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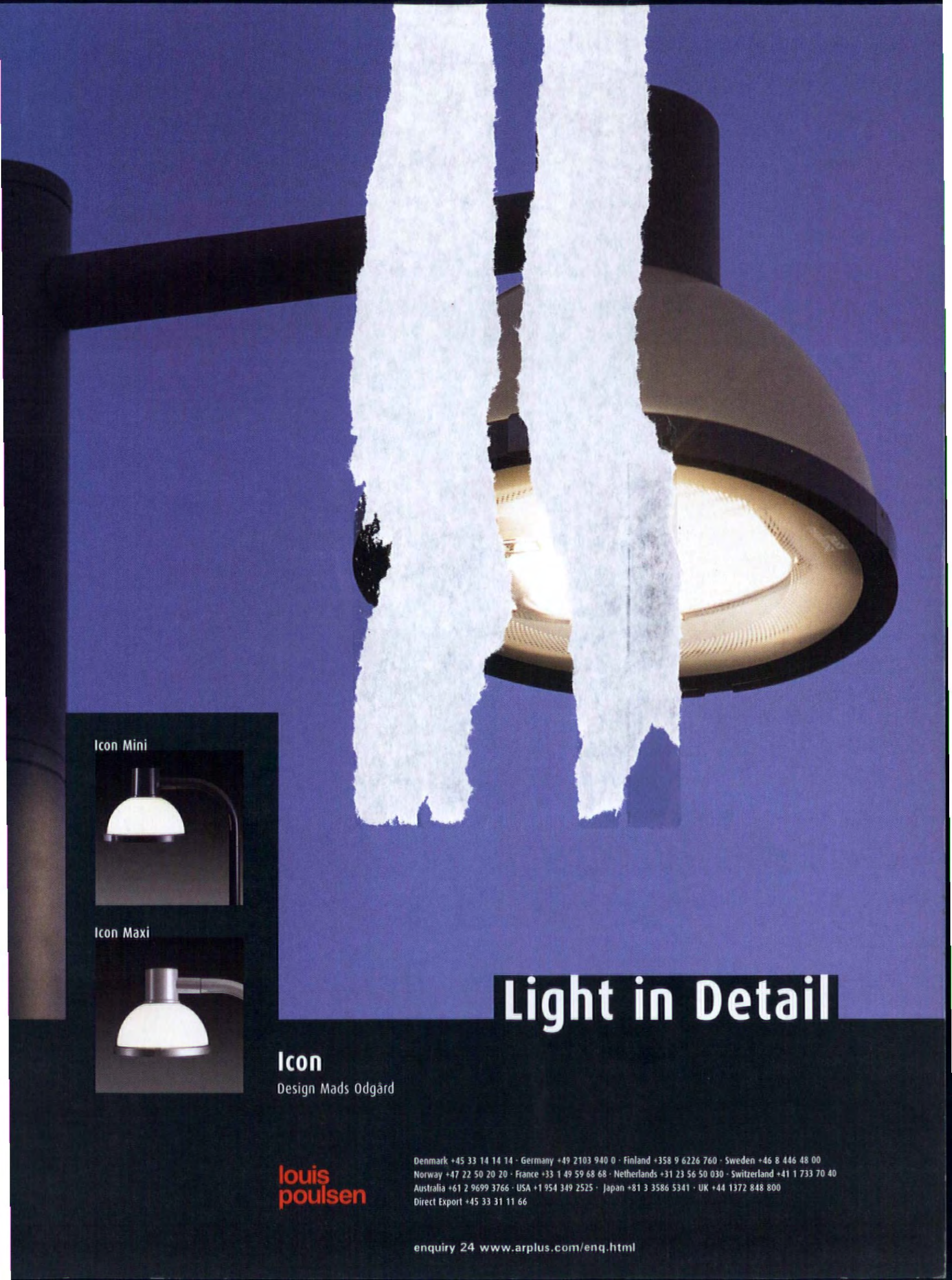

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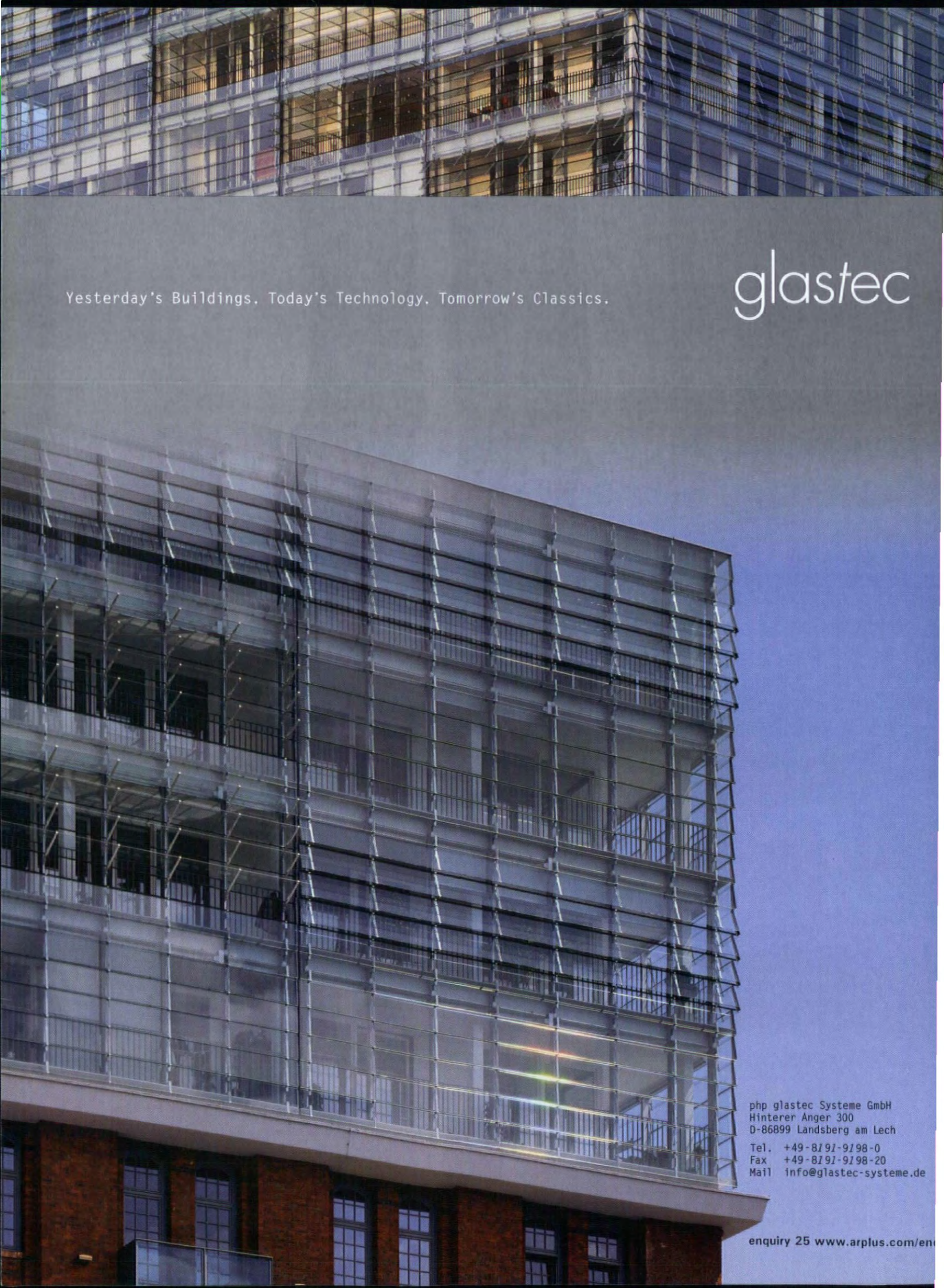
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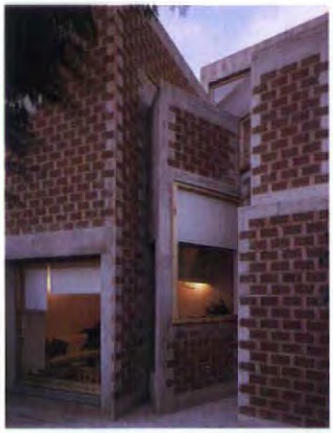
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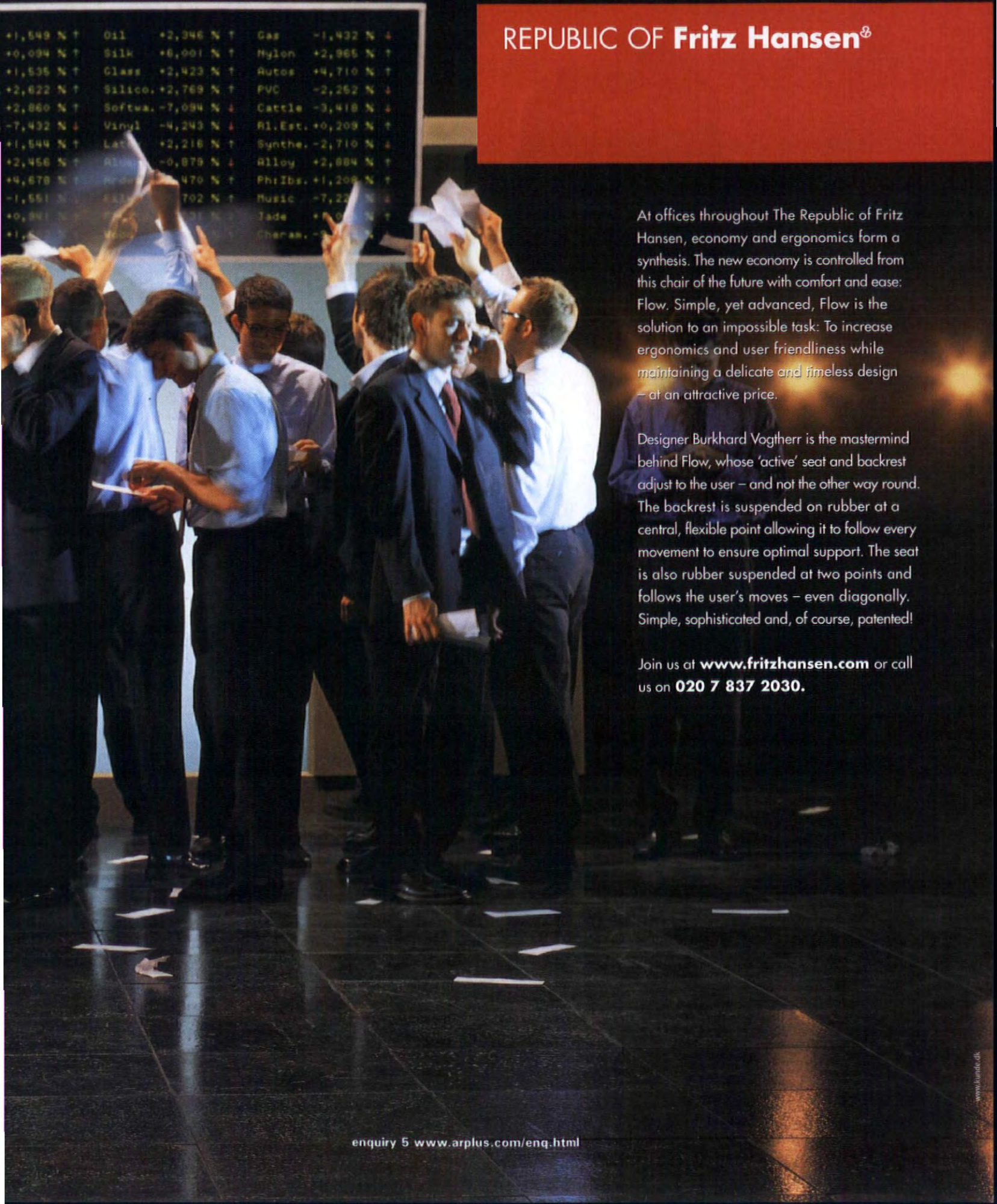

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Mr. Lee Dong-Ho of the Lotte Jamsil Hotel, Seoul, Korea, is very proud of the Mitsubishi elevators and escalators installed in the hotel. "The hotel features two spiral escalators, the only such escalators in Korea!" Combining a deluxe hotel with an adventure theme park and luxury shopping mall, the Lotte Jamsil is an urban resort. Mitsubishi and Lotte collaborated to customize the transport system to suit this unique project – including spiral escalators, observation elevators, Korean artwork within the designs, etc. "The hotel image was actually enhanced by the choice of materials used in the elevator designs. That's something that was only possible with Mitsubishi's superior design sense."
The choice of Mitsubishi products was based on safety, design, technology and reliability. "Elevators and escalators are the most important transport systems in the hotel, and passenger safety is paramount. We were also concerned with design renewal. Lotte knew that Mitsubishi has the best technology in the world, and also the best reliability in the world. And Mitsubishi realized that Lotte is an extremely important client. Mutual trust is why Mitsubishi elevators were installed in this hotel. That's the only reason, I think." Proving that this trust continues today, Mitsubishi and Lotte are currently collaborating on another Lotte World Hotel in the southern resort town of Pusan. "This will be a new landmark for Korea, a world-class hotel and urban-leisure resort."

Korean art decorates the elevator doors.

The lobby has two observation elevat

Mr. Lee Dong-
General Manager, Lotte Jamsil Ho

Mitsubishi Re-Opens Korean Company

On December 1, 2001, Mitsubishi re-entered the Korean market with the establishment of Mitsubishi Elevator Korea Co. Ltd. Since re-opening a branch office in Seoul in October 2000, Mitsubishi has successfully renewed many previous relationships and won prestigious contracts such as Samsung T3, the tallest building in Korea, and Su-Won Station, one of the sites for the 2002 FIFA World Cup. Mitsubishi Elevator Korea estimates steady demand of 15,000 units per year, which makes Korea the third largest elevator market in Asia.

Hotel Lotte Jamsil: Hotel and Shopping Mall

Opened for the Seoul Olympics in 1988, the Hotel Lotte World offers over 500 guest rooms, 12 restaurants and bars, 6 meeting rooms, indoor golf, sauna, etc. Overlooking the Han River, this unusual "resort-style business hotel" combines leisure, business and shopping facilities under one roof. To suit the unique building, the transport system features many unique touches: the only two spiral escalators in Korea; stylish observation elevators; and customized car ceilings and fittings.

The Jamsil's two spiral escalators are the only ones in Korea.

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Bright, decorative ceilings add a touch of luxury to the elevator cars.

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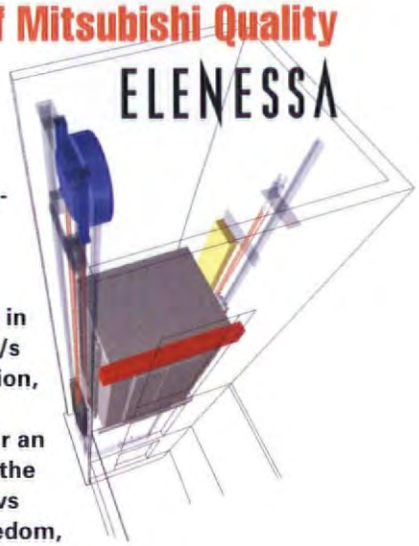

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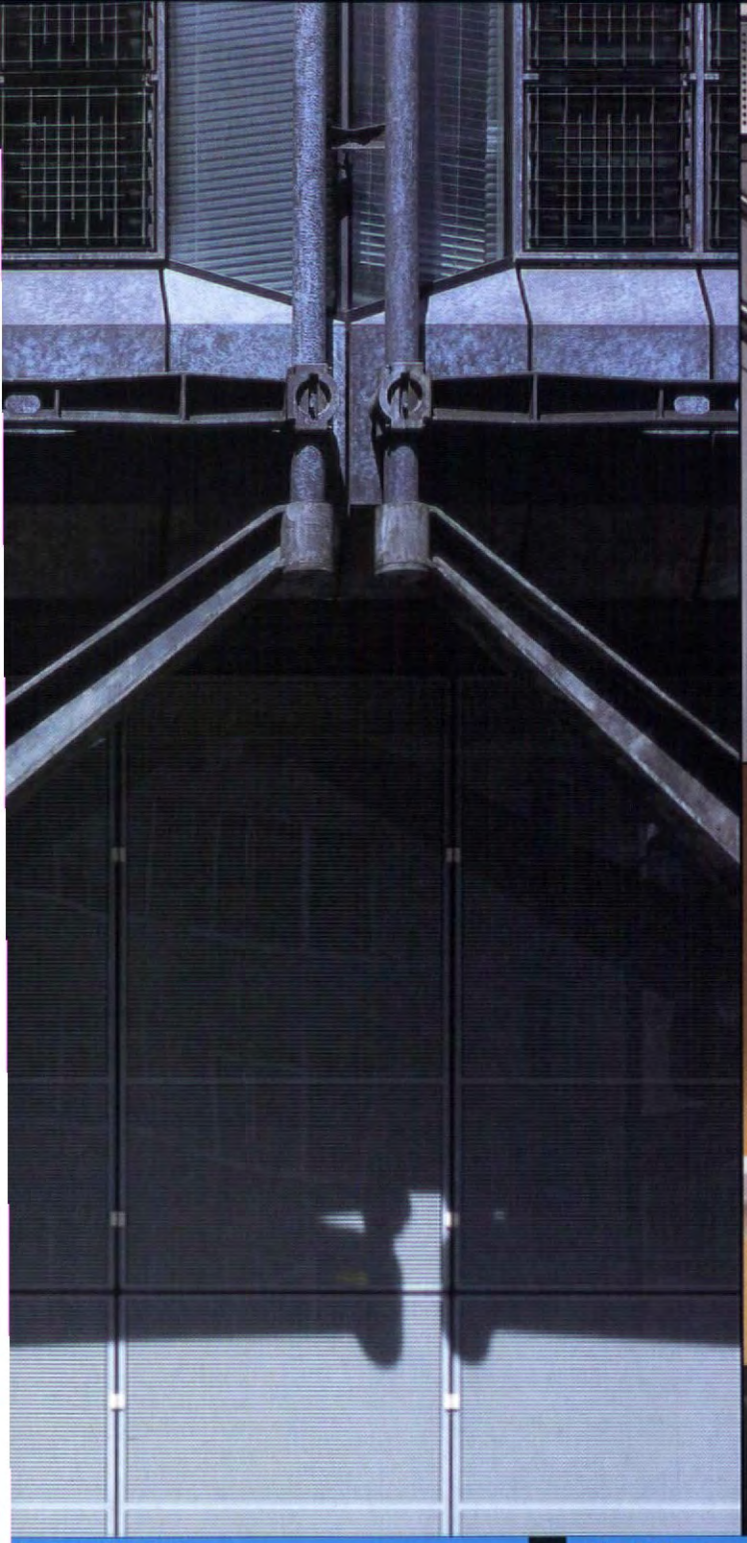

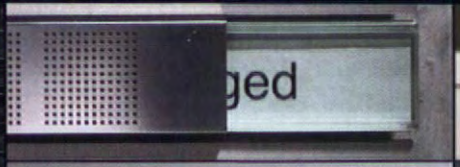

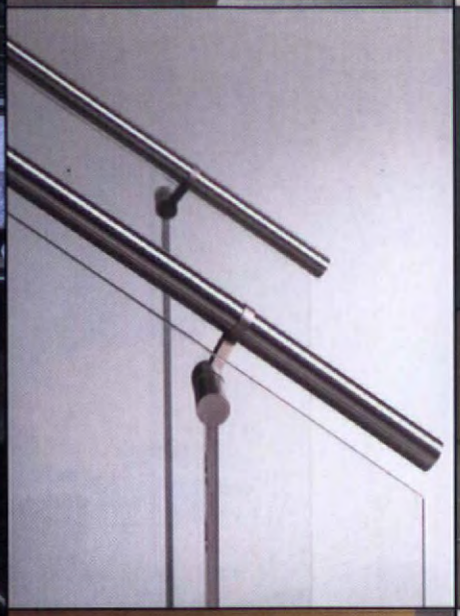

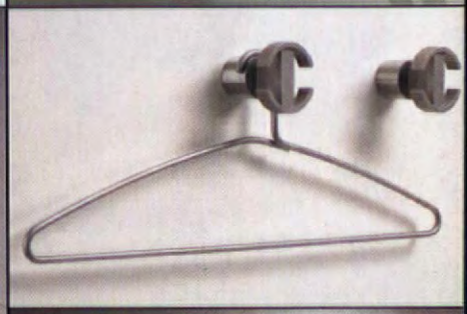

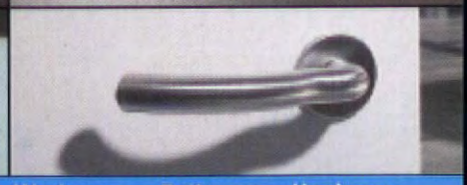

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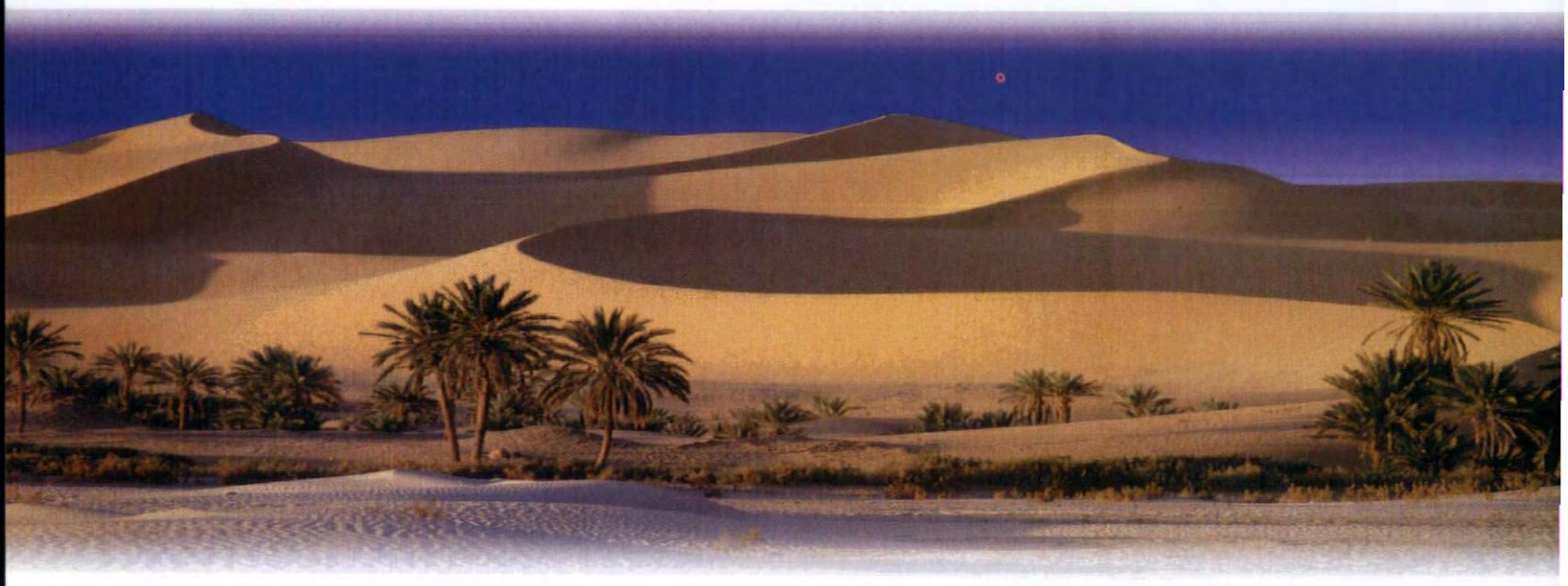

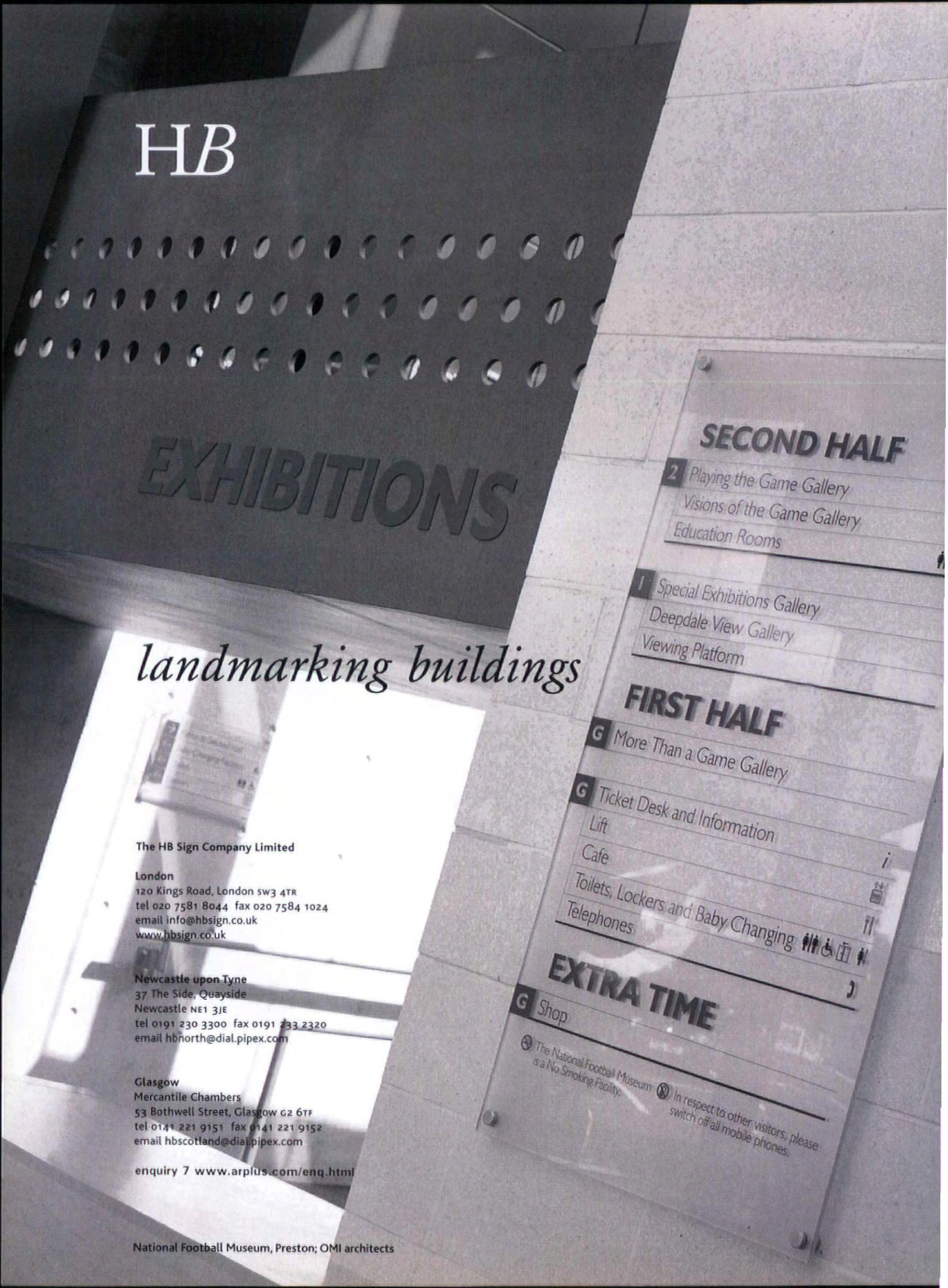

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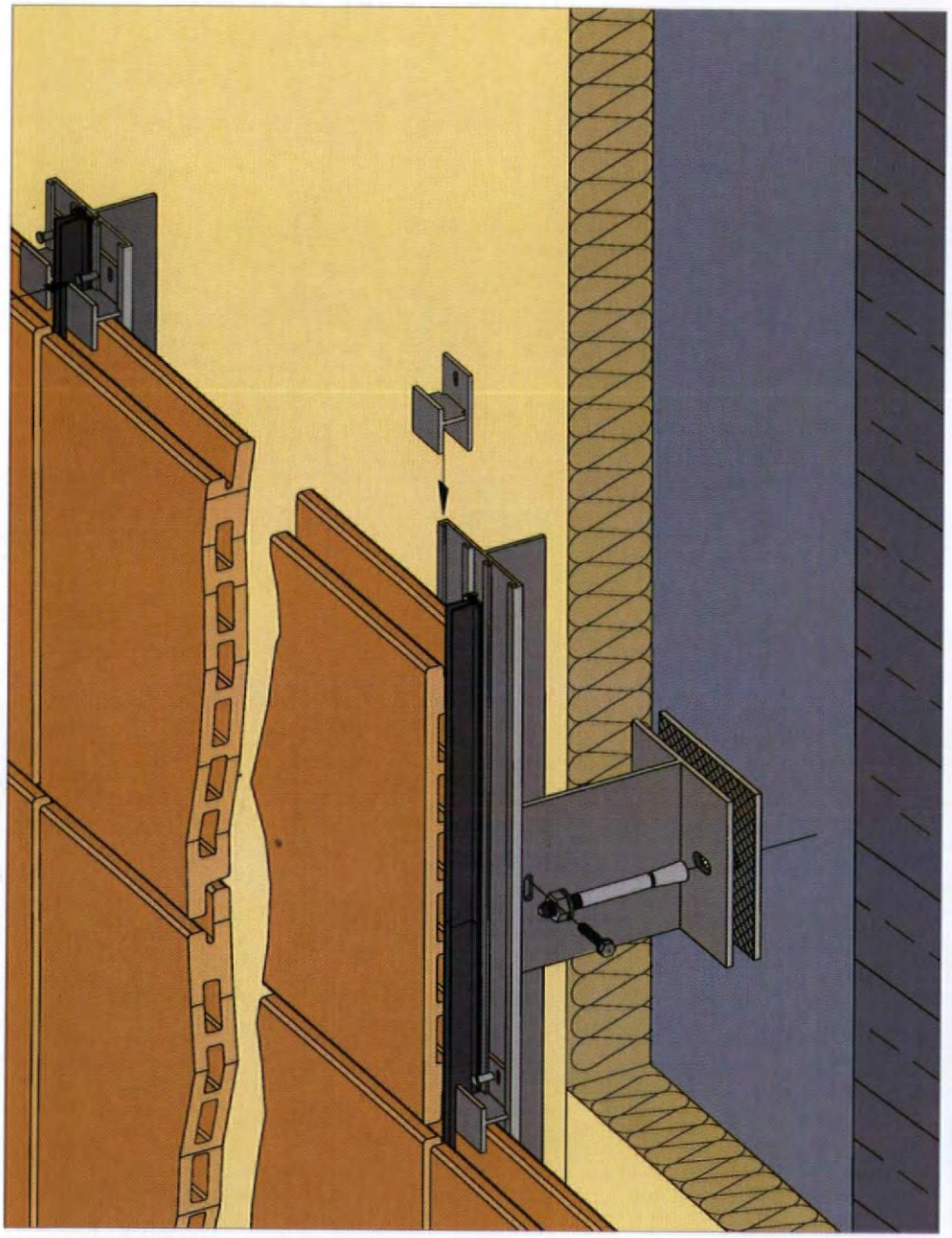

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view

THE AGA KHAN'S COMMITMENT TO PLURALITY AND INTELLECTUAL FREEDOM IN ISLAMIC CULTURE AND ARCHITECTURE. THOMAS HERZOG, PIONEER OF GREEN ARCHITECTURE AND NEW TECHNOLOGY CELEBRATED IN FRANKFURT. GRAPHISOFT PRIZE 2001 RESULTS. TRADITIONAL TIBETAN BUILDINGS AND TOWNSCAPES STILL TERRIBLY THREATENED.

THE AGA'S TRAMPOLINE

Speaking in Syria, the Aga Khan called for new links between technology and Islam.

'Syria has demonstrated the power of Islam as a crucible for the spirit and the intellect, transcending boundaries of geography and culture.' The Aga Khan celebrated a quarter century of his Awards for Architecture (AR November) at the Citadel in Aleppo late last year.

He was clear that 'his 'goal was to create an intellectual space' in which 'there will be no possibility of suffocation from the dying weeds of dogma, whether professional or ideological. Where the flowers of articulation and challenging ideas could grow without restraint. Where the new plants of creativity and risk-taking could blossom'.

The aim is to find how 'the profound humanistic tradition of Islam could inform the conception and construction of buildings and public spaces'.

'At its core', he said, is 'a message of opportunity, of potential, of hope.' He asked for greater understanding of the great plurality of the Muslim world, 'it is essential that we respect and value that plurality ... to build unity in diversity'. His Awards are intended to be 'an intellectual trampoline to generate ideas for building the future productively and constructively in terms that will be meaningful and beneficial to Muslims generally'.

Most of us were extremely puzzled when the first Aga Awards started to recognize humble works for poor people in the Third World and were given acclaim equal to buildings by world-renowned architects. In fact, the Awards' sensitive understanding of the relationships between people and their buildings, their public places and landscapes has greatly added to our understanding of what architecture is for.

The Awards undoubtedly give us another dimension of thought and criticism. The Aga argued that 'We need to achieve a better understanding of how dynamic cultures have and do lose their vitality, and to identify the potential new linkages between technical issues ... and the historical traditions of Islam'. The cultures of the West can learn. P. D.

ARCHITECT'S ARCHITECT

A major new exhibition at the DAM investigates the work of German architect and green pioneer Thomas Herzog.

For the first time since its foundation, 17 years ago, the Deutsches Architektur Museum has exhibited the work of a living architect. Thomas Herzog, 60 years old this year, is not a star architect but an architect's architect. In the 30 years since founding his Munich office he has been researcher, inventor, designer and constructor of systems and material combinations, in the service of elegant, sustainable and energy-saving architecture, and long before the label green was invented. With his partner, Hanns Jörg Schrade, and sculptor wife Verena Herzog-Loibl, he has done more than pay lip service to multi-disciplinary teamwork, collaborating with scientists, engineers, artists and his own students, Europe-wide.

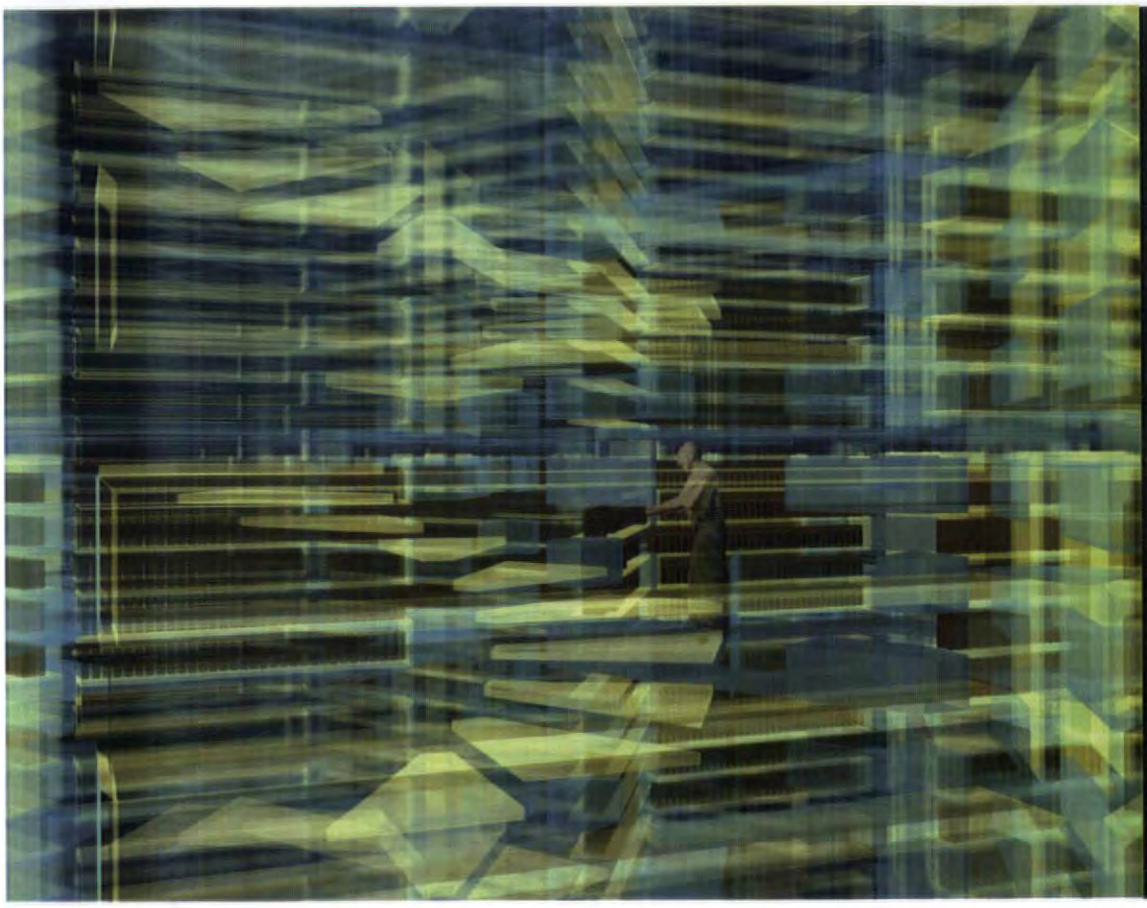
Most well known is his work in Hanover for EXPO 2000 and subsequent trade fairs; Hall 26 (AR March 1997), Deutsche Messe AG administration tower (AR January 2001) and the Expodach itself (AR September 2000), a giant ribbed timber shell roof that epitomized EXPO's theme of 'Humankind – Nature – Technology'. Herzog has continually demonstrated that environmentally friendly architecture is not synonymous with kitschy handcrafts, and a life reduced to eating muesli in mud huts.

The Herzog retrospective starts with the Berlin 1996 manifesto European Charter for Solar Energy in Architecture and Urban Planning written in four languages over the entrance walls. Herzog was one of its chief instigators and the signatories included 29 influential European architects. Growing up in a family of medical doctors, and with a physicist father, Herzog was perhaps predestined to approach architecture from a scientist's point of view. He is on the board of EUROSOLAR, at the Fraunhofer Society for Applied Research, and his preoccupations encompass timber – as a regenerative construction material, daylight – as the most energy saving method of illumination, and passive insulation systems. With Vladimir Nikolic he developed a Petrocarbona External Wall System (1973), and with Helmut Müller the partners put into production a Fischer Unit Construction Facade System (1975). A Daylight Grid System, for diffusing natural light, was developed with Christian Bartenbach for the glazed barrel vault of Linz Exhibition Centre. Translucent Aerogel-Panels, of fluid wall insulation sandwiched between glass sheets, were used for a private house in 1994 (AR January 1995). Most recently, Herzog has developed an insulating hanging clay tile facade system, with Max Gerhaher.

The paradox, as Peter Buchanan points out in his essay 'Pioneering a New Paradigm' in the accompanying catalogue, is that progress in sustainable architectural forms owes more to architects who question accepted practices and reorientate their work using scientific knowledge, than to the fireworks of self-appointed avant-gardists who disguise old technology in spectacu-

The Aga's trampoline: revealed in Aleppo Citadel.

Herzog's enormous timber roof, the Expodach, Hanover.



Judging for the eighth annual Graphisoft Prize for the creative visualization of architecture that lives in the imagination, through literature, film and music, took place at the start of December in Budapest. First prize went to Hartmut Liebster and Bergit Hillner from Leipzig, Germany, for their powerful yet highly sensuous visualization of *The Library of Babel* from the Argentine writer Jorge Luis Borges' short story. Jurors, who included the AR's Catherine Slessor, were impressed by the overall quality of the submissions which demonstrated a high degree of mature architectural thinking as well as technical skill. A fuller account of the awards will follow in a later issue.

lar new clothes. The green agenda is essentially conservationist, but it needs the light hand of innovative artists and scientists to serve the non-exploitative European ideal of a new age. Werner Lang's interview with Herzog (also in the catalogue), reveals a fascinating picture of Herzog's student years in the '60s. Meetings with the young James Stirling, Oswald Mathias Ungers, the then unknown Frei Otto, and the influence of alternative political movements, among a section of post-war German students at this time, also encouraged enquiry and experimentation in architecture. Herzog's continuing work with the structural engineer Kurt Stepan started with their first project in the mid-'60s.

Twenty-six projects, from a summer house on Chiemsee (1966) to the most recent Federal German Environmental Foundation centre in Osnabrück, full-scale component samples and giant photographs as hanging posters, have been specifically designed for a worldwide tour. Needless to say, the display was designed in Herzog's office and is as crystal clear and as thoroughly executed as the architecture.

In future years the cost of this retrospective (a quarter of a million Euros, at a time when the Deutsches Museum has no independent budget), may be weighed against the importance of having documented a historical benchmark in sustainable architectural development.

LAYLA DAWSON

Thomas Herzog Architecture + Technology is at the Deutsches Architektur Museum, Frankfurt am Main, Germany, until 3 March 2002. An accompanying English/German catalogue is published by Prestel.

browser

Sutherland Lyall heroically surfs the cyberwaves.

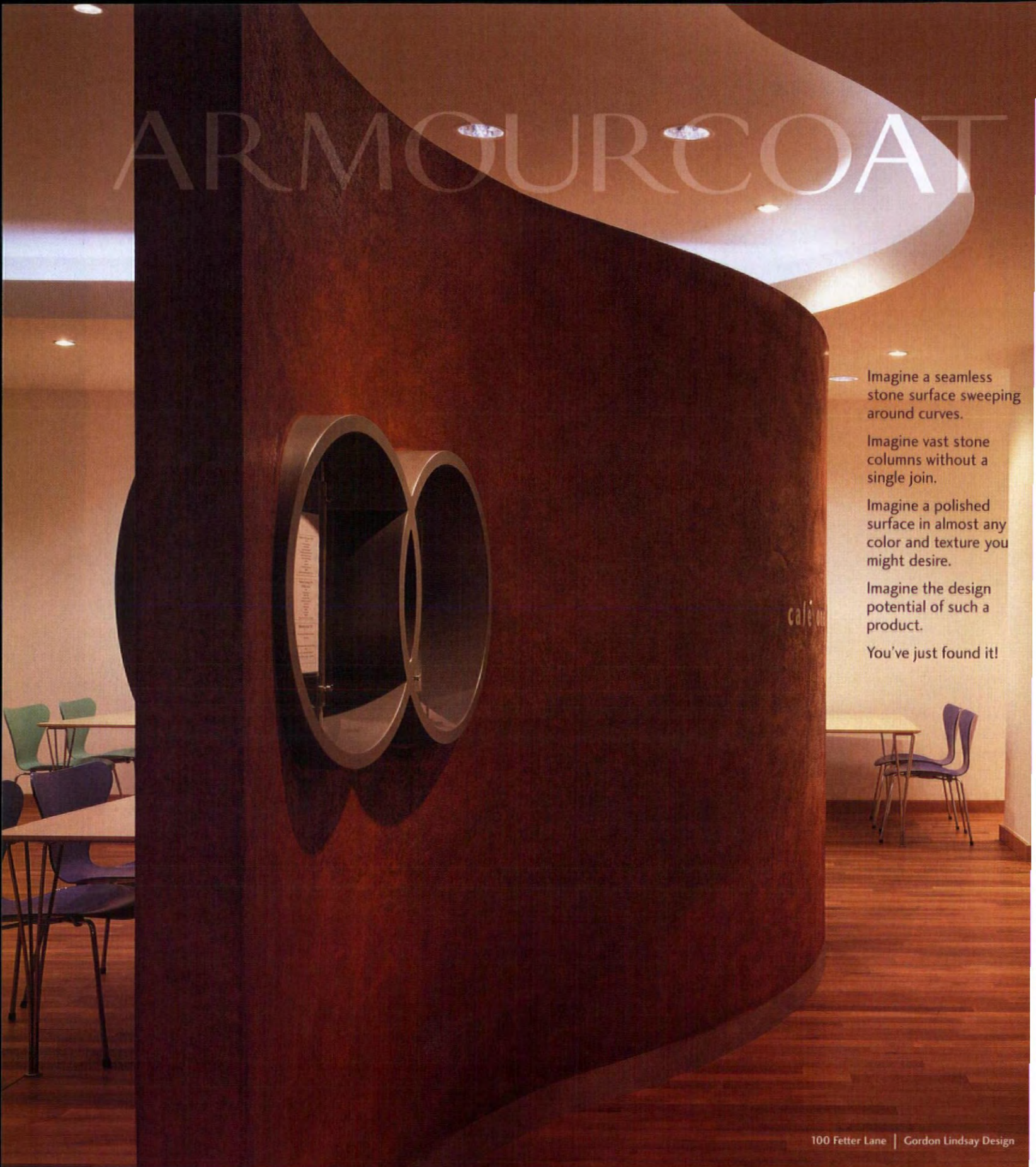
Preserving Pevsner

Nikolaus Pevsner was the defining historian for the Modern Movement. He has a special place for us because he was one of the wartime editors of AR and kept the flame of intellectual curiosity alight during those dark days – at the same time as dousing flames as a firewatcher on St Paul's Cathedral. Yet for the lay world his monument will probably be a multi-volume gazetteer to the architectural heritage of his adopted land: the *Penguin Buildings of England*. It is an extraordinary series. No less than 32 of the books were written by Pevsner on his own, 10 of them he wrote with collaborators and four were by other authors.

When, in the late '90s, Penguin Books went a bit quiet about the series, The Buildings Books Trust, launched its site at http://www.pevsner.co.uk/. The trust is dedicated to updating and continuing the series' publication – and to completing its coverage of Ireland, Scotland and Wales. Thirty-three volumes need revision, and new books have been commissioned: Clare Hartwell's *Manchester* is the latest paperback published in this the 50th anniversary year of the series. Although funding comes from such bodies as the Arts Council, Penguin Books is still there in the background – especially for the linked Looking at Buildings website which can be found at www.lookingatbuildings.org/. It is a lay guide to 'understanding and enjoying architecture of all varieties' but so far mainly English architecture. For the moment its coverage is to do primarily with London and Manchester. For architectural tourists you click on successively detailed maps and then on the red dot denoting a building, say the Tate Modern and, after a panoramic view comes up you click on a succession of blue arrows as you are drawn into the building's interior. It's still a bit rough and is in an early stage of growth but it's basically an ace way of telling people about significant architecture and its environment.

Palpable hits

If you are on the trail of buildings from round the world, another site, the Great Buildings Collection, has a welcome plainness of layout and simplicity of access at http://www.greatbuildings.com/types.html. Type in Stirling and up come Leicester, Cambridge History Faculty and the Neue Staatsgalerie. Usefully you can search by building type, style, date, major city, construction type, climate, context, elements, issues and the editor's choice – oh and there are two greatest hits lists based on surfers' preferences for buildings and architects on both of which topics you can also base your search.



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Rainmakers

Sustainability is firmly on the architectural agenda. So this new global warming-related site, www.ukcip.org.uk/, should be of interest. It's directed primarily at the UK's problems and is called UK Climate Impacts Programme (UKCIP). People, especially those returned from holidays in the sun, have long argued for casting adrift the British Isles and towing them south to below the Tropic of Cancer. But, it seems, within a few decades we shall be experiencing the weather of those climes anyway – including storms and floods.

At the UKCIP site there is quite detailed stuff about the above risks and uncertainties plus cost scenarios and social and economic predictions. All this is produced by people at Sussex University and on the site they offer a bunch of answers to frequently asked questions. Should you live in, say, Jakarta you could possibly extrapolate from this. But it may be more useful to consult the brief set of sites listed at http://www.ukcip.org.uk/international/international.html.

Who's hot?

I guess it's something to do with the fact that architects are trained in the crit system which somehow leads them to habitually compare, comment on and rate designs and buildings. This can be the only explanation for what seems to be a consistent Web interest in architectural league tables. For example, you find at Archibot at www.archibot.com/search.html you are invited to enter images of architecture (and architects) that you rate highly. And it's open to students too: 'How will your thesis project fare in the cut-throat critique that is Archibot HotOrNot? The catagories [*sic*] are: famous project, unknown project, famous architect, and unknown architect.'

There is, happily, more than this, including news and links (and a link swap market), an inchoate forum and a search engine courtesy of Mamma.com which deploys 10 major search engines. This is a bit ho, hum because a search on 'London architecture' failed to produce anything about the Looking at Buildings site above but then neither did the first seven pages of a Google search for entries under the same topic. I would, incidentally, prefer to use Google when searching for information, if only because it referred to more than half a million London architecture-related sites against Archibot's 10. Still, it seems like a site to watch.

Sutherland Lyall is at sutherland.lyall@btinternet.com

outrage

We all now know Jean Nouvel's views on court house design – his almost cruelly severe building at Nantes is intended to warn the citizen that for all the supposed people-friendliness of modern democratic government, State justice is a powerful, unforgiving, unrelenting affair. The problem with these sorts of ideas is that as they filter down through the profession, less talented architects dress them up in less competent and palatable ways.

The recently completed Palais de Justice in Caen, in Normandy, by Architecture Studio of Paris, is a grotesque example of this phenomenon. The building itself is sharp and black, with its main entrance at a prow-like corner. Visitors to this new courtroom must climb 17 steps (passing a sort of monumental pot on the half landing when pausing for breath). Some of these visitors are, apparently, presumed guilty until proven otherwise, for tacky signs direct wheelchair users to their own entrance round the back. This, it emerges, is reached by running the gauntlet alongside the entrance for the police vans and what look like the service entries for the dustbins and the meter readers. TIMOTHY BRITTAIN-CATLIN

letters

TIBETAN TRAGEDY

SIR: I was pleased to see Delight covering a Buddhist monastery in Ladakh (AR November, p98). However, if you raise your eyes to the neighbouring hills, the situation is far from peaceful. The destruction of monasteries is still spreading in Eastern Tibet.

According to http://www.savetibet.org the scale of this continuing demolition of monastic structures is unprecedented since the Cultural Revolution. It seems at Yachen Monastery, now part of Pelyul county of Sichuan Province, Chinese officials forced the monks and nuns to destroy their homes or be fined 200 Yuan ($25) and have belongings confiscated.

But Beijing has always wanted to make Tibet Chinese. A central aim was to diminish Lhasa's role in the religious and cultural life of Buddhist Tibet. Moving people to Lhasa seemed an efficient way, and so the city of 30 000 inhabitants in 1950 grew to 382 000 in 1998. Of course urban growth neccessitates demolition.

Knud Larsen and Amund Sinding-Larsen, University of Trondheim, Norway, documented landmark buildings and the townscape of Lhasa for seven years. They found that the Tibetan architecture kept disappearing before their camera lenses. In 1995 they identified 330 of Lhasa's old religious and secular buildings. By 1999 the total had fallen to about 200. The results are published in a sumptuous and learned volume *The Lhasa Atlas: Traditional Tibetan Architecture and Townscape* (October 2001, Serindia Publications, £40). It is well illustrated with maps, sketches and photographs from the present and the lost past.

Fortunately Unesco's World Heritage Committee lists the 1000-room, golden-roofed Potala and the Jokhang Temple Monastery since 1994/2000. Today this architectural masterpiece is a major tourist attraction and the authorities now realize protection of the Potola and other landmarks are key to commerce. For

Red Palace of the Potala, Llasa, Tibet: one of the very few historic monuments that are reasonably safe because it has been declared a World Heritage site.

the Larsens their protection means 'turning them over to an aggressive form of tourism management seems to be the only solution, however unappetizing and unrealistic that may seem'.

The beauty and peacefulness of the Buddhist monastery in Ladakh contrasts with the situation in Tibet. What a shame Shangri-la is only an imaginary place.

Yours etc
GERALD BLOMEYER
Berlin, Germany

VERTICAL GULAGS

SIR: Referring to View in AR October issue (pp28, 29), I want to make the following comments. Several years before terrorist attacks in New York, at an AIA meeting in Washington, DC, I had expressed my deep reservations on the virtues of tall buildings. I pinned a name for them as Vertical Gulags.

Gerald Blomeyer writes: 'Today tall buildings are the product of need'. Not in my mind. They are the product of financial speculation. Who benefits from them? Not the workers who commute long distances to these anonymous high-rise structures.

Did anybody, specially the architects, ask the clerks if they are happy to work in hermetically shot glass enclosures. What can they see from their interior for relaxation? Other skyscrapers in a tall urban disorder. They do not breathe fresh air, they rarely view the mountains or the plains.

Why many in the States do like Washington, DC, is precisely because the capital of US does not have tall buildings, keeping in harmony L'Enfant urban grand plan. All other American cities with skyscrapers are the same; they do not have any particular distinction.

It is very sad that Frankfurt, or Paris at La Défense is imitating America.

That is not 'a major contribution to the city image' as G. Blomeyer thinks. The towers do not enhance both the skyline and the quality of city life. Tourists do not go to Copenhagen, London, Madrid, Paris or Rome to see the skyscrapers. New York is an exception for being the original creator of the skyscraper in the twentieth century. Today such repetition in the computer world of global communication has no justification.

As to the sustainability: the concentration of energy in a such tall solid density, produced by lifts, heating and air conditioning, as well as lighting, does not contribute to energy conservation, as the Los Angeles and New York crises have already demonstrated in the past.

Water availability might work for New York (Atlantic Ocean) and for Chicago (Great Lakes), but you still will need a lot of energy for pumping machinery and for waste treatment and all other sequences, derived from material and food supplies.

Another important issue as a result of recent events will be their control and maintenance. The vulnerability of tall buildings for sudden collapse will require much greater structural considerations. The CBS, a 40-storey building designed by Eero Saarinen in 1960, was the first skyscraper of reinforced concrete with a tremendous load in comparison to post and beam steel high-rise buildings. The geological soil of Manhattan made it possible to build it, but in other places the cost of tall buildings will be commensurably greater and uneconomical in relation to the renting offices spaces and their prices.

But what is more important: in many lands where the difference between the dwellers in very poor settlements is in abysmal contrast to the glossy high-tech super tall towers, sooner or later we can expect more tragic events of urban unrest and destruction.

Yours etc
ADAM MILCZYNSKI KAAS
University of Navarra, Pamplona, Spain

VIEW FROM A MOUNTAINSIDE

SIR: The day after the terrorist attack on the New York World Trade Center, three of my colleagues and I alighted with our students from a boat butting its nose against a vertical mountainside by the Geiranger fjord, to climb the path up to the abandoned farm of Skageflå, hovering somewhere almost directly above our heads. Every time we paused to regain breath, we figured out the equivalent floor level of the WTC-towers. By reaching the farm at about 250m altitude, with a view to the closest neighbour slightly below on the opposite side of the fjord, we realized that we were only two thirds up the side of those ex-towers.

I came to think of this excursion when I read the 'View from Manhattan' by Paula Deitz in the November issue of AR, and also of the – in view of the shortlivedness of other trends – exceptional persistence of that fad of the late nineteenth and early twentieth centuries, to make tall buildings for little other reason than breaking height records (admittedly, in the days before efficient telecommunications there could be a case for crowding the most sought-after locations). Even in Norway, where such structures in most places are dwarfed by nature, we still have our share of project-makers who insist that having a disproportionately tall building will 'put the place on the map', applauded by architects who think it will make the place more 'urban'.

Some weeks ago the concert staged in memory of the tragedy was on the TV. On the backdrop behind the now somewhat aged (no longer smashing the amplification gear with guitars) The Who, pictures of the pre-disaster scene were projected. In all the views, the former WTC towers' disfiguring effect (to put it mildly) on the Manhattan skyline could be appreciated, and my immediate, cynical observation was that, well, at least one good thing came out of this. Then the really terrifying thought struck me: are acts of such atrocity the only way to get rid of mastodontic eyesores like these?

Perhaps we may hope that the vulnerability of tall buildings so effectively demonstrated there, by working on modern capitalism's inherent fear of risk, will cool the urge for self-assertive high-rise projects. Or, maybe not – when writing an essay in Norwegian, a Dutch exchange student of ours got some nuances of meaning confused when looking up the word for 'reinforced', and came up with 'armed concrete' – perhaps that hitherto unthought of material will be invented to counteract terrorist attacks?

Yours etc
DAG NILSEN
Trondheim, Norway

erratum

ar+d award prizewinner Taiko Shono is a soundscape designer (see AR December 2001, p40). Her design team assistant was Takayuki Osamura.

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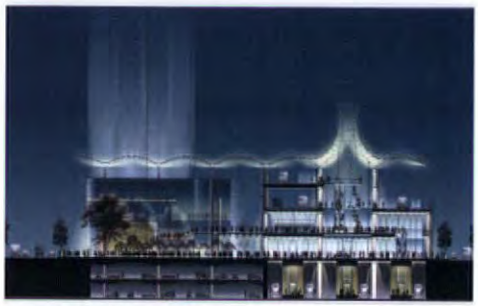


Transbay intermodal terminal by Richard Rogers et al.

... is a new elegant gateway to city.

View from San Francisco

San Francisco may be suffering because of the collapse of the e-industry, but its ambitious infrastructure projects are a fair bid to make it the most civilized city on the US Pacific coast.

What a difference a year makes. Last year San Francisco was experiencing all the irrational exuberance of Silicon Valley's Internet boom. The Bay Area economy epitomized the good times of the Clinton-era policies promoting globalization and high technology. The local real-estate market was white-hot; commercial vacancy rates in the city were less than 1 per cent; freeways were jammed with dot.com commuters from 5am onwards and you had to book reservations at the smartest restaurants months in advance. Now that the Internet bubble has burst and following the tragic events of 11 September, the city is returning to normal and a more sober reality. Commercial vacancy rates have risen to 25 per cent, thousands of former Internet workers are unemployed, restaurants throughout the city have closed and you can zip along the freeways and park practically anywhere. There is a sense of the end of an era.

Both the boom and its inevitable bust have been enormously disruptive to the social and economic life of the city. The spike in rents caused the displacement of thousands of small businesses and the transformation of San Francisco's older working-class neighbourhoods such as SOMA, Potrero Hill and the Mission District through gentrification and the construction of thousands of live/work lofts. The Planning Code, as a way of retaining blue-collar artists, permitted the construction of high-density loft units within mixed-use, formerly industrial neighbourhoods, but because of house price inflation they are more likely to be inhabited by hip Internet entrepreneurs. Some of the new loft projects have been quite spectacular contributing to the dynamism of the context they were built in, including those by San Francisco architects Stanley Saitowitz and Jim Jennings. San Francisco became the most expensive city in the US, and the shortage of affordable housing created a homeless population of nearly 10 000 (incidentally almost the same number of homeless people as during the Great Depression in the '30s). It will take some time for the full impact of the bust to sink in. In the Financial District and SOMA there are at least 3.5 million square feet of office space still under construction, having been approved and started while the going was good. Stopping projects like these is like trying to slow down an oil-tanker.

The building I worked in until recently mirrored the whole saga. A 1925 era concrete-framed warehouse building near the Transbay Terminal, with no air-conditioning, one slow elevator and lousy lavatories, it was full of architects, graphic artists and landscape designers paying rents at less than $1 per square foot. With the boom, rents zoomed up to $7 sq ft and all the small design firms were kicked out and replaced with dot.com start-up companies. Now, after the bust, the building is half empty, rents are down to $2 sq ft and the largest tenant on the second floor is a company called Bankruptcy Services Inc.

In the 12 years since the Loma Prieta Earthquake of 1989, San Francisco has undergone an astonishing transformation, rivalling the reconstruction after the 1906 Earthquake and Fire. Huge amounts of public investment have been spent on new museums, public buildings, seismic retrofitting and improvements to the transportation infrastructure. The '90s was an era of growth and prosperity rivalling the first Gold Rush of 1849. Unlike previous booms, this one produced some important investment in the region's infrastructure and many new public buildings. Seismic retrofitting of public buildings started the economic resurgence with over $2.4 billion being spent on the renovation of the Beaux Arts era Civic Center alone.

Star out-of-town architects have designed many of the new projects still in the design stages, so that San Francisco will have a selection of new cultural buildings by the usual suspects. Herzog and De Meuron for the new DeYoung Museum and Renzo Piano for the reconstruction of the Academy of Sciences, both in Golden Gate Park. Daniel Libeskind and Ricardo Legorreta will contribute to the Yerba Buena Gardens architectural theme park with their Jewish and Mexican Art Museums.

Waterfront restored

One of the greatest recent achievements has been the restoration of the city's waterfront. The former double-decked elevated Embarcadero Freeway, which was built in the late 1950s and disfigured the city's access to the Bay, was badly damaged in the 1989 earthquake and has been torn down to be replaced with a fine boulevard, lined with stately rows of Canary Island palm trees. Contrary to all the worst fears of the traffic experts, the removal of the freeway did not cause gridlock or back-ups across the Bay, but has dispersed traffic easily along surface streets. Most importantly it has allowed the city to regain its waterfront and given access to the splendid Ferry Building and pier buildings. Along the new Embarcadero are two new light-rail lines, which expand the city's already extensive network: the expansion of the Market Street F Line heading north to Fisherman's Wharf which uses

Crissy Field: redeveloped airfield adds to park.

historic 1930s streamline era streetcars; the other heading south running the sleek new Italian Breda cars to Pac Bell Park located at China Basin. Like many American cities in the '90s, San Francisco built a new downtown ballpark. Pac Bell Park is the new brick-clad retro-styled, privately financed baseball stadium, designed by HOK Sports. It is superbly sited within walking distance of Downtown and the nearby Caltrain Depot and faces the Bay so that players can hit a homerun into the water.

At the foot of Market Street, the 100 year old Ferry Building is being renovated by the San Francisco firm of SMWM to once more become the gateway to the city with the increased use of high-speed ferries criss-crossing the Bay. The restored landmark building will contain offices and restaurants and be home to a popular farmer's market. A new plaza designed by ROMA Design Group terminates Market Street and acts as an appropriate forecourt to the Ferry Building.

Further along the northern waterfront, the former Crissy Field airstrip, within the Presidio National Park near the Golden Gate Bridge, has become the city's latest outdoor amenity. Designed by the local firm of George Hargreaves & Associates, it consists of a new two-mile long esplanade, offering unparalleled views of the Bridge and the Bay. The design combines natural features and man-made forms with rows of newly planted trees and chevron-shaped mounds. It enhances the presence of many former military buildings, including the Gorbachev Foundation, a group of buildings donated by the US Government as a future peace forum. A new salt-water tidal lagoon has been created as well as the restoration of sand dunes, a vast new meadow and biking and walking trails.

Infrastructure burgeons

Next year will see the start of the five-year $3billion replacement of the eastern span of the Bay Bridge. The existing prosaic looking cantilever design span, which partially collapsed in 1989, will be replaced with a new suspension bridge with a single tower intended to match the design of the double suspension western span between Yerba Buena Island and the city. The structural design is by TY Lin International with architectural design by Donald MacDonald, San Francisco. The new span has an innovative structural system incorporating a 'self-anchoring system' for attaching the cables to the long causeway from Oakland.

Ferry Building: reworked to become maritime city gate.

Other future transportation improvements still in the planning stages include the proposed new Transbay Terminal with a new inter-modal transportation centre designed by SMWM/ Richard Rogers Partnership with Ove Arup Engineers. The new terminal will replace the original Interurban train and later bus facility, built when the Bay Bridge was first opened in 1937, with a new five-level transit hub containing three levels of naturally ventilated bus platforms, above grade, and a new train station for an extension of the Caltrain line from San Jose and a future new transbay tunnel under the Bay to the proposed High Speed Rail line to Sacramento and Los Angeles. The design, which is in its concept stages, promises to be one of the great transportation buildings in North America and a dramatic element in the dense urban fabric of Downtown. It will be part of an ambitious redevelopment programme to build both new office buildings in the vicinity, but also to house as many as 15 000 people close to transit and all the amenities of this part of San Francisco.

At San Francisco International Airport, the new International Terminal has recently opened, completing almost forty years of airport construction. A newly opened museum at the airport shows a photograph of the original 1954 terminal with three DC-3 airplanes and a dozen taxis parked outside. The new terminal will permit the airport to handle 35 million passengers a year, more than California's entire population. The new building designed by Craig Hartman of the San Francisco office of Skidmore, Owings, and Merrill/Del Campo Maru/ Michael Willis reads as an elegant gateway to the world, its soaring gull-winged roof covering the great departure hall and bridging over the roadways leading in and out of the airport. Sun-shading screens and fritted glass protect the great west-facing window wall from excessive heat and sun. Next year the long-awaited BART rail extension from Downtown will be complete, connecting the airport with the rest of the Bay Area.

As the Bay Area enters a new era it will have a legacy of significant new public buildings of a very high standard to use and enjoy. Now is the time to prepare for future periods of growth and innovation, and to address some of the unmet social needs particularly housing and public transit-oriented development to avoid the waste and blight of suburban sprawl. JOHN ELLIS

1
Growing.
2
Beginning.
3
Natural structures.

VEGETAL BUILDING, GERMANY
ARCHITECT
MARCEL KALBERER

Living architecture

Since ancient times, myths of natural architecture derived from growing trees have haunted European imagination. Here, they are made corporeal.

One of the slogans of contemporary architecture is ecological design and building based on sustainable development. A point of departure for these ideas is provided by Marcel Kalberer, Swiss-born architect working in Germany. The brushwood fence and pergola are among the concepts which take on new forms in Kalberer's work.

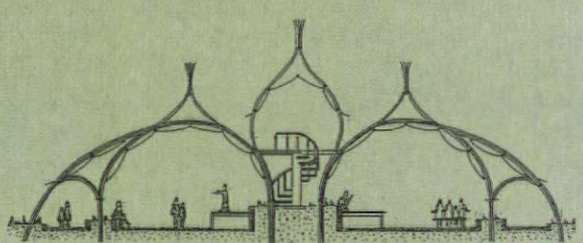
Kalberer has for more than ten years now been drawing on traditional Mesopotamian methods to develop a building technique typified by car ports, children's playhouses and larger structures for social evenings at village festivals, as in Auerstedt near Weimar. From his chosen construction material of three-to-five-year-old growing willows, he creates his own architecture by planting, interweaving and binding poles of up to about 7m in length. Kalberer works in nature on nature's own terms, observing her laws and forms of growth. The result brings to mind support structures for vaulted arches (for instance Gaudí's Sagrada Familia). But here, the solid surfaces of the vaulting are gradually 'bricked in' by the growing branches.

Rural building is familiar with the traditional brushwood or pole fence. Bush has through the ages been used in building cabins, and the builders undoubtedly made occasional use of growing trees. In Kalberer's model, the planned planting of annually managed and trimmed growing wood opens new vistas for traditional practices. Resulting structure is truly ecological, and final disposal of the building is simplicity itself: when it no longer pleases, it can easily be composted. The technique Kalberer has developed for his structures is very simple and easy to learn: a living willow cabin lends itself equally to use as car port or summer house or children's playhouse. Building a growing cabin is undoubtedly a lot of fun, and success is almost guaranteed. The result is an effective union of form and matter which lives with the seasons; the building grows in time and space.
ESA LAAKSONEN

Further information:
www.sanftestrukturen.de
marcel.kalberer@t-online.de

Marcel Kalberer-Micky Remann, *Das Weidenbaubuch – Die Kunst, lebende Bauwerke zu gestalten*. AT Verlag, Aarau, Switzerland, 1999. ISBN 3-85502-649-1

Architect
Marcel Kalberer
Photographs
Marcel Kalberer
Translation
Brian Fleming



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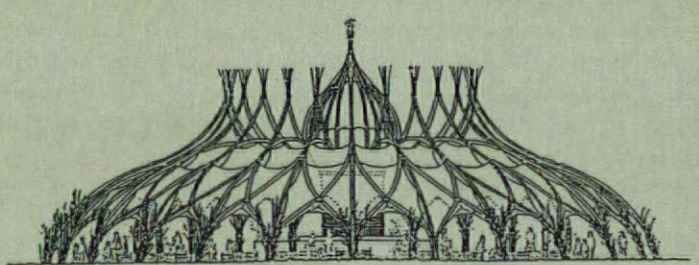

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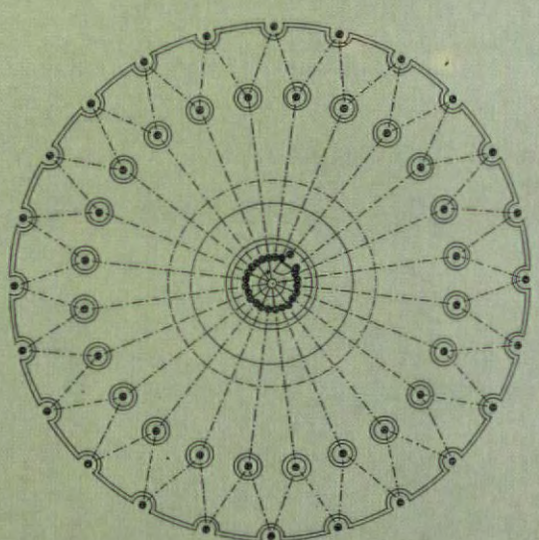

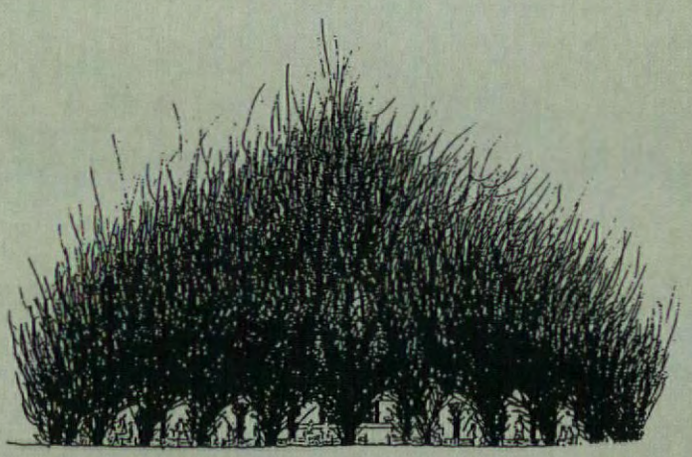

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As if fulfilling the portentous predictions of some medieval soothsayer, the first year of this new century has witnessed an unprecedented catalogue of warnings of the cumulative effects of climate change. Heatwaves in Europe caused over 100 deaths. Forest fires in America devastated an area the sizes of Wales. The global warming that is slowly eroding Europe's largest glacier in Iceland also created clear water across the North West Passage at the top of Canada, making navigation possible for the first time since pre-history. Spring in the northern hemisphere is arriving one week earlier than 20 years ago, Antarctic summers have lengthened by 50 per cent and the Arctic ice sheet had thinned by 40 per cent. World-wide, there have been increasingly violent storms and droughts, with the UK experiencing floods of near biblical proportions. Concentrations of carbon dioxide in the atmosphere continue to increase at an alarming rate. The pre-industrial level was 590 billion tonnes; now it is 760 billion tonnes.[1]

The convulsions of the earth's climate are only part of a familiar, doom-laden equation. An ever increasing population (currently at 6 billion and predicted to swell to 10 billion by 2050) is progressively intensifying the stresses on the environment and exacerbating the problems of urban centres, such as overcrowding, pollution and waste. (For the first time in human history, more people now live in cities than in the rural areas.) Doubtless some form of life could still survive in a world of shrinking land masses, foul air, choked seas and ever increasing temperatures, but humankind still has the potential – if perhaps not always the will – to conceive of responsive coexistence with the natural world and its resources.

Sustaining the environment

For centuries, building has been seen largely as a way of living apart from the environment and dominating nature. It has turned out to be a pyrrhic supremacy, but the current ecological crisis has motivated many professionals and academics to re-evaluate the fundamental premises of how buildings are designed and produced. Underscoring technical efforts to reconstitute the built environment is the elusive but critically important concept of sustainable development. Across a wide range of disciplines, including architecture, conjecturing a built environment that mimics and complements rather than conflicts with nature is emerging as a vital goal of current theory and practice.

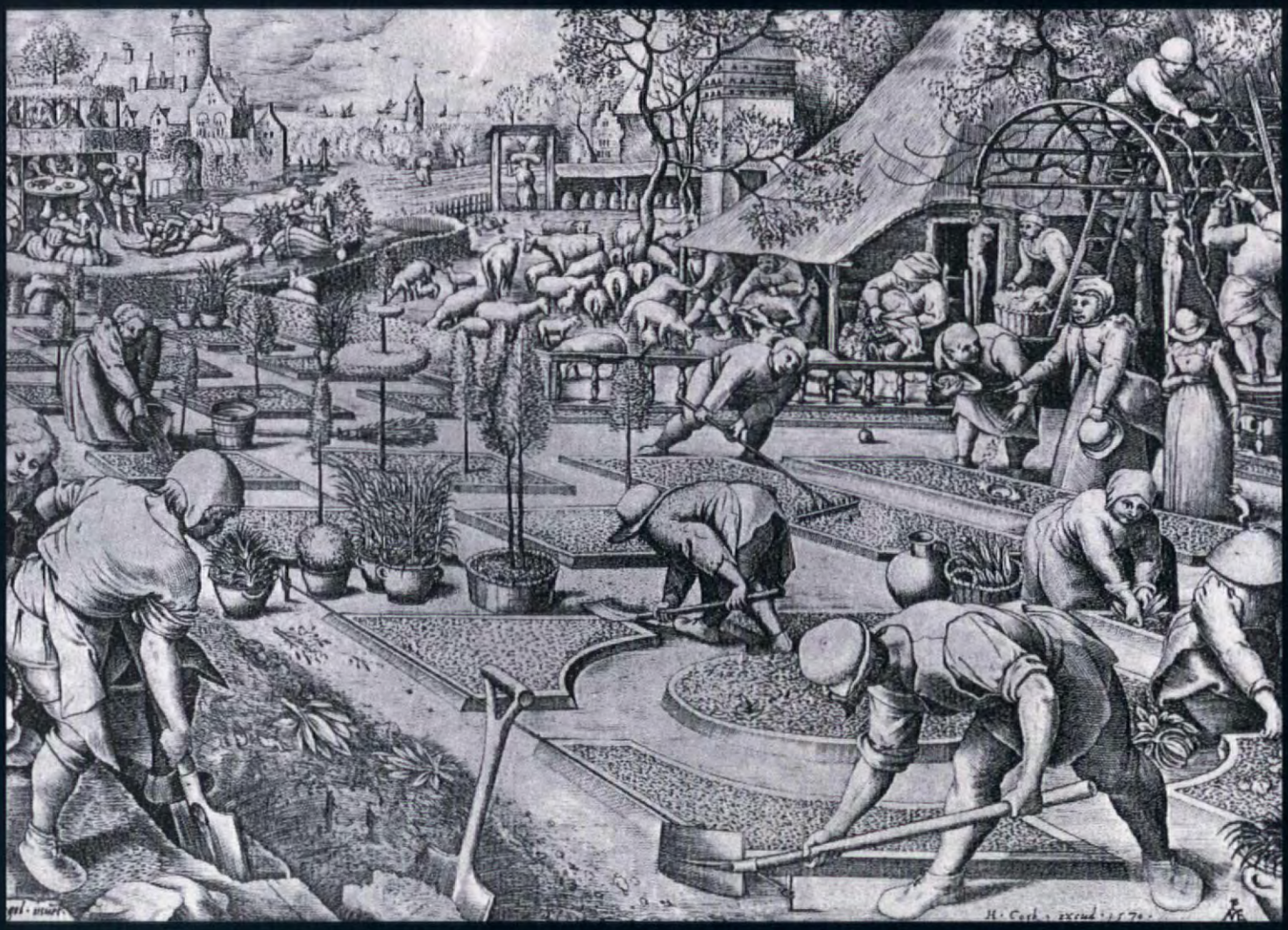
As Brian Edwards and Chrisna du Plessis observe,[2] notions of sustainability are not a preoccupation of recent history. The medieval monasteries of Europe produced their own food, created buildings from local materials, captured and recycled water and developed renewable energy technologies such as water mills and windmills. These highly structured societies took care of the sick and elderly, cultivated land according to ecological principles and had a humane approach to animal husbandry. Such practices still obtain in rural communities in Latin America, Africa and Asia, but often selectively appropriate aspects of contemporary technology. For instance, in the desert regions of north Africa, doctors still travel by camel to visit remote villages. It is a tableau unchanged for generations, but nowadays the camel is equipped with a GPS antenna on its head to signal its geographical position, and a photovoltaic panel on its back that provides energy to run a fridge containing medicines to treat the sick.

Tradition and technology

This instinctive, almost poetic synthesis of tradition and technology could have wider implications for the sclerotic First World, as Edwards and du Plessis note: 'Sustainable development is not a term one hears in such settlements, but in reality, these are places from which the rest of humanity could usefully draw lessons rather than seeking to "improve" them.'[3] The danger of this is a tendency towards the nostalgic glorification of some isolated, eco-responsive aboriginal society totally removed from our debauched, technologically sophisticated milieu. On the other hand, the lessons of these civilizations and their cosmologies reveal a wealth of insights into the evolution of the human habitat that cannot be ignored. They provide instructive examples of how to deal with climate and demonstrate ideas, attitudes and low-tech solutions that can be usefully incorporated into contemporary shelter. Equally importantly, these cultures offer the basis for rethinking humankind's relationship with the planet.

THE QUEST FOR ECOLOGICAL PROPRIETY

For centuries, building has been seen as a way of dominating nature, yet this supremacy has had terrifying consequences. Strategies of sustainability are urgently needed to restore our equilibrium with the planet.



Honest toil in a medieval garden illustrated by Pieter Brueghel's *Spring*. Although few would advocate a return to the grimness and brutality of the medieval peasant existence, notions of living in harmony with nature date from the Middle Ages. Such paradigms can inform the current search for a new kind of ecological propriety.

Architects clearly have roles and responsibilities in the context of ecological propriety, but tend not to have a great deal of latitude for reflection as they are swept along in the 'time is money' dominated processes of building procurement and production. Moreover, it is rare to find a client interested in investing valuable resources in responsive, sustainable architecture, even though it can yield demonstrable economic, social and cultural benefits. Predictably, in view of this, many architects choose not to engage with such issues. Peter Eisenman's dismissive reaction to enquiries about his approach to sustainability is telling, but not untypical: 'To talk to me about sustainability is like talking to me about giving birth. Am I against giving birth? No. But would I like to spend my time doing it? Not really. I'd rather go to a baseball game'.[4]

Green paradigms

Yet it is clear that architects, particularly at Eisenman's exalted superstar level, can lead by example, suggesting ecologically responsive paradigms that in turn can influence other agencies involved in determining the character of the environment, such as clients, planners, politicians and the public. This could form an important catalyst for change. As Susannah Hagen notes 'In the built environment, this kind of redirection can be furthered by architects not only specifying and designing the building's fabric and services in particular ways, but also expressing architecture's capacity to transform itself. This is its ideological message: not that architecture can transform society, but that it can transform itself, and, as architecture does so, perhaps other forms of production'.[5]

In Germany, the work of Thomas Herzog (now celebrated with an exhibition at the DAM, p20) is based on and sustained by a rich vein of ecological consciousness at both a macro level in his buildings and on a micro level in his exploration of the potential of existing and new materials and technologies. Compared with Eisenman's over-intellectualized, gimmick-laden form-making, Herzog's is a humane, inventive, radical and passionate architecture that acknowledges a world beyond the glossy pages of magazines and the sterile plaudits of academia. This hybrid approach explores notions of appropriate rather than high technology, to create buildings that are not only harmoniously integrated with the landscape, but are also climatically responsive, embodying the soul and substance of an emerging ecological propriety that gives great hope for the future. After all, to paraphrase Thoreau, 'What is the use of a house if you haven't got a tolerable planet to put it on?' CATHERINE SLESSOR

1 *Architecture in a Climate of Change*, Peter F. Smith, Architectural Press, Oxford, 2001, p9.
2 'Snakes in Utopia – a Brief History of Sustainability', Brian Edwards & Chrisna du Plessis, *Architectural Design*, July 2001, p10.
3 *Ibid*, p10.
4 'The Case for a Green Aesthetic', Christopher Hawthorne, *Metropolis*, October 2001, p113.
5 *Taking Shape – A New Contract between Architecture and Nature*, Susannah Hagan, Architectural Press, Oxford, 2001, p14.

MIXED DEVELOPMENT,
HAMBURG, GERMANY
ARCHITECT
JAN STÖRMER

HANSEATIC RESTORATION

The transformation of this dockside warehouse into flats and offices follows a familiar urban pattern, but is underpinned by strong environmental concerns.

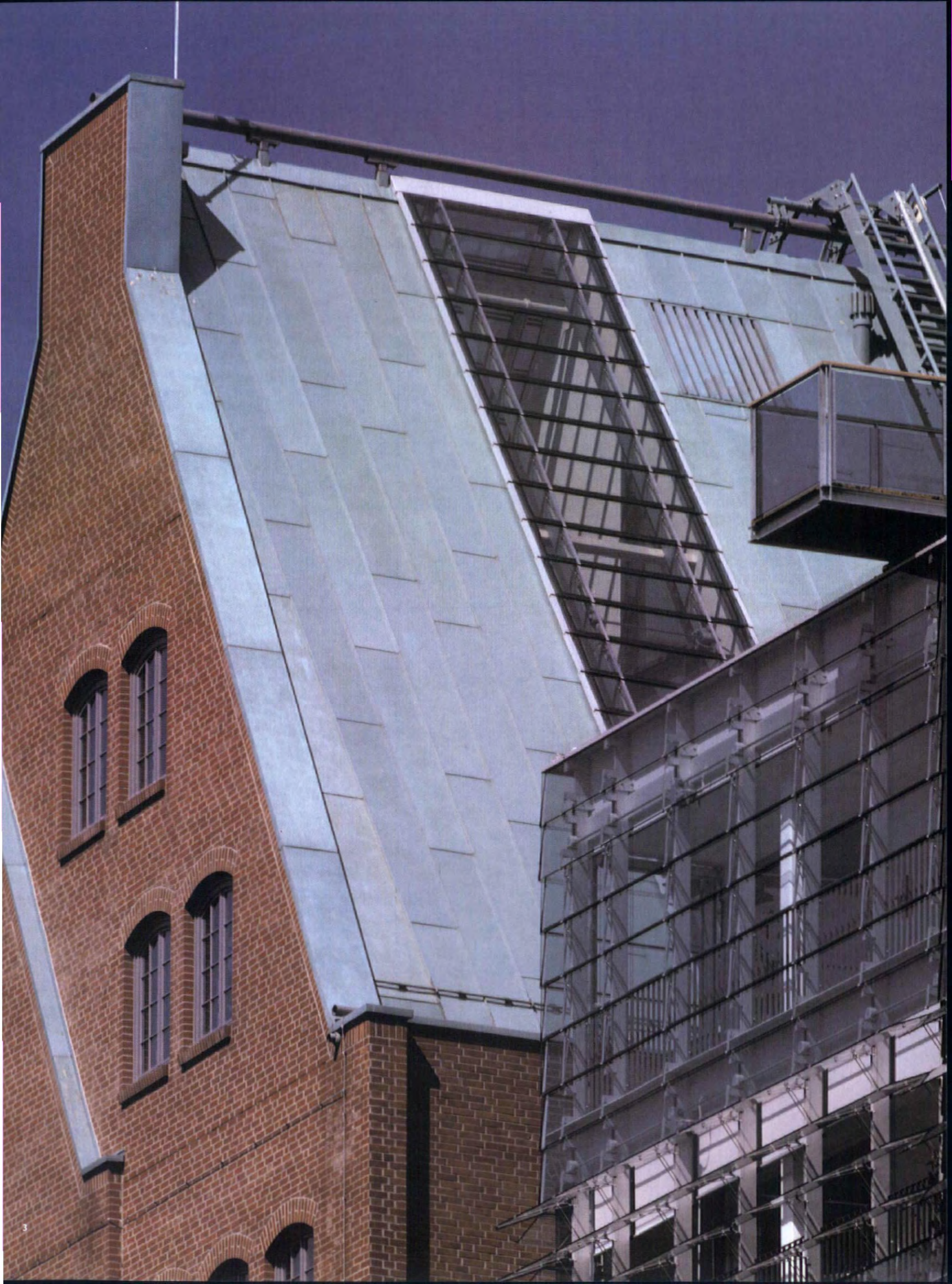
Despite rising sea levels and the cost of flood defences, recycled dockside buildings are highly prized developments. Their brick monumentality stands for stability and their high ceilings offer the luxury of space. The romanticism of sanitized industrial history is now a marketable commodity and there is no shortage of commercial enterprises willing to pay for aura by association. Emotive descriptions promise desk workers bohemian loft lifestyles by proxy.

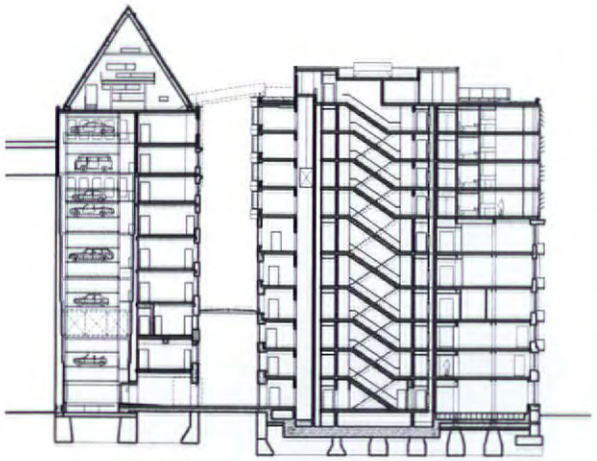
The Stadtlagerhaus (city warehouse) on the Elbe is such a project. It has the most privileged rooftop view in Hamburg, overlooking a miniaturized landscape with container terminal, docks, and wharves for cruise ships. Planning conditions for historical monuments are strict, but compensatory tax advantages for investors are advantageous and costs are passed on to tenants willing to pay for security and exclusivity. Which explains why Hamburg's quays, where armies of fishermen and dockers once landed the riches of the seas, are now the site of recycled historical buildings with green architectural briefs. Costs precluded the incorporation of social housing, but Stadtlagerhaus's neighbours are Greenpeace, private flats for senior citizens, fish restaurants and designer label shops.

Jan Störmer Architekten (formally Alsop & Störmer Architekten) combined a warehouse and grain silo to create 28 penthouse flats, 700m² loft and studio offices, a 500m² riverside restaurant, and an automatic car park stacking system for 134 vehicles. The project was the subject of a competition run by the Volksfürsorge Insurance Group, who paid 40 million DM for refurbishment with four additional storeys and a spectacular new silo roof. Planning began in 1994 and the building was occupied last May.

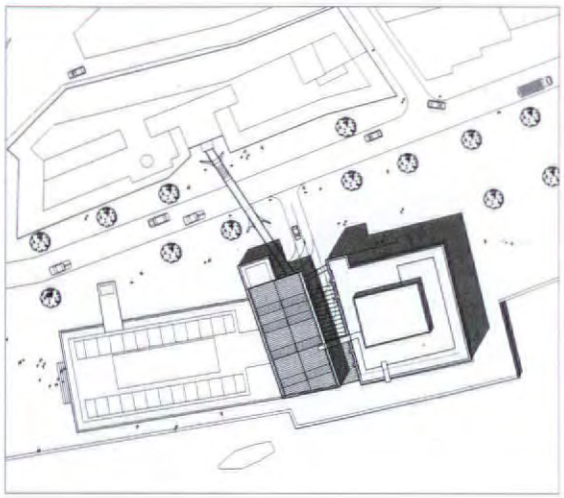
Energy saving and seasonal river flooding strongly influenced the architecture. Original walls over 2m thick and deeply recessed small windows moderate internal temperatures. Air conditioning is unnecessary. Windows are manually regulated. Rain water is filtered through vegetation and gravel. In case of flooding, pumps spring into action to push the water uphill into the city drainage system. Ground water pressure necessitated the installation of a steel plate over the basement floor. Flood defences include waterproof doors, similar to submarine hatches, to all ground floor openings and 25mm thick outer panes for double glazing units to resist water pressure. The emergency footbridge in grey steel, for escape to higher land over the road, has the sinuous profile of a dinosaur's back.

1
Revived Stadtlagerhaus overlooks Hamburg's dockside landscape.
2
Glazed balconies crown the original robust brick warehouse.
3
Detail of the former grain silo's restored Hanseatic gable and new copper and glass roof.



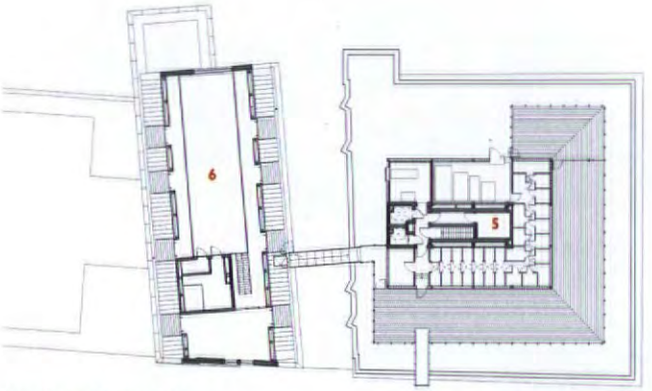


cross section

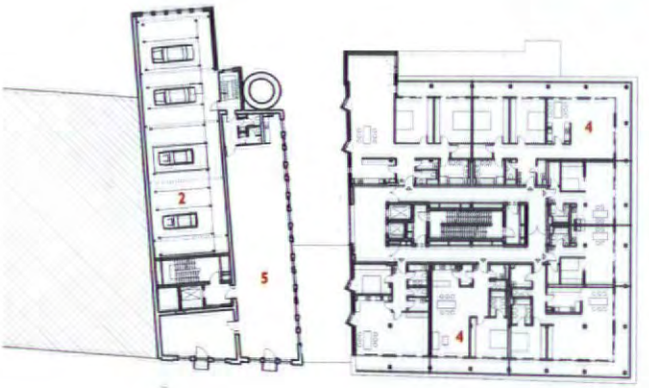


site plan

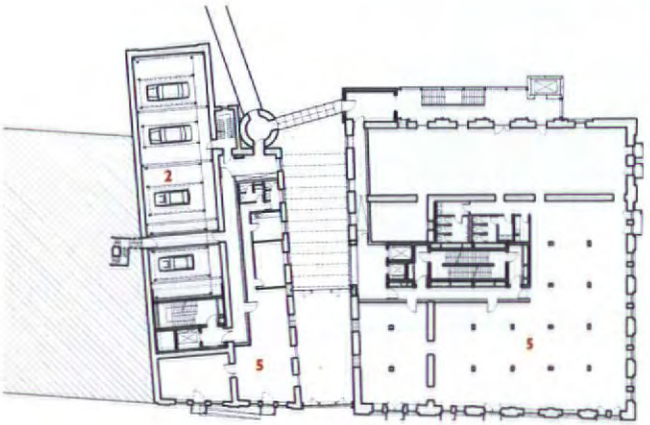
1 entrance hall
2 parking
3 restaurant
4 flats
5 offices/studios
6 attic
7 plant



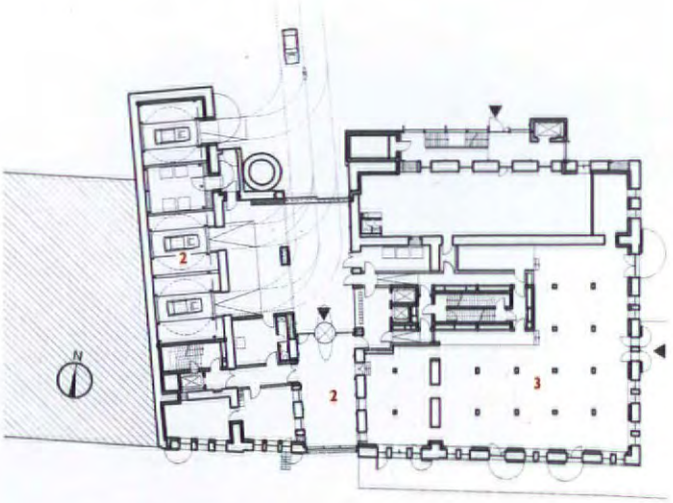
tenth (top) floor plan



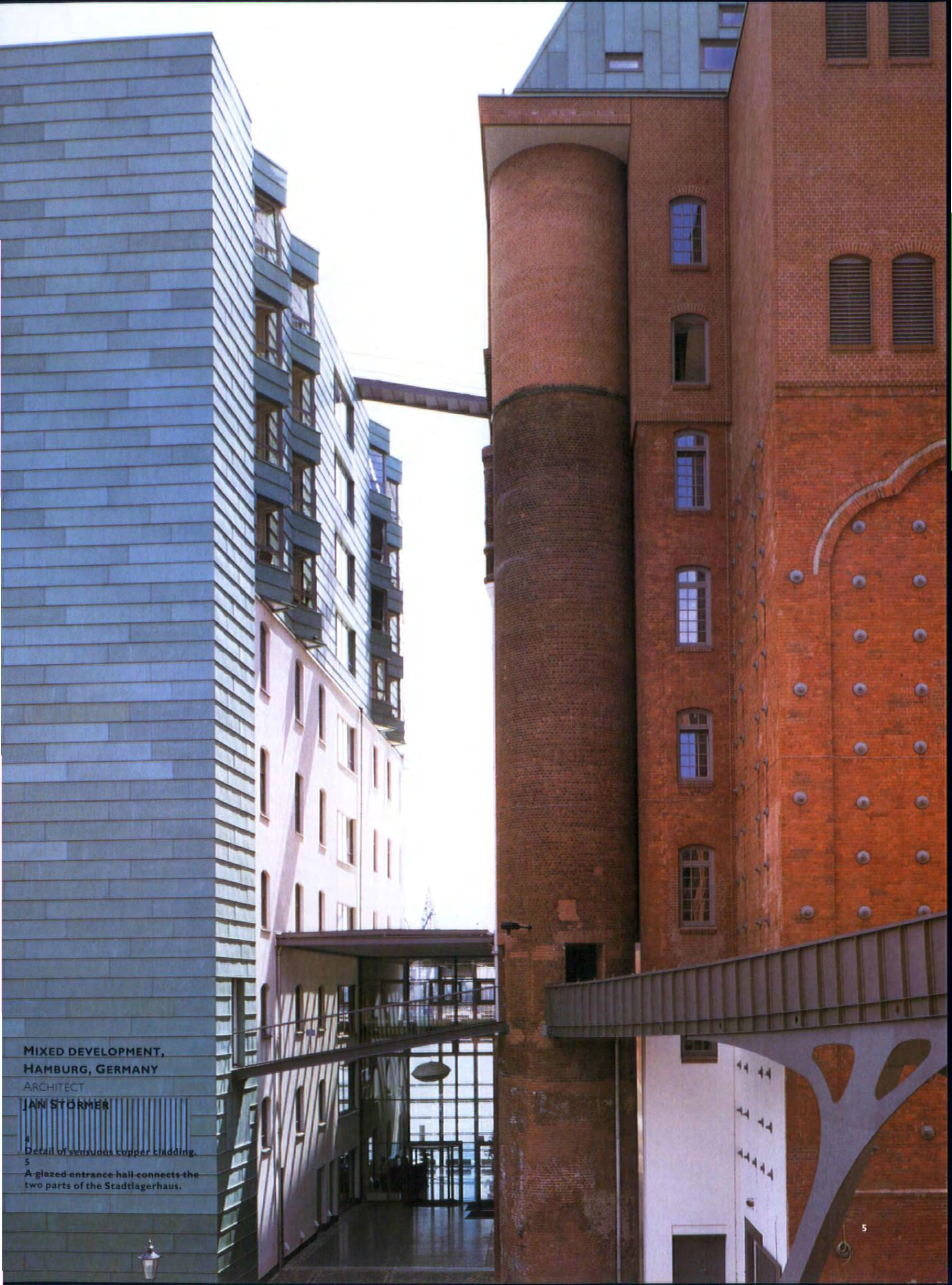
sixth floor plan



second floor plan



ground floor plan (scale approx 1:1000)



MIXED DEVELOPMENT, HAMBURG, GERMANY

ARCHITECT

JAN STORMER

4
Detail of sensuous copper cladding.
5
A glazed entrance hall connects the two parts of the Stadtlagerhaus.

6
Typical office interior. The buildings contain a mix of flats and offices.
7
Penthouse flat with dockside vistas.
8
Dramatic attic space at the top of the former grain silo.

The building's robust materiality explores themes of earth and water. Polished granite and red brick walls are combined with matt grey steel, luscious green copper and terracotta tiles resembling fish scales. Sheet glass shimmers against the metallic translucence of the river. Protected against weather and noise with insulated glass, a layer of penthouse balconies forms a crystal crown above the five floors of office lofts. The pine-decked roof terrace (for residents only) floats over a hardy dune grass-planted roof. From a cantilevered lookout balcony hanging over the dockside, residents who don't suffer from vertigo can imagine themselves as captains on the bridge. A play space, installed to meet planning requirements, remains pristine in a development devoid of children.

Surrounded by a sea of cobbles, the Stadtlagerhaus has no private ground. Controlled entry to flats and offices is through a connecting double-height glazed foyer, which forms a barrier between public and private spheres. Only the restaurant has a separate entrance, marked by a bright orange external wall. Jan Störmer describes this hard landscaped area as an external reception room. Here the highest recorded flood level, +2.5m, is marked by a white line on the facade. Paving of polished granite is traversed by both people and vehicles. Cars are driven into a lift which takes them automatically to stacks in the former grain silo which is now a car silo.

Reduced to half its original height, the industrial chimney serves as structural support for the roof and emergency exit footbridge. The original Hanseatic gable, with restored steel chute for loading grain into barges, is complemented by a new pitched roof clad in alternating vertical strips of copper and glazed louvres. An advertising agency occupies this unique and spacious attic.

In the past, the exploitation of labour, land and commodities, was a low cost exercise in relation to the present expense of environmental rehabilitation necessary for a sustainable future. Healing takes longer than acts of damage. In this context the Stadtlagerhaus is an imaginative solution with landmark character. But photographers and sightseers are unwelcome. Even before 11 September, security was part of the tenancy agreement. The high cost of remodelling cities for green development further divides the world into those who have and those who have not. LAYLA DAWSON

MIXED DEVELOPMENT, HAMBURG, GERMANY
ARCHITECT
JAN STÖRMER

Architect
Jan Störmer Architekten (formerly Alsop & Störmer Architekten), Hamburg
Structural engineer
Assmann
Services engineer
Ridder & Meyn
Glass louvres
php glastec systems GmbH
Photographs
All photographs by Oliver Heissner/artur except no 1 by Cordelia Ewerth

Housing, Greenwich, London
Architect
Erskine Tovatt Arkitekt

Jutting northwards into a loop of the meandering Thames, the Greenwich Peninsula is known mainly for the disastrous Millennium Dome that sits at its tip, like a wen on an outstretched finger. Until the '90s, much of the peninsula was terribly polluted by defunct industry, and one of the reasons for the colossal cost of the dome project was making the peninsula safe for development. Long after the fuss has died down, the Dome sits ghastly, deserted and surrounded by unused acres of car park and empty roads: a miserable picture of desolation. In fact, in the south-east angle of the peninsula, a new ecological park has been created, and buildings are beginning to grow round it. At last, the area is beginning to have signs of life and the possibility of urbanity.

Rogers' original masterplan was an attempt to lay the foundations of a proper piece of city, with a central park linking the leisure area round the dome to employment, retailing and residential areas at the base of the finger. After Victorian pollution had been conquered, the planners hoped that new development would be outstandingly environment-friendly, and that it would be urban, rather than suburban in character. A Millennium Village was to be built as a demonstration of the most up-to-date sustainable ideas in planning, architecture and building. The 1997 competition was won by a team led by Ralph Erskine, the Anglo-Swedish architect, and Greenwich Millennium Village Ltd, a specially founded development consortium.

Erskine produced a detailed masterplan, and laid down strategies for its execution. Flexibility, mixed use, and mixed tenure were key principles. To achieve the latter, there is no differentiation between tenure types, and affordable elements are scattered through the development. Erskine's ideal community form is modelled on an abstraction of the English village, formed round a common, and on the interlocked forms of southern European cities, with their dense tapestries of streets, alleys and squares, and clearly articulated hierarchies of space from private through semi-public local foci to public piazzas. The ecological park is part of the village green, and already seems set to be a success, with well-grown traditional vegetation, fish in the lakes, and birds and animals banished by pollution returning to take up residence in its coverts and islands.

In section, the village complex is tallest to the north-east, where the site touches the Thames and faces icy winds blowing in over the Essex flats across the river. Because the mass rises from the south, sun will be caught by urban spaces. In plan, the urban mass forms a rough U round the green which opens directly to the river. Here, there is a bankside walk from the boat club (an excellent building constructed by Frankl Luty) to the environs of the Dome (which may sooner or later get some sort of life).

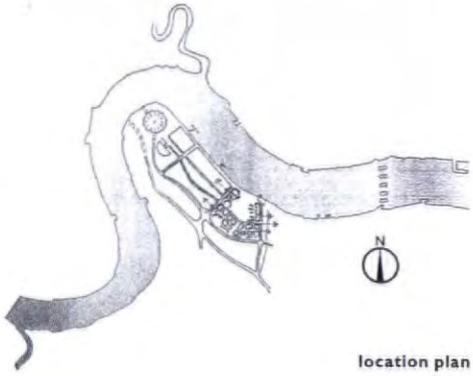
The main armature of the complex is the spine, which follows the perimeter of the central park, one block away. Radial routes feed into the urban mass from perimeter roads. At junctions of the spine and these feeder elements are urban squares, where it is

1
A series of tactical moves intended to rescue large-scale prefabricated construction from anomie.
2
Park is already well grown, and shows potential of whole development.

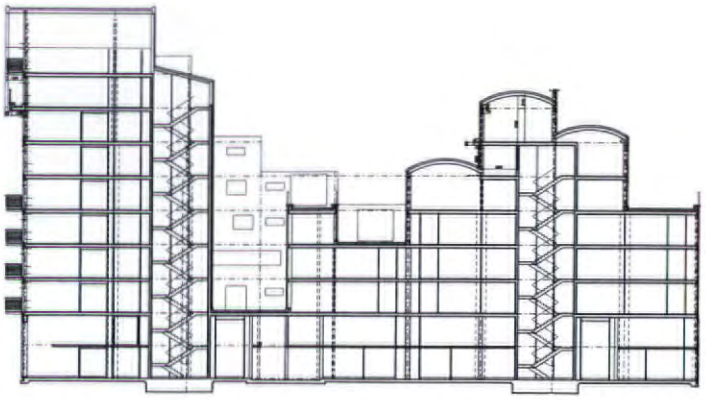
2

ECO URBANITY

An aim of Team X was to generate community by harnessing and humanizing industrial production. Team X member Ralph Erskine still believes in the ideal, which he has married to a lifelong enthusiasm for sustainability.



location plan

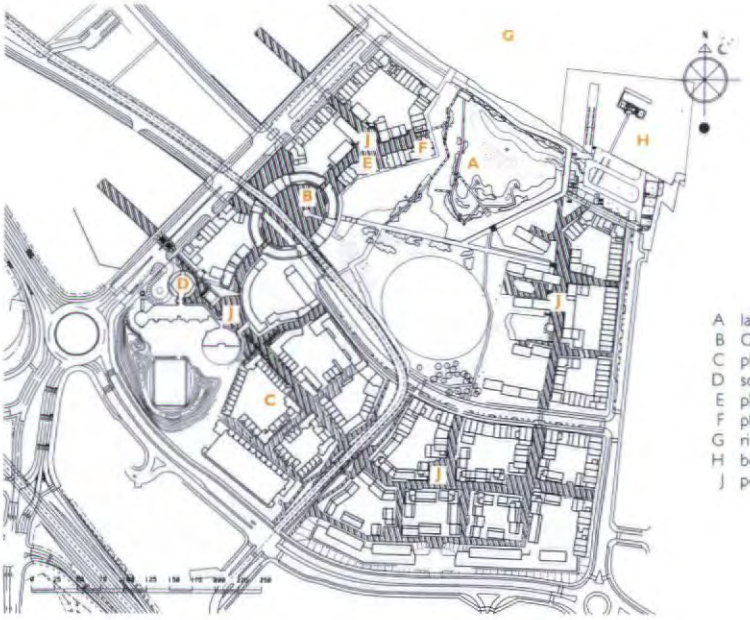


section block 2

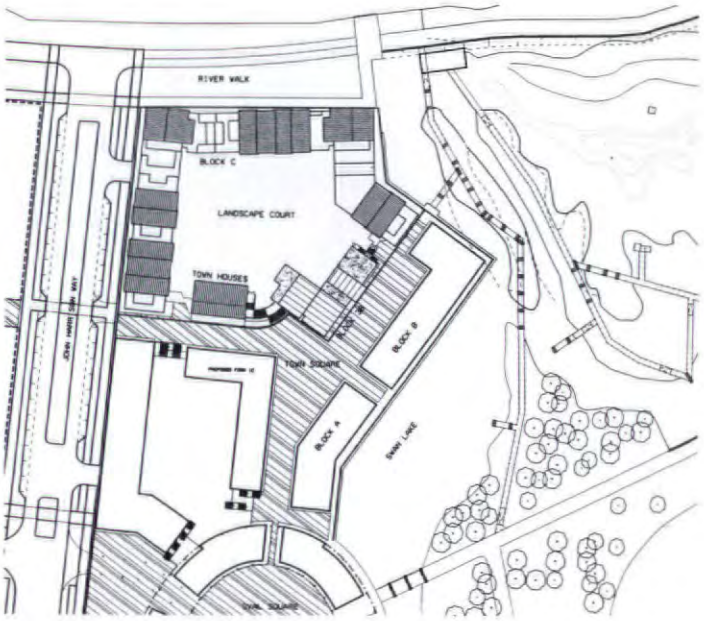
Housing, Greenwich, London

ARCHITECT

Erskine Tovatt Arkitekt



overall layout



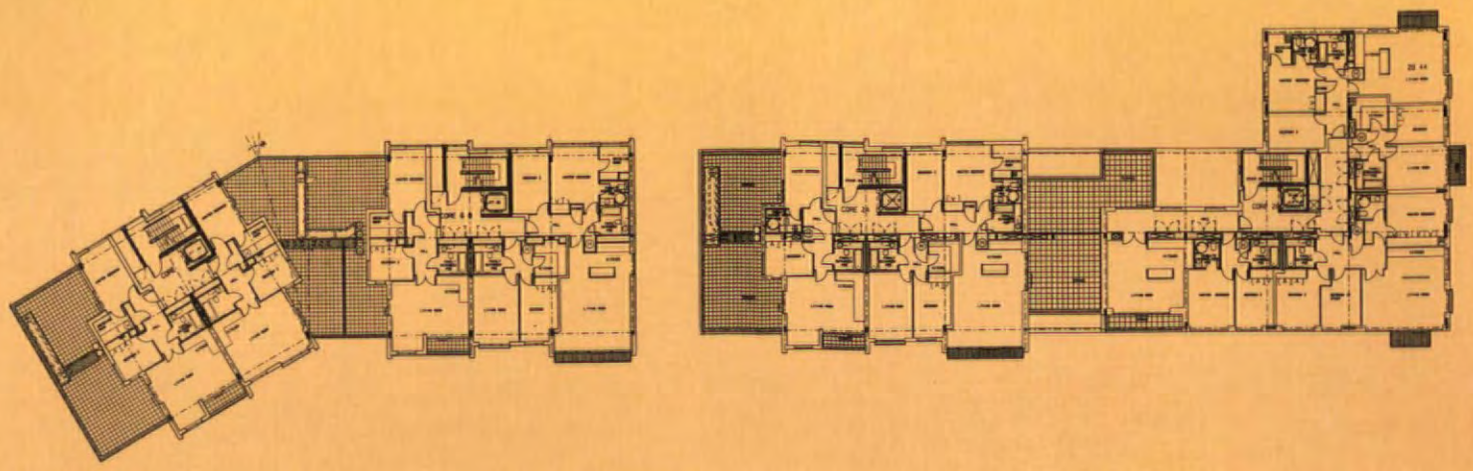
detailed layout

hoped that retail, commercial and communal functions will be located to serve each small quarter. In practice, judging by recent British patterns of development, we shall be lucky to get more than the odd corner shop, hairdresser and occasional pub. But opportunities are there, and we shall see. The main urban public space is the Oval, to the north-west of the urban mass. Here will be the social arena of the whole community, with an arcade round the piazza serving shops, offices and cafés. The local bus stop will be here, and paradoxically the Oval will also be the spatial link between the village green and the central park that runs up the middle of the peninsula.

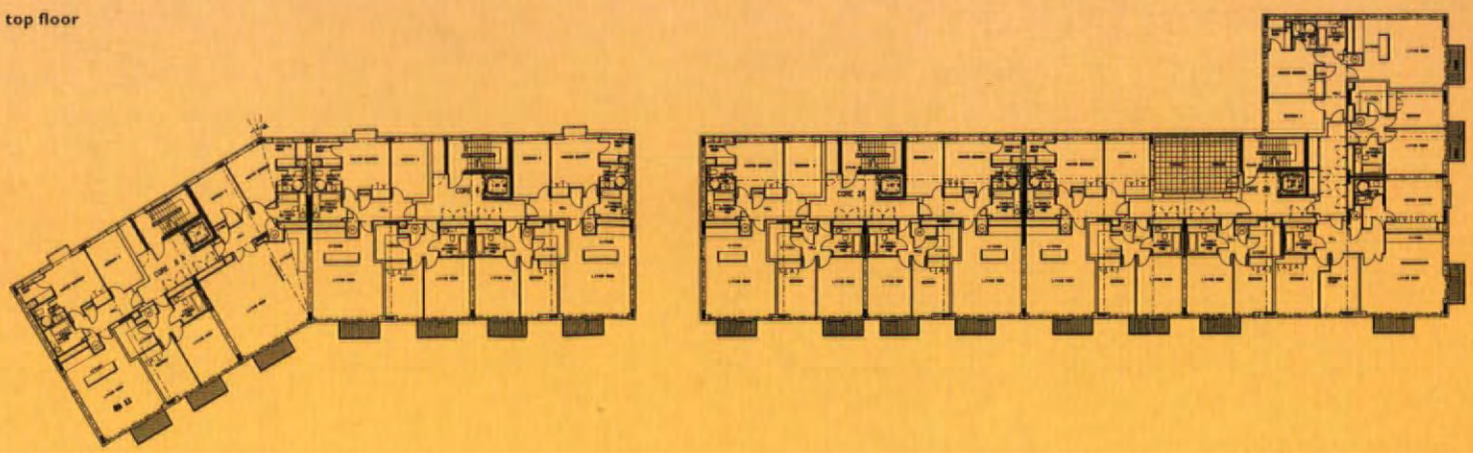
The structure of streets ensures that development is in blocks that contain semi-private green courts. Many of these courts on the perimeter contain underground car parks hidden under podia, and which are concealed on their street sides by manipulation of the section, allowing streets to be virtually vehicle free (except for emergencies and deliveries). Other concealed parking is in bunds to the south, which also deflect and shield the site from the noise of what one day may be a busy road. Surface parking, which will be limited to bays off perimeter roads, is intended to be limited to visitors, and it will be ameliorated by careful planting.

At the moment, you can only see a very slender sketch of what is hoped for. The development was always intended to be built in phases, and the first two have started. The village green is there. So is the school and community centre in phase two by Edward Cullinan Architects, and so are some bits of low-rise housing made in the same sector by various other designers. Now, the first two blocks by Erskine are finished in phase one. They overlook the lakeside in the northern sector of the site, where they give some notion of the intended enclosure of the green park and of the way in which the whole complex is to rise upwards as it approaches the river.

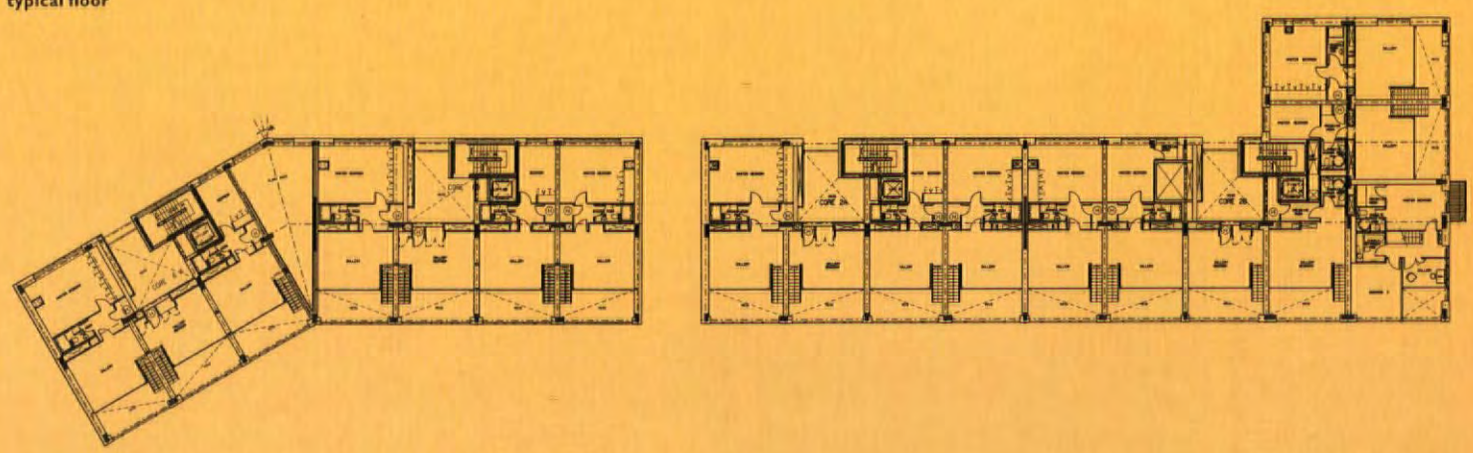
They are very clearly Erskine buildings, using a housing vocabulary that he has evolved over many years. It is very changeful, offering opportunities for many variations in dwelling and plan type within the same block. The notion of particularity within the group is celebrated, so is the idea of the possibility of alteration over time. Yet all this is done within a most rigorous contractual system, under which many important decisions and a great deal of fine detailing is passed over to the contractor. In most cases, such management structures lead to disaster, with the architects marginalized and their detailing ignored or crassly changed. But Erskine is made in a different mould. He evolved his gentle, placemaking, humane architecture in the horrendous climate of Swedish construction culture, in which, from the '50s, control of design passed from architects to bureaucrats



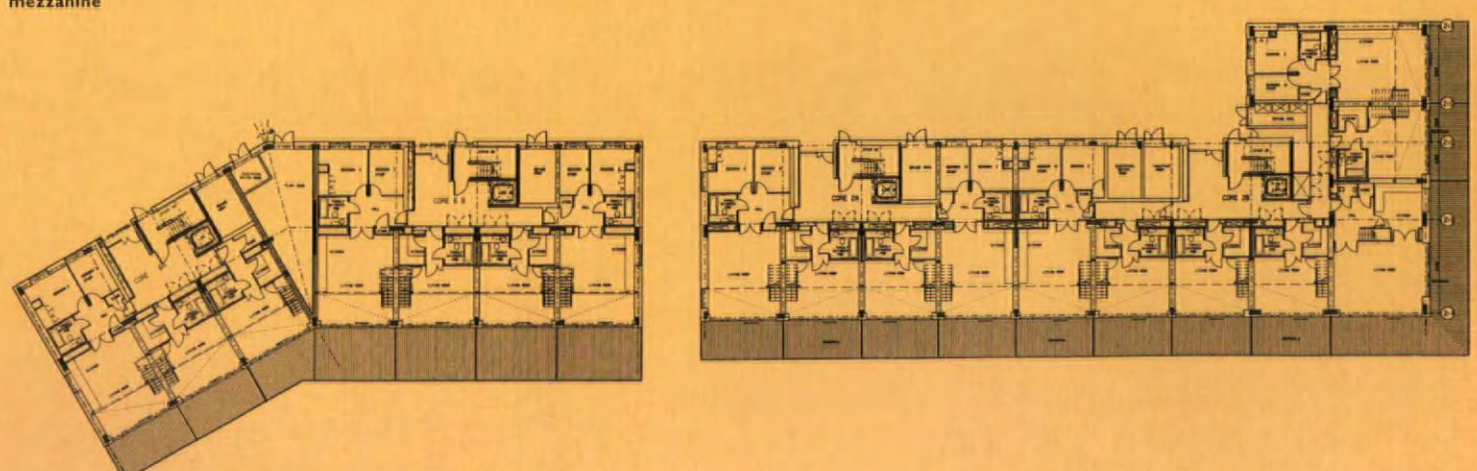
top floor



typical floor



mezzanine



ground floor – block 6 to left, 2 to right (scale approx 1:600)

Housing, Greenwich, London
Architect
Erskine Tovatt Arkitekt

3

4

and to contractors, a process which has had a most disastrous effect on almost all Swedish towns and city centres. Systems like PFI and BOOT[1] were being tried out in Sweden long before they were embraced by philistine governments and developers all over the developed world.

Through the long night of doubt and sorrow, Erskine's commitment to individuality and humanity caused him to focus on how what are essentially heavy prefabricated systems could be adapted to offer notions of place and identity. He has used many tactics including enclosure, varying the section, colouring external wall panels, varying claddings, applying relieving details like stairs and screens (often in timber), introducing balconies and bays, making much use of planting and modifying the skyline. None of these detracts essentially from the industrialized discipline of the structural and service systems, and all are found at Greenwich.

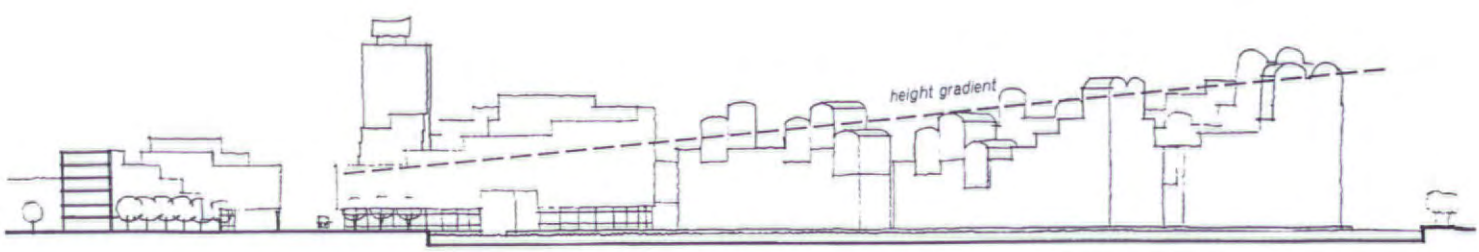
Overall environmental strategies have been adopted for the village. Grey water will be recycled, purified and used to flush lavatories. Rainwater is collected for use in irrigation. A gas powered heat and power plant has been installed which cycles heat normally wasted from the generating process through district mains to all dwellings, where both power and heat are automatically metered, using the village's sophisticated information infrastructure. Levels of thermal and acoustic insulation are high. Construction waste is re-used on site when appropriate and, to try to keep waste to a minimum, as many building components as possible are prefabricated (including service modules like bathrooms). Services and finishes have been specially studied to reduce embodied energy, and wherever possible, recycled materials are used, as are locally sourced products.

Whether all these measures will work remains to be seen. But the development is being monitored in use so that lessons can be learned. It will be interesting to see how the contractor-driven detailing will stand up to the sometimes harsh weather of the lower Thames – some of the junctions look a bit odd to me. But the experiment is under way, and for all the problems encountered, results are eagerly awaited. Erskine is trying to make humanly rewarding places in a desert: the attempt is heroic and, though results seem strange, and are far from complete, the attempt to build a modern community that will live in harmony with nature deserves our closest attention. P.D.

1 Private Finance Initiative (UK) or Build, Own, Operate and Transfer (US). In both systems, the contractor builds the building, leases it to the client, operates it, and after an agreed period transfers ownership to the client. It has yet to be proved that it is cheaper than the usual system, and can produce good buildings.

MASTERPLAN
Architect
Erskine Tovatt Arkitekt
Project team
Ralph Erskine, Johannes Tovatt, Britt Almqvist, Magnus Andersson, Lars Backhans, Geoff Denton, Albert France-Lanord, David Neuschütz, Staffan Read, Björn Åström
Traffic consultant
Rutherfords
Planning consultant
Montagu Evans
Innovation consultant
Richard Hodkinson
Environmental consultant
Taywood Engineering
Photographs
Charlotte Wood

3
From east, with block 2 in foreground. Height is needed to shelter inner urban spaces from wind over Thames.
4
The two blocks with 6 in foreground: an attempt to generate sense of place in the most difficult circumstances.
5
Idealized living room.



idealized section through site, showing gradual growth in height to north and river

1

EXHIBITION ECO

An unpretentious prototype production building in a demonstration ecology park involves ingenious technological and sustainable devices for conserving energy.

The Ecopark on the edge of the small town of Hartberg in Styria was set up as a demonstration of ecological design and construction. Built on the site of a former clay pit, it was intended to be self-sufficient, and to heal the bruising of the land without depositing debris elsewhere. The buildings – exhibition and production sites as in a normal industrial estate – were to be as unpolluting and sparing of energy as possible, in terms of both consumed and embodied energy. At the north-east end, there is a natural pond to absorb run-off water while attracting and nurturing wildlife. On an adjacent site Konrad Frey, a pioneer in solar architecture in Austria since the 1970s, was commissioned by the park's organizers for a prototype production building. Its task was to act first as an exhibition pavilion and then as a factory/warehouse for solar equipment. Sited at the north end, it lies to the west of the ecological pond with a high protective bank dividing it from the highway behind. It is approached via a drive from the south which terminates in its car park.

Frey accepted from the start that the main task was to provide economical general purpose spaces, and he made two 700m² linear building tracts 16m wide and 7m high which can be used separately or together. They have contrasting characters according to position: the northern one with a fully glazed end enjoying a dramatic view of the pond while the southern has continuous low glazing towards the approach. A second brief requirement asked for offices, changing and recreation rooms which have been built within the east end of the southern tract as a two-storey block. Above them on the roof is the curved conference room with its external terrace and longer views, the one touch of real extravagance in an otherwise low-

1
Building is in two linear tracts which can be used separately or together.
2
South elevation: conference room on roof is hung from exposed trusses. Fabric shades protect from overheating.
3
Glazed east wall is shaded by being recessed one bay. Building celebrates its economical and industrial origins.

2

Solar building, Ecopark, Hartberg, Austria
ARCHITECT
Konrad Frey

cost project, and full of interesting details. Various sun-shading devices are applied to the different faces of the buildings in response to the calculated exposure. The south facade, for example, has Frey-designed stretched fabric screens over the windows, but it also serves as a testing ground for a demonstration of solar collectors and solar control devices. Since these products change, it retains a deliberately experimental and provisional look.

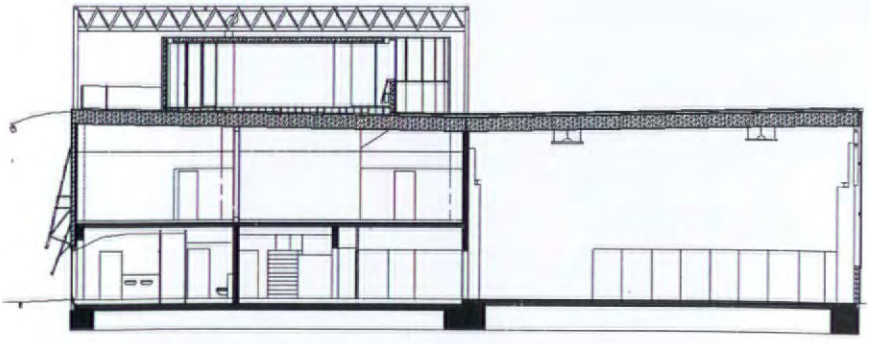
At first sight this project might seem banal with its boxy forms and standardized elements, for it accepts the realities of industrial estates and of serial production, but the closer you look the more unusual it seems. The energy-rich steel frame expected in such buildings is completely lacking. Instead the simple foundations support minimal concrete columns at 5m intervals, and these do not reach the roof. Instead they support timber-framed facade panels skinned in particle board, which form a continuous edge to bear the roof. Frey reveals this structural system on the north side where it breaks for windows, for he shows T-shaped glazing with visible trusses in place of the missing panels. The all-timber roof deck spanning the 16m building width follows the stressed-skin principle. Plywood box sections 600mm deep containing their own thick insulation layer were prefabricated then hoisted into place, resting on the side panels. The slightly sloping roof surfaces, topped with a membrane and a thin soil layer to encourage plants, meet at a central gutter. Lining the ceiling is a layer of wood-wool which acts as acoustic absorbent. Unbroken by the usual beams, its surface allows heating and artificial lighting elements to be freely placed. To show the free-spanning nature of the roof structure at its open end, the glazed east wall – set back a bay for solar protection – has only the minimal steel supports required for wind load. The insulated double glazing is divided in three horizontal layers, and since the vertical glazing joints were not structural and only limited by delivery sizes, Frey could play with the rhythm, taking his cue from the thematically appropriate '50s hit song 'O sole mio'.

Another structural curiosity is the support for the conference room on the roof. This penthouse element would have caused too much deflection in the stressed skin structure, so it is suspended from exposed trusses above, which transmit its loads back to the columns. The structural network so provided also turned into a convenient bearer for a stretched canvas awning for the terrace. Conventionally skinned in metal, the penthouse roof drains to a gutter on the north side.

The long side walls are clad in timber slats, which give mechanical protection to the insulation layer beneath while allowing it to breathe. For the end walls, Frey used PVC sheet, a controversial material in

SOLAR BUILDING, ECOPARK, HARTBERG, AUSTRIA
ARCHITECT
KONRAD FREY

4,5
Simple mass-produced components are used to reduce embodied energy.
6,7
Conference room on roof supported by exposed trusses over terrace that also carry shading fabrics.



cross section through conference room, offices and north tract

ecological terms, but used in relatively small quantity. Interestingly, this is the one element that the client has asked Frey to change because it sends the wrong signals about the park's ecological aims. It is being replaced by a more cosy-looking and predictable fur coat of coconut netting.

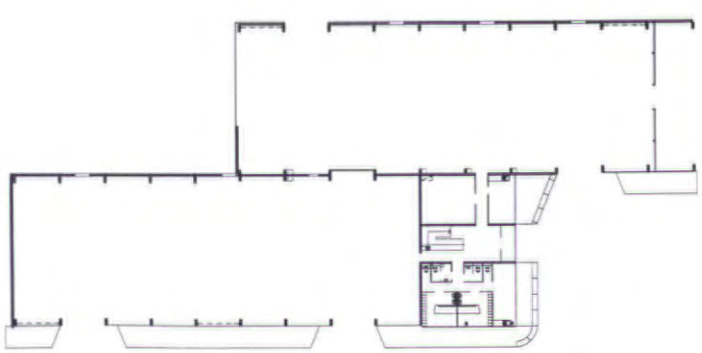
In the age of image and spin, the look is often more important than the reality, and in ecological matters people want to placate their consciences while continuing with their recklessly consumptive lifestyles. So it is difficult to see, in the often chaotic display of ecological projects, just what will really count and what is mere window dressing. The solar collectors on the front of Frey's building, for example, have become an obvious symbol of ecological concern, almost a cliché. But the various sun-shading devices and the setback of the large east window are both more cheaply achieved and passively effective. These are the kinds of measures architects should surely now be adopting as a matter of course. Potentially Frey's most important innovation, though, is the timber-based wide-span roof structure. If this were applied to every such shed in every industrial and commercial estate in Europe, an enormous energy saving would be effected.

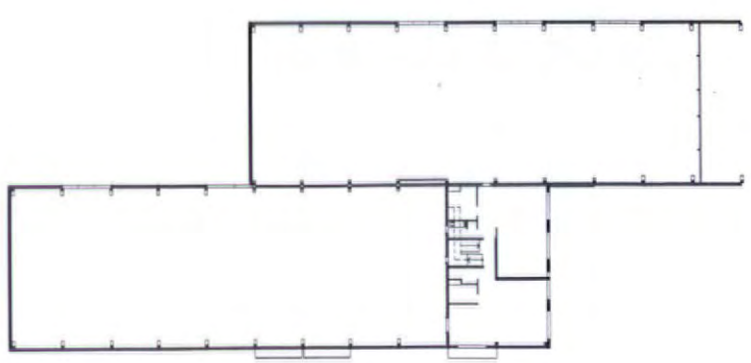
PETER BLUNDELL JONES

Architect
Konrad Frey, Graz
Photographs
Angelo Kaunat


6


7


ground floor plan (scale 1:750)


first floor plan

1

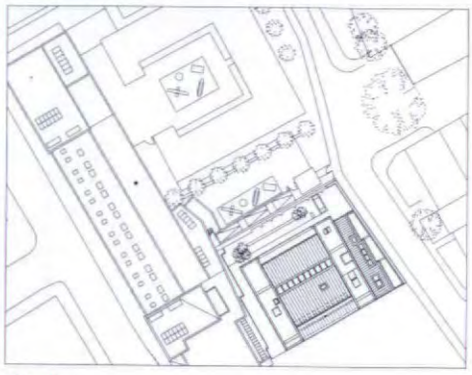
Founded in 1926 by Millicent Fawcett, the distinguished campaigner for women's rights, the Women's Library began life in a converted pub in Westminster. Emerging out of the suffrage movement, it has since evolved to become the UK's most comprehensive research library covering all aspects of women's lives, from political activism to domestic minutiae. Its collection, some of which dates back to the sixteenth century, is of international significance and includes banners, photographs, posters, papers and artefacts documenting the campaign for the vote, social, political and medical history and domestic affairs. In 1977 the collection was acquired by the City of London Polytechnic (now London Guildhall University) and its latest home is on the site of a former Victorian public baths in the East End which has been sensitively and inventively remodelled by Wright & Wright. The new building extends its archival role to encompass a museum and cultural centre, together with a range of education and conference spaces. Beyond conventional scholarship and research, it also has a wider educational and regenerative remit within the notoriously deprived and marginalized London borough of Tower Hamlets.

Located on Guildhall University's Whitechapel campus, the site straddles a gritty urban hinterland between the City and the East End, where changes of scale and character can be abrupt. Housing estates and street markets lie cheek by jowl with soaring office towers. Dating from 1846, the building contained public baths and wash houses, an important amenity and social focus in the Victorian East End. The locally listed facade on the east side of the original wash house is retained and partly wrapped around the new building, a fragment of the past linking women's lives over the centuries. Behind this massive soot-coloured brick wall the new building steps up to a height of six storeys. Drawing on the functional spirit of the wash house, new parts are executed in taut, Kahnian planes of russet brick and sensuous copper which will patinate gracefully and gradually over time.

Despite its cramped site and disparate neighbours, the building responds thoughtfully to its surroundings. On the north side, a small courtyard garden planted with slender birch saplings gives a degree of privacy to an adjacent housing block. To the west, another courtyard will link the library to a new law department and community school, currently under development. To the south, the building adjoins an existing university building. Articulated by a series of new openings punched into the ground floor, the east side forms the library's main street frontage. Heavy sliding steel grilles screen the openings, but also allow views into the entrance hall beyond.

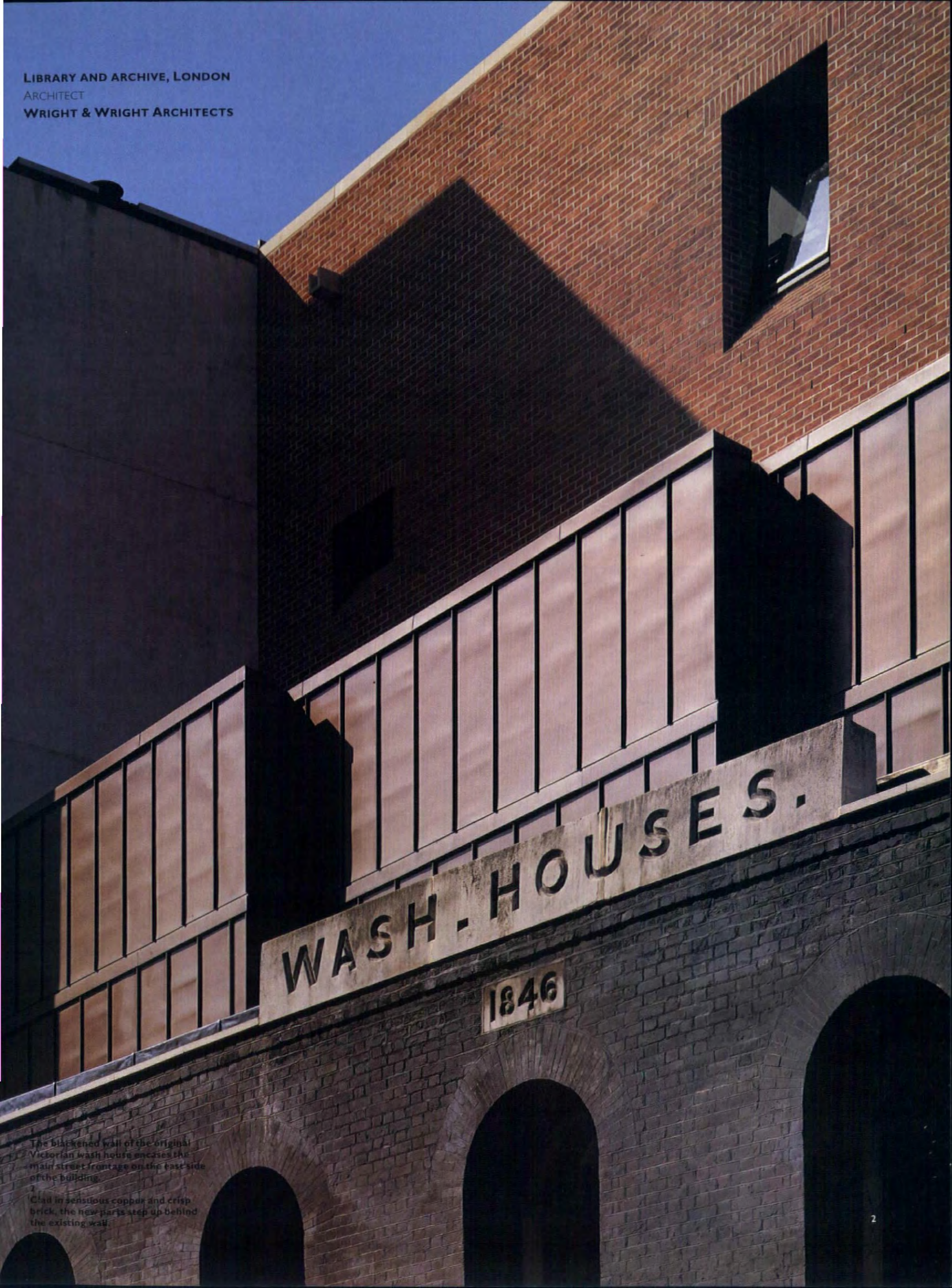
MAKING HISTORY

On the site of a Victorian public baths, a new library and archive illuminates women's lives and is a model of good practice in environmental regulation.



site plan

LIBRARY AND ARCHIVE, LONDON
ARCHITECT
WRIGHT & WRIGHT ARCHITECTS



The blackened wall of the original Victorian wash house encases the main street frontage on the east side of the building.

Clad in sensuous copper and crisp brick, the new parts step up behind the existing wall.

3

The various spaces interlock with the elegant complexity of a Chinese puzzle. The basic parti consists of a series of large rooms framed by two structural cores running along on the east and west sides of the building. On the east side, the core is set back from the existing wash house wall, with the entrance hall and a café (at first floor level) placed in between. The most obviously public areas, such as the exhibition hall, seminar room and multi-purpose space are located on the lower floors, with the more private and scholarly domains – library, archive and staff offices – on the upper storeys.

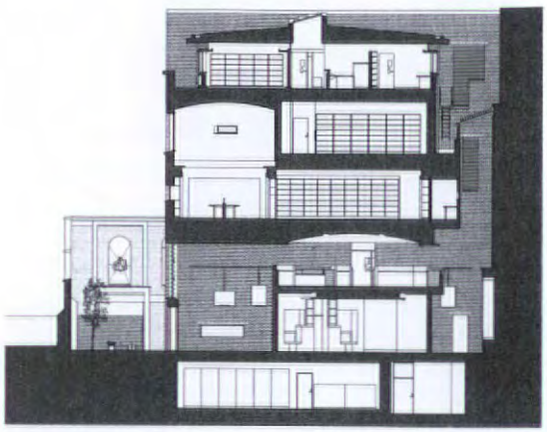
The largest set-piece space is a luminous double-height exhibition hall, which opens up to the elongated garden courtyard on the north side. Within the hall, a seminar room forms a separate stone clad container, a building within a building. Spaces overlap and interact so that the exhibition hall can be used as a foyer for the seminar room. Changes of scale are orchestrated to suit the different types of exhibits. Large suffrage banners, for instance, are arrayed in a dramatic 15m high toplit shaft, while smaller objects such as badges, medals and letters occupy display glass cases in more confined spaces so that they can be viewed intimately at close quarters.

The exhibition hall can also be contemplated from the multi-purpose space nestling beneath an oak-lined vault on top of the seminar room at first floor level. This is another self-contained space that can be adapted for various functions, such as teaching, seminars and entertainment. Materials are consistently rich – deep red handmade clay brick, creamy Tadcaster stone, American white oak and grey steel – and beautifully worked, so that the interiors have the feel of an exquisitely crafted casket.

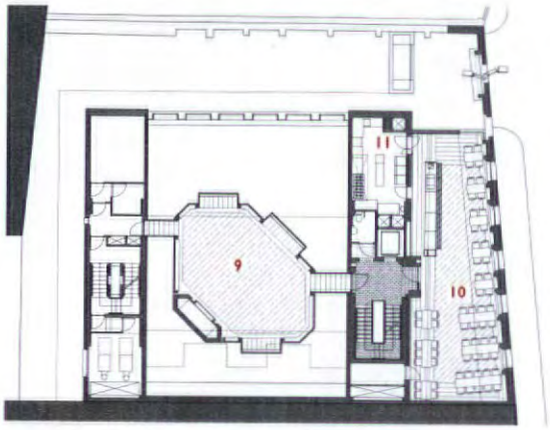
Winding up the service core on the east side, the main public staircase is lined with handmade brick softened by an intricate play of shadows radiating through a gridded steel cage enclosing the central well. The stair leads to the first floor café which is slotted into the oblique geometry of the site and takes advantage of the row of tall arched openings in the existing wash house wall. The symmetrical, barrel-vaulted hall of the library reading room occupies the floor above. Large windows at high level give views of the sky and admit cool north light, while small vignettes provide glimpses of the East End, including a framed view of Hawksmoor's famous Christchurch which can be surveyed

3
Courtyard garden on the north side forms a tranquil refuge and connects with the main exhibition space.
4
The stone clad casket of the seminar room sits at the centre of the exhibition hall.

cross section looking south



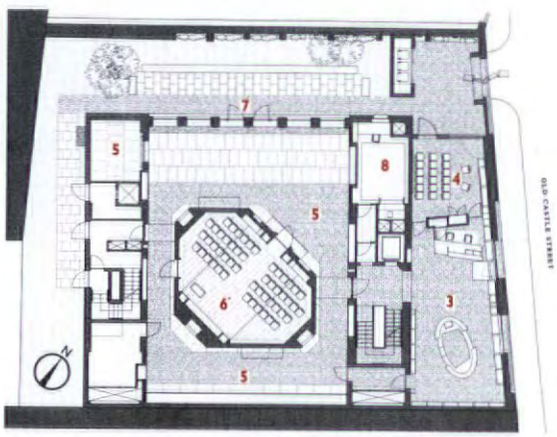
cross section looking east



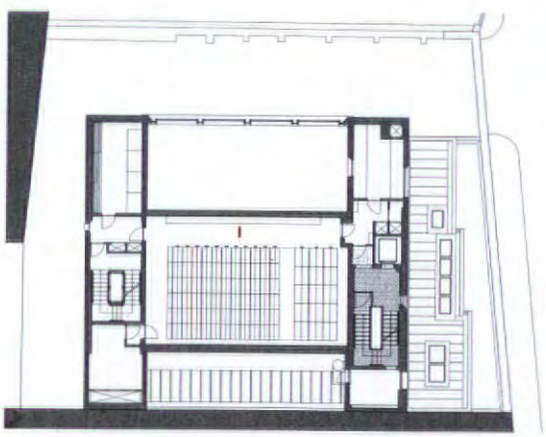
first floor plan

1 archive
2 wcs
3 entrance hall
4 education room
5 exhibition space
6 seminar room
7 courtyard garden
8 offices
9 multi-purpose space
10 café
11 kitchen
12 reading room
13 stacks
14 study spaces
15 meeting room
16 roof terrace

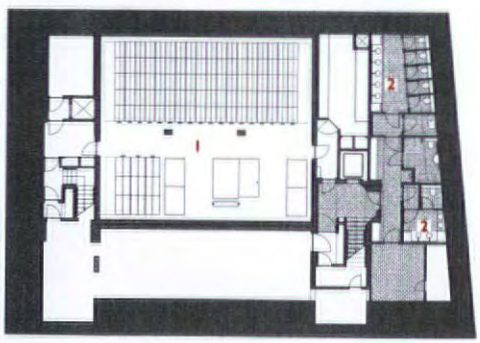
fourth floor plan



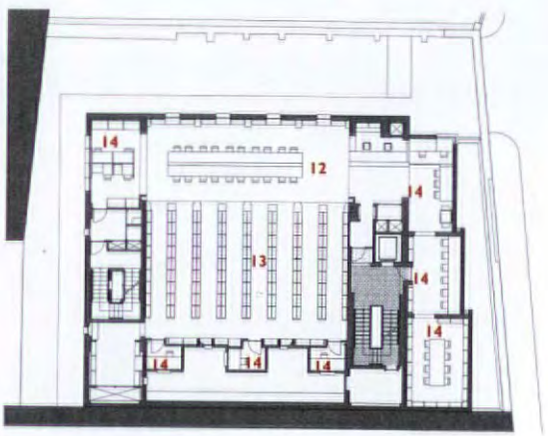
ground floor plan (scale approx 1:700)



third floor plan



basement plan



second floor plan

LIBRARY AND ARCHIVE, LONDON
ARCHITECT
WRIGHT & WRIGHT ARCHITECTS

5
Rear of the exhibition hall is illuminated by a toplit shaft that also acts as a thermal chimney.

6

from the study desk for viewing special objects. The main archive is housed above the library stacks (there is also additional space in the basement), with the topmost floor containing staff offices.

Underpinning the project is a serious commitment to reduce energy use, manifest in the employment of a masonry structure (with high thermal mass) and natural ventilation. Most spaces are naturally ventilated with opening windows positioned away from direct sunlight. Where possible, all spaces are daylit supplemented with low energy sources of artificial lighting. The building envelope is highly insulated, reducing heating demand.

The resolution of the building's structure, environmental control and spatial organization led to the development of a complex section of heavyweight construction. The archives (which must be held in a highly secure, environmentally controlled atmosphere) are contained on the third floor in a sealed room that sits within the external walls of the building. The walls of the archive are formed from concrete beams spanning between the two structural cores, creating a load-bearing black box. This arrangement allows the structure to be held clear of the party wall on the south side to form a shaft that brings diffuse light into the back of the exhibition hall. It also acts as a thermal chimney by which both the exhibition hall and library are ventilated and cooled.

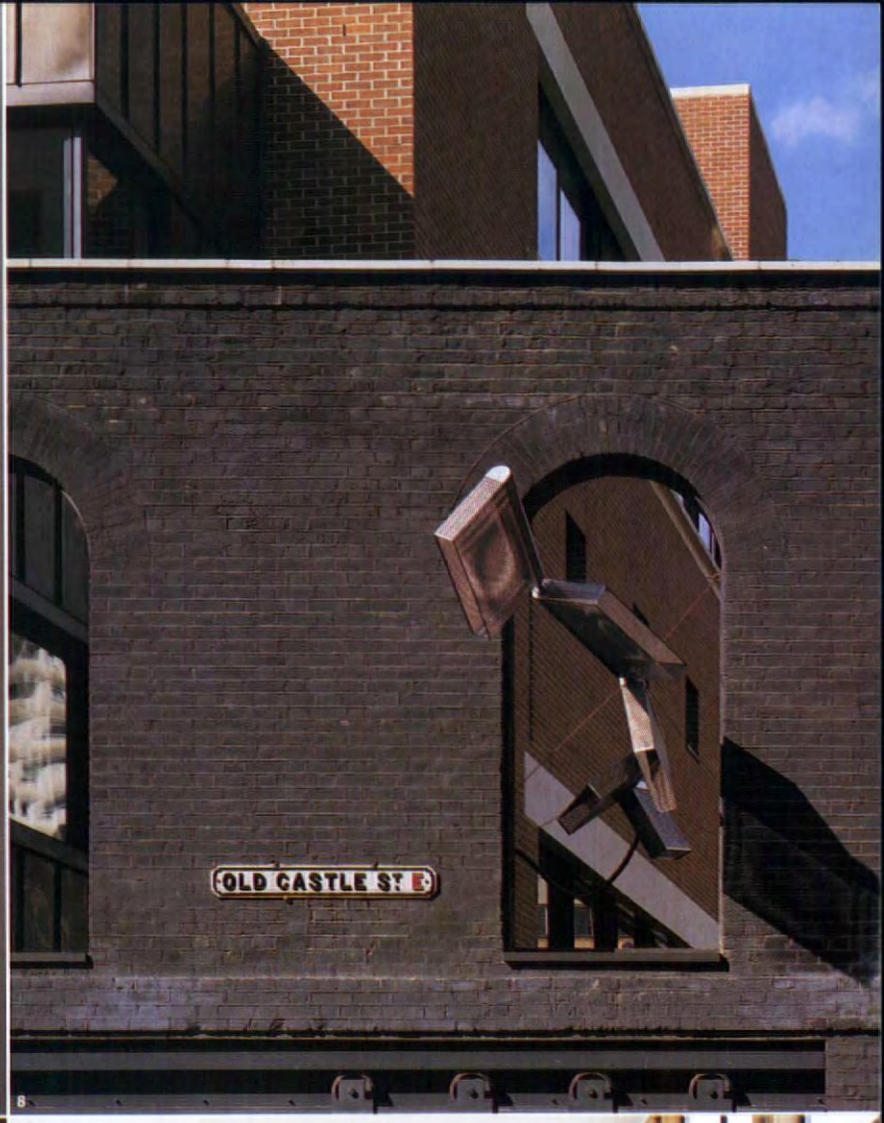
The archives are also passively environmentally controlled, reducing the need for complex air-conditioning and dehumidification systems, except in a small film archive. The masonry walls are lined with heavy concrete blocks and separated from the rest of the building by a vapour barrier, so minimizing changes in temperature and humidity. Engineers Ove Arup & Partners estimate that this will reduce the archives' energy consumption to around 20 per cent of conventional demand.

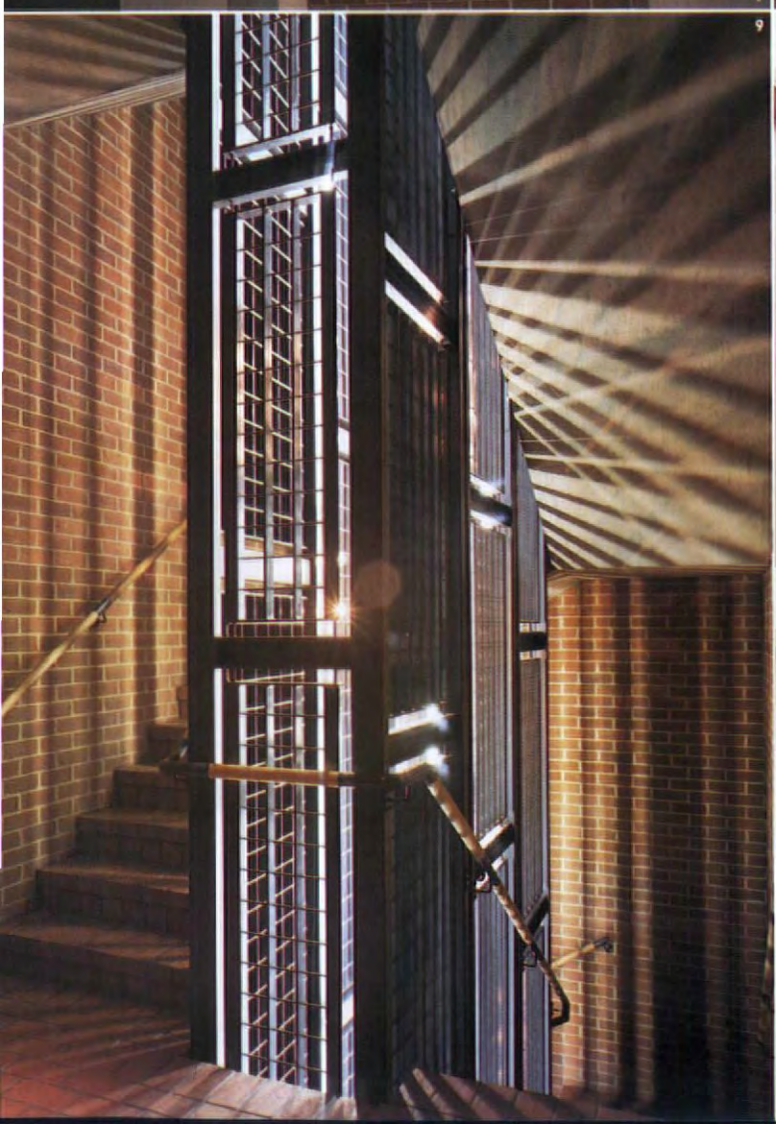
Beyond the laudable technical aim of reducing energy use, the building is enlivened by the work of several artists and craftspeople, who have collaborated with the architects since the project's inception. Eight artists were commissioned to make pieces representing significant women such as Elizabeth Garret Anderson, Virginia Woolf and Gertrude Jekyll. The pieces will be inserted into the steel grid of the main staircase, so that the lightwell will be gradually filled with gorgeous individual objects. More are planned. Jeweller Anna Gordon, who made pieces for the stair, was also commissioned to make a clock for the reading room and door panels in silver and gold, underscoring the strong honorific quality of the interior. Light artist Martin Richman designed a sign for the building that hangs in one of the vacant openings of the retained facade. It represents a book being hurled out of a window – a reminder, perhaps, that protest is an essential constituent of social progress. CATHERINE SLESSOR

Architect
Wright & Wright Architects, London
Structural and mechanical engineer
Ove Arup & Partners
Quantity surveyor
Davis Langdon & Everest
Project manager
Davis Langdon & Everest jointly with Wright & Wright Architects
Photographs
Peter Cook/VIEW

LIBRARY AND ARCHIVE, LONDON
ARCHITECT
WRIGHT & WRIGHT ARCHITECTS

6
Multi-purpose space nestles under the oak clad barrel vault of the exhibition hall.
7
Daylight percolates into the thermal chimney. Individual study spaces in library overlook shaft.
8
Light artist Richman's cartwheeling book.
9
Geometric shadow play on the main staircase.
10, 11
The library reading room is a calm and dignified space.


OLD CASTLE ST E



This solar house manages considerable energy saving through passive means without excessive costs or gadgetry. Essentially linear in concept, it was pushed to the north edge of the site. A string of rooms faces the sun, with a toplit hall behind to the north, and an acoustic buffer of storage cupboards in between. This element does not run full height but is glazed at the top to maintain visual continuity. The main energy device is a continuous glazed balcony tucked under the projecting roof, which acts as solar collector in winter and climatic buffer in summer. Slightly less than half glazed, with standard doors one, two, or three to a room, the massive concrete wall stores heat. Daytime build-up of radiation in winter can be used later. Shaded in the summer, it cools by absorbing daytime heat then losing it at night. Family members can individually adjust the climate of each room by opening and closing the glazed door or vent to exchange air with the buffer.

On a seasonal scale, the buffer's performance is adjusted by two more drastic measures: alternate glass panels slide open to allow full ventilation in the hot season, and the open timber slatted deck can be covered with rubber mats in winter to make the space relatively airtight. The overhanging roof projects enough to keep out midsummer sun. Falling back to the north, it slopes gently to a gutter at the eaves. The back wall extends the lightweight vocabulary of the roof with timber frame, thick insulation and metal skin. It is blind but for a horizontal slot window in the living room.

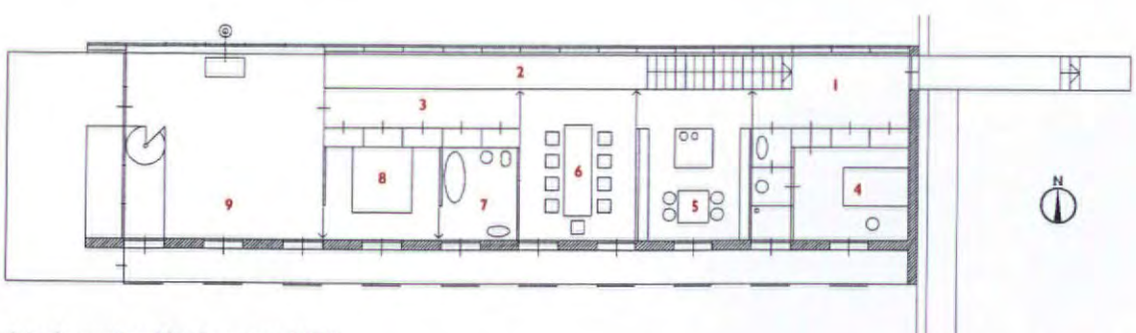
If the site were flat and the ends were treated in the same way, the linearity of the house would be oppressive, but the land slopes from the entrance by nearly two storeys, allowing the inclusion of a lower floor for children's bedrooms, utility and study. And the facades could scarcely be more different. The east sets a defensive concrete face to the street, formal and parapeted to conceal the sloping roof section, with a slit window only onto the buffer. The west, by contrast, is as transparent as possible, its two-storey glazing and generous balconies enjoying wonderful views across the valley. The linear hall-space on which the entrance opens is dominated by the running stair, the passage through the piano nobile becoming a landing and side-stepping to accommodate it. This landing opens to the kitchen and dining spaces, but sliding screens can be pulled across for privacy. The spatial sequence of the house culminates naturally in a room which takes the whole width of plan. You know you have arrived, with views in three directions. There is a hearth in the form of a wood-burning stove, and the spiral stair drops to the study below. The sequence has a dramatic and inspiring form, making the most of the linear plan rather than being cramped by it.

Contrast between light and heavy construction has partly to do with where heat is stored, but also with architectural presentation as with the formal concrete front. Wondra has in places devised ingenious details

SOLAR HOUSE, LUSTBÜHL, GRAZ, AUSTRIA
ARCHITECT
HEINZ WONDRA

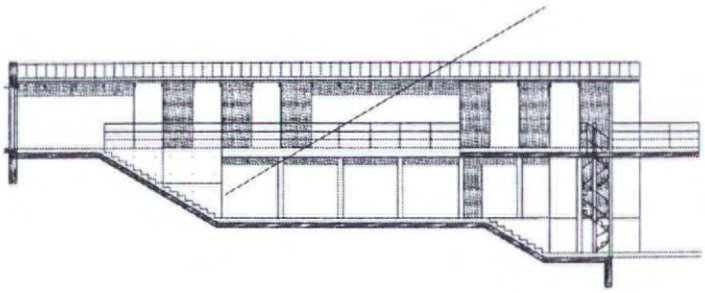
SOLAR COLLECTOR

Using passive devices which enhance its architecture, this house manages to reduce energy consumption to a third of the norm.

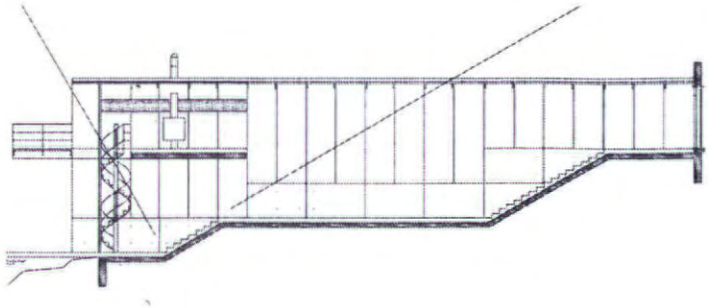


1 hall
2 down to study and children
3 gallery
4 guest
5 kitchen
6 dining
7 bath
8 master bed

plan of upper level (scale approx 1:250)



east-west section



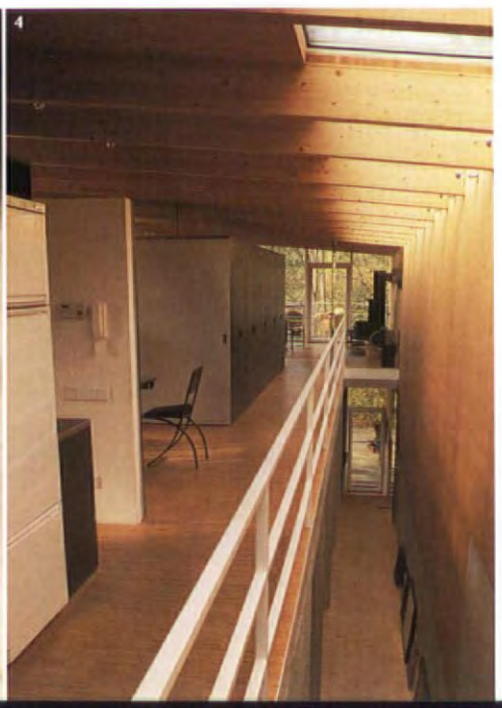
west-east section

such as the glass door canopy and the loose-fit stainless steel outer door which allows secure ventilation while the inner one is open. There are cleverly minimal sliding doors, an ingenious shaft to drop dirty washing from the bedroom to a basement cupboard, and glazing over the cupboards which slides in ceiling slots to absorb roof deflections through snow load. But these things are incidental: the virtue of the house is that energy consumption has been cut to about a third of the current norm, yet the architecture is enhanced rather than compromised. The pay-back period for the buffer and insulation is relatively short, and the energy policy involves neither an elaborate technical system nor complex engagement by the user.

PETER BLUNDELL JONES

5

3



4

1
East (street) front is massive and impassive.
2
Upper level has continuous glass-fronted balcony on south side to act as climatic buffer.
3
Buffer breathes through floor, which can be made almost impervious in winter with rubber mats.
4
From entrance hall with stair down to children's rooms and study. Gallery at entrance level ...
5
... leads to living room at west end of house.

Research institute, Magdeburg, Germany
Architect
Sauerbruch Hutton

1
Offices and labs on the east side of the building have double-glazed but openable windows set into the candy-striped aluminium skin.
2
The five-storey offices form a bulwark along eastern edge of site.
3
Clad in translucent glass, north and south facades are treated as cut ends.

site plan

2

POLYCHROME EXPERIMENT

Wrapped in a bold candy-striped skin, this new research institute combines the rational and romantic to stimulate intercourse between academia and industry.

The young Anglo-German partnership of Matthias Sauerbruch and Louisa Hutton is acquiring a reputation for architecture characterized by formal experimentation, environmental awareness and an uninhibited use of colour. Mundane buildings types – factories, offices and research laboratories – are transformed and elevated by this consistently inventive approach. Projects such as the Photonics Centre (AR December 1999) and the GSW offices (AR December 2000), both in Berlin, are resourceful responses to site and programme, exhibiting a structural polychromy that generates a provocative ambiguity between the visual and the physical.

Sauerbruch Hutton's assertion that their architecture is guided by the modern instinct of 'wanting to make reality work', while also exploring the more sensuous properties of materials and colour, clearly informs their most recent commission, an Experimental Factory in Magdeburg (EFM). Housing a research institute dedicated to developing, testing and marketing new cladding technologies, the building sits on the edge of the Otto von Guericke University campus. Formerly in the GDR, Magdeburg's social and economic fortunes have languished since reunification. Underpinning its research function, the EFM brings together academics and private sector product developers with the aim of improving the city's currently limited employment opportunities.

Confronting a busy four lane motorway, the building joins an existing institute and the site of a proposed further development on the south-eastern campus edge. The building consists of three parts: a five-storey structure overlooking the motorway with cellular rooms for offices and laboratories, and a testing space to assess the effects of electromagnetic fields, its walls surreally studded with conical protrusions to dissipate electromagnetic force. These volumes wrap around a central single-storey hall (7-10m high) used for large-scale experiments. A double-height internal street runs along the west side of the office volume uniting the offices physically and visually with the testing hall. Bands of glazing provide glimpses into the hall's cavernous interior, both at ground floor level and from a first floor gallery. The orientation and open-endedness of the internal street forms a public route that threads together the existing and proposed research institutes like beads on a string.

The three volumes are enveloped by an undulating skin of sheet aluminium cladding that drapes languidly over the building like a candy-striped blanket. Colour comes vividly into play with bands of pink, orange and silver forming a striated, kaleidoscopic coating that looks good enough to eat. The flowing contours reflect and resolve the different scales of the various parts of the building. The combination of these heterogeneous elements in a

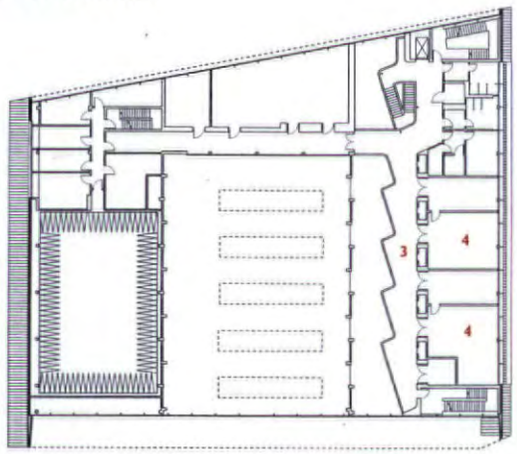
3

4

RESEARCH INSTITUTE, MAGDEBURG, GERMANY

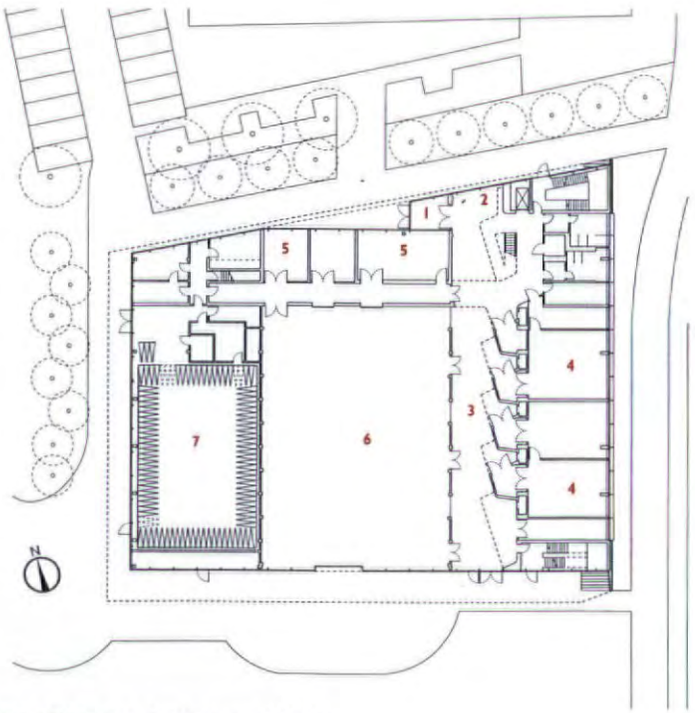
ARCHITECT

SAUERBRUCH HUTTON



first floor plan

1 entrance
2 reception
3 internal street
4 laboratories
5 offices
6 central testing hall
7 electromagnetic testing hall



ground floor plan (scale approx 1:1500)

single, compact form contrives to improve thermal performance and lower energy consumption. The roof projects over the north and south ends of the building, which are treated as cut edges clad in sheets of translucent glass, providing protection against glare and solar gain. Windows on the east side are double-glazed to reduce sound transmission from the adjacent motorway, but both the outer and inner panes can be opened for ventilation. Solar shading devices in the internal cavity also reduce heat gain. Even when open, the windows reduce sound transmission from the road to the office and laboratory spaces by around 8-10 decibels.

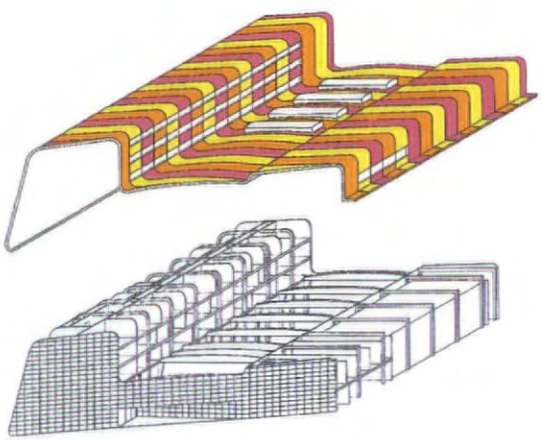
The east wing has a central service spine of vertical ducts from which the laboratories are supplied with services. Ducts are easily accessible, simplifying initial installation as well as any subsequent changes to services. Generous duct depths (850mm) also enable the potential retrofitting of laboratory equipment should extensive ventilation systems be required.

The deliberately orchestrated contrast between the functional laboratories and their colourful skin – between the rational and the romantic – has become a familiar theme of Sauerbruch Hutton's work. Psychologically, the effects of the partnership's preoccupation with polychromy must be, at the very least, to lift spirits and perhaps even help stimulate feats of innovation. Providing a civilized forum for research, the EFM is also a conspicuous affirmation of Magdeburg's renewal. C. S.

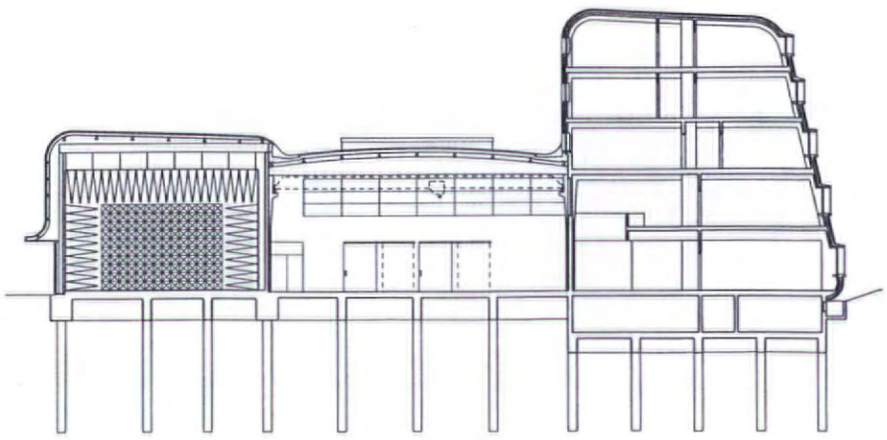
Architect
Sauerbruch Hutton Architects, London/Berlin
Project team
Matthias Sauerbruch, Louisa Hutton, Andrew Kiel, Marcus Hsu, Philip Engelbrecht, Barbara Suter, Mehmet Dogu, Bettina Pinks
Structural engineer
Bautra
Photographs
Gerrit Engel

4
The striped cladding undulates expressively over the building, like an enveloping blanket, uniting the various volumes.
5
Internal street at ground floor level. Colour also animates and energizes the interior.

5



isometric projection of structure and skin



cross section

House, Islington, London
ARCHITECT
Sarah Wigglesworth Architects

THE SLICK AND THE HAIRY

'Slick and hairy', the house made by a pair of architects on a neglected north London site, has many environmental lessons to teach – not least about the nature of wit in building and the importance of imagination.

Jokes in architecture are not usually good. Unless you're Lutyens, they quickly seem to be solidified embarrassments, as many of the tattered hulks of '80s PoMo demonstrate only too clearly. Little do you expect to find one of the wittiest new buildings in London at the end of a back-street next to a busy railway line. In time, it will be seen as one of the most gallant experiments in eco-architecture of our age. And yet, in a period when so many green architects seem so solemn, so really po-faced, it is light-hearted, full of double-entendres, tenderness for its dreadful sight and for its users.

Stock Orchard Street was a little bit of railway land disposed of when British Railways were so scandalously sold by John Major to a pack of accountants and civil engineers who were more interested in profit than service. But a few good things were dragged from disaster. This is one. The building, at the bottom of a rather run-down Victorian terrace, looks as if it will be a long-standing series of jokes and lessons that will become more important over time.

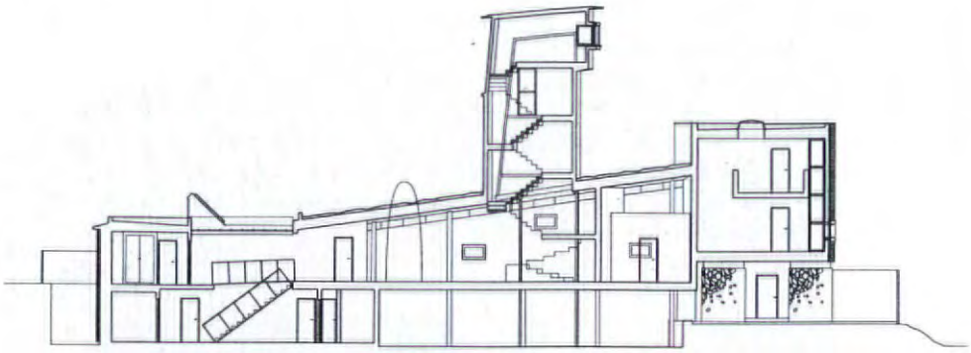
Time is of the essence in Stock Orchard Street: the house is intended to change as it gets older; it will never be finished, as its architect owners say most heroically. You first understand its odd qualities when you come to the gate, made of willow hurdles in a galvanized steel frame. Two manufacturing cultures are united: traditional craftwork and common or garden steel jobbery. The result, though apparently difficult to achieve, because the tolerances needed by willow workers are very different from those of welders, is a precise statement about what is to follow. The whole house, constructed throughout with similar care, took 350 drawings and nearly two and a half years to make. It is an imaginative combination of what the architects call 'the slick and the hairy'.

Once past the gate, you are faced by a rather formidable front door. You are in a strange arcade of piers made of bits of recycled concrete made rectangular sense with gabions. These main supports of the building have had to have reinforced concrete sacrificial columns in their middles to comply with the fire regulations (the metal cages would deform in intense heat), but they are more than able to support the loads by themselves. The architects point out that it is environmentally cheaper to have a lorry of broken concrete delivered to a site than to take away a load of site waste. Material from demolished buildings is abundant and cheap.

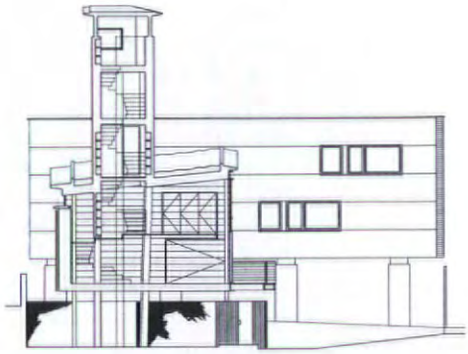
On top of the gabions are springs in green boxes. They moderate the vibration set up by endless trains, and their ameliorating effect is amplified by a sandbag wall, which provides acoustic mass. The wall was inspired by a dusky wartime picture of London bolstered against the blitz in the Second World War. It is extremely funny and bizarre, with window openings framed in Australian hardwood railway sleepers found on the site. Made with bags full of sand, cement and lime, the wall is intended to decay gradually into a rippling surface of concrete left with the rough imprint of cloth, and the beautiful local wild plants like herb-Robert and Welsh poppy which will surely seed there.

Over the entrance is a silver quilted wall: another sound-reducing device. Silicone faced

1
The sun side, opening itself to heat and light, with bales sexily exposed through polycarbonate.
2
Tower (which will contain library) is a landmark in a run-down inner city suburb.

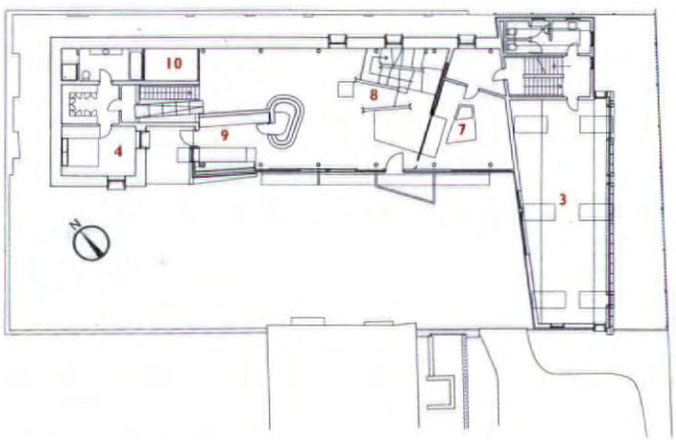


long (west-east) section

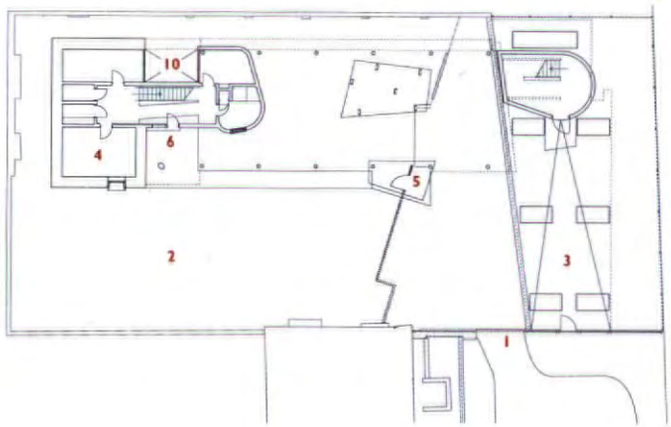


cross section through tower

1 gate
2 garden
3 office
4 bed
5 official entrance
6 domestic entrance
7 conference-dining room
8 tower library
9 larder-kitchen
10 court



ground floor (scale approx 1:450)



first floor

3

HOUSE, ISLINGTON, LONDON

ARCHITECT

SARAH WIGGLESWORTH ARCHITECTS

3
Court carved in back of mass has pool fed by roof water. Intended to be a damp mossy grotto, similar to Soane's courts at his museum, the space is an outdoor room, surrounded by domestic spaces.
4
The sound wall: against the noise of the trains, the architects have buttoned on a quilt, and made a massive wall of sand bags designed to decay with dignity.

5

6

7

fibreglass made by a sail-maker is buttoned to the inner building with an insulating layer and inner damp-proof lining. Sarah Wigglesworth says that one day, the cloth may be unbuttoned; and a whole new and completely different kind of cladding will be applied. But that time will be long ahead, when building materials have properties that we can only dimly imagine.

Sand bag and quilt enclose the office part of the plan. L-shaped, the parti is organized round a double-height dining room – a hinge which acts as both a family communal space and (during the day) a place for office meetings. Height is one of the architects' driving concerns: the office or studio has a gallery mezzanine. There is a tower, not yet completed, which is starting to contain the library. At the top of this landmark will be a little study from where the whole of north London will be seen.

Much of the domestic part of the plan is, as Wigglesworth says, 'swaddled in straw bales'. The house is claimed to be the first modern straw building in England, using the natural and mostly ignored highly insulative material. Vertical wood ladders take roof and floor loads and the straw bales are stacked between them. A farmer in the west of England was found who was proud of the precision of his baling and 550 bales were delivered to London at the almost unbelievably cheap price of £825. Wigglesworth says that 'bales are quick and easy to build with' and that the whole wall was put up in three and a half days by unskilled friends. I worry about vermin, but Wigglesworth claims that perforated metal closures at top and bottom of the cavity that separates the bales from the outer rainscreen will keep out rodents and insects. She will live with the straw and see. Rainscreen is provided by corrugated galvanized steel, which in one place is replaced by polycarbonate so that you can see 'the straw in its golden glory'. A very delicate sensibility is here, where the juxtaposition of 'shiny steel with rough straw' disturbs normal architectural categories 'uniting the slick with the hairy, the fetishized with the repressed'.

The spaces of the residential part are cheerful, for the most part happily looking out over a gradually growing garden through a glass wall facing south that draws heat from the sun and, in hot summer days, moderates it with louvres. The living area is dominated by a most bizarre device; a plastered masonry beehive-shaped larder. Based on the mud-brick structures of mid Africa, the strange bulk bulges itself on you. Inside, temperature is kept stable and cool by vents at top and bottom. Coolth as opposed to warmth of the hearth becomes the centre of existence. The architects have reversed normal perceptions, as they have in so many other senses.

Less obvious is the way in which they have made two 3000 litre rainwater tanks underneath the house. One gives water to the lavatories; the other irrigates the meadow on the roof, which has wild strawberries as well as local weeds.

No 9 Stock Orchard Street is the most sexy and witty building I have seen for years: fetishistic, full of very clever invention, happy with overlapping story-telling, wild yet tender, ever open to change – tower and garden, green yet industrial. We all live in houses like that in our imaginations. Wigglesworth is actually building one – with jokes that will last, and get more amusing with age. PETER DAVEY

Architect
Sarah Wigglesworth Architects, London
Project team
Sarah Wigglesworth, Jeremy Till, Gillian Horn, Michael Richards
Structural engineer
Price & Myers
Acoustic consultants
Paul Gillieron Acoustic Design
Photographs
Paul Smoothy

HOUSE, ISLINGTON, LONDON
ARCHITECT
SARAH WIGGLESWORTH ARCHITECTS

5
Detailing is simple but thoughtful and not too wounding.
6
Tall dining room is for conferences during day and acts as a hinge between office and domestic parts.
7
Living area, from which ladder to library tower ascends vertiginously.

SUSTAINABLE SCHOOL

One of the most rigorous programmes ever devised ensured that this French school is environmentally appropriate in multiple ways. It has many lessons to teach.

The new Lycée at Caudry near Cambrai in north-east France involved the most stringent design and construction ecological competition yet for a school in France. All aspects were considered: running energy, embodied energy, lighting, environmental quality, rainwater, sustainability, toxicity of materials, long and short term pollution, potential re-use and recycling, even waste management on the building site.

A government department called HQE (Haute Qualité Environmentale) prepared a table of 67 performance criteria, and competitors were invited to bid for the minimum environmental load they could achieve. If awarded the contract, they might stray outside the figure for this or that item, but would have to make up the loss elsewhere. Adding all together they were obliged to meet their chosen figure, with a financial penalty imposed for every point in which they fell short. Performance was to be measured on site after completion, so predictions had to be accurate. Main contractor Caroni-Sogea took, as Kroll put it, 'mad risks', but the figure was achieved. An enormous amount of research and technical work had to be done, different aspects of the design being shared between Kroll's office (A. U. A. I. Brussels), a second architect's office Quatr'A of Lille, and three offices of technical consultants, Tribu, Sodeg and Alain Bornarel.

Kroll stresses the need for a holistic approach, drawing no hard lines between physical and psychological issues, cultural and technical ones, or between the well-being of the individual and that of the planet. These concerns interact in complex ways, so stringent energy demands were not allowed, for example, suddenly to dictate the whole design of the school as with the famous glass wall at Wallasey, or with a huge hemispherical form for minimal surface area. Rather, Kroll went for his usual complexity and differentiation, and it makes the story complicated. The ecological design affects the form, but in ways not obvious at a glance. East-west alignment of both main teaching blocks is perhaps the strongest move, which gives them north and south faces. Southern exposure is needed for maximum solar gain, but is also more manageable with shading devices

1

ECOLOGICAL SCHOOL, CAUDRY, FRANCE
ARCHITECT
LUCIEN KROLL

1
Large mass of arts tower with its cascading roofs dominates composition.

2

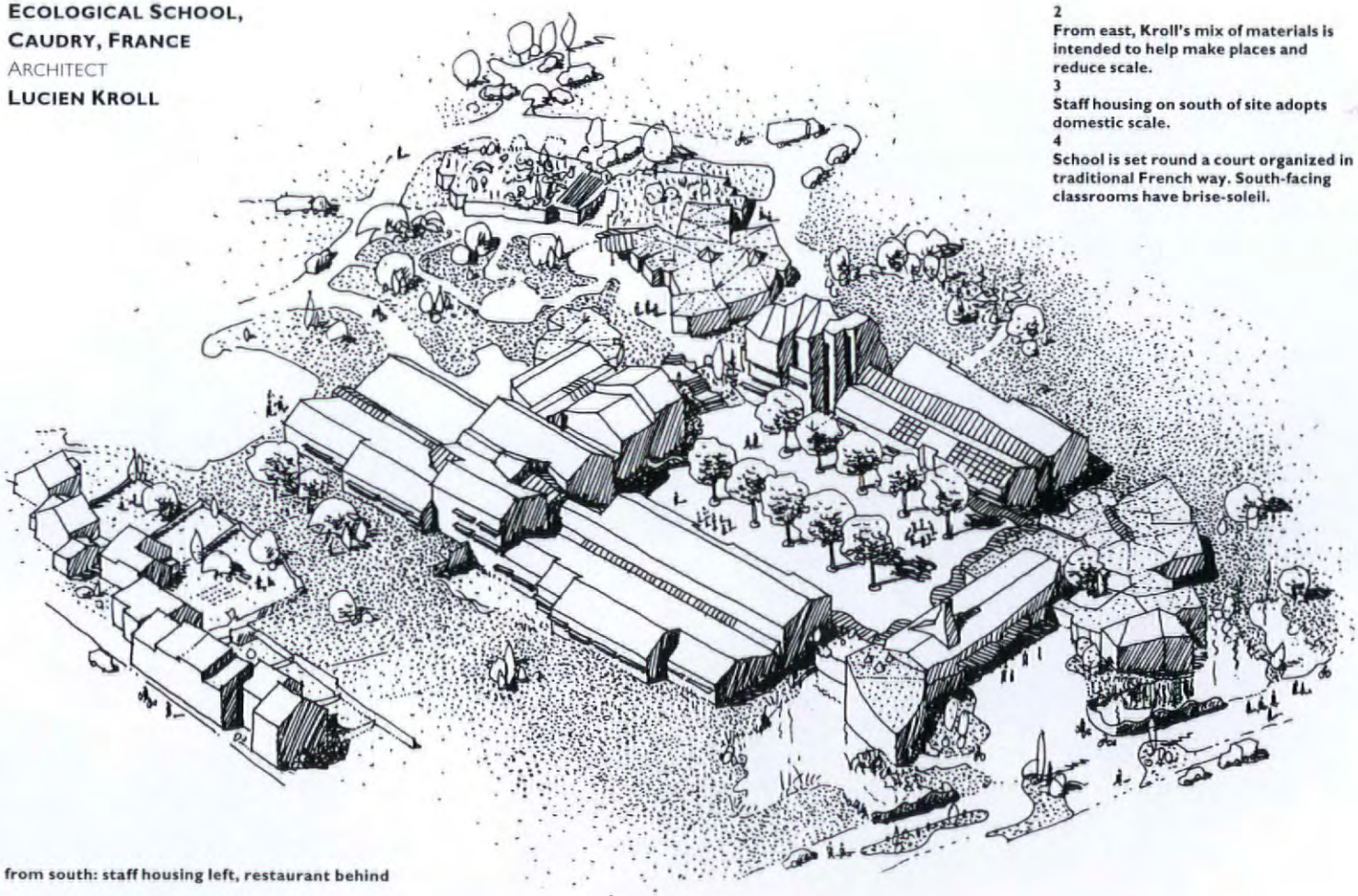
3

in summer because the sun is high. It is important too for the ecological concept that the linear blocks have a shallow plan-depth for daylighting.

Ecological design also profoundly affected landscape treatment, with green roofs, newly made ponds to the east, and a hillside to the west. Roof strategy was to grow vegetation on all low-pitched or flat ones not paved for access. This increases insulation and avoids the need for surface treatment, while the vegetation absorbs rain like a sponge, reducing or at least delaying run-off. It also increases the biomass, replacing lost ground with more CO_2 absorbing plants, though oddly this item was missing from the French bureaucrats' list, but Kroll did it anyway. The ponds, besides being wildlife habitats, are reservoirs for the rainwater system, supplying water for flushing lavatories and absorbing excessive run-off that could cause flash floods elsewhere. The low hill, another ecological habitat, shades the building from the west, the most difficult side for unwanted solar gain. It also absorbed all foundation soil from the site, so none needed to be carried off (so transporting energy) or dumped elsewhere (generating pollution).

As in earlier projects (see for instance AR March 1987), Kroll considered that the school should be a group of buildings rather than a single monolith, and that the parts should have recognizable identities. The complex shows both that it houses a varied community engaged in many tasks, and that it is in itself a small city. Excessive scale and long labyrinthine corridors were avoided by focusing the whole institution on a single central court, open to the public but using the administrative offices as a gatehouse for symbolic control. Paved as the main concourse, the court was ordered in the traditional French way (for 'those who love order',

ECOLOGICAL SCHOOL, CAUDRY, FRANCE
ARCHITECT
LUCIEN KROLL



2
From east, Kroll's mix of materials is intended to help make places and reduce scale.
3
Staff housing on south of site adopts domestic scale.
4
School is set round a court organized in traditional French way. South-facing classrooms have brise-soleil.

 from south: staff housing left, restaurant behind

Kroll says) with a grid of plane trees for summer shade. Glass canopies along the edge provide shelter for pupils moving from class to class. North of the court is a linear block for general teaching which ends to the west in the specialized arts tower with its cascading roofs. Opposite is the largest block, used for teaching technical subjects: sciences, laboratories, workshops. In the most publicly accessible corner north of the entrance are assembly hall and information centre (library and IT). The pointed building to left of the entrance is the pupils' common room. In the most protected position centre rear of the court is the vulnerable infirmary, and in the north-west corner the school restaurant and kitchen.

Going against the rules of the original competition, Kroll persuaded the municipality that staff accommodation should extend an existing housing street to the south-west, integrating them into the local community. In keeping with the principles of his earlier work, there was user participation as soon as the competition was over when, as Kroll put it, the 'cold skeleton' of the competition programme could be 'fleshed out' in discussions with teachers. While this resulted in no major changes of layout, there were many developments in detail.

Most classrooms are conventionally rectangular and set in linear ranges conditioned by daylighting. Social spaces for larger groups such as the library, assembly hall and restaurant have more complex polygonal forms with faceted roofs. This differentiates them visually and spatially from the other parts, but they are also more centralized in form. Polygonal shapes allowed development of semi-separate bays – for example in the library – which break down the scale of the whole into sub-spaces 'owned' by smaller groups. Small variations of shape and angle make each corridor and staircase individually recognizable, removing the anaesthetizing effect of repetition, and improving sense of place. This is ecological planning in a psychological sense.

Spatial variety is accompanied by a wilful variety in visible construction techniques typical of Kroll, whose aim is always to use everything in the catalogue. In this case, though, techniques and materials all had to run the gauntlet of ecological scrutiny, avoiding high embodied energy, journeys to the site of more than 200km, toxicity now or in the future and other harmful effects, but still a range was possible. The high energy input of the zinc-clad administrative block could be balanced, for example, by larger areas of untreated larch shingles, the most energy-efficient and sustainable cladding used, with a life of 30-50 years. Under such tight scrutiny, materials had to be chosen with care. Plastics were as far as possible avoided, but PVC inevitably appeared for electric cables and some plumbing pipes. Recycled paper (Warmcell) was employed for the main insulation, 150mm thick for roofs and 180mm for walls, generally applied outside the main structure. This pushed thermal loss down to 0.25 W/m²/per deg C, but only with 'fanatical' attention to continuity at eaves and corners, and with stringent elimination of cold-bridges. Potentially harmful solvents in paints and glues had to be avoided, both for the health of the construction workers and that of the children and staff. Linoleum turned out to be one of the most desirable flooring materials because it is 86 per cent recyclable, but it is a bit hard acoustically. Structurally, timber was used as much as possible, in laminated beams for large spans, but concrete was needed for fireproof and ground-based parts, and also for thermal mass. A large part of the embodied energy load,[1] this could at least be reckoned a local material, all its constituents being drawn from a short distance. Window frames were of softwood, though with added aluminium trim on the

5

6

7

ECOLOGICAL SCHOOL, CAUDRY, FRANCE

ARCHITECT

LUCIEN KROLL

5
Untreated larch is most energy-efficient and sustainable cladding available.
6
Canopies surround much of court and provide modern version of cloister.
7
Entrance hall.
8
Corridors have glass roofs to introduce daylight into middle of plan.
9
Social spaces are mostly polygonal to break down scale.

exposed heads and cills to extend its life: again a high-energy material used very sparingly. Only when environmental costs are highlighted in this way are so many aspects of normal practice made so questionable.

Great efforts were made with lighting, heating, and ventilation. An ambitious aim was to make the classrooms fully daylit, but even a complete side wall of glass allows a daylight factor only of 3.5 per cent at the back of the room. To get satisfactory light levels throughout, further daylight was introduced from the corridor side via clerestoreys, the corridors being given glass roofs. Such a large glazed area threatened excessive heat loss, so high performance double-glazing units were used, with an air-gap of 16mm and heat transmission down to 1.39 watts/m²/deg C. Inert gases in the cavity had to be avoided because of their embodied energy costs. South-facing classrooms required solar protection and, to maintain daylighting, horizontal visors were designed to act as reflectors, bouncing light up on to the ceiling. As short-stay spaces, the glazed corridors could be allowed more temperature variation, used as solar-collectors, even solar chimneys to aid the ventilation system. For a typical classroom block, air is drawn from some metres away through pipes buried a couple of metres underground, which cools a few degrees in summer and warms in winter. In the basement, input air exchanges heat with outgoing, then it is admitted to the classroom's outer side. From the inner side it passes to the corridor, rising to extract at roof level, and in winter fans return it to the basement heat exchanger. As with other services, performance is controlled electronically, electric fans cutting in when the natural effect is too weak. The artificial lighting too is computer controlled, turning on as daylight fails, but also turning off after a few minutes if no movement is detected in the room – when it comes to saving energy, every little helps. In the upper corridor of the administration/entrance building a more ambitious solar chimney protrudes from the roof, doubling as a rhetorical entrance tower. Venting itself by convection in the summer, it is fan-assisted in winter.

A modicum of active solar collection was included. Most significant is a large water-based collector on the kitchen roof which pre-warms water for the kitchens and lavatories. Aided by a heat pump which raises it to a usable temperature, this device accounts for about half of the hot water energy. There are also 120m² of photovoltaics on the south roof which provide around 4100 kilowatt hours of electricity a year, or around 11 units per day. This would run a one-bar electric fire for half the time, or 25 x 20 watt lightbulbs continuously. With mains electricity at around 5 pence a unit you can see why the payback period is currently so unrealistic.

Waste produced on the building site means both energy loss and pollution, so at Caudry it was carefully regulated, all stacked in separate heaps for recycling. Waste liquids and wash water were also controlled. Entrants to the competition were even expected to produce calculations for the long-term destiny of the site, so not only was the recyclability of the building materials taken into consideration: test designs were made for conversion. Most of the school was tested in a model for conversion into housing. The larger-scale technical teaching areas were reconceived as a Lace Museum, celebrating a local craft.

Always political, always outspoken, Kroll has pursued a career of polemical projects that seldom reached as far as he wished. His first great participative scheme, the Mémé student housing on the edge of Brussels, involved user participation to produce a complex differentiated form in conscious reaction against the adjacent system-built hospital. The hospital and other buildings of its kind represented for Kroll a technical or military kind of dictatorship: impersonal, alienating, and unforgivably top-down as opposed to bottom-up.

Appointed as architect in the wake of events in May 1968, he devised a complex interactive design process based on a cumulative physical model, and produced a chaotic building form which thrilled or shocked the architectural world, depending on one's point of view. It questioned the '60s tendency that architecture need express no more than the logic of the assembly process, and so seemed aggressively anti-rational. Yet ironically Kroll was a rational operator, using a Habraken-based module to coordinate construction. He remained in his own way systematic, even becoming a pioneer of CAD, and now he has pioneered the most comprehensively researched of ecological buildings: much rationality, much work. His concern for continuity of landscape – and for the planet as a whole – as opposed to the hateful 'selfish' or even 'autistic' object, is clear. His latest book is called *Tout est Paysage*: 'All is landscape'. Yet a recognizable Kroll style has emerged with its own signature elements, and many readers will recognize a Kroll building before they see an ecological one.

It reflects his bid for complexity: even complexity for complexity's sake, and it is undoubtedly artificial. His argument has always been that artificially provoked complexity is better than militaristic simplicity, because it plays a catalytic role, standing in for a complexity which in traditional settlements developed naturally over a long time. As he once observed, to paint your door a different colour in a long row of identical doors takes an act of courage, but to add your colour to an already varied row is natural and straightforward.

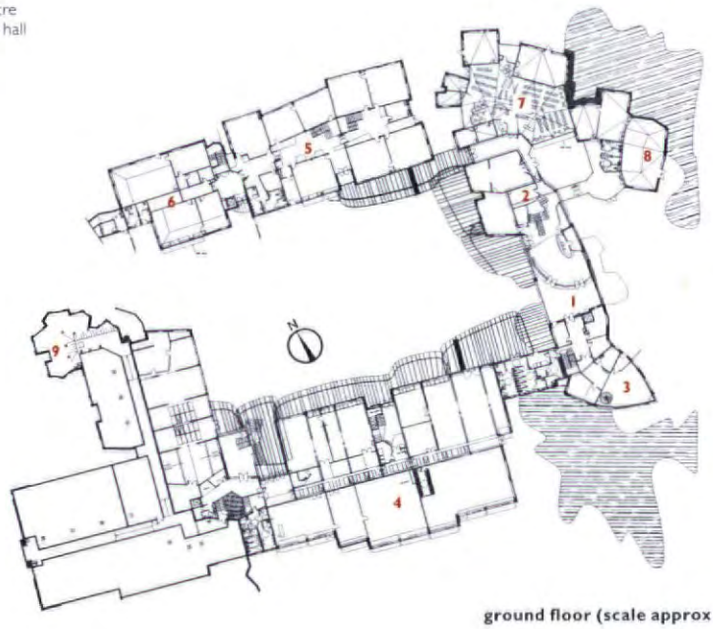
PETER BLUNDELL JONES

1 57 per cent of embodied energy is in the heavy structure – 17 per cent in the cladding, mainly in the glass and sheet metal.

Architect
Atelier d'Urbanisme, d'Architecture et d'Informatique sprl Lucien Kroll, Brussels and Quatr'A, Lille
Technical consultants
Tribu; Sodeg; Alain Bornarel
Photographs
Atelier d'Urbanisme, d'Architecture et d'Informatique sprl Lucien Kroll

1 entrance
2 administration
3 pupil's common room
4 technical teaching
5 general teaching
6 arts tower
7 information centre
8 general purpose hall
9 infirmary
10 restaurant

first floor



ground floor (scale approx 1:1250)

8

9

The Queen's House in Greenwich was designed by Inigo Jones for Anne of Denmark, wife of James I. Built between 1616 and 1635 in the hunting grounds of the Tudor palace of Placentia, it was an essay in Jones's assured handling of Palladian style and proportion. In contrast to the rambling brick palace which, spread around three courtyards, was the haphazard enlargement of a fifteenth-century mansion, the Queen's House was cool and Classically ordered at the edge of wilderness. Pevsner observes that the building's chastity and bareness must have seemed as foreign to contemporary beholders, used to the entertaining elaborations of Elizabethan and Jacobean architecture, as Modernism was to the Edwardians.

In reality, architectural exoticism must have been tempered by familiar amusements, for the house had a fantastical surprise garden with fountains; its plan too was diverting. The building straddled the public road, between London and Dover, which divided park from palace. In doing so, it became a metaphorical bridge between the safety of the palace's walled enclosure and the dangerous world outside (or, if you prefer, the rational link between two kinds of chaos: mathematical and physical). H-shaped on plan, the house had two parallel wings, running east-west and connected by a cross-bar at first floor level, above a vaulted basement.

Anne died in 1619 before her house could be completed and building was resumed by Charles I for Henrietta Maria, for whom the house became a garden retreat (there was never a kitchen). Her garden, with formal parterres and patterns, was designed to be viewed from above. In consequence, the basement (below the level of the road) with its handsome brick vaults and windows on to the garden, was blocked off.

Finding the house too small, Henrietta Maria engaged John Webb, Jones's successor and son-in-law, to add two more bridges to the first floor, one to the west and one to the east.

The house we see today is a square block. Facades on all sides, except the south, are tripartite with a central projecting section and plain walls rising from a rusticated base and surmounted by a balustrade. On the south side, a first floor loggia with Ionic columns overlooked the garden; on the north, a horseshoe staircase leads in Palladian manner to a terrace and a two-storey cubic hall. Inside the building, ornamented rooms are disposed in symmetrical fashion; to the east of the great hall, the interior is pierced by a circular void containing the famous Tulip Stair (the name deriving from the repeating wrought iron pattern of the balustrade). At the beginning of the nineteenth century, the building was extended by addition of east and west wings linked to the centre by colonnades tracing the path of the old road.

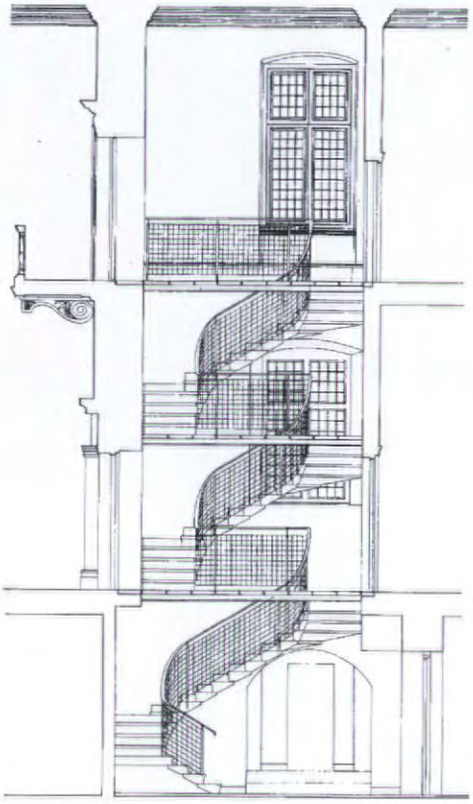
The present owner of the Queen's House, the National Maritime Museum, has wanted to use the building as a gallery. But its curious plan and difficult

QUEEN'S HOUSE RESTORATION, GREENWICH, LONDON
ARCHITECT
ALLIES & MORRISON

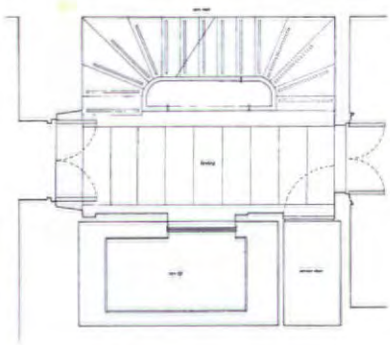
Fit for a queen

Remodelling of part of the Queen's House, Greenwich permits its use as a gallery and improves circulation without disturbing its seventeenth-century architecture.

1
North face with horseshoe staircase to terrace.
2
North face and colonnade to east wing. New public entrance with stone ramp embraced by staircase.
3
From great cubic hall, with black and white marble floor, to new staircase on west.



staircase elevation



plan: staircase and lift shaft

circulation, with no disabled access, made it unsuitable. Wishing to stage its millennium exhibition, *The Story of Time*, the museum invited Allies and Morrison to explore ways of improving access in, and circulation through, this most sensitive of monuments without upsetting English Heritage.

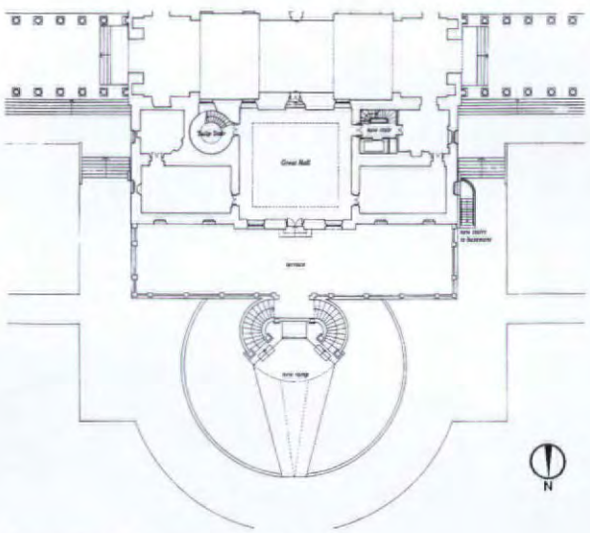
The practice's solution, with English Heritage agreement, was to restore the basement and transform it into a new public entrance, and in the process to reinstate Jones's original basement door on the north. To the west of the great hall, in a space previously occupied by a contorted staircase and where the basement vault had been breached, they inserted an elegant new three-storey staircase and lift.

Design of the staircase was based on the structural principle of the Tulip Stair, directly opposite on the other side of the great hall. Treads are made of precast concrete units, the load being transferred vertically from tread to tread. A steel string bolted to the face of brick shaft takes the torsion load and restrains the risers. The balustrading suggests the sumptuousness of handmade seventeenth-century filigree and the purity of Jones's decorative ornamentation. It is made of steel strips plaited into a grid which, when wound around circular riser sections, distorts and echoes the geometric distortions of the black and white marble floor of the great hall. A continuous bronze handrail expresses the curve of the staircase.

Within the basement, the vaulted brickwork has been covered, as it would have originally been, with rough lime render and the spaces made lighter and clearer. Down here are the reception, cloakroom, shop and lavatories reached by the new public entrance on the north. Facing the river and embraced by the horseshoe staircase, Jones's door leads to a tunnel under the terrace. The door was previously hidden at the bottom of a short flight of steps that have been replaced by a simple stone forecourt forming a shallow ramp. (Excavation revealed the original brick base of the horseshoe which turned 180 degrees so that the bottom steps faced each other.) P. M.

Architect
Allies & Morrison Architects, London
Project team
Bob Allies, Di Haigh
Structural engineer
Harris & Sutherland
Services engineer
Nordale Building Services
Photographs
Peter Cook/VIEW

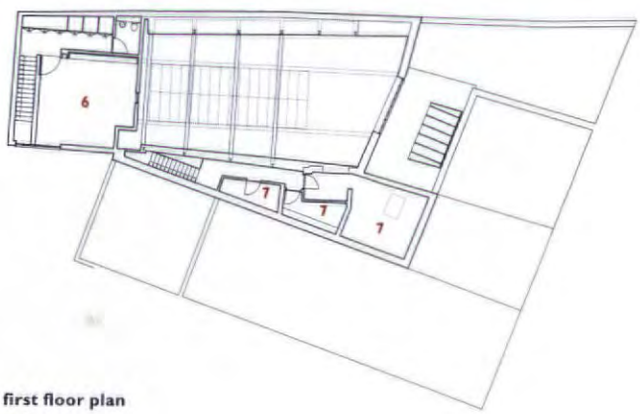
4
Basement enfilade.
5
New staircase: precast concrete treads, balustrading of plaited steel strips, continuous bronze handrail.



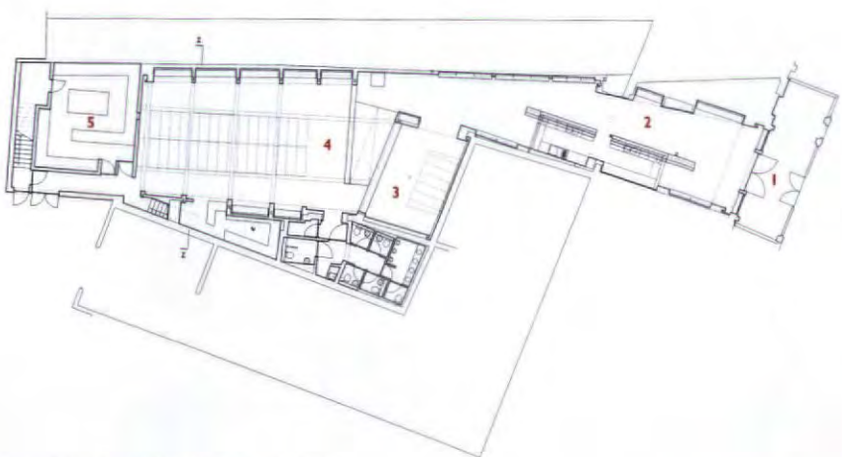
first floor plan (scale approx 1:500)

Queen's House restoration, Greenwich, London
Architect
Allies & Morrison

RESTAURANT, LONDON
ARCHITECT
SETH STEIN ARCHITECTS WITH DRURY BROWNE ARCHITECTS



first floor plan



1 lobby
2 bar
3 sitting
4 dining
5 kitchen
6 private dining room
7 office

ground floor plan (scale approx 1:500)

Distilled Baltic

Celebrating the austere elegance of the Baltic and the roughness of early nineteenth-century London, this restaurant is built with a strange, imaginative recipe.

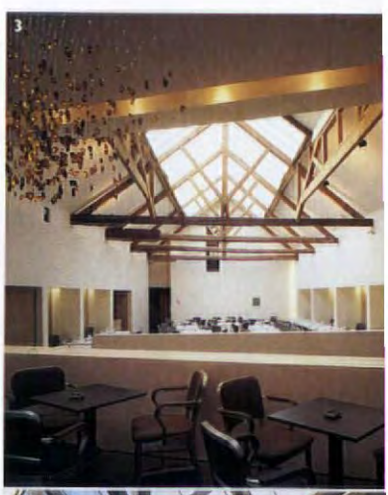
Baltic, a new Polish restaurant on Blackfriars Road in south London, very near Tate Britain, was initially designed with customary elegance, and feeling for space, by Seth Stein Architects, and subsequently executed with Drury Browne Architects. The client is Jan Woroniecki, who is also the proprietor of another Polish restaurant, Wodka in Kensington, known for delicately flavoured vodkas.

Behind the facade of an early nineteenth-century terrace, Baltic has been fitted into a supremely awkward site, shaped on plan like a chopping knife, with its handle pointing towards the road. The premises were once occupied by a coach building firm and when they were acquired by Woroniecki, the derelict and abandoned garage was found to be full of vintage Citroëns.

In spite of – or indeed perhaps because of – its awkwardness, the site's shape lent itself to division into different areas, and to spatial drama. From the street, you enter a long, low corridor, its linearity emphasized, in a passing reference to Richard Serra, by the monolithic lacquered steel bar running down the south wall. At the far end, this dimly lit corridor compresses itself so that your emergence into a luminous skylit dining room is all the more striking. This is a tranquil lofty space, white-painted, lined down each wall with illuminated rendered alcoves and upholstered benches.

A slight change in level, for the floor of the dining room lies below that of the entrance, is dealt with by a shallow ramp. Before the ramp, there is an intermediate room, between bar and dining room, illuminated by a deep lightwell.

In designing his own house in London's fashionable Kensington (AR October 1996), Seth Stein worked with existing structures, expressing their textures, imperfections and odd angles, making old and new coexisting but distinct. Here too, the architects have adopted the same approach. Apart from



wooden roof trusses and rooflights, few original features remained, but within the dining room, a clear sense of the original building is gained from the architects' expression of the trusses, and of structural irregularities and junctions. In the bar/eating area, luminance picks up the texture and colour of an old brick wall.

A Baltic theme runs like a continuous thread through the building. Colours – washed out putty, grey, green – are those of the northern seas. In the bar/eating room, lumps of Baltic amber suspended on silvery fibre-optic strands and fashioned into a hanging light, are gold against the pink brick. Both ends of the bar are enclosed in illuminated translucent panels filled with glowing amber chips.

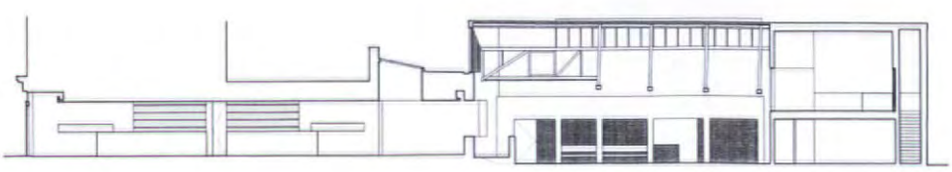
PENNY MCGUIRE

Architect
Seth Stein Architects, London with Drury Browne Architects, London
Project team
Seth Stein, Tom Drury, David Russell, Paul Wallace
Photographs
Richard Davies

5

6

1
Behind the chaste facade of a London terrace ...
2
... is a long low bar, dark but leading to ...
3,4
... a tranquil lofty space, luminous from the sky.
5
Stein celebrates the irregularities of the original building ...
6
... and celebrates the Baltic theme with lumps of amber hung on silvery fibre-optic strands.



long section

HOUSE, LA CLOTA, BARCELONA, SPAIN
ARCHITECT
ENRIC MIRALLES WITH BENEDETTA TAGLIABUE

1
Entrance front: new house has exposed perforated brick within concrete frame in contrast to traditional neighbours (left).
2
Double-height library.

Historic fusion

One of Enric Miralles' last works shows in small, exquisite scale his sensitivity to old and new, tectonic and human.

With its skewed angles, curving and intersecting elements and complex plans, the architecture of Enric Miralles, who died unexpectedly last year, was apt at one time to be consigned to Deconstructivism. Examining his richly embroidered and airy inventions, thoughtful commentators (see for instance AR August 1994) rightly traced connections to organic Modernism and the works of Scharoun, Häring and Aalto. In the architectural equivalent of the stream of consciousness in literature, Miralles had a habit of superimposing drawings and images to achieve apparently irrational compositions; but they were always underpinned by rigour and a very refined appreciation of context.

This family house in La Clota, Barcelona was designed by Miralles with his partner, Benedetta Tagliabue. Formed by amalgamating two small houses, it is a personal architectural essay. Amalgamation was shaped by the character of the existing buildings, and by the architects' desire to acknowledge history: to express the independence of the structures and, conversely, their organic integration. The interior admits and feeds off the exterior in complex intricate ways through voids and a sequence of volumes that, expanding and contracting, are made to have a constant dialogue with garden and skies.

Construction of the existing buildings, which lie side by side and are rectangular in plan, is of perforated brick within a concrete frame. In knitting the two together by means of an extension on the front, the architects have picked up the unpretentious but elegant quality of the skin and repeated it.

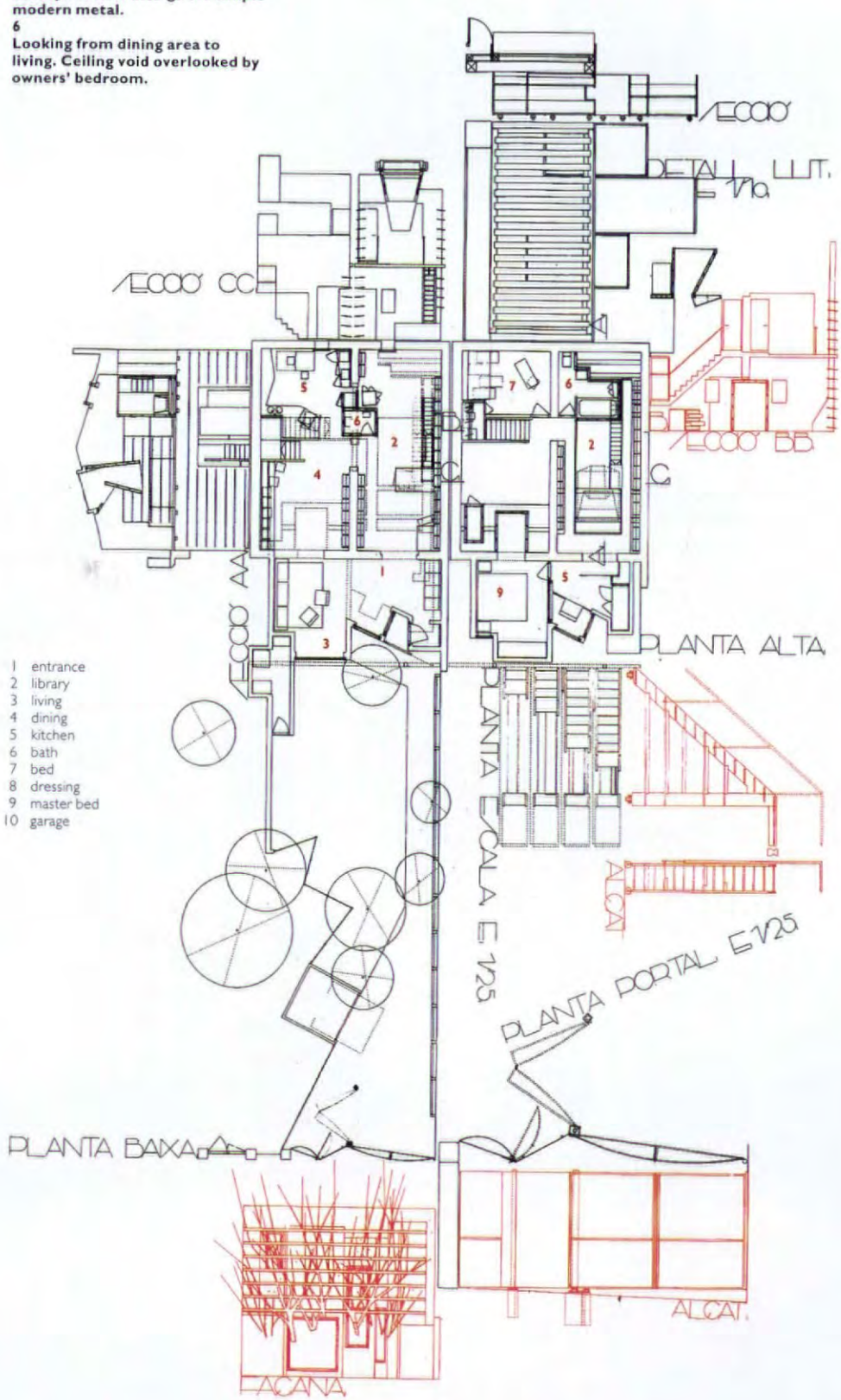
While combining the buildings, the extension also expresses historical division. To the right, an indented, angled and stepped section containing entrance hall and first floor gallery, has oblique windows giving glimpses of the

House, La Clota, Barcelona, Spain

ARCHITECT

Enric Miralles with Benedetta Tagliabue

3
Library rooflight.
4
Upper level library.
5
Original beams are retained in library but new fittings are simple modern metal.
6
Looking from dining area to living. Ceiling void overlooked by owners' bedroom.



1 entrance
2 library
3 living
4 dining
5 kitchen
6 bath
7 bed
8 dressing
9 master bed
10 garage

interior to the left, of the exterior texture and garden. From the wooden gallery, which incorporates an existing balcony, you look down into the entrance hall. To the left, the extension projects and faces squarely onto the garden with big windows to the living room on the ground floor, and master bedroom above.

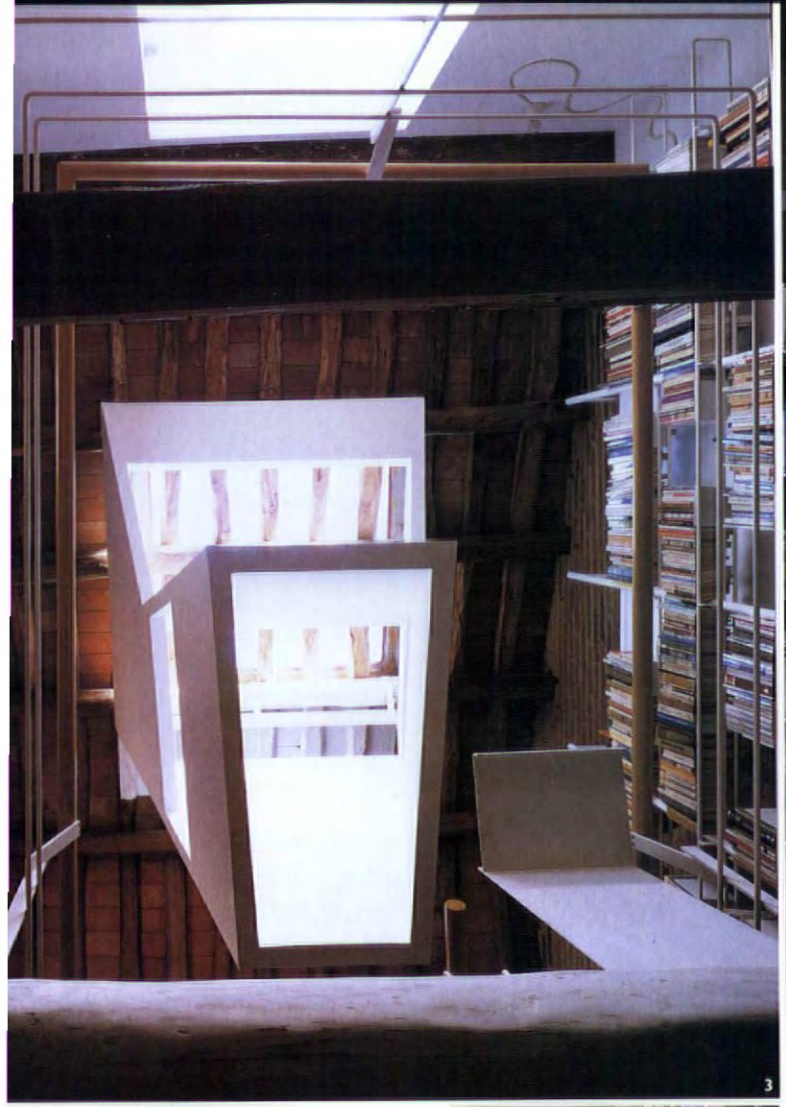
Behind the extension, the house falls into two interlinked but separate parts. The left-hand building has a double-height library illuminated by a funnel of light; in the right-hand one, there is clear differentiation between communal areas – kitchen, living and dining rooms on the ground floor – and private bedrooms on the first. Like the library, this part of the house is pierced by voids.

Details throughout are a constant delight. In the library's double-height volume, movable wooden stairs reach to the height of a perimeter catwalk giving access to plain metal bookshelves. A landing between stairs and catwalk is equipped with a reading stand. An old wooden beamed ceiling over the dining room, beam ends painted with white stripes, parts to reveal a light-filled void.

To northern eyes, there is something indefinably Catalan about design of this house. It has to do with robustness, flamboyance, the vigorous manipulation of light and materials – the sturdy wooden beams decorated in places, the diagonal slash of a wooden beam supporting first floor gallery, floors and furniture of different woods to enhance gradations of light, white walls washed by luminance. In the end, you are delighted by the architects' sheer invention and the modesty allied to it. There is nothing pretentious or grand; the materials are ordinary. You are left with the architects' evident pleasure in elaborating on what exists, in revelation. Miralles had an ability to acknowledge history without being trapped by it, and to make use of modern technology while making it subservient. This house is a small, but exquisite, part of his legacy. P. M.

Architect
Enric Miralles and Benedetta Tagliabue, Barcelona
Photographs
Duccio Malagamba

plans – ground floor to left, first floor to right (scale approx 1:280)



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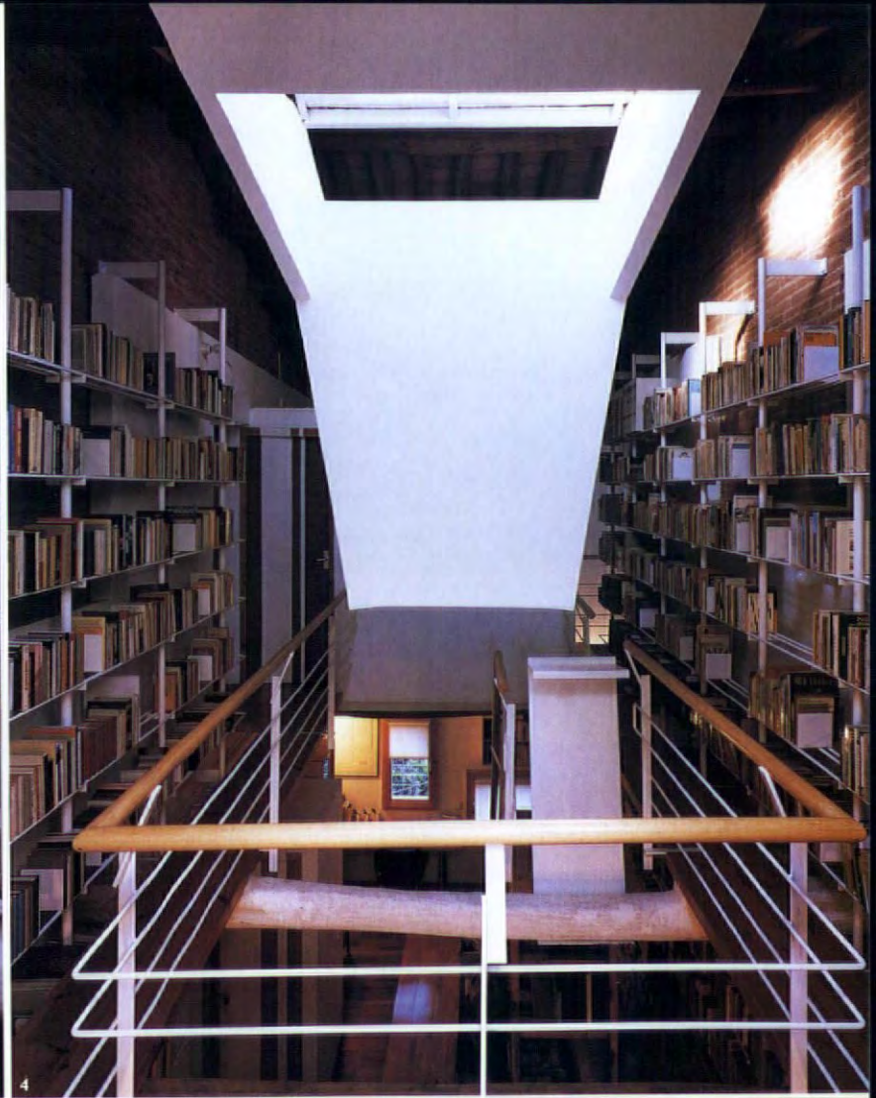


4

5

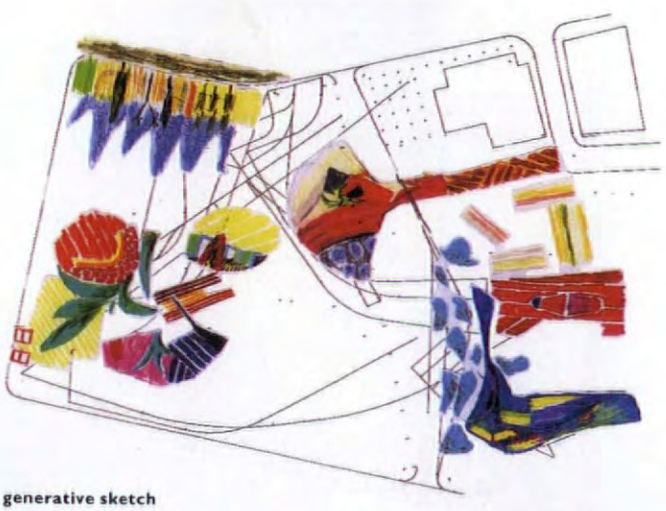
6

Over the last ten years, the development of Barcelona's public parks has underpinned its remarkable urban revival, bringing life to neglected and deprived parts of the city. The Parque de los Colores in Mollet del Vallés, by Enric Miralles and Benedetta Tagliabue, is typical of this ongoing programme, forming the first phase in a masterplan that will eventually encompass a sports hall and civic centre. The site lies in Barcelona's industrial belt, surrounded by featureless new apartment blocks. Given the lack of character and context, Miralles and Tagliabue's first task was to redefine a sense of place. The architects borrow and cannibalize physical fragments – including bits of walls and pavements, familiar elements throughout the city – to create a fictitious, oneiric topography that will eventually merge with the planting and new construction.

The man-made landscape is penetrated by a series of long, horizontal pergolas made of fragments of brick, concrete, and rusted steel artfully cut and sculpted to evoke the jagged forms of urban graffiti. Elevated on columns, these suspended screens filter light and mark out where to walk and where to rest by creating shaded zones and paths. At ground level, various different landscape treatments are used to create a fluidly informal mélange of earth mounds, concrete planters, coloured pavements, playgrounds, games areas, grids of palm trees, clusters of antenna-like lights and sinuous, mosaic-lined pools. The focus of the composition is a small open-air theatre that offers the potential for communal gatherings and performances. The theatre divides the park roughly in half and from the top of its seating tiers, a mirador offers good views across the landscape. Together with the pergolas, the winding pools and the compact masses of trees, the ramped theatre structure marks out and defines different parts of the park.

Like many of Miralles and Tagliabue's other urban projects, the park is located in a peripheral neighbourhood onto which must be grafted a sense of urban identity. But here the notion of a social topography seems especially relevant, responding to the wishes of residents and transforming a marginal place into a forum for many

Park of colours



Barcelona's network of urban parks, often in quite neglected neighbourhoods, has been a key part of the city's regeneration. This latest park by Miralles and Tagliabue is a series of colourful incidents and events that forms a vivid backdrop to everyday life.

Park, Barcelona, Spain
ARCHITECT
Enric Miralles with Benedetta Tagliabue

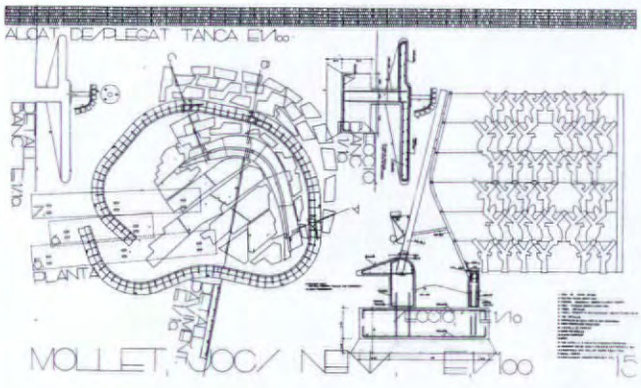
1
The new park is conceived as a series of events and incidents.
2
A small open-air theatre forms the focus of the composition.
3
Antenna-like light-fittings resemble clusters of trees.

landscape

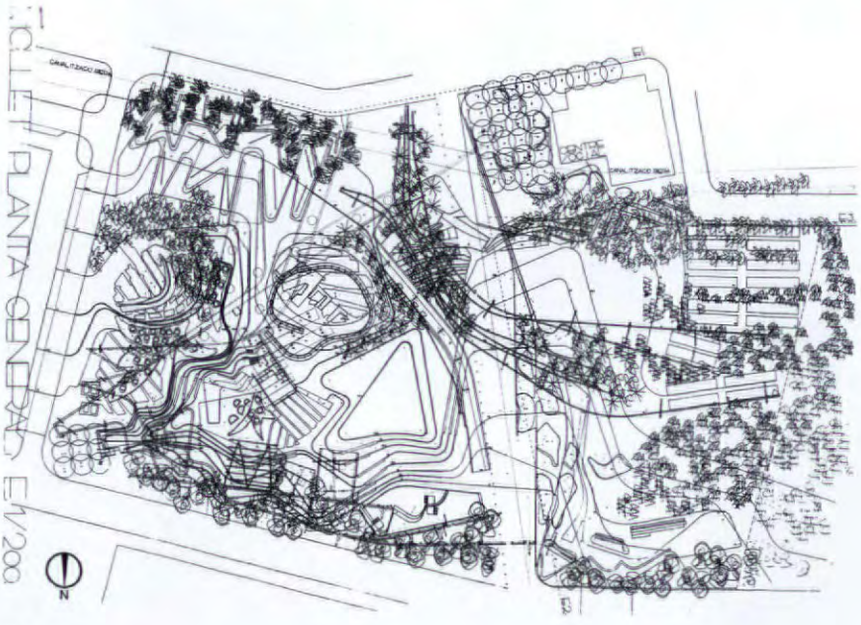
different sorts of outdoor activities. Clearly a world away from the precise, formal squares of London and Paris, the new park has a richly varied texture that will evolve as the planting becomes established and patterns of use begin to emerge. Local featurelessness is overcome by a prevailing element of surprise and the festive spirit of an artificial topography that embodies an inventive use of materials. At times almost dream-like, the park has the quality of a complex, ever-changing stage set for the daily dramas of urban life.

CARLA BERTOLUCCI

Architect
Enric Miralles and Benedetta Tagliabue, Barcelona
Project team
Enric Miralles, Lluis Cantallops, Joan Callís, Josep Miàs, Ricardo Flores, Josep Cargol, Jordi Artigues, Mary Rose Greene, Lucia De Colle, Nicolás Alvarez, Victoria Garriga, Sibyl Maurer, Germán Zambrana
Photographs
Duccio Malagamba



detail of pergola



 site plan

location plan

Park, Barcelona, Spain
Architect
Enric Miralles with Benedetta Tagliabue

4, 5
Pergolas define different kinds of spaces and activities.
6
Crafted from concrete and rusted steel, the pergolas have a strong sculptural quality; they also filter light and provide shade.

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501

502

501 KRISTALIA

Aeroplane wing technology inspired the design of a new range of dining, office and conference tables, Bird. Bartoli Design has created a table top of laminated cherry or birch which tapers to a delicate edge of solid wood. The splayed tubular legs are of aluminium or polished chrome.

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502 KRISTALIA

The Bebop bookshelf, by Bartoli Design, is 1.47m high and accessible on four sides; it is intended for use as a free-standing element. Made of Finnish birch plywood, in natural or cherry coloured finish, it comes as a flat pack for on-site assembly. Fixed or swivelling base versions are available.

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503

503 WALTER KNOLL

Norman Foster has designed the Foster 500 range of single seats, benches and sofas for reception, waiting and meeting areas. The seating units have broad arm-rests and are upholstered in dark grey with elegant metal bases. A range of glass tables with matching metal frames is also available.

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St. Pancras Chambers

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504


505


506


507

504 FRITZ HANSEN

Runner is an elegant stacking chair designed by the young Danish designer Kasper Salto. The separate back and seat are made of moulded laminated beech, maple or cherry on a black-grey, chromed or satin chromed base frame. It can be supplied with or without arms, seat upholstery and, when used at conferences, with writing tablets and linking elements.

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505 SEGIS SPA

Designed by Roberto Romanello, Hi-tau is a stylish bar stool with a footrest, an addition to the Alphabet collection. It is available with or without a back, and with a fixed or a rotating base. The cone-like seat is lined with non-deformable polyurethane and padded with polyester; it can be covered with fabric or leather.

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506 KUSCH + CO

Luca Series 1500 is a range of chairs and tables designed in wood by Robert de le Roi. The range includes a stackable armchair and a bench for short-term waiting. They are available in different backrest heights and with removable seat and seat coverings.

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507 ARVO PIIROINEN OY

The Chip chair has been designed by Antti Kotilainen to be as light as possible. The seat and backrest are made of moulded plywood which is only 4.2mm thick. They are connected to the steel frame with plastic injection-moulded fittings. The result is a chair with a total weight of little more than three kilograms.

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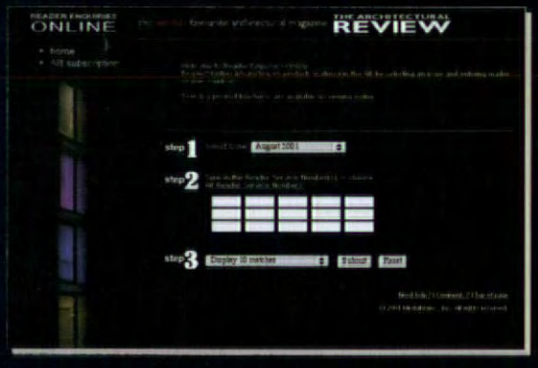

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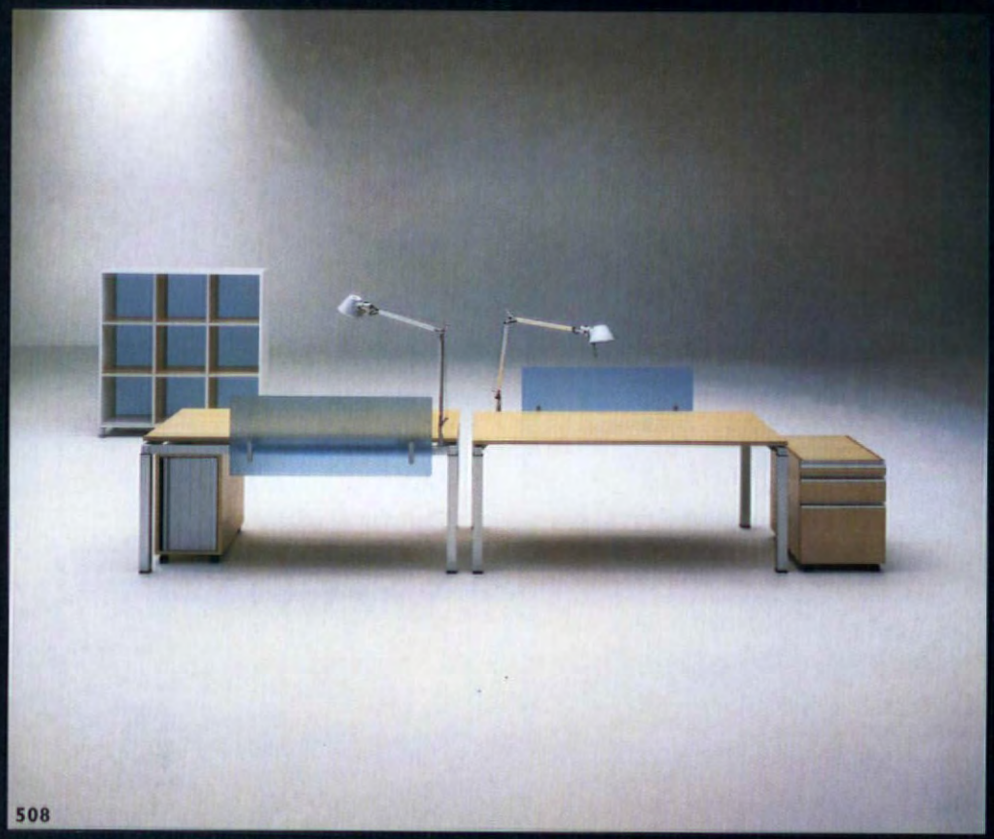

508

508 LENSVELT

Designed by Fritz Frenkler and Justin Kolberg, Minamo is a work/organization furniture system. It can be adapted to suit individual ergonomic requirements by adjusting the height of the satin anodized aluminium under-frame. An intelligent cable management system is also incorporated.

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509 BRUNNER GmbH

Intended for use at meetings and conferences, the new Freischwinger executive chair has an upholstered seat and back which is designed to offer exceptional seating comfort. It has a tubular frame and a cantilever sled base of quenched and tempered steel. The chair is part of the Drive collection of executive seating.

Enquiry 509 www.arplus.com/enq.html

510 INTERSTUHL

Designed by Rainer Moll, Xantos is a range of swivel chairs with backrests of transparent mesh mounted on die-cast aluminium frames. Three heights of backrest are available, along with a variety of mesh or upholstered backrest options. The chairs can be adjusted in several ways to suit individual ergonomic requirements.

Enquiry 510 www.arplus.com/enq.html

509

510

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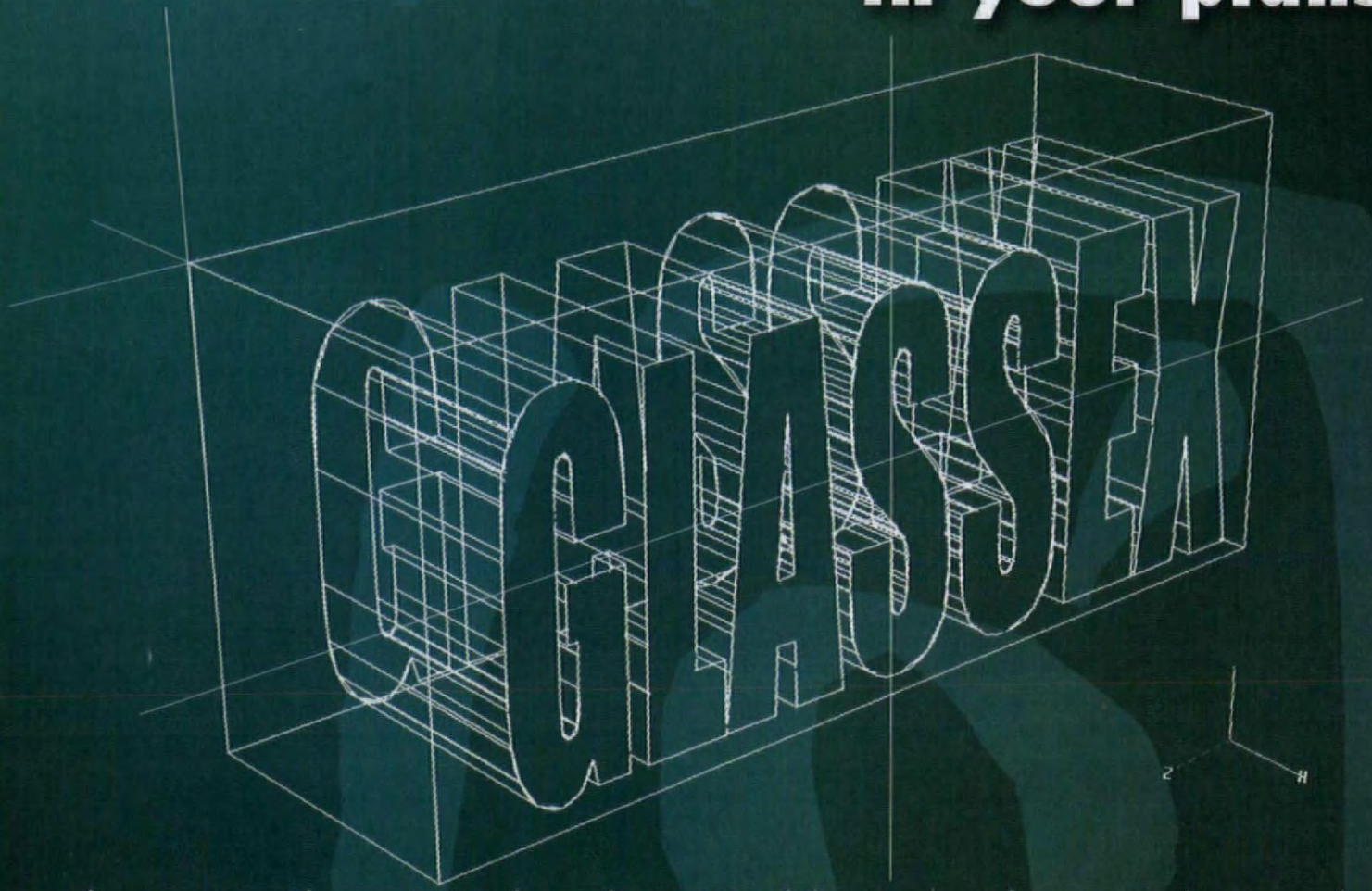

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Specifier's information

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Vision panel specialist North 4 Design has added a 30-minute fire integrity to its expanding range of vision panels for doors and walls. Finished in brushed stainless steel with a choice of glass and fixings, they provide an attractive solution to functional vision requirements. All vision panels are designed for simple installation and are supplied as complete kits. A custom etching/signage service is also available.

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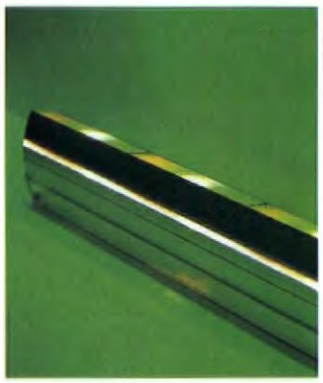
Kawneer Europe

Kawneer produced the complex glazing to a dome which forms part of Foster & Partners' refurbishment of the British Library of Political and Economic Science for the London School of Economics. The central lightwell has been transformed into an airy atrium which rises to a dome fitted with a canted glazed rooflight (canted to avoid glare and solar gain). It is formed of Kawneer's Series 1200 Slope Glaze with triangular top and bottom hung vents which are structural silicone glazed. The vents are an integral part of the library's natural ventilation strategy.

901 www.arplus.com/enq.html



Isometrix Lighting and Design

Colourwash is a custom designed linear optical lighting system which offers pure saturated washes of coloured light. The unit has integral mounting and comes in lengths of 900 and 1200mm. Any number of units can be combined to suit specific wall lengths. Lighting control is by a rotary controller unit with manual colour selection or an automatic scroll option which cycles through 256 colours in sequences which range from one to 128 minutes. A single controller can operate an unlimited number of units.

902 www.arplus.com/enq.html

Luxcrete

Stainless steel has been used in several innovative ways on the facades of the Fördetower, a new six-storey office building in Kiel which overlooks the harbour. The west facade has been clad with smooth stainless-steel panels anodized to a light purple tint. The panels on the east facade are ribbed and dimpled but retain their polished finish. They are fixed to a robust supporting structure with bolts, reflecting the construction of an old bridge which runs alongside the building.

903 www.arplus.com/enq.html

Reynaers Aluminium

The Old Jewry, a traditional stone building in London's financial district, has been restored by the Fitzroy Robinson Partnership. The architect chose a selection of Reynaers Aluminium systems to clad the front and rear facades. The CW50 curtain wall system, together with Raynaers thermo system windows, was used to clad the front facade while the CW60 curtain walling system was used for the rear facade.

904 www.arplus.com/enq.html

Concord:Marlin

Concord's Torus range of electronic spotlights now features a new all-in-one diecast aluminium bezel. Cool-to-touch polymer grips allow the spotlight to be repositioned while in operation, making the bezels easy to remove and lamps to be replaced. Accessories include coloured, UV and daylight filters which fit easily into the new silicone-lined accessory holder. Glare control is available from a honeycomb filter or the new Torus 100 flat control lens with integral anti-glare cap.

905 www.arplus.com/enq.html

K + N International

Winner of the Neocon Gold Award for Seating Design 2001, Skye is a range of seating including task and visitor chairs. The range provides maximum back inclination with minimum effort. A patented GPM (global positioning mechanism) synchro mechanism allows the seat to incline to a maximum of 47 degrees. The pivotal point, close to the body, and the chair geometry ensures a dynamic centre of gravity which prevents the chair from toppling. The seat, backrest and armrests can be adjusted in several ways to suit ergonomic needs.

906 www.arplus.com/enq.html

Optelma Lighting

Move is a new track lighting system suitable for accent and display lighting in retail interiors, offices, museums and galleries. Incorporating three circuits within an 18 x 18mm profile, the track is 75 per cent smaller than conventional systems. A distinctive range of luminaires is available including pivoting and suspended spotlights, low voltage spotlights, Par30 halogen spotlights and fluorescent modules.

907 www.arplus.com/enq.html

DESIGN ETHICS

THE ETHICAL ARCHITECT: THE DILEMMA OF CONTEMPORARY PRACTICE

By Tom Spector. Princeton: Princeton Architectural Press. 2001. Hardback £37.95, paperback £17.95

What is the value of architecture? What constitutes good design? What is an architect's duty? These are fundamental questions which this ambitious book aims to address. Spector's intention is no less than a restructuring of the practice of architecture through a unified design ethic.

The first two chapters cleverly align practice and theory. The role of the moral professional is the focus of the chapter entitled 'Practice' and explores concepts like professionalism, duty and contract. 'Theory' introduces the Vitruvian values of *utilitas, venustas* and *firmitas* (utility, beauty and firmness) and shows that little consensus exists over their relative importance. Recent theories (after Modernism) which endeavour to separate morality from artistic merit are then placed in a context which demonstrates that architects today face ethical dilemmas over their professional position, which are intimately linked to a lack of agreement over what constitutes good architecture.

The next three chapters apply aspects of moral philosophy to evaluations centring on Vitruvius' values, which in turn are structured around relevant case studies. Intermittently, the discussion encourages developing a subjective ethic based on personal values and virtues, and promotes truth to this ethic as a means of resolving design dilemmas. This notion is elaborated on by asserting that architects should develop a personal style, although the epilogue raises an ambiguity: is this style as architects traditionally understand, or style as process? Spector is convincing when he argues that buying into established stylistic conventions facilitates community dialogue and societal development; but, one is left unsure that such objective arguments could alone explain the reality of Corb's Ronchamp Chapel or Zumthor's Vals Thermal Baths, unique buildings married to their context in subtle, elemental ways. Indeed, essential notions like space, place and dwelling are consistently underplayed. However, the book is important for professionals and students alike, and of importance not just to architecture.

BOBBY OPEN

Syon House dining room from *The Genius of Robert Adam* by Eileen Harris, Yale, London, 2001, £65.00. Magnificently illustrated with drawings and photographs in colour and black and white, the book looks at Adam's interior work in 19 houses. A tribute which brings the work to life on the page.

DEVELOPING CITIES

COMPACT CITIES: SUSTAINABLE URBAN FORMS FOR DEVELOPING COUNTRIES

Edited by Mike Jenks and Rod Burgess. London: Spon Press. 2001. £35

This is the third book in a sequence that began with *The Compact City: A Sustainable Urban Form?* (Jenks et al, 1996) and *Achieving Sustainable Urban Form* (Williams et al, 2000). Those predecessors were concerned with the question of the nature of sustainability in the cities of the developed world. Now the focus has shifted to the equally pressing problem of developing cities.

Over 20 essays, by authors from round the world, present a wide-ranging analysis and debate on an issue that is shown to be of the utmost complexity. The editors offer judicious commentary and avoid the trap of proposing simplistic conclusions. The cities of the developing world are shown to be extremely diverse; culturally, historically, economically and formally. The contrasts between Dhaka, Medellin and Hong Kong are vivid demonstration of this. These facts deny the possibility of the 'quick-fix'. Yet, a number of the papers present case studies, such as the managed densification and urban intensification of Curitiba, Brazil, that might be adapted and applied in very different contexts, in the developing world and, perhaps, in older cities of the developed world.

Most of the essays are concerned with issues of macro-scale and with processes of management rather than design. That is a necessary reflection of the nature of the problem. There are, however, useful perceptions that derive from a more architectural perspective. For example, an elegant essay by de Schiller and Evans, of the Faculty of Architecture, Design and Urbanism at Buenos Aires, presents a convincing critique of the stereotypes of architectural globalism and argues for a more climatically responsive approach to the architecture of the sustainable city.

This book and its companion volumes deserve a place on the bookshelves of all who believe that architecture and urbanism have obligations beyond the territories of pragmatism or fashion.

DEAN HAWKES

HOUSE AND HOME

COUNCIL HOUSING AND CULTURE: THE HISTORY OF A SOCIAL EXPERIMENT

By Alison Ravetz. London: Routledge. 2001. £22.50

Professor Ravetz is Britain's most distinguished housing historian. In the '90s she wrote with Richard Turkington *The Place of Home*, one of the few housing histories to take note of the changed use of space in the home brought about by heating systems and domestic appliances. Her new book, traces the more successful of council housing estates back to Howard's Garden Cities and the work of Unwin and the Arts and Crafts architects and the least successful to the impact of the Modern Movement and the pressure on local authorities by a Conservative government to adopt system-built high-rise solutions.

She stresses that the last people to be consulted were tenants, subject to an increasingly remote managerial bureaucracy, and describes how since 1980 the aim of governments of both complexions has been to squeeze housing out of council control. Apart from the 'right to buy' there is huge pressure to push whole estates into the hands of housing associations or private landlords, neither of which has even the formal electoral control of councillors.

She is withering about the way the concept of genuine tenant control has been crushed into rhetoric about 'partnership' in which the poor, in residualized 'sink' estates are 'required to manage their own poverty when everybody else failed to do so'.

COLIN WARD

DETAILED ANALYSIS

IN DETAIL: BUILDING SKINS – CONCEPTS, LAYERS, MATERIALS

Edited by Christian Schittich. Basel: Birkhäuser. 2001. SFr 88, Euro 58

Those who love the way buildings are put together are familiar with the German magazine *Detail*. This book is from the same stable.

'Skin' is treated in a broad way. It is regarded as the non-structural covering to a framed

structure, but the authors have not restricted themselves to lightweight cladding. The frontispiece, for example, shows the stony gabions of Herzog & de Meuron's California winery.

The book starts with an introduction leading us through the history of the building skin, up to the thin glass curtain walling of the '60s which is now presumed to be energy wasteful and often boring. Post-modernism is dismissed in a paragraph. The post-post-modern response is seen to be two-fold. The first response is the skin designed to be a heat and power generator, or at the very least put together with green issues very much in mind. The second response is to attach applied decoration, as Herzog & de Meuron's printed concrete at Eberswalde or Francis Soler's Renaissance images superimposed on a glass facade in Paris. Personally I don't get much pleasure from the second group, but the book covers both approaches fairly, with worldwide examples.

Beautifully produced, the book is well illustrated and, best of all for architects, it has details drawn to a recognized scale. If I have a complaint it is that it falls between being a picture book and a technical treatise. The minimalism that makes the book so delightful graphically gets in the way of providing fuller information; so it is not possible to comprehend much of the construction, or to know how well buildings perform in energy terms. But it is encouraging to see so many fine buildings not seen published before. JOHN WINTER

SIMULTANEOUS TRANSLATIONS

THE LOWE LECTURES: THE PARADOX OF CONTEMPORARY ARCHITECTURE

Edited by Peter Cook, Neil Spiller, Laura Allen and Peg Rawes. London: Wiley-Academy. 2001. £24.95

DIGITAL/REAL: BLOBMEISTER/FIRST BUILT PROJECTS

Edited by Peter Cachola Schmal. Basel: Birkhäuser. 2001. CHF88.00, £39

With translation fundamental to architecture both of these books are helpful. *The Paradox of Contemporary Architecture* addresses the problems of translating ideas into words and images. While lectures by architects about their work are important propaganda for architecture schools, they are also an integral part of both pedagogy and practice. Yet they almost invariably disappear as quickly as they are presented. By documenting 22 of the Lowe Lectures, given at the Bartlett between 1999 and 2001, this book seeks to not only offset that loss but to prompt further discussion. It presents ideas from a range of architects of different persuasions and from different settings to project the work of familiar names – Zaha Hadid, Christine Hawley, Snøhetta and Klaus Kada – alongside others more mysterious – Chora, Softform and Lotek. Words and images have been edited and mostly with tact and insight.

Occasionally editors seem to have been overzealous so one lecture is reported with the briefest of texts and no illustrations while for others strident images are given preference over informative drawings. Yet this is a useful record and a reference that presents sweeping views over the architectural landscape.

Digital/Real focuses on specific translations from screen to building. A catalogue for a recent exhibition at the Deutsche Architektur Museum, it combines six essays, of varying quality, that speculate on digital design research with descriptions of 11 built projects by architects dubbed as Blobmeisters. All have sought ways to construct complex three-dimensional building forms devised with the liberating influence of new computer modeling systems. The book describes the detail of those translations. It also notes some of the benefits of digital technology for fabrication by referencing new techniques, collaborations and initiatives that have been developed by architects, engineers and contractors. While explanations of the constructional systems developed for the Zollhof in Düsseldorf hardly represent Gehry's first built project when put alongside schemes by Jacob + MacFarlane, Hadid and Egeraat, they provide useful insights. Studies of other projects, however, reveal cumbersome ways of building and question the relationships between the apparent ease of developing complex three-dimensional forms digitally and the seemingly inherent difficulties of translating them to the scale of buildings. More detailed information on material research and structural innovations would be beneficial. Drawings more effectively labelled, with scales noted and describing actual edges, openings and skin/frame connections would also help.

This book's effusive flow of words, screen-based imagery and breathless enthusiasm for the new bring to mind the extraordinary translations of von Erlach and Guarini, or more recent achievements of Mendelsohn, Le Corbusier and Eero Saarinen BRIAN CARTER

IT'S UP TO US

ECOHOUSE – A DESIGN GUIDE

By Sue Roaf, with Manuel Fuentes and Stephanie Thomas. Oxford: Architectural Press. 2001. £24.95

It's great to read a book with a no-nonsense message. Sue Roaf's is this: we are doomed unless we do something about it, and we architects in particular must design responsibly if the planet is to be saved. 'Architects who cannot incorporate energy and water conservation and reuse, and renewable energy into their buildings, will become dinosaurs, as will their white elephant buildings.'

Living room, Breuer House, Lincoln, Mass, 1936, from *Marcel Breuer Architect* by Isabelle Hyman, Abrams (Thames & Hudson), London, 2001, £55.00. Subtitled *The Career and the Buildings*, the lavishly illustrated book is more about career than buildings, with often just one picture of major works, and too few drawings.

This book is a design manual for those involved with making houses more sustainable. The way houses perform is explained by analogy (eg The Third Skin, The Tea Cosy, The Swallow etc), which is an attractive way to describe building performance to non-experts. Later chapters describe in detail photovoltaics, solar hot water systems and passive solar design. And between these is sensible advice about choosing materials, detailing to avoid cold bridges, health and happiness in the home, even an offering by Christopher Day on the importance of soul in dwellings. Twenty examples of ecohouses from round the world complete this guide, which is written to be informal and readable.

The only quibble I have is that it tries to cover too much in its 300-odd pages. Much that is included is covered elsewhere (to be fair, this is probably acknowledged by the book's good bibliography). Christopher Day's chapter hardly has a chance to get going, and is better dealt with in his own books. Issues such as disabled access, noise, fire, security, and defensible space are included, but I feel are tangential to the core of the book. And when there are sections about building in earthquake and cyclone zones, I slightly wonder who exactly the book was written for. ADAM VOELCKER

Book reviews from this and recent issues of The Architectural Review can now be seen on our website at www.arplus.com and the books can be ordered online, many at special discount.

delight

A MYSTERIOUS EVOCATION OF THE POWER OF THE FOREST AND OF RELIGION, THIS TOWER STANDS UNEXPECTED AND PRISTINE BEFORE ITS TRANQUIL POOL IN A QUIET CLEARING UNDER THE STYRIAN MOUNTAINS.

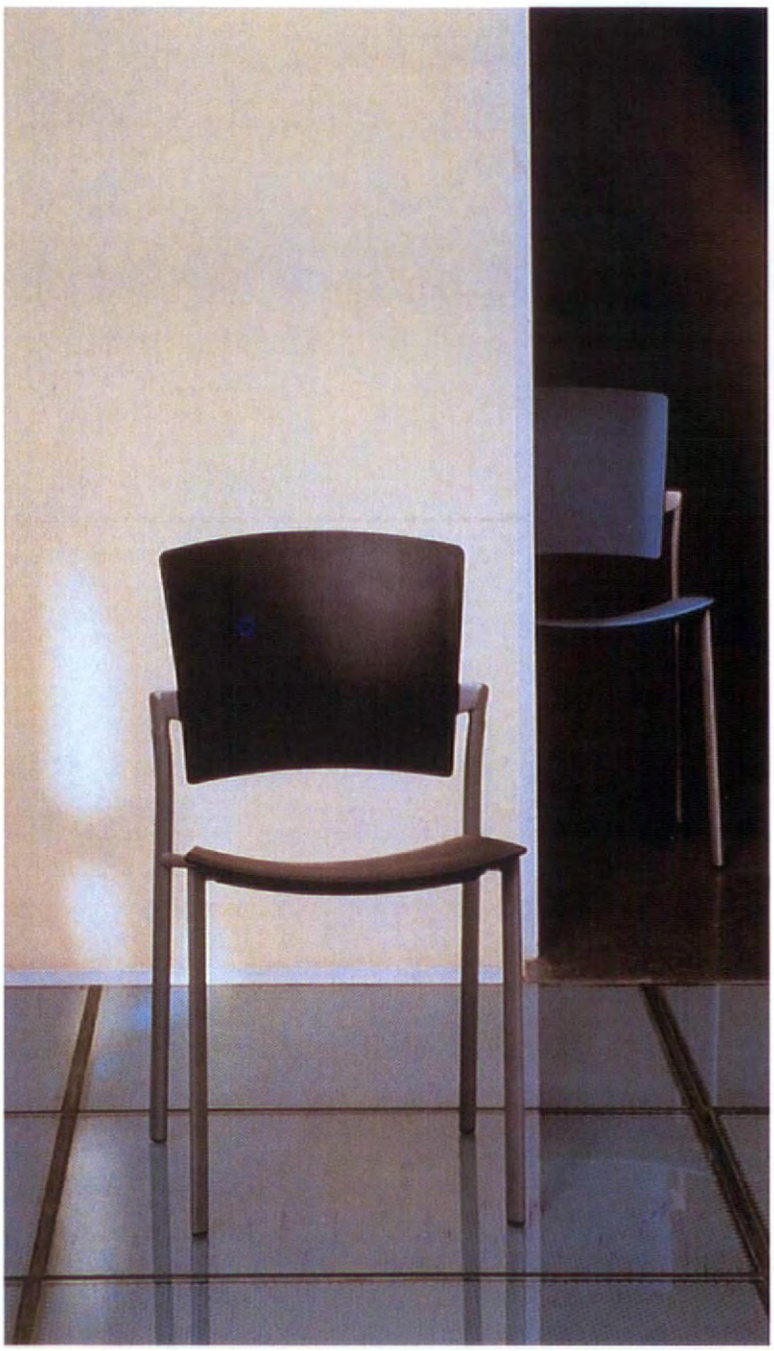
The Germanic forest is full of myths: unicorns abound; the shade of Armenius who slaughtered the legions of Augustus hovers in pine scented air; the ancient Nordic gods wait for Wagner's trumpets.

Romance has not stopped. In a clearing in the forested slopes of the Seetaler Alps in Styria there is a most graceful tower – a campanile. Standing slender among the larch and spruce, it spirals up, winding round the sounds of the bells, and acting as a strange broadcasting mechanism for their chimes.

A massive concrete base holds the structure to the ground. Above is an octagonal steel structure which carries the weight of the three bells, and the shell. This is made of strips of pale larch wound helically to the sky. On top is a polyester diaphragm with an etched piece of sheet glass that bears the sign of the Cross.

The architect, Markus Pernthaler, says that the building is symbolic of the connection between birth and death, earth and heaven, and is a 'three-dimensional projection of the vibrations of the bells'. We lack gentleness in this age; we lack romance (except, vilely, with capital and civil engineering); we lack ability to make monuments for our irreligious times. Here is a construction of our age that touches the heart as well as the head; one that draws on myths of the forest and mountain. It sings in its shape and careful crafting. At night, it glows like a unicorn's horn. PETER DAVEY

ENEA



Eina chair designed by Josep Lluscá

ATRIVM

Atrium Ltd. Centrepoint, 22-24 St Giles High Street London WC2H 8LN Tel 020 7379 7288 Fax 020 7240 2080 Showroom entrance on Andrew Borde Street.
e-mail: all@atrivm.co.uk web site: http://www.atrivm.co.uk

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New Concert Hall Marienkirche Neubrandenburg. Architect: Pekka Salminen