, appears a well satisfied client.

JT employ a full spectrum of professionally qualified staff, and advise clients on funding and finance as well as more obvious design-related issues. In recent months, however, following Roy Paramor's "management buy-in" of the company, the numbers of in-house design and project management staff have been halved, and design is increasingly being subcontracted to consultant architects. This policy reduces JT's overheads, and ensures that individual projects benefit from the specialist skills and local knowledge of selected consultants, without removing the most significant benefits of D & B from the client's perspective: one point responsibility, with fixed prices and programmes. Whilst the "buildability" of designs is less easy to control, limited experience shows that close working relationships between in-house design staff and external consultants can be mutually stimulating and productive.





Tandridge pool (top), Oxted pool (above and right). Tandridge pool interior (far right)

In what context should JT's "Rolls Royce" classification be appraised? Asked to illustrate the quality of their service, Rob Davis, the company's chief designer, cites the example of three recent projects in Surrey, which collectively demonstrate how local authorities can work with private enterprise to develop public facilities at reduced cost. Tandridge District Council's new offices in Oxted, built by JT, were substantially financed through the development of retail facilities in nearby Caterham town centre. Both these projects were completed in 1988.

Of course such creative financial arrangements are not unique to JT's projects – or even to Design Build generally. JT believe, however, that in the context of such deals, fixed prices and accelerated programmes are of paramount importance. Even the most celebrated signature designers have occasionally won jobs on the basis of efficient programming and buildability – Michael Hopkins at Lords, for example. But, according to JT's argument, only a highly systematised procurement route can guarantee such efficiency and reliability every time – systematisation being a key component in achieving consistency, if not innovation or excellence, in all manufacturing processes.

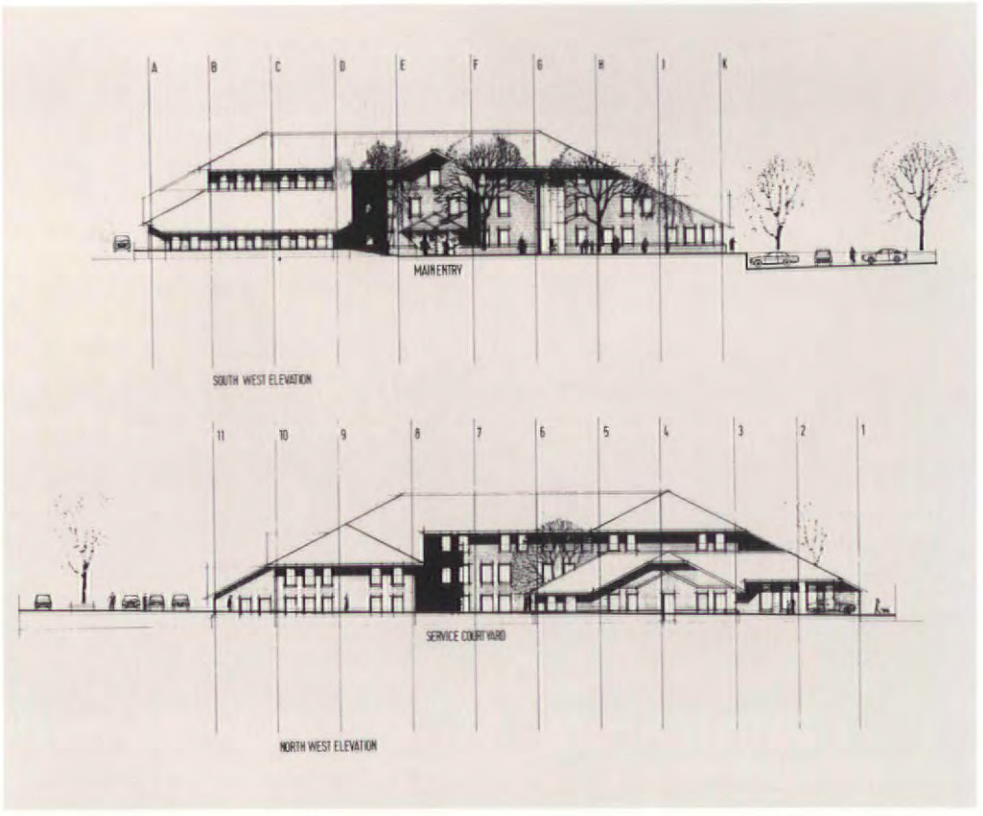
In the case of Tandridge District Council, JT's commission was won through its partly-owned development subsidiary, Sheraton JT, which had a successful record of land swap initiatives providing local authority accommodation. The use of Design and Build contracting, provided within the same group of companies, allowed the developer to have tighter control over the programme, thus maximising potential gains in land values.

The dependability argument in favour of Design Build is, of course, well rehearsed. Professor Norman Fisher of Reading University's Department of Construction Management makes the point that construction has become a manufacturing process, with components substantially fabricated off-site. Recognising this reality, designers and project managers increasingly look to established industries – notably automotive and aerospace – to evolve more efficient procurement processes. The aircraft manufacturer Boeing, Fisher points out, is amongst many leading companies which apply the "standard box" criterion for design appraisal. The "standard box", in any context, is the simplest and cheapest option that will meet a given requirement; the selection of any design which might be more complex and costly has to be justified against the "standard box" datum. Of course, on many occasions, justifications for surpassing the "standard box" can readily be found. The assumption that this kind of thinking inevitably leads to mediocre results is challenged, Fisher argues, but the fact that Boeing's designs consistently win the admiration of leading architects – most notably Norman Foster and Richard Rogers – whilst retaining its domination of the civilian aircraft market for a wealth of more pragmatic reasons.

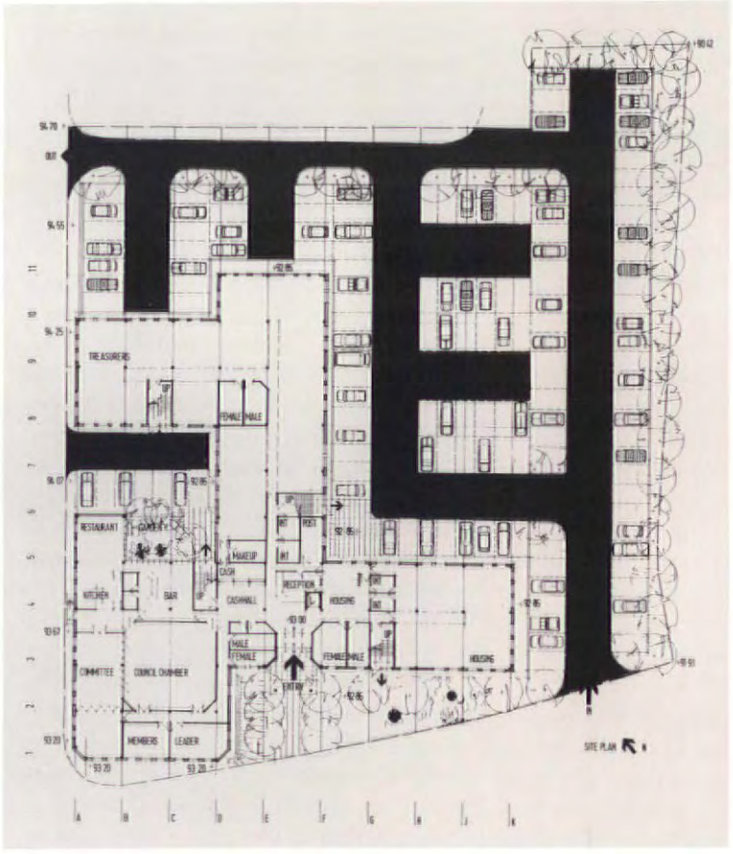
Architects often use the term "standard box" pejoratively, typically with reference to the output of JT and other Design Build contractors. In which sense are JT's buildings in Oxted and Caterham "standard box" in Norman Fisher's terms? The building's massing is complex, in order to disguise its bulk in relation to smaller-scale neighbours. A more literal "standard box" simply wouldn't have got planning permission – JT's solution being quite skilful, but ultimately purely pragmatic. Otherwise, most things about the building are emphatically standard. The external envelope is of planar, unarticulated brickwork; a single window type has been used throughout; and the offices have uniform suspended ceilings. All of these qualities disappoint architects who enjoy complexity and invention, but satisfy a client with limited means and significant needs. Furthermore, the specification of each of these elements – the brickwork, the windows and the ceiling – is not the cheapest possible: an example of life-cycle costing being used to justify improvements on the crudest possible "standard".

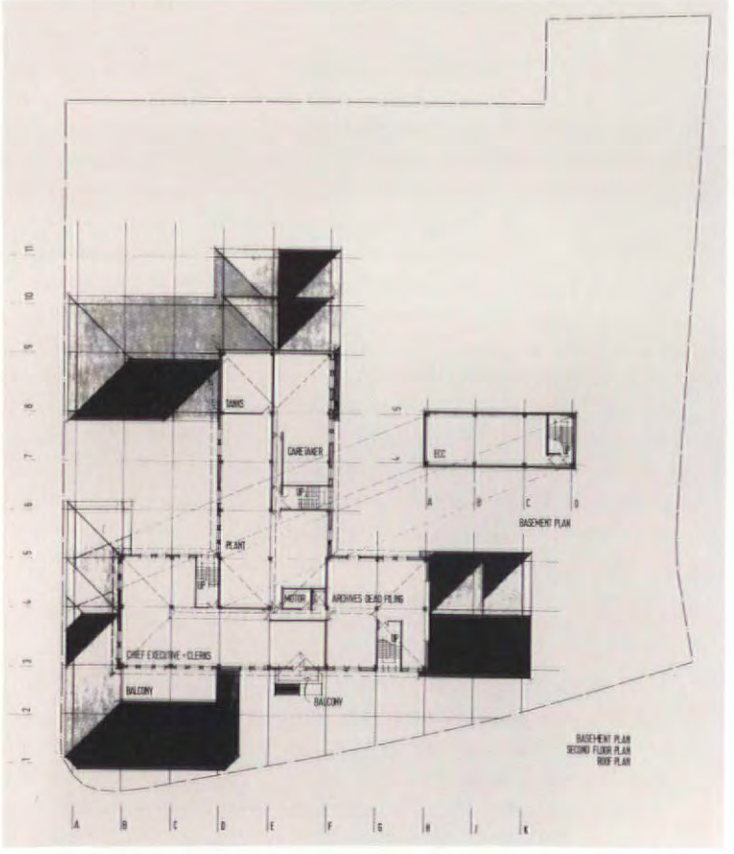
The materials and finishes of the Caterham development are of a similar quality, and some details, such as the splayed shop window bays, provide visual relief as well as display opportunities for retailers. JT have knitted a large volume of retail units into a difficult, steeply sloping urban site. Just as at Oxted, complexity is allowed – and skilfully achieved – for the most imperative of reasons. Whereas shopfronts in Caterham's Church Walk look adequately solid and reassuringly traditional, the concrete structure of the car park is honestly expressed, with an elegant cantilever at the building's edge. At roof level, where savings could be achieved, finishes are of the most basic possible standard.

The Oxted offices represented Tandridge Council's first experiment with Design Build, and they were sufficiently impressed to pursue the same procurement path for their next major investment: the Tandridge Leisure Pool. In order to safeguard public interests, a number of



Caterham retail shopping (above). Tandridge District Council offices (right and below). British Airports Authority (far right)





D & B contractors were invited to tender. JT won the commission in July 1988 on the basis of competitiveness and considerable experience of leisure facilities. The resulting building has proved popular with the public, and whilst lacking the sophistication and flamboyance of similar facilities designed by practices such as Faulkner Browns, it serves its purpose quite adequately, simultaneously allowing competitive swimming and aquatic fun. Essentially a steel framed shed, clad in "contextual" brickwork and decorative accretions of tile, the building's entrance is embellished with a slightly gratuitous, but visually striking trussed porch.

Taken together, JT's Surrey projects can be said to do all the right things in the right places: set backs to hide bulk; gables to mark entrances; flumes to excite children. Counsellors and Council Tax payers alike appear satisfied with developments which have offered unsurpassed value for money. But are these buildings worthy of a public authority? Is this civic architecture?

Of JT's clients, BAA have demonstrated the greatest awareness of the firm's strengths and limitations. Enterprise House, a four-storey, 9,000 square metre office block adjoining Norman Foster's terminal at Stansted, was completed in a 15-month period within a budget of £10,500,000. BAA believe that a traditional procurement process would have taken several weeks longer, and cost about 25 per cent more.

BAA is, of course, a highly professional client, with a continuous programme of development, refurbishment and expansion of passenger and ancillary facilities. Norman Fisher's chair in Construction Project Management at Reading University is sponsored by BAA, which clearly takes its selection of consultants, and appropriate procurement route very seriously. So if Roy Paramor believes JT to be the Rolls Royce of the building industry, why have more glamorous projects, such as the Stansted terminal at Heathrow's Terminal 5 eluded them? Even in the case of Enterprise House, JT was awarded the contract after Sir Norman Foster and Partners had produced a sketch scheme, and BAA's in-house engineers had defined testing performance specifications for the services and structure.

The answer, Paramor argues, is partly to do with size. JT (as a contractor, rather than consultant architect) simply isn't big enough to handle Terminal 5. But more fundamentally, if JT claims to be the D & B sector's answer to Rolls Royce – producing a high quality product in a limited production line – signature designers like Foster and Rogers will always remain to occupy the "Morgan" market within the construction industry – unique, handcrafted, bespoke commissions for the most discerning and affluent clients. As BAA's David Williams confirms, Design and Build has served them well for straightforward projects, completed swiftly to well defined briefs. An international terminal building would be an altogether too complex and dynamic proposition, given a typical period of over ten years from inception to completion, with countless variation throughout the design and construction period. Nobody could expect a Design and Build contractor to fix a contract sum and a completion date given these complexities – so other procurement routes, inherently more flexible (if consequently less predictable) are always BAA's preference.

Looking towards the future, if current trends continue as Roy Paramor believes, Design and Build will account for the majority of UK construction; a market within which JT can justifiably claim to be amongst the best producers. Not every Design and Build contractor could tackle the contextual complexities of Caterham town centre; or even be entrusted with relatively straightforward work for BAA. Most buildings will remain simpler and less challenging: "standard boxes", in every sense of the words, and hardly meriting the title of "Architecture". This is as obvious today as it was at the turn of the century, when Adolf Loos exaggerated the argument stating that only the tomb and the monument can be described as works of art, all other structures being merely buildings.

The architectural profession – and even more so, schools of architecture – must accept this reality, in order to break the cycle of self-inflicted frustration and disillusionment. JT may indeed claim to be a Rolls Royce. Most car designers are happy to work for Ford and Fiat; and, as a result, talent and innovation have been applied to products which even the less wealthy consumers can afford. The current generation of professionals and academics could bring immense social – and creative – benefits if they shed their prejudices against

Design Build, and realised, as the diverse intellects of Henry Ford and Adolf Loos anticipated nearly a century ago, that the greatest cultural and economic good might be achieved by accepting the inevitable consequences of developments in industry and management. If we accept Norman Fisher's view that construction and manufacturing are essentially synonymous, and that both require systematisation for the achievement of quality, then Design and Build's popularity is indeed set to increase. Fewer – but better – prefabricated components will make higher standard of design and assembly accessible to ever greater numbers of people: a dream of Walter Gropius over half a century ago, being realised by car-makers – but not yet building – today.

Economics and technology may indeed favour increasing use of Design and Build contracting. But the potential benefits, in design terms at least, will remain severely compromised while JT and others cling to traditional imagery and outmoded technologies. Roy Paramor's ambition to be the Rolls Royce of the Design and Build business is disappointing. Whilst the exclusive British manufacturer might indeed be associated with reassuringly familiar aesthetics and meticulous fabrication, Ford's infinitely greater investment in research and development has propelled them far ahead of Rolls Royce in both social and technological achievement. □

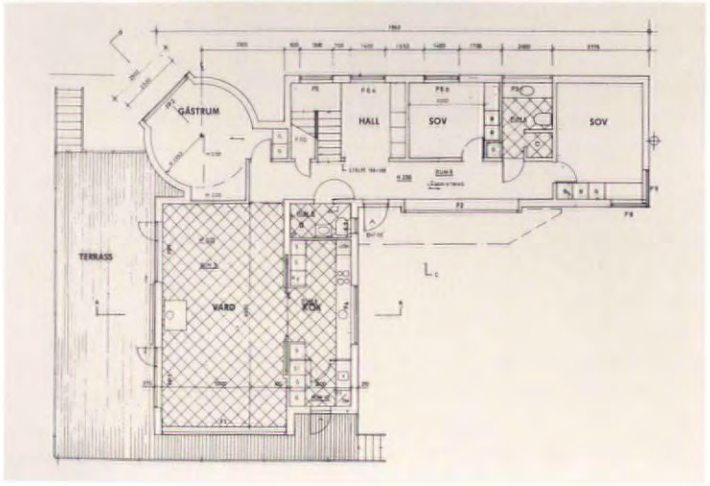
All photos this spread Jan Svenungsson

Summer House in Aspö, Karlskrona, Sweden, 1991

Architect: Thomas Sandell

The house is located on a peninsula in the Karlskrona archipelago area, and is at an angle in front of the site's high plateau. The two wings, reflecting the main functional separation of the spaces into a bedroom area and the hall, are linked by a two storey studio tower. Two large window sections open out onto the large terrace from the main hall space.

The house is clad with tarred shingles and white painted timber panelling. Thus the architecture of the building works as an allusion to both the traditional domestic hut image with its organic timber skin-like finish, and typical ship architecture with its white walls, circular windows and tube railings on the terraces. The latter resemble ship deck timbers.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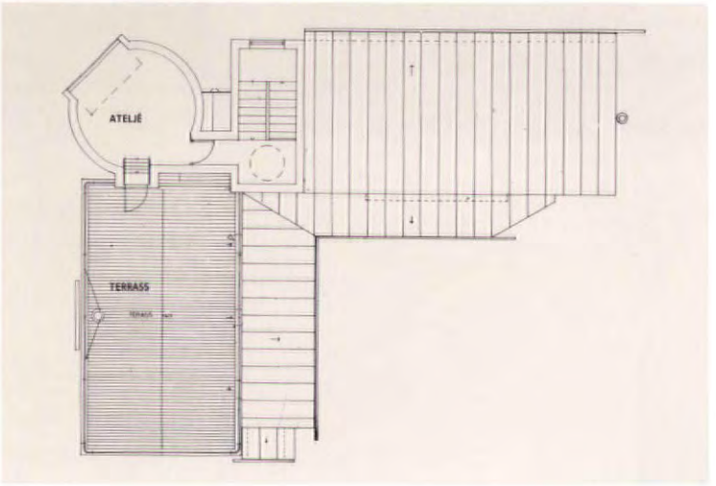
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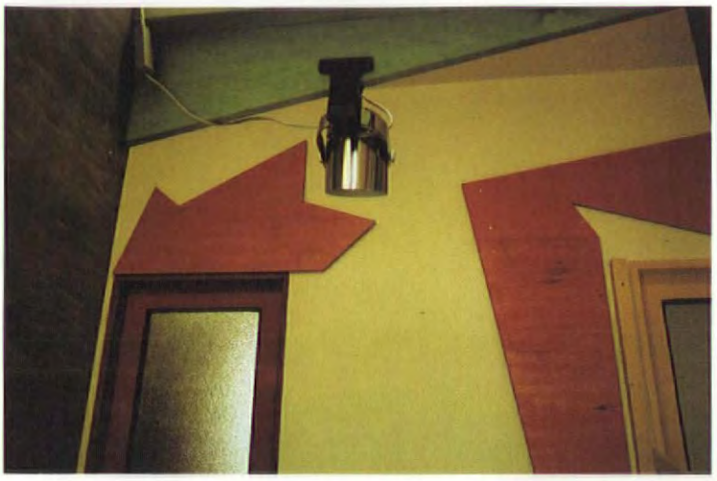
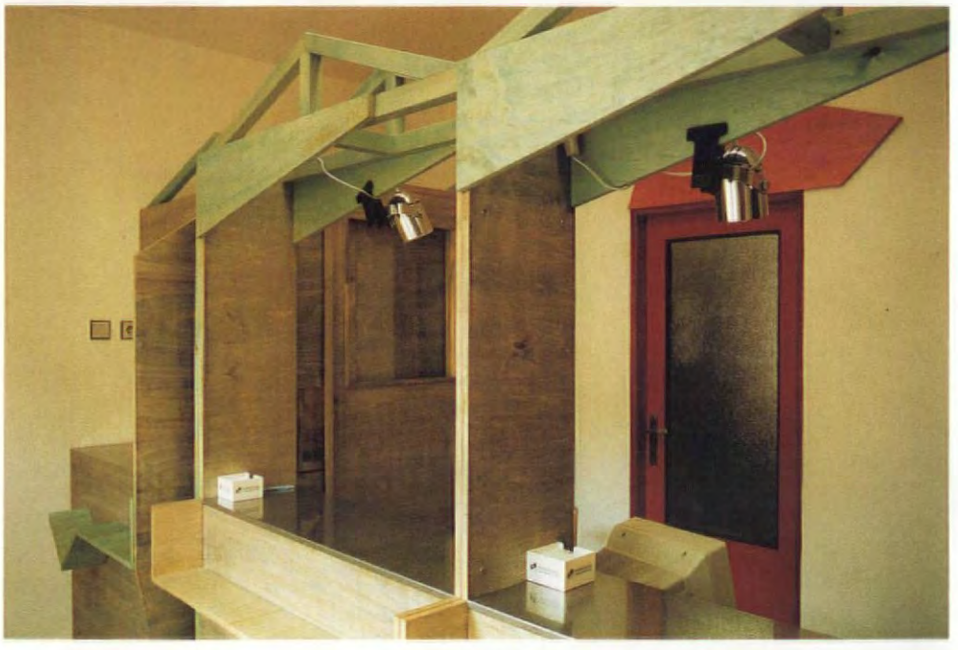




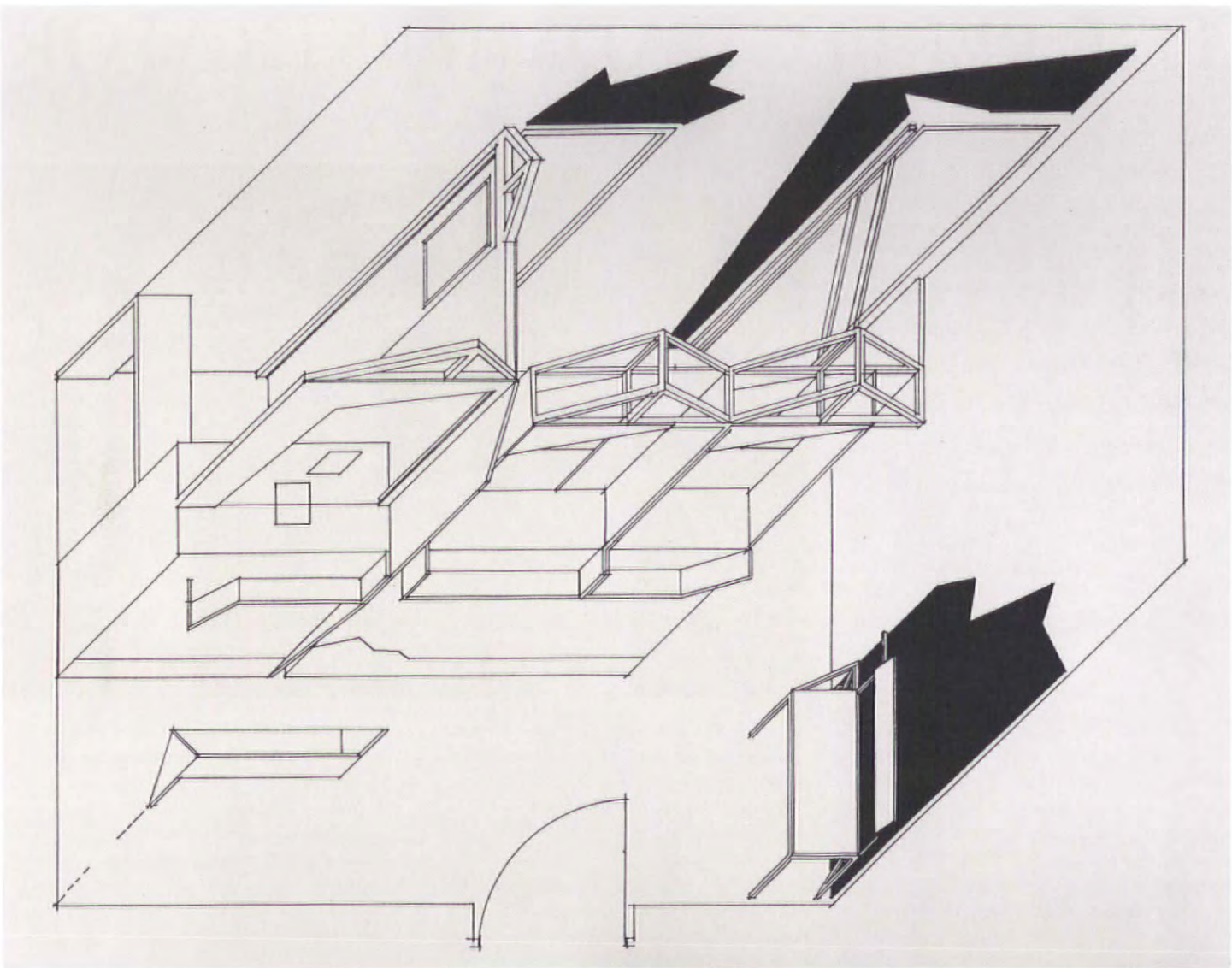
Temporary Bank,
Nove Mesto nad Metuji,
Czechoslavakia, 1991

Architect: Alexandr Skalicky, Atelier Tsunami.

Before the 1989 revolution, the National Bank was located in bigger towns and its clients had to commute - there was no other bank. Privatization of national property brought with it a series of smaller banks which gradually extended their network of branches. The Commercial Bank situated in Nachod also decided to locate branches in small neighbouring towns and decided to open a small temporary branch in Nove Mesto nad Metuji to examine the possibilities of the banking market.

A very small budget was allocated for the design of the interior. The whole bank consisted of two rooms, one of which served as a banking hall and the other as a room for clients. It was impossible to carry out any structural modifications or to use demanding technologies. The budget only allowed for painting the rooms and doors and for furnishings, but the investor nevertheless expected the interior to be distinctive enough to attract attention.

The interior was designed on the principle of contrast between a traditional three-dimensionally deformed shape of the counter and the colourfulness contesting structure of the used material. It was impossible to furnish the spaces and cashier's desk with sectional furniture. The designed interior fulfilled its purpose successfully. Two years later, the Commercial Bank moved into a larger premises and these rooms were closed down. □



THE PERFECT ADMINISTRATOR

The architectural task in the East is enormous, two billion people to be employed, housed and served. But fortunately the profession is well organised and ready to shoulder this development burden. Graham Vickers talks to Hj Esa Bin Hj Mohamed, president of the Malaysian Institute of Architects, on a recent visit to London.

Diligent readers of *World Architecture* may recall Charles Correa's mild criticisms of jet-setting architects in WA 27. The fact that he made these criticisms whilst himself on a flying visit to London should not detract from his central point, namely that architects ought to spend more time working at home instead of flying around the globe devising artful structures for foreign countries whose cultures they cannot possibly understand.

I was reminded of this theme of cultural dislocation whilst trying to track down the current President of the Malaysian Institute of Architects, Hj Esa Bin Hj Mohamed, during his recent 24-hour stopover in London. By six in the evening, defeated by his punishing schedule, I had given up and was musing on the itinerary quirk whereby only the week before I had been in the Malaysian town where one of Mohamed's offices is located, when I received a call informing me that my quarry had surfaced at the Ritz Hotel in Piccadilly.

There are interviews and there are interviews. This one took on a slightly weird cross-cultural texture all its own, being conducted in the hotel's restaurant and accompanied by a gypsy quartet with a highly international repertoire and a performing style best described as the musical equivalent of ormolu.

So it was between lustrous glissandos and decorative arpeggios that Hj Esa Bin Hj Mohamed sought to explain how booming Malaysia is in urgent need of an indigenous architectural style.

"We don't have writers or reviewers in Malaysia who can take an overview of what is happening" he began, to the ebullient strains of Czardas. "Everyone is bogged down by commercialism – clients tell the architect what they want, regardless of whether the end product is appropriate to the local culture or climate. As a result, the urban environment is not determined by the architect but by entrepreneurs and developers. Our architects are always subservient to their paymasters. As president of the Institute of Architects one of my tasks has been to try to change this attitude."

Mohamed looks like an advertising executive and talks like a high flying civil servant. But what does he do? The presidency is traditionally a two-year stint and this is his second year of incumbency. His own firm, Akitek Jururancang, is described as "Architects, Town and Regional Planners", and has two offices, one in Kuala Lumpur, the other in Johor Bahru. His personal talents appear to take the form of a facility for the pragmatic overview rather than a dialectic approach. Trained at the University of Newcastle in Australia, he graduated in 1972 and after a couple of years out took his post-graduate in Town and Country Planning at Sydney.

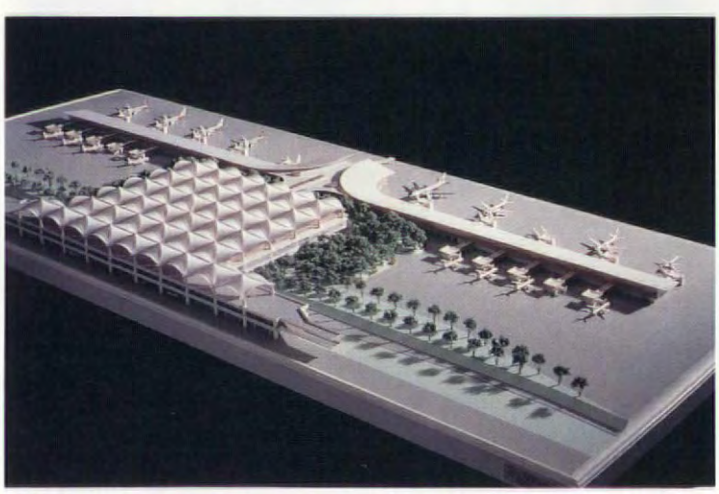
"I returned to Malaysia in 1976" he says, modulating in response to the quartet's abrupt downshift into *Lara's Theme*.

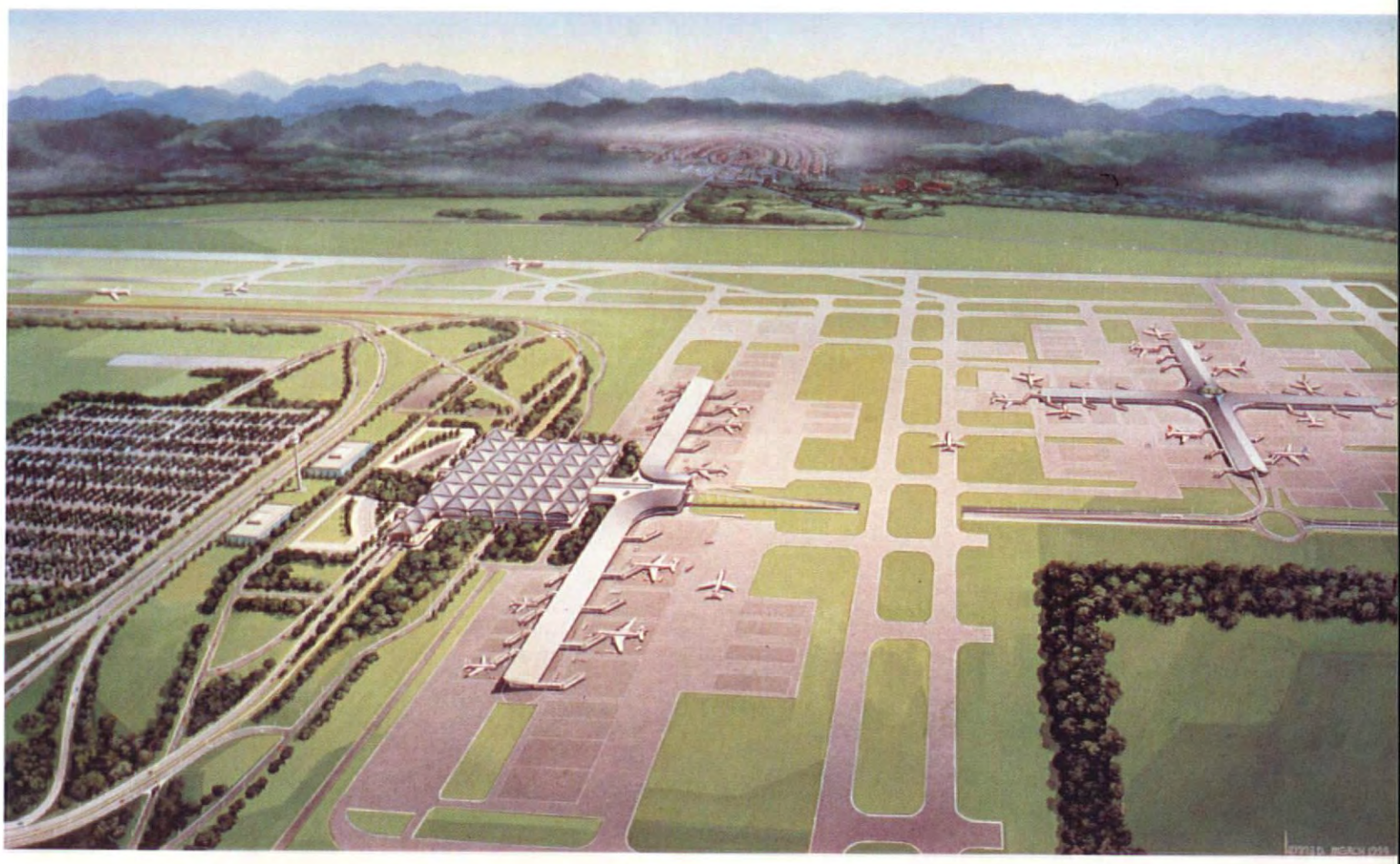
"That's when I started working for a company that was at the time seconded to City Hall to do the 1978 master plan for Kuala Lumpur".

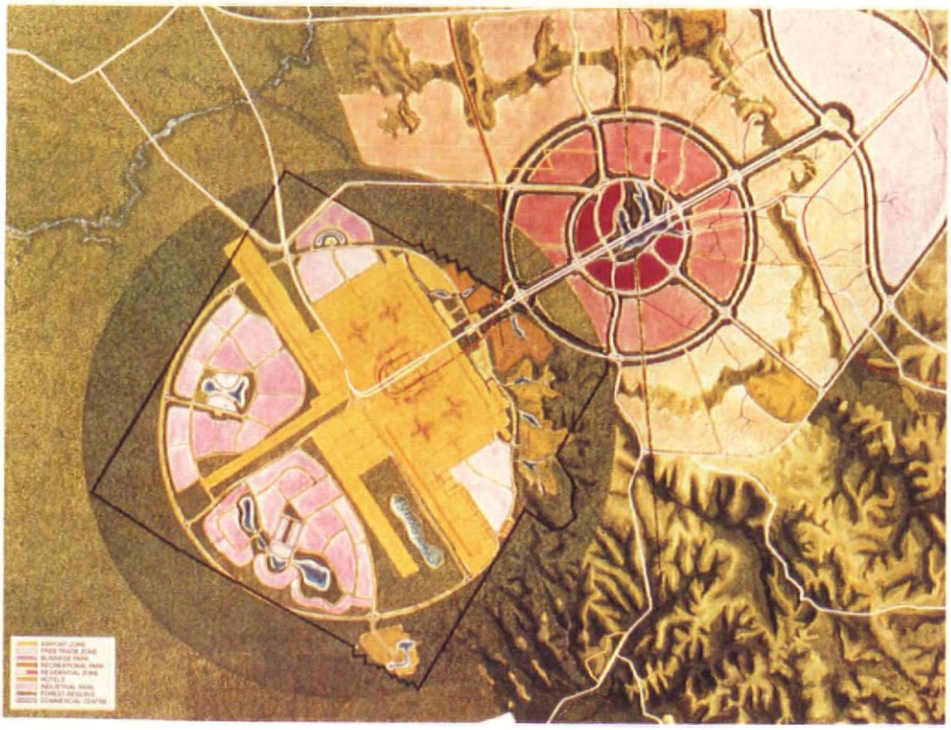
In Malaysian terms, that 16-year-old plan is now part of pre-history, and today Mohamed is again working closely with the government to try to alleviate some of Kuala Lumpur's problems of rapid expansion. He says he is impressed that the government is alive to the difficulties of the architectural profession, but he also believes that in reality they can do little more than give or withhold planning permission in individual cases. It is up to the profession itself. Meanwhile Malaysia grows apace.

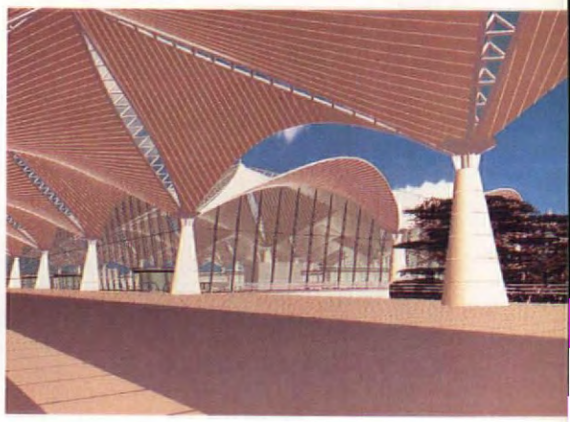
"No one anticipated this scale of growth" he says. "The existing infrastructure of Kuala Lumpur is no longer sufficient to cater for

The National Electricity Company (Tenaga Nasional Berhad) Headquarters Complex project. (Top) Stone-based tower block. (Left) Masterplan, model (above)









The new Kuala Lumpur International Airport (above and on opposite page). Architects and planners: Akitek Jururancang (Malaysia) Sdn Bhd and Kisho Kurokawa Architects Associates

Datai Bay Resort, Lang Kawi, Malaysia. Architects: Akitek Jururancang (Malaysia) Sdn Bhd and Kerry Hill & Associates

what it is experiencing at the moment. We now need a review every five years. Just recently we finished a proposal to the government for a new overspill city. My practice has done master plans for various towns, including Johor Bahru and a few new town developments. Currently I'm working on the new international airport."

For Malaysia the model of Singapore hovers on the other side of the causeway, living proof of what happens when high levels of growth collide with an architectural vacuum.

"As you know, all the famous architects went to Singapore to do one building" Mohamed says. "We are quite concerned that the same thing doesn't happen to Malaysia. But of course the state of the economy and the buoyant building industry does attract a lot of big name architects – to Kuala Lumpur in particular. Unfortunately, not many people are asking 'Is it appropriate? Is it sensitive to promoting local industries and local talent?'"

Mohamed also sees unwelcome domestic echoes of the architect's decline in the UK and elsewhere.

"Unfortunately the profession has relinquished status and control, but it is very important for us to ensure that Malaysian architects have a standing, not only nationally but internationally. At the moment the public doesn't seem to perceive the architect as what he once was and what he should be again."

Which is?

"The captain of the building industry" Mohamed replies. Right on cue the ensemble launches into a stirring rendition of *The Liberty Belle*.

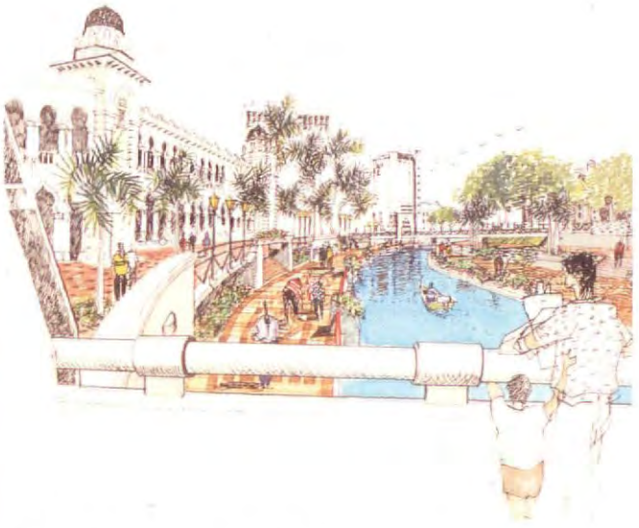
If Mohamed's analysis seems sound enough, his strategy for putting things right remains elusive. What has he actually done? What can he actually do?

"Firstly, architectural education must be centred in Asia" he says. "We send students overseas, then when they come back, naturally they've been influenced by what they have experienced. They're the ones who are most active and to a certain extent they import a sort of international style. At present we have only three schools of architecture in Malaysia.

"Secondly, architects have to make sure that their professionalism is intact. They should not compromise. At the moment, if a client demands an office building that looks like that, they get one that looks like that. The architects have no positive influence, and the only way for them to acquire it is to unite and understand what is needed to develop a vernacular language locally rather than getting it from overseas."

I ask him about his compatriot Ken Yeang's one-man crusade to synthesise a whole series of tropical building characteristics into a contemporary architectural style –

Proposed plan for Kuala Lumpur City River Development



no shortage of vernacular aspirations there, surely, notwithstanding Yeang's very English education?

"Ken is one of the few trying to promote a language that is tropical" Mohamed admits with an indulgent smile as the violinist embarks upon *Perfidia*. "It's a noble idea but it's ahead of its time – the general public is simply not able to grasp the philosophy or the practicality of it."

With Yeang's Sisyphean task put firmly in perspective, what, I wonder, does Mohamed's own practice bring to the process of change?

"I think I do mainly urban design. I try to fit the various building forms into a design context" he replies. "It's a complex process. In Australia I gained a fairly comprehensive view of what the architect should be in practical terms – not just being good at design, but also being good at construction and at management.

"I believe that being able to design well means knowing how to put all kinds of things together, not just buildings. You must be capable of being manipulative to some extent in order to achieve your ends. Management of people is very important for architects."

Mohamed tends to confound with reasonable sounding generalisations. The specific never gets discussed. Perhaps he is a civil servant.

"I was talking to some students today" he continues. "One of them said to me 'You have this idea that the architect should be leader of the team – which just means you see yourself as the boss'. My answer to that is very simple – it's that there's a difference between being a leader and being the boss. Being the boss is just being autocratic. Leadership is about gaining the respect of the other people around you in the team. And you can only do that by becoming expert in their fields."

But how can the architect hope to become expert in so many increasing complex disciplines?

"The architect simply has to do a lot more research. Education must go on, you can't stop after getting your degree. The clients are becoming cleverer than the architects. They're the ones who see the world, they're the ones who travel first class."

It is time to leave Esa Mohamed to get ready for his first class flight home. I have failed to extract a single shred of information from him about exactly what he has done, but in the vague hope that a faithful record of failure is some sort of success, I take my leave of him, partly because I can think of nothing else to ask him and partly because I have always loathed the theme from *Un Homme et Une Femme*. □

OUTWITTING SPACE

From Shinto to Ando; studies in architectural anthropology in Japan. *By Gunther Nitschke. Academy Editions: Ernst & Sohn. 104pp. £27.50.*

Reviewed by Gillian Darley

When the Emperor Hirohito died in 1989 the Japanese threw away their calendars. The Showa Era had ended after 64 years. Now it was Year One of the Heisei era.

In the past, the change to a new era would have called for the establishment of an entirely new capital city. Less extreme in its measures, modern Japan is still guided by a constant succession of cycles, whether of seasons, imperial eras or simply the constant renewal of the physical fabric. Time is a guide and yet it is, oddly, constantly being outwitted.

Gunther Nitschke is an architect and town planner who has evolved his own systematic anthropology of Japanese building, based upon 30 years' research. His essays, loosely connected, follow the notion and practice of cyclical reconstruction, set against the rich but often obscure background of the symbolism of time and space within Japanese tradition and religion.

Nitschke takes his thinking a step further, with varying success, in order to test certain of these principles against contemporary architecture. He limits himself to Tadao Ando and Hiromi Fuji, and deals – extremely briefly – with precise aspects of the relationship of buildings to site.

He writes of the *en*, a flexible space, sometimes virtually a veil, between the townhouse and the street. Traditionally protected by wooden lattices or the *noren*, a split fabric curtain, Gunther Nitschke finds parallels, in formal terms at least, in the screening of Fuji's Project Mizoe 1 and in Ando's Horiuchi House, Osaka, where a freestanding glass block wall creates an intermediate sense of space. Yet despite the obvious similarities, in Ando's case self-stated, there is little sign in either example of the subtle blending and shading of public into private space that guided the traditional treatment of this zone.

The effort to "outwit" spatial constrictions is, of course, a constant determinant of Japanese design. It was in Japan that the Chinese notion of *shakkei* or borrowed scenery, was incorporated into garden design with consummate wizardry; from the complex, miniaturised scene at hand, the strolling visitor looks out at some distant view, framed and captured as an idealised vista.

Within the city, the handling of an entrance can offer a similar sense of *trompe l'oeil*. By a succession of sleights of hand, Ishikawa Jozan designed the leafy, climbing passage to his Kyoto retreat, built in the mid seventeenth century, as if it were traversing a great area. In fact, he achieved the effect by a series of devices which Nitschke enumerates. Shifts in level, shifts in aspect, shifts in outlook, all contribute to a sense of almost limitless space and to the state of mind which follows.

Against this example, Nitschke sets the attenuated entrance path to Tadao Ando's Chapel of Light at Rokko, near Kobe. Here the connections are more resonant. Ando's restraint, dealing on the way with the immediate bathos of the setting in the grounds of the Oriental Hotel, is exemplary.

Elements of the landscape and the distant sea are introduced at intervals. The visitors pass in and out of tunnels, lit and, finally, darkened. Suddenly they find themselves upon the chapel, but looking down into it. Ando sets the scene for a journey to a spiritual destination, even a somewhat outlandish Christian one, and keeps his promise.

Nitschke's contemporary allusions prove to be insubstantial beside the weight of his intensely scholarly insights into traditional Japanese architecture and thought. The title of this book may be misleading, but its substance is engrossing.

ALMOST VIRGIN LANDSCAPE

Architecture in Detail series. Bauhaus, Dessau by Walter Gropius. *By Dennis Sharp.* **Salk Institute by Louis Kahn** *by James Steele.* **Querini Stampalia Foundation by Carlo Scarpa** *by Richard Murphy. Phaidon Press. £19.95 each.*

Reviewed by Gillian Darley

Of the three titles in the current crop of *Architecture in Detail* volumes, two offer illuminating parallels. Gropius' Bauhaus, especially in its Dessau incarnation, struggled with "the specific object of realising a modern architectonic art, which, like human nature, should be all-embracing in scope", as Gropius put it, seeking to align the techniques of mass production with the skills of the artist and designer.

Kahn's Salk Institute for Biological Studies in Southern California, also designed to be a residential centre for research and innovation, was guided by Salk's statement that "a totality of values is integral to a vision of total health." Thus, each complex theoretically expressed an attempt to break through the confines of a discipline, to revolutionise the arts and the sciences by extending and including areas hitherto out of reach. Their physical form would be the key to this inclusivity.

The Bauhaus, as completed in 1926, was a brilliant flare, put up to signal the new style and illuminate the purpose of the enterprise. Yet within six years, it was closed on political grounds. Dennis Sharp's inexplicably dull account of one of the great adventures of the twentieth century skips, at a stroke, from the completion of the building to its contemporary condition. The building emerges on the page, but the vitality and nerve disappears in the telling.

The development of the Salk Institute was the outcome of the chemistry between architect and client, although the resultant buildings represent a much-truncated version of the original scheme. Salk's humanised centre for biological science (an unreal as well as incomplete dream, it now seems) largely evaporated in the redesign, particularly once both the Living Place and the Meeting Place – the latter the social hub of the campus – were dropped.

Kahn was responsible for the choice of a stunning natural site – on the ocean at La Jolla in what was, in 1960, an almost virgin landscape. Construction photographs reproduced in the book show the buildings as they crept towards the cliffs. Those two serrated cliffs of studios, the thread of water between them (in a space which would have been a lush garden but for Luis Barragan's suggestion, "do nothing"), and the western horizon beyond the cliff edge add up to an icon of 1960s architecture. James Steele's account makes all the necessary connections, includes technical data on the materials and specification of the research laboratories and still, in an admirably economic text, succeeds in conveying succinct insights into Kahn's working methods and thinking.

The volume devoted to the Querini Stampalia Foundation also delineates a project – in this case a fairly small-scale work – in a way which illuminates not simply the architectural process but the climate of opinion around it. Carlo Scarpa's 1964 remodelling of the ground floor areas of a Venetian Palace and his linking of these, water level, rooms to the outside spaces, both an enclosed garden to the rear and a new bridge leading directly into the building, was a work of rare clarity and subtlety. Scarpa, as Richard Murphy notes with prescience, exemplifies William Morris' dictum on work in ancient buildings; we cannot, he said, ape the old, the work of today must stand as such.

Richard Murphy discusses the particular and valuable nature of Scarpa's relationship to his client, the quirks in Scarpa's own training (he was not a qualified architect) and the peculiar circumstances attending any attempt to build, or even renovate, in Venice. The later phase of the Foundation, designed by Scarpa in the mid 1970s, foundered on the restrictions of the city planners.

The *Architecture in Detail* volumes distil a potent mix of image and information into a short space. The combination of archival material, contemporary commissioned photographs and a set of drawings, including a detail or two, offers a good account of the buildings in question. As the professional press and magazines increasingly desert the higher ground, the thoughtful examination of a series of key buildings in the recent history of architecture is invaluable. More please.

THE KING IS IN THE ALTOGETHER

Re: Working Eisenman. *Contributions from Derrida, Taylor, Kipnis, Kwinter* et al. *Academy. 212pp. £35.00.*

Reviewed by Michael Glickman

"Arguably the most significant architect working today" asserts the fly leaf. The surprise is not the publisher's predictable hyperbole but the subject's vanity in allowing it to be printed.

I met Peter Eisenman several times, briefly, in New York and Cambridge a little over 20 years ago. It was clear that he was an entertaining, resourceful, energetic and ambitious player on the peculiarly glamorous East Coast stage. Equally clear was the fact that, compared with the other four of the Famous Five, Eisenman was not much of an architect. How, I wondered, would he maintain his position in this heady circus, with this fast crowd?

Well, as we have seen for two decades, the boy did good. He out-wrote the opposition by a mile. Just as Tom Wolfe described the New York art scene in *The Painted Word*, Eisenman has established supremacy in *The Written Architecture*.

The writing in question is of a particularly tortured character. There are six pieces (he calls them "texts" or "discourses") by Eisenman, six about him, two interviews and six projects. The title gives us a clue; the insertion of a colon fragments the word "reworking" and produces the possibility of ambivalence of meaning.

The first inkling of all this stuff was Eisenman's "Fin D'ou T Hou S" (geddit?) in the '80s.

Breaking up of words, playing with upper and lower case letters, an implicit illumination of embodied meaning. But it does not work. Beneath the clever word play, the bang-up-to-the-minute philosophical allusion, nothing is revealed. Almost any sentence, randomly selected from any page will bewilder. More often it will amuse with its dogged pretension.

There clearly must be a market for this kind of stuff, but its patrons must have been long numbed to the use of the word "problematic" as a noun, to select just one infuriating example.

The centrepiece is the Derrida/Eisenman Correspondence – a lengthy letter from the eminent French philosopher followed by our hero's equally long reply. This is a coup. The master stroke. To publish this letter, from Jacques himself! It even begins "Dear Peter". This is a clue to Eisenman's predicament. I do not know how good his French is, but he must be aware that French writing, and philosophy in particular, comes from a rhetorical tradition which translates badly. Any attempt by Eisenman to "discourse" with an equivalent verve and flourish is hopelessly doomed.

The sections are separated by tastefully pastel coloured images. We are not informed what they are meant to be and, certainly, they – like everything here – are at pains to remain enigmatic. Almost as an afterthought, some "projects" are included. The writing (text?) about these is as impenetrable as everything else and, insofar as I am able to judge, the schemes are disordered and ugly.

I felt that I had stumbled across a strange ritual table-tennis match. The players wore elaborate decorative clothing and each stroke was played with an ornate and portentous precision of gesture. There was no ball.

It is nicely printed and the pages are, to my relief, gratifyingly thick.

The king is in the altogether, or as Eisenman might feel it clever to write tHE kINg is in the altogether.

MASTERS OF INCONGRUITY

James Stirling and Michael WIlford. Architectural Monograph 32. *Academy Editions/Ernst and Sohn. HB £27.50, PB £19.50*

Reviewed by Jon Rowland

If there is one word that keeps on cropping up in the description of James Stirling and his work (the Wilford is silent) it is monumentality. The "forbidding monumentality of Poultry"; the "modest monuments" of the early museums; buildings that are "monumentally informal – in the monumental traditions of public buildings". Leon Krier described James Stirling as having "monumental self centredness". Yet for all the monumentality there was a long standing creative partnership between Stirling and Michael Wilford. This book does little to reveal how this partnership works. If Stirling was the more powerful presence, was Wilford a foil? Perhaps it was the taming of the giant, the channelling of Stirling's undoubted ability to a more focused view of design, that Wilford oversaw.

If one looks at the turning point in Stirling's career it is only shortly after their partnership began that the key museum projects of the Nord Rhein-Westfalen, and the Wallraff – Richartz in Cologne were designed, culminating in the 1976 competition for the Staatsgalerie in Stuttgart. For the first time an added dimension of urbanism became apparent. These are urban projects reflecting both the internal functions of the buildings but

also the context of the urban grain. They each contribute to civic space, creating squares, courtyards and links to the surrounding city. The urban design principles of using simple legible forms, generating street level activities, healing city blocks all give these projects a depth of meaning. "It shows", as Charles Jencks says of Stirling, "a Modern architect acting with the kind of sensitivity towards the historical context one would expect of a traditionalist, with the freshness and invention of a Renaissance architect". Yet I wonder – was this Wilford's influence or that of Leon Krier, who was working at their office in the 1970s?

The enormously popular Staatsgalerie demonstrated for the first time the practice's successful articulation of elemental shapes. The use of circles, drums, squares, and cubes reflected a more conservative stance, harkening back to Shinkel and Asplund. The exquisite drawings of the Stuttgart Music School show the counterbalance with the Staatsgalerie. Like the white and black Taj Mahals, here we have a cylinder of a building responding to the calm open drum courtyard of the Staatsgalerie across the road, creating a new strong urban order. The use of such eclectic elements created a popular architecture, that helped label Stirling as a post-Modernist – much to his irritation. It is both iconic, and amusing. However, one gets the feeling that it is this desire to play with shapes and to enjoy visual jokes that could not be contained, and like all good humour got cruder and less satisfying.

The book illustrates just this, juxtaposing the indelicacy of No 1 Poultry with the sparkle of Palazio Citterio Art Gallery, the bluntness of Braun's Headquarters of Melsungen, with simplicity of Newcastle University's School of Architecture in Australia. Epitomising this dichotomy are two projects: the large ungainly University of California's Science Library with the unforgettable image of a space-ship crash-landing onto Irvine, a site surrounded by small scale buildings; and the gem of the Venice Biennale Bookshop, snug in its serene setting of a woodland glade.

This monograph provides a timely appraisal: looking back to the great days with admiration and enjoyment: looking forward to the future with anticipation. An important book for those interested in change.

MIND OF A MASTER

Peter Buchanan. Renzo Piano Building Workshop Volume 1. *Phaidon. £39.95.*

Reviewed by Michael Glickman

Looking back over the past ten years or so we survey a landscape of wreckage and rubble. At such times one realises (with horror!) just how long the consequences of our activity will endure.

The pain results, I think, less from the superficial smearing of dimly understood historic symbols across facades than from the awful realisation that fewer and fewer architects have been interested in making things. Modernism had always aspired to the well-made, to the beautifully constructed. Even though so many of its leading practitioners were such lousy builders, the aspiration remained.

Renzo Piano is, above all, a committed and prodigious maker. His work, and this record of it, remind us that the design and construction of built enclosure might still be a worthwhile – even noble – activity.

As an Eames fan I notice the similarities. Many of the photographs of the Piano offices and workshop startle with their similarity to the Eames' shop in Venice, California. The method of working too, seems to share the same spirit. Both have been concerned with first principals, with the essential needs and constraints of the problem. Both are obsessed with the connection, whether a junction detail or a wider implicit association. The work of both embodies an understanding of pace and of timing. An intuitive sense that certain components of a problem should be attacked directly while others should be allowed to evolve at their own pace.

There are designs here of remarkable assurance and courage. The structure of the Padre Pio Pilgrimage Church, for example, has a structure based on slender and elegant metal-stayed stone arches. Stone elements? Steel-strutted and stressed? Who else could have dreamed this and realised it so simply?

The IBM Travelling Pavilion realised another basic dream of the Modern Movement: a truly demountable component building. The project is illustrated in real depth from early sketches, through element prototyping to a triumphant trial assembly by the office staff on a beach near Geneva. This section of the book should be a familiar part of every design or architecture curriculum. The connector alone is a classic with which we should all be familiar.

The San Nicola Stadium in Bari (1987-90) is another building of great importance. A huge concrete structure, it achieves an almost unbelievable lightness. In the landscape it is poised on its hilltop like a newly landed spaceship.

I find it remarkable that these two projects, a transportable rapid assembly enclosure of plastic, wood and aluminium, and a massive sports stadium of raw concrete could both originate from the same mind and the same team. Even more remarkable is the fact that such differing buildings, embracing diverse materials and technologies, are realised with equal mastery.

THE THINGS THEY SAY

Architects on Architecture. *By Paul Heyer. Van Nostrand Reinhold. 416pp. £34.50.*

Reviewed by Andrew Rabaneck

It's hard to understand what Van Nostrand Reinhold think they're up to, reprinting Paul Heyer's *Architects on Architecture* (original publication 1966), and offering it in paperback at...£34.50 in the UK. This was always an interesting book because Heyer's reverential tracking style elucidated extraordinary remarks from the American architects he interviewed. For example, Philip Johnson: "Structural honesty is one of the bugaboos that we should free ourselves from very quickly."

For old timers, the book is useful because it covers wonderful architects nearly forgotten outside their home regions – William Wurster, Ernie Kump, Ed Killingsworth, etc, as well as Mies, Sert and all the self-elected giants of Modern architecture.

Heyer's book has of course since been joined by Barbaralee Diamondstein's *American Architecture Now* (1980) and *AAN II* (1985). Together, these are documents which all historians, and even the simply curious, will have to consult to read what those crazy architects thought they were up to back then. □

PROBLEMS AT POMPIDOU

Conservationists have always argued that Modern buildings require too much maintenance or, even worse, are unmaintainable. Sometimes the case is overstated, sometimes it is nothing less than the truth. Pierre Vago considers the case of Piano & Rogers' Centre Pompidou, and the lessons it holds for all of us, including Jean Nouvel.

April is a good month for jokes. Some time ago, a very serious French journal announced the demolition (and possible reconstruction somewhere in the provinces) of the famous Centre Pompidou, whose maintenance costs were proving ruinously expensive. It was an April Fool's joke. (WA, No. 18). But today, in April 1994, the matter has become serious. One can read everywhere in the Press that Piano and Rogers' building is in such a bad state that it needs very extensive and very costly renovation, which will involve its closure for a long period. This will afford an opportunity to make very considerable alterations.

When I visited the disappointing exhibition on "The City" (WA No.29) I had another look at this very controversial building. I found it in a sad state, especially considering that it is no more than 20 years old; but it wasn't as bad as some have said. I don't want to get involved in a technical discussion for which I do not feel myself particularly qualified. One cannot of course deny that the Centre Pompidou hasn't aged very well. Was it badly designed? Badly built? Perhaps too quickly? Has it been badly maintained? These are questions for specialists. If large-scale alterations are required, perhaps this it the result of this innovative institution's quite unexpected popular success. It wouldn't be fair to blame the architects. The building, with its thoroughly contemporary "style", planted brutally enough in a very old neighbourhood of the French capital, gave rise to much controversy. But Paris and the Parisians accepted it very quickly. Its construction and content have profoundly altered its surroundings. This need not be regretted.

Often asked about it, I have always defended, perhaps not so much the architecture, as the courage of the national and city authorities, who in accepting the plans selected by the international jury gave the lie to the unjust accusations of conservatism and chauvinism levelled at the French. And what about the architecture? It shocked me much less than did most of the proposals submitted for the international competition. (About 600 projects, if my memory serves me well!). I admit I am glad that substantial changes were made to the original plans. The height was reduced, the aggressive superstructure eliminated etc. But these alterations gave rise to a paradoxical situation. The very idea of a "glass box" in which everything inside (floors, walls etc.) should be flexible and moveable soon proved to be utopian and not very useful. The glass cage was no longer suspended, floating above almost completely clear ground – it is even solidly implanted in the earth, the whole block having had to be lowered – and this made superfluous its costly suspension within an external support structure standing clear of the facade.

Logically, the whole system of construction, now no longer justified, should have been rethought. It could have been much more simple and significantly more economical, both in initial investment and in maintenance. (Think, for example, of the problem of cleaning those immense sheets of glass, which the external framework prevents one from getting close to). One has to think that probably because of the timetable set for the architects, essentially for political reasons, they weren't able, even if they had wanted to, to rework the whole thing in order to adapt it to the functional and other conditions imposed on them. What was built, in the end, was a compromise, a little too hastily arrived at, and as a result the object of serious and well-founded criticisms, which though justified in themselves should not be addressed to those who drew up those first audacious plans. The quarrel is needless. Paris can be pleased and proud of its Centre Pompidou, the most visited public building of the Ville Lumière. And if in the absence of the total flexibility imagined by Piano and Rogers the planned alterations will allow certain defects, certain weaknesses to be corrected, then we will be glad that they had to be done.

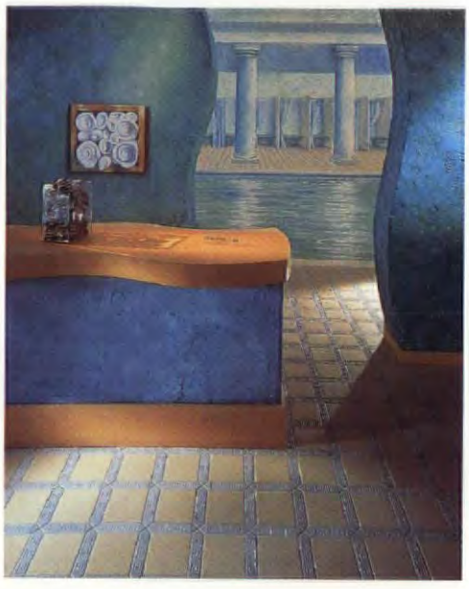
Jean Nouvel is one of the most talked about of the new generation of French architects. He's also one of the most prolific. I read that he has completed four major buildings in the last 12 months. And that's without saying anything about such sensational projects as the "endless tower" I mentioned recently. You can think what you like about his work: it is undeniable that his buildings never lack interest, and they are never "repetitions".

The Fondation Cartier, whose purpose is to support contemporary art, has just abandoned its beautiful park in Jouy-en-Joses in order to move to the centre of Paris. Its new premises will have been opened by the time this column goes to press. Looking at the building one sees one of these now numerous, more or less transparent, more or less well-proportioned boxes of metal and glass, more or less carefully detailed, and more or less carefully carried out. This one in the Boulevard Raspail, with its eight floors, is agreeable and elegant, despite the few extensions into the void of its metallic structure, excrescences whose function it isn't easy to understand. Standing back 10 metres or so from the building line, behind some trees (among them a superb and historic cedar, said to have been planted by Chateaubriand), it would pass almost unseen by the uninitiated pedestrian. But look! There on the line of the neighbouring buildings, the architect has raised a false facade, a sheet of glass of the same height connected by a tubular structure to the building itself, the real one. Pure décor, and proud of it, it shocks and seduces. Of course, you have to be the Fondation Cartier to offer yourself this little luxury. But wasn't Cartier a jeweller? □

INTERIORS REVIEW

Over a lifetime of practice the work of an architect can span the whole gamut of construction from the huge structural elements found in civil engineering to the tiny fixtures and fittings found inside the different spaces of buildings themselves. Sometimes the architect can be responsible for virtually every aspect of the design of a building from the macro scale of intervention at street and city scale, to the design of furniture for a specific space inside a specific building. At Sir Norman Foster and Partners this has happened frequently, with specific interior elements later developed into product ranges themselves. Even when the architect's role is more limited, he or she is generally in a position to make the first proposition, the first selection and often the final decision on important matters in the world of interiors.

Like the larger world of architecture, the world of interiors encompasses its own spectrum of elements. They range from intensively designed fixtures like light fittings, door pulls and handles, to almost universal elements like window blind systems, screens and partitioning systems, raised floor technologies, suspended ceilings, fabrics, carpets and synthetic floor finishes, sanitary installations and equipment, fixed and mobile furniture and security and communications systems. Across this huge spread of elements only time and scale draws a line. For the architect the building is the container, and the interior is the world that is contained.



New floor tiles from Pilkington's

The problem of finding a truly white tile has at last been solved by Pilkington's which has developed and produced the first unglazed "Ultrawhite" floor tile. Available in 300 x 300 x 9mm and 100 x 100 x 9 mm unglazed flat and 300 x 300 x 9 mm polished, Ultrawhite is ideal for retail, hotel, or leisure applications.

Pilkington's other collection, "Naturefloor" has been developed in line with the current popularity of natural materials such as limestone, slate and wood. The range is produced with carefully selected natural clays. The tiles come in a 300 x 300 mm size with accessories and are available in five colours: barley, sand, pebble, conifer and sky. "Naturefloor" has an intrinsically slip resistant finish, ensuring safety in any area of a building.

Pilkington's popular Dorset Range (a collection of plain and speckled plain colour floor tiles in a variety of slip resistant textures) has been extended with the introduction of a new co-ordinate strip tile - Dorset Trim. The strips (194 x 44 x 9 mm) have a decorative finish in the form of an embossed pattern on one side, and are reversible with the other side being plain. It comes in two designs - Greek Key and Medici - and is availabe in red, white, green and blue. All shades coordinate with the whole of the Dorset range.

Pilkington's Tiles Limited
P.O. Box 4 Clifton Junction, Manchester, M27 8LP.
Telephone: 061 727 1000. Fax: 061-727 1122.

RAL

RAL was established in 1925 - an initiative of the central German associations of industry, craft, trade and consumers, and of the Federal Ministries. The main task of RAL was, and still is, to arrange voluntary regulations for quality, consumer protection and fair trading. In this way RAL is responsible for the German system of quality assurance, for contracts with German industry concerning the environmental label Blue Angel and for some systems of product labelling.

Back in 1927 German trade and industry made RAL responsible for establishing and maintaining the collection of standard industrial colour samples. This collection includes colours mainly used by industry, public utilities and government bodies. Through world-wide commodity exchange this RAL colour collection has become known in Europe and overseas and is in use wherever coloured products are manufactured. It should be noted, however, that the colours in this collection are only roughly arranged into colour groups: there is no scientific system behind it because new colours were introduced as they were applied for.

As with any colour collection, it is not possible to form logical lines of colours as sought by designers for colour harmony. But it is ensured that any colour sample from this collection can be used by colour planners without causing problems - whatever the application. Paint and plastic manufacturers all over the world know how to formulate a RAL colour, although these standard colours are mostly in use in Europe.

The RAL 840-HR collection presently contains 194 single shade colour cards.

In the past year RAL has introduced a unique colour system with 1688 colour samples arranged in accordance with the CIE recommendations for the CIELAB-colour solid. This system is called RAL Design System (RDS). The coordinated range of colour samples follows exactly the internationally used CIE-formula for describing colour differences and thus are mathematically equally spaced. The reference numbers of each shade are formed by the three components of the CIE-three dimensional colour solid: HUE (H), LIGHTNESS (L), CHROMA (C). A typical notation for a deep blue shade is

	H	L	C
RAL	270	40	35

This system offers a quick and reliable way to find well coordinated colours and their respective colour families for planning and application in any project.

"RAL Under Windows" introduces the RAL Design System for use on CAD graphic computers - a wonderful tool for colour planning on the monitor.

RAL
Siegburger Strasse 39, 53757 Sankt Augustin, Federal Republic of Germany.
Telephone: (0 22 41) 16 05-0. Fax: (0 22 41) 16 05 11

David Mobley "Platforms"

California-based art furniture designer David Mobley introduces a new line of soft-edged tables for home and office. The line, "Platforms", is intended for the practical art furniture collector who wants a high-end contemporary look at down-to-earth prices.

The Platforms line consists of seven free-form tabletop shapes covered with Italian laminate or wood veneer and edged with soft rubber molding. The cocktail, end, dining and console tables are supported by tapered legs in black, silver or clear-finished steel rod. Various tabletops and 15-inch, 21-iinch or 28-inch legs can be mixed and matched to better meet buyers' needs and reflect individual tastes.

Also optional are tapered and bunched covers for Platforms' table legs. These canvas leg covers, which Mobley calls "leggings" offer intriguing variations on the basic leg configuration, and add color, form and texture to the

overall design. Leg covers are available in natural (off-white), tan, black, deep blue, violet, canary, emerald and crimson.

The soft edges and cornerless, free-form shapes, plus easy-to-clean laminated tops, make the tables ideal for households with small children. Yet Platforms' neo-modern styling make the line equally suited to any high-end contemporary office or home interior.

David Mobley Design & Architecture
7056-43 Park Mesa Way, San Diego, CA 9211, USA.
Telephone: (619) 279-5283. Fax: (619) 279-6061.

Jung

A.Jung is one of the leading manufacturers of electrical wiring accessories in Europe. Founded in 1912 the company specializes in high quality switches, sockets, dimmers and accessories. Today 550 people staff its two factories and in 1993 its turnover was in excess of DM 190,000,000. Over 25 representatives work with architects, consultants, designers and electrical contractors throughout the world.

Special attention is given to hotel projects where many products have to be specially designed such as key card holders, PIR detectors, wording and symbols for clear identification, timers etc.

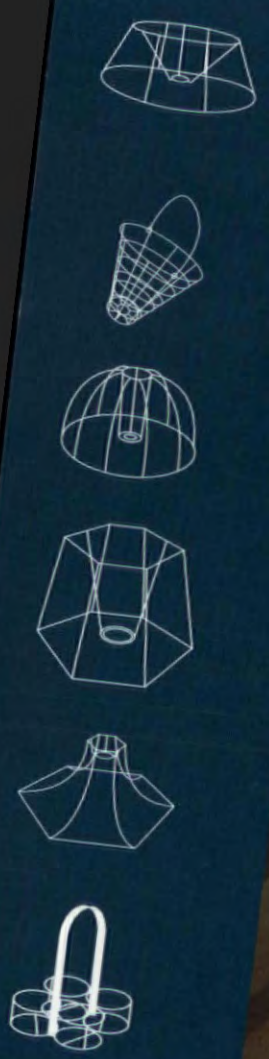
Some of the products recently introduced during the Hanover Fair include the electronic control for venetian blinds, the electronic time switch, the Jung Observer System Power Unit - ideal for use in long hospital or hotel corridors, and the Jung Observer System Sensor 180 UP.

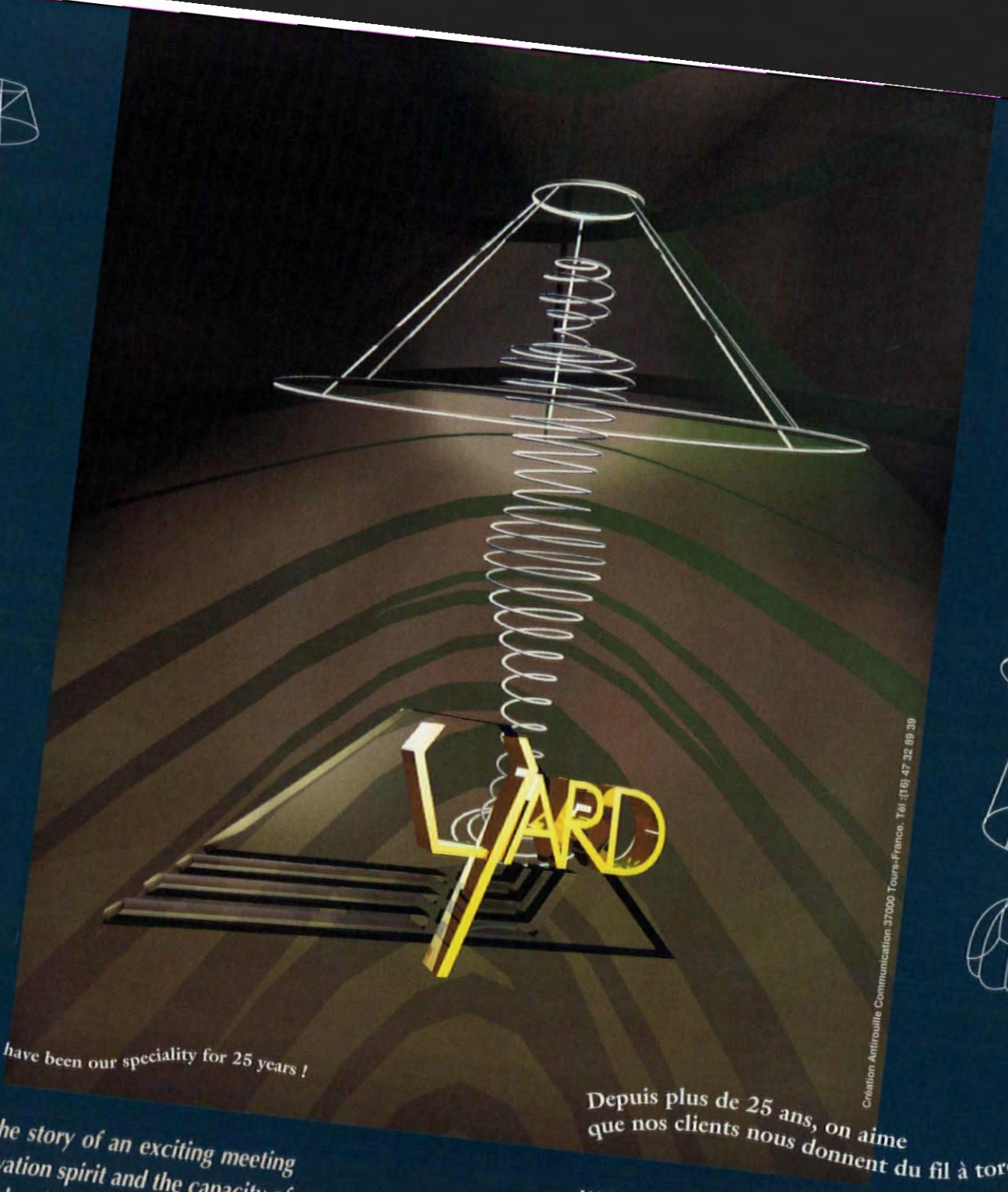
Albrecht Jung GMBH & Co. KG
PO Box 1320, 58569 Schalksmühle, Federal Republic of Germany.
Telephone: 2355/806-157. Fax: 2355/806-254.

Junkers at La Reserve Hotel

La Reserve Hotel in Fulham is a major departure from conventional hotel design. Behind a period facade, it has uncluttered, contemporary interiors. Junckers Ship's Decking floors are a central feature of the main reception area, the neoprene strips between the staves highlighting the strong, linear use of matt black in the scheme.

Junckers Ltd
Wheaton Court Commercial Centre, Wheaton Road, Witham, Essex CM8 3UJ, UK.
Telephone: (0376) 517512. Fax: (0376) 514401.





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YARD, c'est avant tout l'histoire d'une rencontre passionnée entre l'esprit novateur des hommes et les capacités à se tordre que peut avoir le fil de fer cuivré et galvanisé.
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De la carcasse d'abat-jour au panier à épices, en passant par les armatures de bagages...
Il vous suffit de demander, nous exécutons...
Depuis maintenant plus de 25 ans, nos établissements s'efforcent de mettre tout leur savoir-faire à votre service.
Bon nombre d'entre vous ont déja pu apprécier notre travail !
C'est pourquoi en remerciement de la confiance accordée au fil de ses années, nous nous engageons à plier, tordre et souder pour donner corps à vos plus belles idées...

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RAL

RAL, Siegburger Straße 39
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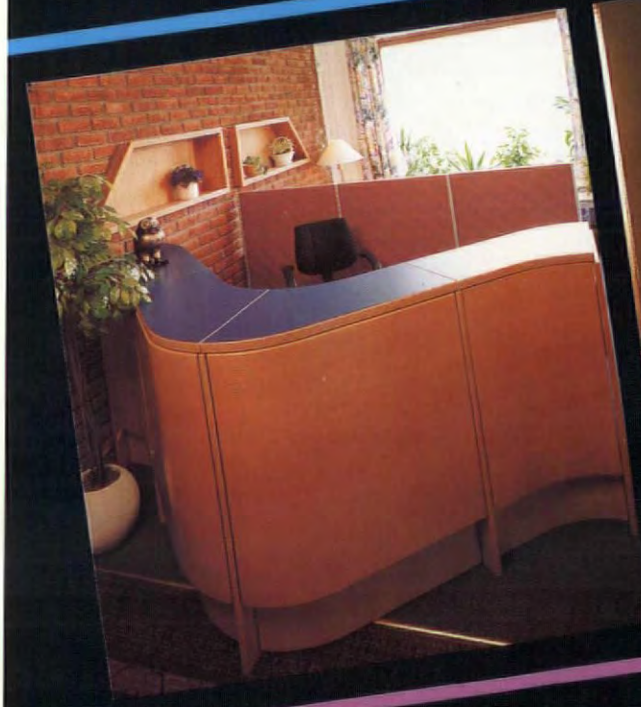

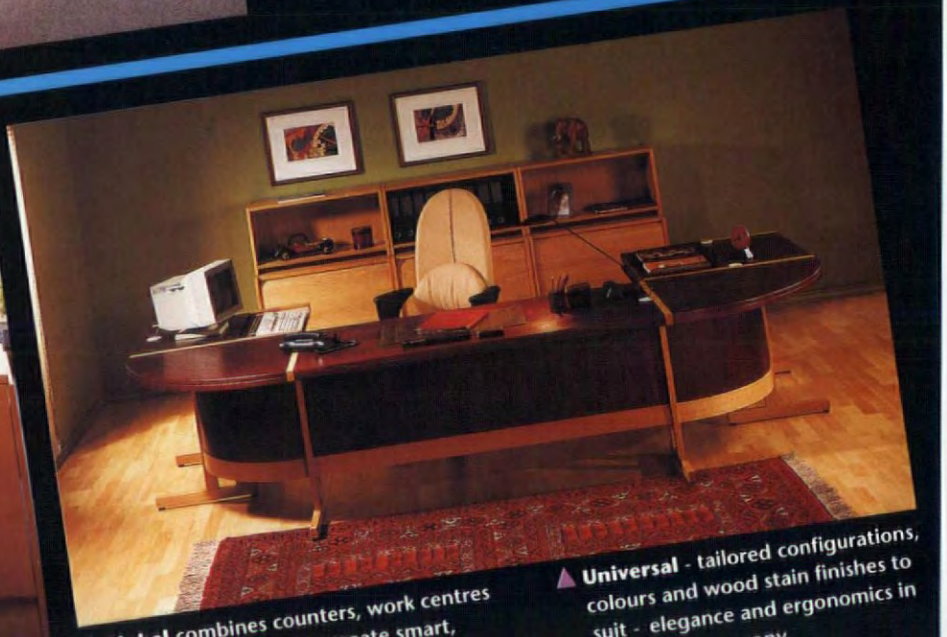

Global combines counters, work centres and seating systems to create smart, practical reception areas.

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So simple, so practical, so inexpensive. **Spectral** gives you quality and value for money.

Office design, incorporating the new EEC Directive, is a series of rules covering the essential design criteria for work stations. Ergonomic intelligence and comfort combined with elegance make Newstyle's portfolio of distinctive office furniture the unbeatable choice. Manufactured by Hov Dokka in Norway, natural wood veneers and the latest in contemporary finishes are used to produce superb furniture at surprisingly sensible prices.

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Crossways Business Centre, Alconbury Hill, Alconbury Weston, Huntingdon PE17 5JH
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The fine art of switching.

High-quality materials and a well-defined form are the characteristics of the "SL 500" design.
Setting the coloured metal units in acrylic glass gives the frames a light and elegant appearance. Reflections and light refraction take up the surrounding colours and create soft transition.
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The design of the "SL 500" has been harmonized with the established JUNG Modular System for integral use of the push-button switches.
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Available colours: white, bronze, black/silver.

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Bude Cornwall EX23 8QN
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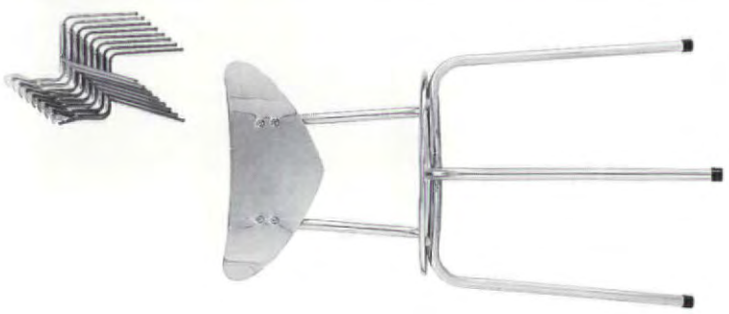

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Brochure Showcase

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USM

The USM Haller Furniture Systems have been setting standards in matters of office furnishings, and as classics of the modern period are increasingly finding enthusiasts also in the private sphere. And with USM Kitos, a Complex Integrated Table Organisation System, USM Schärer Sons Ltd have created all the prerequisites for putting a further innovative long term product on a successful path into the future.

Reply number 30

NORAL

In this new NORAL catalogue there are 24 new models. All of these new lighting products have the same high quality aluminium alloy, painting process and design as the existing NORAL products. This catalogue is aimed at the architects, electrical consultants, electrical engineers, communities, etc. With its three product lines: Traditional Line, Compact Line and Park & Street Line, NORAL is able to cover a broad spectre of lighting. The catalogue has been made for easy location of products. All the necessary information for each model is gathered on the specific product page.
This new NORAL catalogue reflects the commitment of the NORAL company to product quality, high quality design and customer satisfaction.

Reply number 15

Ramchester Furnishings International

The softer design of the Signos family of chairs belies the technical innovation for which Roder are renowned. The spontaneous synchronised mechanism provides a gentle sliding adjustment into any seating position giving constant support.
The "family" consists of visitors, conference and executive chairs, reception area seating with matching tables.

Reply number 31

Hovair

Hovair air-film turntables are now available to architects worldwide for all conventional applications (vehicle turntables, theatre revolves and large display turntables) and some less conventional ones (revolving restaurants, revolving auditoria and revolving buildings). Loads of 5 to 5,000 tonnes can be supported on compressed air or pressurised water for extended periods with minimal maintenance, enabling anything to be facing the right place at the right time. All Hovair's Turntables are low profile, rumble-free and safe.
Contact Hovair by phone on +44 (252) 319922 or Fax on +44 (252) 333790.

Reply number 34

Falcon International

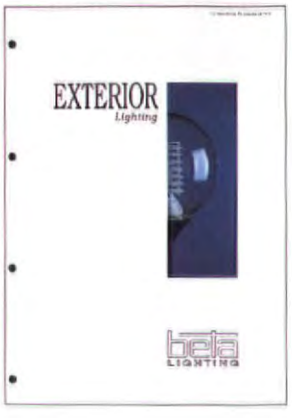
Falcon, American furniture manufactured for the hotel, restaurant and office segment since 1957.
Today, Falcon introduces the Charlotte furniture collection for lobby, reception and other interior spaces.
Together, Falcon and Charlotte offer you variety, flexibility and value and the ability to enhance your design capabilities.

Reply number 32

Ferrari

Composite Membranes
Textile Architecture, a new technology, uses flexible membranes that allow the enhancement of roof areas as well as great architectural freedom, and natural interior lighting.
Précontraint FLUOTOP T membranes have exclusive advantages thanks to the Précontraint technology and to the Kynar PVDF surface coating:
- permanence of the mechanical characteristics throughout time;
- conservation of the light transmission properties;
- anti-adhesion of atmospheric pollution.

Reply number 35



Beta Lighting Ltd

Exterior Lighting
Beta Lighting have introduced a comprehensive range of exterior amenity lighting. A full range of IP55 polycarbonate spheres and diffusers, brackets and columns are available combined with a selection of high quality bollards and bulkheads. The new catalogue provides the architect or engineer a means of specifying lighting requirements for all types of commercial and architectural exterior lighting projects. Beta Lighting offer a computer aided lighting design service and a full 'specials' manufacturing service.
For further information please contact: Remy Silver, Marketing Manager, Beta Lighting Ltd, 383/387 Leeds Rd, Bradford BD3 9LZ. Tel: +44 (274) 721129. Fax: +44 (274) 305007.

Reply number 33

Steelcase Strafor

Leader of the European office environment market, and present worldwide, STEELCASE STRAFOR provides an extensive range of high-quality products and services enabling effective solutions to be found to satisfy even the most exacting customer requirements. Created in partnership with renowned product designers, STEELCASE STRAFOR products – desks, seating, storage elements, computer furniture, shelving and panels – combine pronounced design with functionality, ergonomics and environment-friendliness to ensure optimum user comfort and efficiency within the office environment.

Reply number 36

For information on how your company can benefit from the World Architecture Brochure Showcase, telephone +44 (0) 71 383 5757

Brochure Showcase

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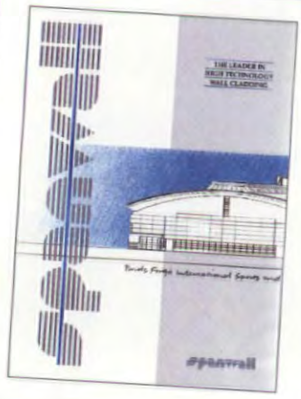


EDM Spanwall

Spanwall is a precision, high performance, versatile, lightweight curtain wall/cladding system, incorporating composite metal panels, windows, doors and louvres to create a total building facade. It is ideal for industrial, retail, commercial and high technology buildings, both for new developments and the refurbishment of existing structures.

The versatility of the Spanwall Cladding System allows architects and designers to plan without constraints in design.

All types of curved shapes are possible, circular, quarter circle, asymmetrical curves, along with cranked and faceted panels.

EDM SPANWALL have undertaken some of the most demanding fast track projects to the highest standards.

Reply number 37

Gerflor International

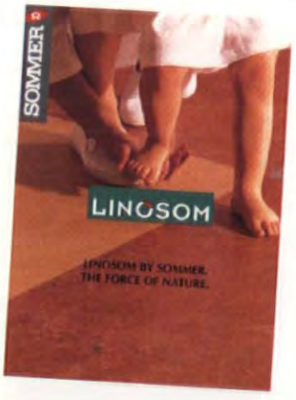
GERFLOR = Vinyl Floorings

GERFLOR markets the widest range of contract vinyl sheet and tile floorings in the world. These floorings meet the various European and international market standards and qualities. Whether in offices, schools or hospitals, computer suites, stores or shops, there is a Gerflor flooring to suit every need.

The collection combines creativity with innovation and the most advanced technology to present a product spectrum of over 300 colours.

There is a wide choice of designs and qualities to suit all budgets and enhance modern interiors and architectural environments.

Reply number 41



Sommer

In this international brochure LINOSOM, the linoleum floorcovering designed by Sommer, is introduced. Sixty colours and six designs harmonise this natural collection.

Linosom consists of cork, wood and linseed oil. It is homogeneous, durable, resistant, flexible and may be installed in the heaviest traffic areas and in the tightest corners.

International projects are pictured, displaying Linosom's versatility and creative design possibilities.

Reply number 38

MSP/Guy Linking

Architectural ties and supports from MSP McCalls Special Products, manufacturers of threaded bar systems, is now offering a range of small diameter stainless steel high tensile cable and tie rods.

The stainless steel tensioners and terminations were developed by Guy Linking Ltd and complement MSP's own range of Macalloy 460 tension components in larger diameters. They are designed to suit a variety of applications, including structural ties, hangers and bracing, glass curtain wall supports, membrane roof and canopy supports, and balustrading. A broad and comprehensive range of diameters of stainless steel cable and bar are available in various strengths.

Reply number 42

Pilkington's Tiles Ltd

Relevant, factual and easy to use, Pilkington's latest architectural brochure effectively illustrates the wealth of new wall and floor tiles available to specifiers and includes, for the first time, a comprehensive picture of Pilkington's 'swimtile' ranges. Providing relevant and accurate information in a logical format, the brochure devotes a whole section to technical advice and guidance. This features product performance data; slip resistance information on floor tiles; fixing recommendations for both wall and floor tiles in an easy to use, at a glance chart; and full cleaning and maintenance recommendations.

Highlights include the new unique Ultrawhite unglazed floor tile, which works particularly well with the other shades in Pilkington's Designer Floor Tile Range, and Naturefloor, designed to meet current popularity for the specification of natural materials such as limestone, slate and wood.

Details of Pilkington's technical back up service are clearly listed and the inclusion of a hot line number means that access for advice on fixing specifications couldn't be easier.

Reply number 39

Zoeftig & Company Ltd

From its beginnings in 1969, Zoeftig & Company is now firmly established as one of the most innovative and consistently high-quality furniture manufacturers in Britain today.

Design quality and awareness have always been trademarks at Zoeftig so it's natural that, at a time when industry is becoming more aware of its image and the public are demanding higher standards from its living environment, Zoeftig should be going from strength to strength.

Zoeftig can offer the customer the choice of either their existing range of furniture or any specific design requirements which can be put into manufacturing terms. The flexibility is there to supply a customer's needs from the smallest order to the largest contract.

Zoeftig now have a permanent showroom in Rotterdam in collaboration with the Dutch Company Hulst and an agent in Germany.

Reply number 26

Rocomat

Natural Stone

Rocomat, producer of marble, granite and limestone, has quickly come into its own in the international market. It has been involved in many major architectural projects, amongst them the Musée d'Orsay, Opéra de la Bastille and Grand Louvre in Paris, palaces in the Middle East, 235 Pine Street in San Francisco, the German Defence Ministry in Bonn, and shopping centres in the USA and Australia.

Reply number 40

Fujitsu General Ltd

Fujitsu Air Conditioning

The 1994 leaflet for split system air conditioners includes wall, ceiling, floor and ceiling cassette units in both cooling/heating and cooling modes. New models include 14,000BTU compact design wall mounts, four room multi-type systems using the 'compact' wall units, 30,000BTU wall and ceiling cassettes, both with single phase supply.

The cassette range now has models at 18,000, 25,000, 30,000, 36,000 and 45,000BTUs.

European distributors:

Fujitsu General (UK) Co Ltd, 154 Great North Road, Hatfield, Herts AL9 5JN, UK.
Tel: 0707 272841. Fax: 0707 273111.

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