

AUTUMN 2005 ISSUE 01 VARIETIES 10 EURO

DAYLIGHT & ARCHITECTURE MAGAZINE BY VELUX



DISCOURSE BY GÜNTER BEHNISCH

Diversity is not the same as abundance, which can indeed be very arbitrary. Diversity implies more: it also comprises unity. And unity implies more than restriction to a single unit.

Unity can only be perceived in diversity; without it diversity cannot exist. The many folds of a single garment are an image that gives visual expression to this concept.

The world we live in is monotonous? This is hard to believe. It is more likely that the way it is perceived is monotonous and that it is made monotonous. Diversity is obscured by a single consideration or a small number of them: for example, returns on money invested, or quite simply the way the system works. The architect who allows himself to be influenced primarily by these considerations and who disregards the many other aspects will produce monotonous work.

Such interests which are indeed powerful, and often monumental, hardly need much promotion from us: their claims are powerfully represented by other parties. There are other considerations that are in need of our commitment: ecology, for example; our fellow-men, children, people, working methods, communal living and many others. We can uncover and investigate as many as possible of the almost unlimited number of facets of a brief – that we receive in the deceptive guise of a single concept, such as a hospital – facets that otherwise remain unrepresented. We are in a position to enable hidden forces, neglected in the reality of our society, to find expression and to assume their visible form.

The more such aspects we can identify, the more richness we will recognise in the brief and the greater the diversity of the resultant architectural form. Additional techniques of harmonisation – be they mathematical, geometrical, formal or of any other type – become superfluous. Architecture assumes a special quality if it is constantly new, different and many-sided, or if it can never be definitively understood or interpreted: architecture as the mirror of the diversity inherent in our environment and as the reflection of our concern for it.

Read more about Günter Behnisch's architecture in *Daylighting: Berlin Academy of Arts*, starting on page 18.

VELUX EDITORIAL

WELCOME TO DAYLIGHT & ARCHITECTURE MAGAZINE BY VELUX

The focus on daylight in architecture is high and rising. In this respect, VELUX wants to play a role by contributing and stimulating issues that lead to better living environments. As an international manufacturer of roof windows and skylight systems, it is important for us constantly to seek and strengthen the relevance of our products in architecture. We would like to enhance and encourage the role of daylight in design prioritising. This focus is our platform for building and nurturing relations with the building sector – not least with architects.

Our founder, Villum Kann Rasmussen invented the roof window in 1942. He called his company by the short name of VELUX, an acronym of VEntilation and the Latin word for light, LUX. Part of Villum Kann Rasmussen's original vision was to create good cheap square metres of living space under pitched roofs by letting light into the attic at a time when living space was in shortage. In the early years of VELUX much time was spent with architects and other trendsetters to present the

concept and the products. By doing this, he laid the cornerstone of the strategy that we pursue today: to engage in have dedicated dialogue with professionals about daylight, and to seek and strengthen the architectural relevance of our products. We see our daily business as being closely linked to building design, with the overall objective of focussing on daylight and fresh air as providers of better living conditions in people's everyday lives.

This objective is the platform from which we present "Daylight & Architecture".

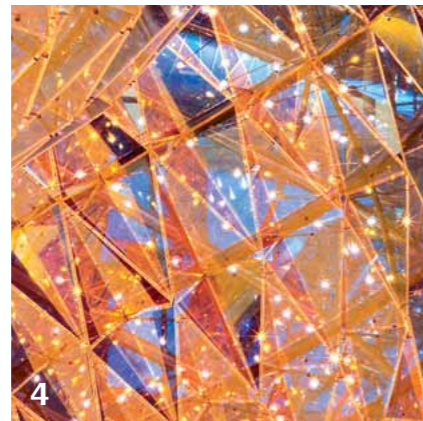
In this magazine – and in the issues to come – we will strive to raise topics and present views and angles about the past, present and future of architecture with daylight and fresh air. This will provide a platform for dialogue between professionals in which we will raise questions rather than give standard answers and statements and thereby inspire and facilitate the discourse on architecture, especially daylight.

Enjoy the read and please visit www.VELUX.com/DA for further inspiration and information.

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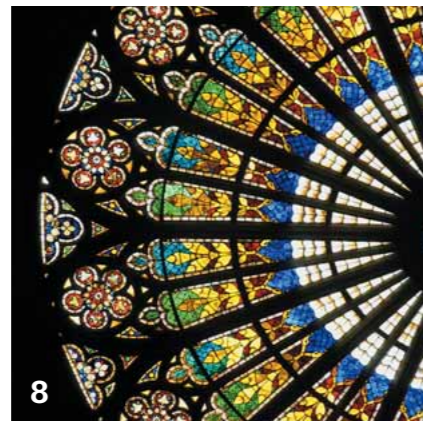
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MANKIND AND ARCHITECTURE GLASS IN ARCHITECTURE

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Great art behind a plain glass façade: for a long time, no building has been so controversially discussed in Germany as the new Berlin Academy of Arts designed by **Günter Behnisch**. Now the scaffolding has gone, the virtuoso daylight design of the German master is revealed, as well as the spatial diversity of the building which originates in his averseness to anything that is monumental.



REFLECTIONS SEEING YOURSELF SEEING

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VELUX INSIGHT TOWARDS THE SUN ARMADA

Four reasons to praise the residential building project realised by British architectural firm **Building Design Partnership** in s'Hertogenbosch: it gives the city back its former industrial quarter, provides living space for a wide range of uses, combines public and private areas in close proximity and creates a feeling of identification for residents with its diversified form.

VELUX PANORAMA

A narrow tower house in the Swiss Alps. A house with a panoramic view at the foot of the Pyrenees. And an estate of terraced houses in Denmark in which children were not really wanted – but then moved in. What do they have in common? Their manifold relations to the exterior and the fantastic daylighting of the interiors via roof windows.



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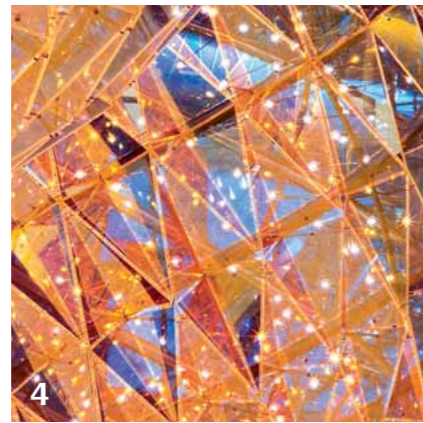
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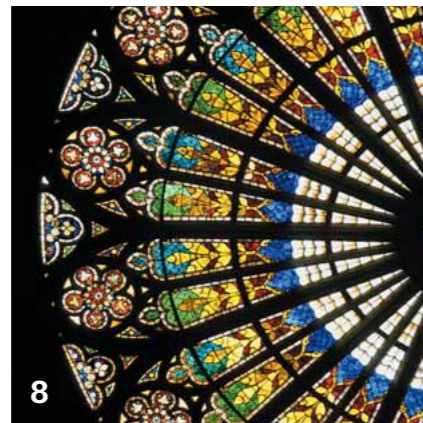
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The things that make architecture tick: events, competitions and selected new developments from the world of daylighting.



PHOTO BY ADAM MERK

LIGHT SCULPTURES IN THE COPENHAGEN OPERA HOUSE

Danish Olafur Eliasson (born 1967) has made his own imitable mark on his former home city Copenhagen with a very special art work: in the foyer of the new Opera House designed by Henning Larsen, three voluminous light sculptures hang some three metres above the heads of the visitors. Each of the three crystal spheres has a diameter of 285 centimetres and comprises 1430 pieces of special colour-effect filter glass. In the daylight, the light spheres sparkle in the colour spectrum between blue and violet. At night, lit up by 330 20-watt halogen lamps each, they themselves become the light source adding a touch of glamour to the wide reaches of the foyer.

Olafur Eliasson has been working systematically with crystal structures for many years. The multi-faceted surface of a chandelier, a jigsaw of convex and concave rhombi, is reflected in Eliasson's second current opera project: for the foyer of the new opera house in Oslo (due for completion by 2007), he designed cladding for the walls made from rhombic wooden panels. Eliasson intends for the rhombic structure to represent the growth pattern of ice crystals, ripples on the surface of water or sound waves triggered by cracking ice. The artist is not making a fixed statement here – instead of sending a message to the observer, he sees his work as an opportunity to form your own perceptions and surround yourself in a sensory experience.

Read more about Olafur Eliasson's work in *Reflections: Seeing yourself seeing*, starting on page 14.



"... the voided volumes are also the only source of light, extending up through the lowered ceiling to catch the light from the skylights above. The columns also reveal their lack of structural necessity by being lifted two centimeters off the floor to allow light to seep out from underneath."

Peter Eisenman in the exhibition catalogue



PHOTOS BY WOLFGANG WÖSSNER/MAK. PORTRAIT BY EISENMAN ARCHITECTS



"BAREFOOT ON WHITE-HOT WALLS" PETER EISENMAN IN MAK IN VIENNA

The Museum for Applied Arts (MAK) in Vienna fosters a special kind of cooperation with contemporary artists: it initiates exhibitions, which are more than a mere presentation of works, but constitute temporary changes of the museum's building structure. For the second time (after Zaha Hadid in 2003) an architect has left his marks in the MAK exhibition hall: Peter Eisenman, the thinker and critic amongst the architects, overlaid the historic architecture of the space with thirty small exhibition cubicles, referred to as "columns", and an inserted ceiling at a height of only 2.55m. "A transforming exhibition, sparse and hard hitting", Eisenman characterised the MAK show. As always he aimed to irritate the visitor: the hall itself is dark; single sources of light are the columns (the "white-hot walls" in the exhibition title), which penetrate the inserted ceiling and capture the light entering from above. In each cube Eisenman presents one of his works in form of a three-dimensional "diagram". The majority of these conceptual sculptures are especially made for the MAK exhibition. Only four projects are presented with traditional models: the "Ciudad de la Cultura de Galicia" in Santiago de Compostela (under construction since 1999) and the designs for the Musée du Quai Branly in Paris (1999), the FSM Towers in New York (2001), and the high-speed train station in Naples (2003).



PHOTO BY DERIX GLASSTUDIOS

NEW WINDOW FOR GROUND ZERO

Is it an exotic flower – or an explosion? Perhaps either interpretation is partly true of the new coloured window that American artist Guy Kemper designed for St. Joseph's Chapel in New York.

Located right at Ground Zero, the chapel was used by the New York fire brigade after 9/11, but has now reverted to its original purpose. The 6 x 2.6 metre window was manufactured by Derox Glasstudio in Taunusstein, Germany at a cost of around 30,000 dollars. It is composed of individual blown glass panels, each 60 x 80 centimetres in size and three to four millimetres thick.

The glass artists used red overlay glass to emphasise the brilliancy of the red tones in the window and provide greater variety, with the top layer of the overlay glass partially etched away. In this way, they created various different pinkish tones or – where the top layer was entirely removed – clear glass. The other colours were added using the

traditional painting technique, with a layer of clear glass being glued over the window panels at the end to provide stability.

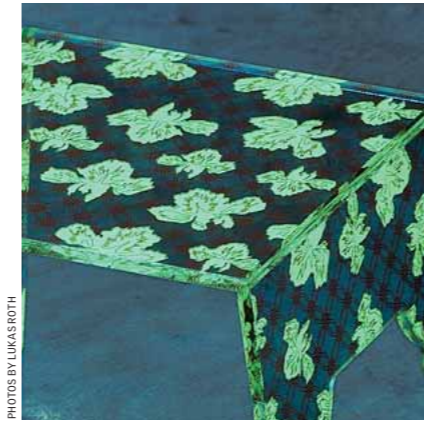
CRYSTAL DOME IN NEW LIGHT

Bright stars burn out quickly: Bruno Taut's glass pavilion at the exhibition of the Deutsche Werkbund in Cologne in 1914 had only been open for a few weeks when the start of the First World War compelled the exhibition to close. "The glass house has no other purpose than to be beautiful", wrote Taut about his building at the beginning of 1914. And the poet Paul Scheerbarth wrote for him the following much-quoted verse: "Ohne einen Glaspalast / ist das Leben eine Last" ("Without a glass palace, life is a burden").

More than 80 years later, the inventor Günther Kunz and the architect Anja Brüll have reawakened interest in the glass pavilion. In the grounds of the "Chateau de Graaf" in Montzen, Belgium, they inaugurated a glass dome building which is based on the same geometric principle as Bruno Taut's masterpiece. Seen from the inside, the rhomboid dome with its narrow ribs is reminiscent of a flower's petals. It is a

free interpretation as the designers emphasise: the original consisted of an iron and concrete skeleton with framed sections made of "Luxfer" glass prisms which "transformed incoming daylight into a mild, shadowless dispersed light", said a contemporary newspaper report. The copy has a wooden skeleton with framed sections made of simple dark glass and a silicon seal. Nevertheless, it gives an impression of how Taut's glass pavilion changed its appearance over the course of the day. In bad weather, the reflecting facets of the dome assume a greenish-yellow tone, which was why the dome was nicknamed "asparagus head" at the time. In clear weather, they reflect the pure blue of the sky.

The glass pavilion in the Chateau de Montzen can be visited only after an appointment has been made. Further information is obtainable on the Internet at: www.subvision.net/sub/chateau-graaf.



PHOTOS BY LUKAS ROTH

AFTERGLOWING GLASS

The German designers gruppe RE and the Austrian glass-refining firm Glas-Eckelt have developed a special glass, which afterglows in the darkness. The reason for this is a glass-ceramic coating, which is able to store artificial light and daylight. The glass was first applied for the glass table "floral", for which gruppe RE was awarded in the design competition "Design for Europe" in Kortrijk in 2004.

The luminous glass, a single-pane safety glass, can be activated in two ways: by invisible ultraviolet light and visible artificial light or daylight. When activated by ultraviolet light the glass reaches a homogeneous luminance of approximately 60 candela/m² at a viewing distance of 50 centimetres. When activated by artificial light or daylight, the glass glows for up to ten hours. The ceramic baked finish can be applied with all common processing methods such as rolling, spraying or printing. Design options for this new glass are

almost without limits: it is suitable for furniture making, as wall cladding, partition walls or façades. The glass, which was patented by gruppe RE all over Europe, is distributed by Glas-Eckelt and available as sound-insulating glass or compound safety glass.

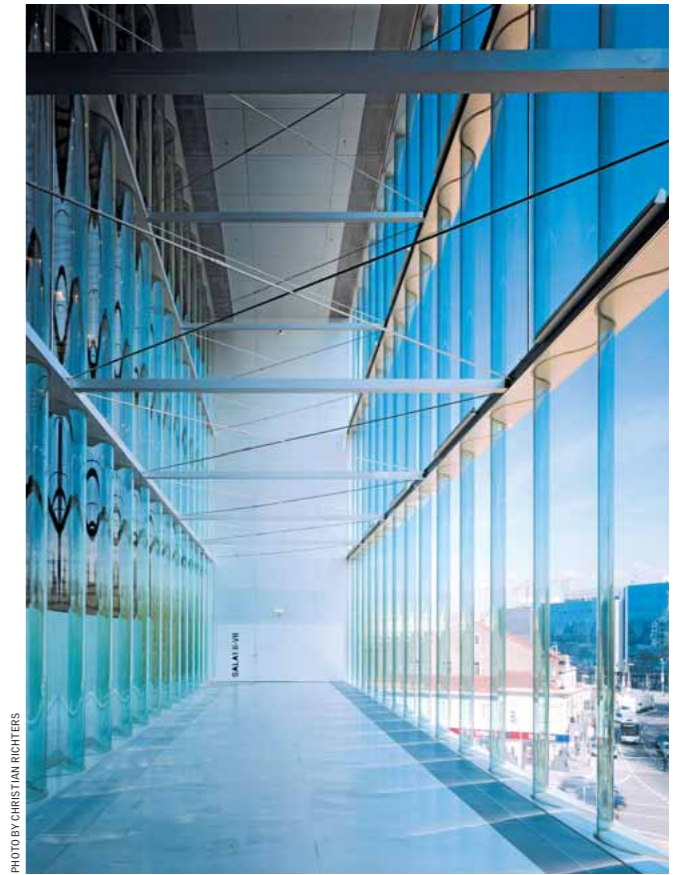


PHOTO BY CHRISTIAN RICHTERS

WINDOW TO PORTO

An extraordinary look – and unique views: the 'Casa da Música', the new concert hall in Porto, offers both.

The 'meteorite', as people have nicknamed the new building constructed by the Rotterdam-based architectural consultants OMA, opens onto the city through three unusual windows – 14 x 9 metres, 22 x 12 metres and 22 x 15 metres, made not from traditional glazing, but from corrugated glass panels. In these dimensions, they are a world first and were developed by OMA together with ABT engineering consultants and Robert Jan van Santen.

From a distance, the rippling glass windows blur the view into the interior from outside, while concert-goers standing directly in front of the windows inside enjoy an uninterrupted view of the city. Two of the giant windows are at the front of the large concert hall. They are constructed with double panes of glass for the purposes of sound insulation and in order to integrate an emer-

gency exit route in the space in between; the glass for the outside panel is 2 x 10 millimetres thick and 2 x 6 millimetres thick for the inside panel. Suspended horizontal lattice girders bear the strain of the wind load, also forming joint profiles for the 1.2 x 4.5 metre glass panels.

GLASS IN ARCHITECTURE



PHOTO BY RUPERT TRUMAN

Above The Palm House at the Royal Botanical Gardens in Kew/London was built between 1845–1848 by Richard Turner and Decimus Burton.

In the large greenhouses of the 19th century, glasshouse architecture took on a unique, engineered style quite different from classical archetypes.

Text by Michael Wigginton.

Glass in architecture means light and life, power and spirituality, utopia and ideology. Michael Wigginton tells the story of a material whose potential has by no means been exhausted yet.

ABOUT 4000 YEARS ago an extraordinary new material was discovered which was to change the nature of architecture. When and how this discovery was made is a matter of pure speculation, but we may imagine a craftsman sitting by a kiln on the shores of a river in Mesopotamia noticing a brilliant sparkle where the hot coals from the kiln had fallen on the sand beneath. From this discovery flowed centuries of technical experiment from which has evolved one of the most important materials known to mankind: a material made from one of the most abundant materials in the Earth's crust, silica, which has the remarkable property when melted and carefully cooled of transmitting the radiation from the planet's giver of life, the sun. The material was glass.

Discovering the true nature of the material, and methods of forming it, was an extremely slow process. From its earliest form as beads, the discovery that it was viscous when very hot led to the development of the core method of making pots (in which threads of molten glass were wrapped round a core). By 1500BC there was a glass industry in Egypt, which created vessels, and decorative products of enormous richness and diversity. This was consolidated by Alexander the Great in 332 BC when he founded the glass industry in Alexandria.

By around 750BC it was found that glass could be blown using a pipe, and the real adventure began. Blowing glass meant that it could be made very thin, and comparatively even in thickness. The basic technique for making the modern window was in place. This extraordinary material, hard, transparent, and capable of being formed, could act as a material to keep the weather out of buildings whilst at the same time admitting light and view.

It is remarkable that the evolution of the window itself then took nearly 3000 years to mature. The Romans, who conquered Egypt and used glass as tribute, lived in the same Mediterranean climate as the Greeks and Egyptians before them. Although they used glass in openings, and developed ways of growing plants out of season using what are now called "cold frames" (rudimentary conservatories), the climate did not create the functional imperative needed to create what we call windows.

Then, a thousand years ago, the need arose in France for a new kind of architecture. European architecture up until this time had been essentially derived from the massive forms of

the southern Romanesque, itself derived (as the name implies) from the powerful precedents of Rome.

Romanesque was an architecture of massive walls, great vaults and small windows: an apparently inevitable result of the need to create large rhetorical volumes in a warm climate. The volumes provided the powerful statements concerning the importance of God and the technical prowess of man. The structures stabilised the temperature. The small windows modulated and controlled the often overwhelming light.

THE FIRST GLASS AGE: GOTHIC CATHEDRALS

For the abbots and bishops of northern Europe at the turn of the first Christian millennium, this was not enough. They wanted to build bigger, both to accommodate more lay congregations (an essential source of funds as well as of spiritual allegiance) and to exploit the glories of Gregorian chant. In a slow, empirical progress, ways of spanning space with stone, a material only structurally effective in compression, were evolved, and geometries developed which could generate space free from the constraints of the Romanesque barrel vault. The development of the Gothic frame and the need to create walls to fill the huge resulting openings generated the need for light-providing, and lightweight, membranes. The first glass architecture in the history of the human race was born.

Transparency in the sense of providing visibility was not a prime objective to the church and cathedral builders of the Middle Ages. Their idea was to give light to the interiors of their huge volumes, and to use the richness of colour which glass had always been able to deliver. Stories from the Bible were told with vast images, much greater and more powerful than could be delivered by mere painting, lit from behind by the vast source of the sky.

From the rose windows of France, to the huge nave windows of the English, the skills of the Roman empire and their imported Mediterranean glass makers and glaziers evolved a new form of architecture, characterised by enormous expanses of stained and painted glass. The east window of York Minster is the size of a tennis court, and comprises thousands of pieces of glass producing, not transparency (there was no requirement to see in or out), but a shining painting. The Sainte Chapelle



PHOTO BY MARGHERITA SPILUTTINI

in Paris, built between 1243 and 1248, represents an extraordinary refinement of the Gothic glaziers art, with stone mullions almost as thin as metal.

Medieval cathedral architecture was essentially a northern European adventure, and it is not surprising that it continued to be built, and evolved, well after the inhabitants of the sunnier climates to the south had created new architectural paradigms. In the 11th century, Proto-Renaissance architecture was emerging in Florence at the same time as Gothic in Northern Europe, and Bramante was working on St Peter's in Rome in the early 16th century at the same time as Henry VII was building King's College Chapel in Cambridge, and Westminster Abbey, two of the last great Gothic glazed structures in England.

As soon as the Renaissance arrived in northern Europe a new generation of clients saw a way of using glass to celebrate their wealth in architecture. Whilst transparency was not needed in most Gothic churches, the great houses of the northern European aristocracy of the 16th century required view, and buildings such as Hardwick Hall ("more glass than wall"), designed by Robert Smythson and built in the 1590s, were the secular inheritors of the great Gothic glass architecture. Hardwick Hall, like most of the English "Prodigy Houses" of the Elizabethan period, was extremely uncomfortable to live in. Too cold in the winter, and far too hot in summer on its south elevation, the only way the occupants could survive in such a building was by moving around the house from season to season. The aesthetic considerations of glass architecture were far more important than the environmental, which in any case were only vaguely understood.

How to make glass, and particularly how to make it strong, was an abiding preoccupation for glass makers, and the 17th century saw an important new development in glass technology. Blown glass had dominated the industry for centuries, but the product was intrinsically thin and weak. The French government initiated the search for a new stronger glass in 1676, and the result was plate glass, made by grinding and polishing cast glass. This was very expensive, but provided the basis for the extraordinary use of mirrors in the Palais of Versailles, completed in 1685. The great windows in the Hall of Mirrors, which the mirrors literally reflected, were characteristically

poor in thermal performance, however, and wine and water froze on the dining table in the cold winter of 1695.

It was an acknowledgement of the thermal performance of glass in the late 16th century which led, by an accident of history, to the development of the conservatory. The exotic plants imported by the European explorers were recognised as requiring protection, and glass houses, including the great orangeries of the time, began to infiltrate the world of architecture, albeit as adjuncts to the houses and institutions they served. It was the conservatory which, over the subsequent 250 years, was to form the basis of the evolution of the next great flowering of glass architecture, the second glass age, growing from utilitarian buildings serving horticulture into the status of a great architectural type.

THE CRYSTAL PALACE AND ITS PREDECESSORS

By the 19th century glass conservatories had developed from unpretentious buildings built by gardeners into great pieces of architecture. In England, the Palm House of 1845 at Kew by Richard Turner is one of the greatest of these, but fine and elegant conservatories were built all over Europe. The designers and their clients competed with each other to produce the biggest and the grandest, traversing the continent to look at the work of predecessors and rivals. It was this rapid evolution in the 19th century, and the travelling which fed it, which led to the design of what is undeniably the greatest glass building of the time, built in London in 1851. It was a visit by Joseph Paxton to Rohault de Fleurie's Jardin des Plantes in 1834 which was to plant one of the seeds for the Crystal Palace, home of the Great Exhibition of 1851. Hailed by Konrad Wachsmann, the great 20th century engineer, as the first modern building, the Crystal Palace combined innovation in technology, manufacture and space to create a masterpiece, created by a gardener, an engineer, and a fabrication company, constructed off-site as a prefabricated structure, and then, when its original use was complete, dismantled and moved to a different location, all without an architect in sight.

The Crystal Palace was one of an evolving type, growing out of the demands of the industrial revolution. If the Crystal Palace was the home of a celebration of the industrial revolution, railway stations, arcades (such as the Galleria Vittorio

"Everyone knows the wonderful properties of glass: it is transparent, hard, colourless, indestructible by acids and most liquids, and at certain temperatures more ductile than wax, ..."

Justus von Liebig, German chemist (1803–1873)



PHOTO BY HENRI PARENT

Opposite With the construction of the main hall of the Postspar-kasse (Post Office Savings Bank) in Vienna between 1904–1912, Otto Wagner created one of the pioneering works of early Modernism, a model for modern office halls. Even the basement floor receives natural light, thanks to glass blocks laid in the floor.

Above Gothic style breaks up the formerly solid cathedral wall into a ribbed framework, with the spaces in between filled by large glass windows. The large rose window of the Cathedral of Strasbourg clearly illustrates how the windows were constructed: the precast lead-encased panes were inserted into the stone tracery as a complete unit.

Emmanuele II in Milan, built between 1865 and 1867) and market halls were the building types which were demanded by the requirements of industry in the railway age. Railway stations and the great central market buildings demanded large open spaces with long spans to be protected from the rain, and daylit at the same time. The great Victorian industrial buildings, able to rely on iron and steel, not stone, were the cathedrals of their time. These buildings had no basis in history, and defied the imaginations of contemporary European architects, leaving the challenge to be met by engineers.

The USA did not carry the same sort of cultural "baggage" as the Europeans, and it was in the USA that a new type of architecture emerged. The regeneration of Chicago after the great fire of 1871 led to the evolution of the skyscraper, with its steel or iron frame, and its glazed façade. Buildings such as the Gage building by Holabird and Roche of 1898 (with Louis Sullivan creating a next door neighbour) were virtually unthinkable by the "academic" architects of Europe. These buildings used the potential of plate glass, invented in France in 1687, and the origin of a great French industry set up in the Chateau de St Gobain in 1693.

FROM INDUSTRIAL HALLS TO PUBLIC BUILDINGS

Although American architecture in the second half of the 19th century saw the creation of new building types, Europe was the home of the third great age of glass architecture, and its theoretical basis. Otto Wagner's Post Office in Vienna of 1904–12 demonstrated how to move the industrial technology of the industrial halls into a public building, with its wonderful glass roof and floor, but it was German architects and theorists in the second decade of the 20th century whose obsession with glass was to become the most significant influence both on architecture as a whole, and of its relationship with glass in particular. The writings of Paul Scheerbart, the author of "Glasarchitektur" of 1914, and the buildings by Bruno Taut, and later by Walter Gropius and Mies van der Rohe, changed the perception of the role glass could play in architecture. Mies van der Rohe's competition designs for Berlin in 1919 and 1922 represented a huge change in architecture, and he became one of the guiding figures in the modern movement who adopted glass as "their material"; a group

Below Unaffected by climatic building considerations, Walter Gropius used single glazing to construct the minutely detailed three-storey façade of the Dessau Bauhaus in 1926. The so-called 'curtain walls' are an exemplary realisation of the separation of the skeleton and façade of a building, an ideal of classical modernism.

Opposite The possibilities of modern glassmaking are demonstrated in the "Dichroic Light Field" installation by engineer James Carpenter in New York. The light reflexions and shadows which the dichroic glass "fins" cast onto the glass façade change their colour according to the position of the sun.



the Hallidie Building in San Francisco of 1918 by Wills Jefferson Polk), and the work of architects such as Fred Keck in the American mid-West in the 1930s gave a hint of what was to come 40 years later, the evolution of the high-performance glazed façade, addressing issues such as energy conservation. Le Corbusier had tried to address these issues in his Cite de Refuge in Paris of 1931 (in the same year, and in the same city, as one of the greatest of all glass buildings, Chareau's Maison de Verre). However, technology was not yet well enough developed to sustain this sort of experiment.

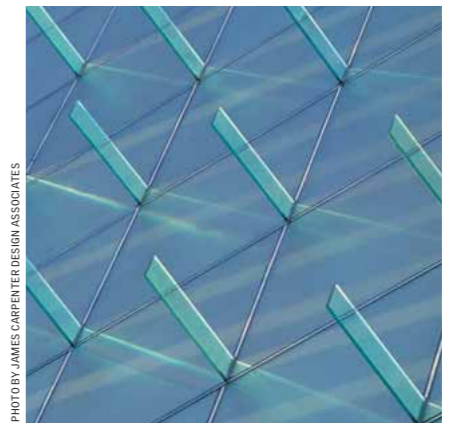
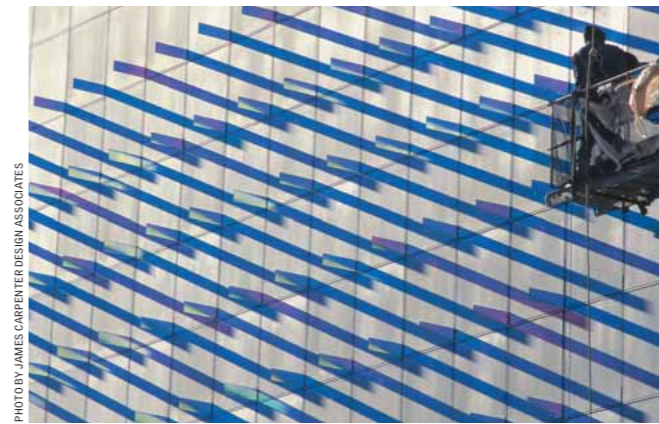
In the USA, Frank Lloyd Wright enunciated what he saw as the theoretical and aesthetic problem related to glass and architecture in a lecture he gave at Princeton University in 1930: "Glass has now a perfect visibility, thin sheets of air crystallised to keep air currents outside or inside.....Tradition left no orders concerning this material as a means of perfect visibility". Working with characteristic innovative individuality, he went on to design the Johnson Wax Administration Building in 1936. This building used a membrane constructed from borosilicate glass tubing, creating a unique and wonderful translucency.

A HOUSE WITHOUT WALLS:

MIES VAN DER ROHE AND FARNSWORTH

In the years after the Second World War, the enthusiasm for the material remained, particularly in the USA, home of many European emigres, including Mies van der Rohe and Eero Saarinen. Mies van der Rohe designed what remains perhaps the greatest single example of the architecture Wright claimed to be seeking in 1930. The Farnsworth House, designed in 1946, is the classic paradigm of an architecture where the wall disappears. Postwar architecture in the USA saw the construction of some great glass architecture including Eero Saarinen's masterpiece for General Motors of 1948–56 (which remains an exemplar of technical virtuosity in glass, with one of the earliest uses of gasket technology), SOM's Lever House of 1951, and the Seagram Building by Mies van der Rohe himself, built between 1954 and 1958.

It is a tragedy of architecture that the geometrical simplicity of classic modern architecture proved so easily cheapened and copied. The technique of producing thin, bland, and poorly performing skins, with their huge need for environ-



mental controlling systems including air conditioning, was exported round the world to produce a generation of devalued glass architecture, using the mass-market curtain wall, which became one of the most despised aspects of postwar architecture. It took the importing of another essentially American invention, the passive solar glass wall, and the oil crisis of the early 1970s, to consign this sort of architecture to history. The idea of using the radiation transmission characteristics of glass to capture solar energy had been studied in the USA in buildings such as the Peabody House by Maria Telkes in 1947, picking up ideas which were decades old. The Europeans followed with buildings like the Wallasey School in England by A E Morgan of 1961, and Michel and Trombe's work in France of the mid-1960s.

ENVIRONMENTAL ISSUES AND INTELLIGENT SKINS

Thus, although the curtain wall retains an unfortunate hold across the planet, as a phenomenon which blights our cities, a new generation of architects, with different priorities, produced a new flourishing of glass architecture in the 1980s and 1990s, building (perhaps sometimes unconsciously) on the theoretical principles of Wright, Mies van der Rohe and le Corbusier. What we might call the fourth age of glass architecture draws together the strands of the previous 60 years, liberated by the invention of the float process by Pilkington in the 1950s, and the development of a large number of technologies related to coatings and treatments. Glass is now one of the predominant constituents of architecture across the world, from climate skins to wonderful displays of structural ingenuity. Structural glazing is exemplified in the work of Tim McFarlane in the UK, of Mick Eekhout in the Netherlands, and of the Paris firm RFR. Many of these are effective realisations of the visions of work produced 50 years or more previously. Willis Faber Dumas, product of Foster Associates in the early 1970s, makes real the idea of a suspended wall seen in Mies van der Rohe's 1922 competition entry. The Lloyd's building by Richard Rogers Partnership, built 10 years later, saw the final realisation of le Corbusier's "mur neutralisant". Architects became interested in refined chemistries and new ways of fixing, exemplified in the glazing of the Pyramides in the Louvre in Paris, by IM Pei and Partners, designed and

built between 1983 and 1988. Here "water white" glass, with most of the iron removed, produced glazing which did not distort the colour of the stone in the Cour de Napoleon when viewed through it, and the use of silicon bonding permitted a completely flush exterior. Other work used the emerging thin film technologies. Gunnar Birkert's Corning Museum of 1980 used thin film coating, to transform the hard and brittle visual nature of glass architecture into a soft appearance, as smooth as satin. For the last 20 years glass has become the favourite material for architectural essays in transparency, ambiguity and energy.

A fifth age is now on the horizon, with new materials, and new perceptions of use. Smart glass has been developed in the area known as "chromogenics" which change their performance at the flick of a switch. Insulating materials which produce U-values close to "0" have been developed using aerogels, and stronger materials resisting fire are all infiltrating the catalogues. Dichroics and beam splitting glasses can deliver or block tailored frequencies of the spectrum. Light bending glasses using Total Internal Reflection, such as Serraglaze, are also coming on to the market. These will transform the ability of the window to draw in daylight, and enable solar shading to operate using transparent materials.

If one aspect of this fifth age is clear, it is that we cannot easily imagine what it will have delivered in 50 or even 20 years' time. We can be sure that it could be magical, beautiful and wonderful. We can be equally sure that it is exploited properly, and not used to create universal blandness. We still suffer from all pervasive nature of the curtain wall, but the potential richness of the multifunctional intelligent skin, responding moment by moment, and season by season to the vagaries of climate and the needs of the occupants has the potential to give us the transient beauty of the butterfly's wing, with a material as hard as steel.

Michael Wigginton holds a chair in architecture and design at the Plymouth School of Architecture in England. His main research interests are intelligent façades, glazing systems and ecological studies. He has published several books on these subjects, including *Glass in Architecture* (Phaidon, 1996) and *Intelligent Skins* (Butterworth Architecture, 2002).

DAYLIGHTING

The natural gift of daylight put to practice in architecture.

BERLIN ACADEMY OF ARTS

Text by Jakob Schoof.
Photos by Adam Mørk.

Berlin, Pariser Platz. Right in the centre of the German capital, Günter Behnisch inserted a glass foreign body which, even before its opening, was a centre of controversy. The generous openness of the new Academy of Arts stirred up feelings in Berlin and is now engaging the attention of the climate engineers once again.





Previous From the top floor of the Academy, visitors can enjoy an unlimited view over one of the top sites of Berlin architecture: the Pariser Platz and the Brandenburg Gate. The Reichstag dome is visible in the background.

Left Behnisch's Academy forms a glassy contrast to the stony mass of the Pariser Platz. The north façade resembles the front of the old Academy building in proportion and outline, but you will notice this only if you are familiar with the old building.

Opposite Despite the storm of criticism unleashed at the new building: Berlin has much more vulgar glass façades than this. The multi-layered profile of the façade offers striking light reflections in the late afternoon sun.

Berlin, the protestant stronghold of Prussia, has hardly been considered a colourful city in our collective memory. Even today – more than ever after the fall of the Wall – the streets seem as stonily grey and unyielding as the image of the city itself.

But there are exceptions. The buildings created by the Berlin-based sauerbruch hutton architects are particularly worthy of mention – as is a building that is one of the most controversial in recent German architecture: Günter Behnisch's Academy of Arts. Behind its conservative – some would say dull – façade, the new building is a torrent of creative disarray. Its roof shimmers like an icy sea of glass, frozen momentarily before resuming motion once more. On the upper levels, only a symbolic leaf-patterned roof – made from laminated glass with a pattern of autumn foliage printed onto the separating film – separates the visitor from the Berlin sky. Günter Behnisch describes the phenomenon, made tangible here, in his book *On colour*: "... the beautiful light, colour floating freely in architectural space, a phenomenon known in the Middle Ages and the Baroque period, and

used to bring light into cathedrals, churches and palaces."

The location of the new Academy could hardly be more prominent: Pariser Platz is considered as the 'living-room' of the Berlin republic. It is dominated by the Brandenburg Gate, an undisputed symbol of the reunified city. To the left of the Academy stands the pseudo-historic Hotel Adlon, built in 1997, while to the right is the DG Bank designed by Frank Gehry; a highly unusual building for the Californian architect. With its civilised, sandstone-coloured façade, only the over-size tilted windows hint at the wild originality of the foyer beyond.

The new Academy is divided into three main areas: in the centre, as the historic heart of the Behnisch building, are the five restored exhibition halls of the old Berlin Academy from 1904. The glass main building is situated to the north overlooking Pariser Platz, while to the west, a long side wing houses the section workshop and archives. A public pathway crosses below, running north to south. A second pathway runs east of the exhibition halls via an elevated walkway. Here, the inner courtyard

of the Hotel Adlon acts like a backdrop to Behnisch's interior; especially to the cafeteria of the Academy. Two entirely different architectural styles thus meet in close proximity: the hotel on one side, busy and crammed with dimly lit rooms; the Academy on the other side, light, bright and filled with multi-purpose space. Behnisch deliberately designed the building to continue the so-called 'Treppenreden' or 'stairway speech' tradition from the old West Berlin Academy – or at least the possibility of making such a speech.

At first glance, the main Academy building to the north looks like a complicated internal maze of multi-purpose levels, jutting out one on top of the other. Six criss-crossing staircases, walkways and ramps, all in different styles, lead the visitor through the hall up to the top floor. New vistas and light angles open up at every step. The path leads back again to the north façade, the 'chocolate box' side of the building. Each and every Academy member and visitor can partake in the view over the square.

The reception and bookshops are located on the ground floor, with the library and read-





ing room on the first floor and the Academy assembly hall on the second floor. Nearby, a partially covered sculpture garden covers the roof of the front exhibition hall. Although the ground floor seems rather gloomy, mainly due to the anthracite-coloured cast asphalt floor, the interior really begins to 'breathe' from this point on, opening up to the daylight flooding in from the south.

The third floor is used as office space for the Academy President and the press department. On the fourth floor, the club room runs along the entire building front. It's 'members only' – only Academy members and their friends are allowed entry. They can enjoy one of the best views Berlin has to offer: north to Pariser Platz, at eye-level with the Quadriga on the Brandenburg Gate and south to the icy sea of glass crowning the Academy. The room is spectacular, even on the duller of days, with the daylight filtering in red and yellow through the patterned laminated glass.

To the south, a slanting glass façade opens onto the inner courtyard, with its sole fixed point being the stair tower of the old Academy. It is painted white inside and dark

grey outside. This Janus-like configuration is no accident – Behnisch has actively sought to emphasise the extremes within the building, in terms of the wide variety of spaces, materials and colours used. The visitor ascends from the cast asphalt of the ground floor via concrete, parquet and linoleum floors; the walkway and stair handrails are made from steel, wood and concrete, or are surrounded by a reflective sheet metal layer. One colour is not enough for the slanting supports of the south façade either; halfway up, they change from light grey to white.

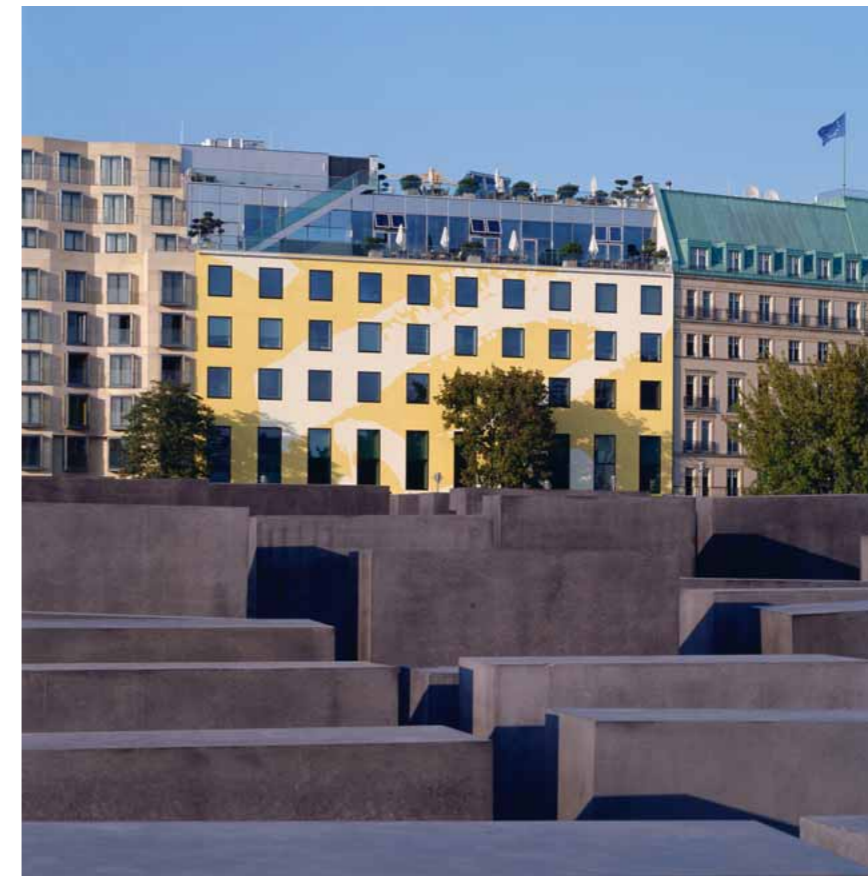
Instead of suppressing them all into a single whole, Behnisch gives the various elements of his architecture space to unfold. If so inclined, you could take this as a metaphor for the institution that will be using this building in the future. Supported by the state, but not necessarily supporting the state, the Academy of Arts is a collective of the country's leading writers, painters, sculptors, composers and actors. Today, it is a kind of enclave for high culture in the world of pop – even if its new home represents the opposite: amidst the forbidding stony Berlin architecture of the 90s, it

stands out like an exponent of a contradictory colourful counter-culture.

No wonder it caused such a fuss in the recent past. 'Façade fight' is perhaps the right phrase; a Berlin speciality ostensibly about façade cladding and window formats, but really more about the different perceptions of the European city. The city authorities in Berlin came up with design regulations for Pariser Platz, with detailed specifications for façade design: "Matt mineral surfaces and colour shades ranging from pale ochre to grey", with no more than 40 percent being taken up by windows.

Given these specifications, Behnisch's design naturally caused an uproar. It includes 100% windows, including the 'fifth façade' – the roof. In order to rescue his design, Behnisch made a slight compromise, blending the double-layered glass façade of the new building with the old pre-war façade 'in structure and relief'. In practice, this means a network of rods has been installed 40 cm (the thickness of the original façade) in front of the glass front, to look like a line drawing of the old Academy façade.

Academy President Adolf Muschg called



Opposite The club room for Academy members reaches along the entire front of the building under the patterned glass roof. Measuring 20 x 35 metres, the roof is suspended from a construction of steel girders. Each glass pane measures 1.60 x 5.25 metres.

Left The palace on the southern side of the site fits in with the Berlin façade regulations – unlike the north façade. The Academy archive was originally housed here. Today, it belongs to the Hotel Adlon.

the new building a 'drunken boat', after the poem by Rimbaud ('Le Bateau Ivre'), alluding not so much to the stormy construction history of the building as to the architecture of the new building itself, dominated by expansive inclines and acute angles. Critics have taken Behnisch to task for the fact that the north façade often looks dark and empty during the day and that the architect has treated the old building with little respect, simply plastering over wide areas in white or covering them with plasterboard.

The greatest weakness of the new building however did not become apparent until three months after the opening: large temperature and humidity fluctuations in the rooms forced the academy to cancel all exhibitions until further notice. The causes are currently being investigated but those in the know believe there is a simple reason for the problem: Günter Behnisch had always objected to a porch on the ground floor. In summer, a gust of warm air rushes into the building whenever the door is opened. It is therefore likely that the academy will have to be made viable in practice by means of extra building work.

If the climatic problems were to be solved, Berlin would nevertheless have gained: an abstract architectural sculpture combining the various different qualities of Behnisch's architecture. In 1998, before construction began, the architect wrote "The emphasis is on the contrast with the historical site. Transparency, airiness and light colours will give the new building a more exhilarating, friendly atmosphere. It should gleam by day and glow by night." The new building is certainly exhilarating. It remains to be seen how it will hold up in terms of functionality and maintenance costs. The Academy now faces the challenge of filling this extraordinary building with life.

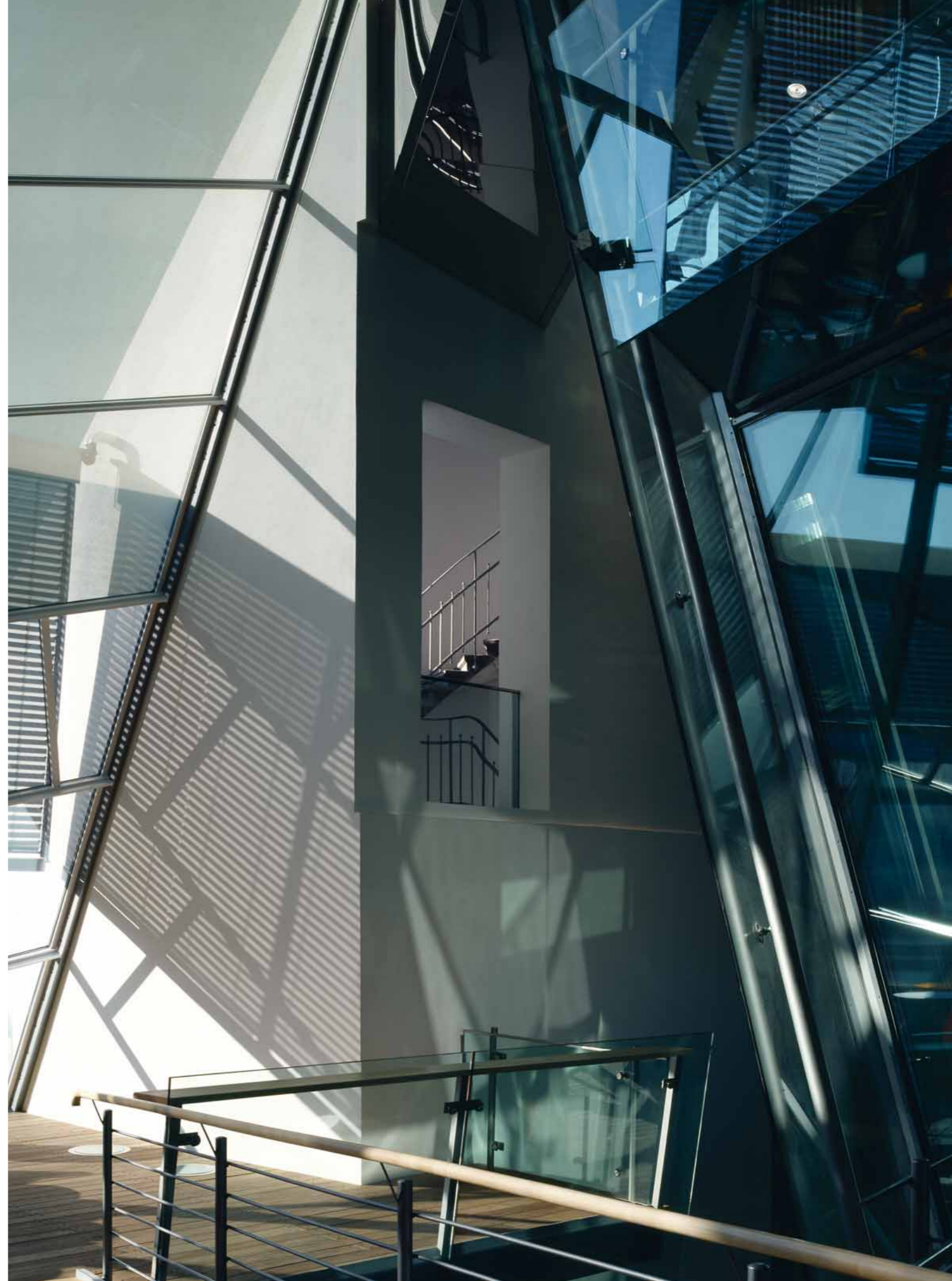


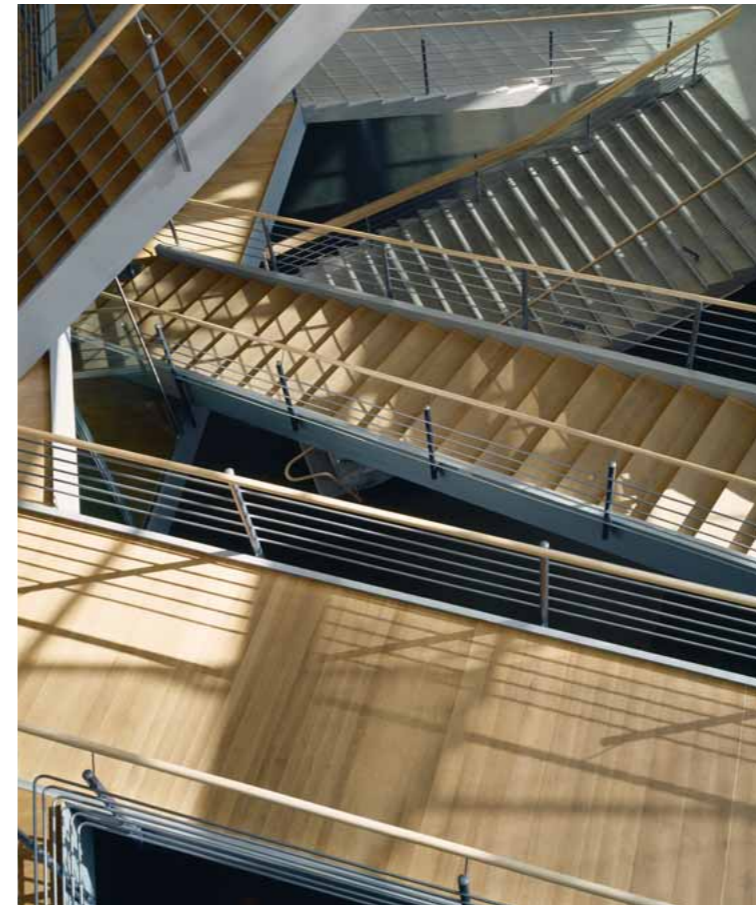
Left At ground floor level, an inclined surface composed of mastic asphalt continues Pariser Platz into the building without any steps. The entrance area is comparatively low and gloomy. The building does not open itself up to the light until higher up.



Left The glass 'roof of leaves' crowns the south façade. A large sliding door leads to the outside. A separate construction has been placed in front of the slanting glass façade to provide sun protection.

Opposite For sun-worshippers: the view and the daylight are at their most intense immediately behind the south façade. It's like standing outside – but protected from the weather.





Facts

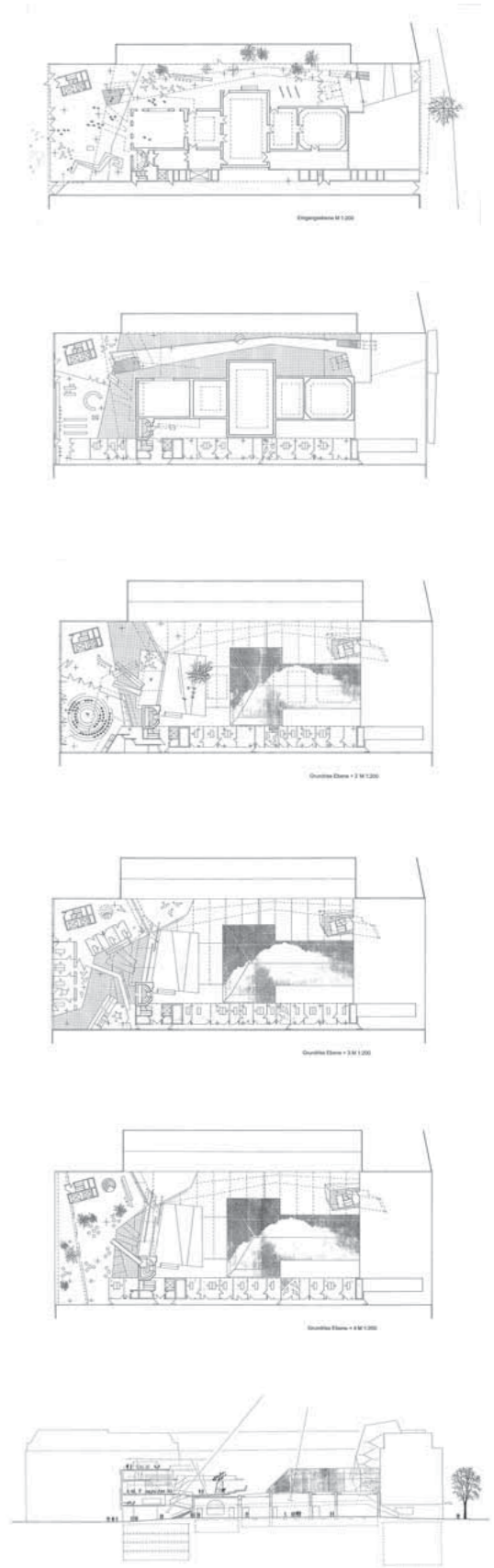
Location	Berlin, D
Building type	Mixed-use for exhibitions and administration
Client	Land Berlin
Architect	Behnisch und Partner with Werner Durth, Stuttgart, D
Completion	2005

Opposite The way up through the atrium leads from semi-darkness to light: the ground floor is dominated by the anthracite-coloured cast asphalt floor, while the sunlight from the south floods in above.

Above Walkways and staircases wind up through the hall, all different in design. The higher the visitor climbs, the lighter the space becomes.

Right (from top to bottom)
 Level 0
 Level +1
 Level +2
 Level +3
 Level +4
 Longitudinal section north-south

Overleaf At night, the house and its north facade, which often appears gray and opaque during the day, become sources of light. Diverse light moods and colors reflect the varied uses of the academy.



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SEEING YOURSELF SEEING

OLAFUR ELIASSON



ALL IMAGES COURTESY OF TANYA BONAKDAR GALLERY/HEUGERRENSCHNEIDER, BERLIN

Text by Jakob Schoof.

Mist and light, water and mirror glass are the media of the Danish installation artist Olafur Eliasson. The wealth of experience in his works has made Eliasson popular. He teaches us what many have already forgotten amidst the general overstimulation: the conscious perception of our environment and ourselves.

OUTSIDE, THE SUN set a long time ago. Here, inside the turbine hall of the Tate Modern in London, it is still shining. That is to say: it sets all day long. High above the heads of the visitors, the enormous room is filled with glistening, golden yellow light from the setting sun. A fine mist drifts through the hall, collects below the ceiling as clouds, and gets lost again. The people stare at the unfamiliar light, meditate or lie on the floor, stretched out, struck by its overwhelming presence. “Like worshippers to an unknown god”, as a lady visiting the exhibition said later on. Some of them have tears in their eyes.

The cause of all the emotion is 200 monochrome spotlights, 3000 square metres of reflective film on a metal construction and a semi-circle made of a translucent membrane. The semi-circle is doubled by the reflecting ceiling of the hall and in this way becomes complete, a replica of the sun. Whoever takes a closer look can see all the technical components, which bring the installation in the Tate to life – also the fog generators, the weather machines for the “Weather Project”.

Who is the man who makes people cry, dream or meditate with an arsenal of technical equipment, but in any case brings about an intensive awareness?

Olafur Eliasson, a Dane of Icelandic origin, was born in 1967 in Copenhagen and studied there from 1989 to 1995 at the Royal Academy of Arts. He lives and works in Berlin. That is according to the dry facts in the artist’s official curriculum vitae. Normally there follows a long list of exhibitions and museums where his works were to be seen and still are: for example, the Guggenheim Museum in New York, the Museum of Contemporary Art in Los Angeles and the Tate Gallery in London. At least three to four larger exhibitions dedicated entirely to his work take place each year throughout the world.

In an interview with the magazine “Kunstforum International” Eliasson said, “I see myself as a mainstream artist, which is why my work is easily accessible.” The fact that his work is often referred to as “Anthology of special effects” and is appreciated by the public for its entertainment value does not bother him: “I like it that it can be entertaining, even if the public could see through this entertainment construction. It is a matter of responsibility and ethics in connection with that which is said and that which is done.”

To describe Eliasson as a kind of variety show artist who performs magic with installations instead of a top hat and card tricks would be to say he is not understood. Because after the great amazement when looking at his work there always follows the benefit of discovery too. Four central themes are always repeated: nature, light, architecture and – most important of all – the interaction of the onlooker.

NATURE

The experience of the four elements in Greek science – water, fire, earth, air – and derived from them light, colour and temperature is a central part of Eliasson’s art. He mediated an extraordinary direct experience of nature to the visitor of the exhibition “The Mediated Motion” 2001 in the Bregenz Art Gallery. Eliasson transformed the inner rooms of the Zumthor Building, together with the landscape architect Günther Vogt, into a strikingly mystical landscape garden wafted by clouds of mist. The visitors move through the landscape on gangplanks



and across a suspension bridge, which consists largely of genuine natural materials: water, earth, wood and water lentils, a water plant. In addition, Eliasson changed the orthogonal structure of the exhibition rooms with sloping floor levels, so that the visitor perceives his movement through the room more consciously. He wanted “to question the very static dominating architecture, in order to put the association with the house into better perspective”, as he later reported in an interview.

In principle, Eliasson is not so much concerned in “The Mediated Motion” about landscape gardening: the garden landscape used for the production serves as a tool with which he plays on the theme of human perception of space and nature. In Eliasson’s opinion, nature is no “real” and original category anymore, but a result of our view of the world: “[...] there is no truthful nature, there is only your and my construct of it.”

This construct is made visible by Eliasson at two levels. At the first, the onlooker experiences clouds of mist, artificial geysers, waterfalls and staged sunsets. For just a fleeting moment he can give in to the illusion that this is “real” nature. But as soon as he looks closer, he becomes aware of the things behind the vision: fog generators, pipes and tubes, steam jets and spotlights. Eliasson took the game to extremes with contrived natural phenomena in 1999 with the installation “Double Sunset” in Utrecht, in which real and artificial sunsets appear in direct competition. A round disc of yellow corrugated iron measuring 38 metres was attached to the façade of a high industrial building and was illuminated by the flood lights from the stadium opposite. The artificial sun disc stood out far enough over the silhouette of the town, so that in the evening an actual picture puzzle was created: Which is the real sun, which is the tin sun? Has nature become exchangeable?

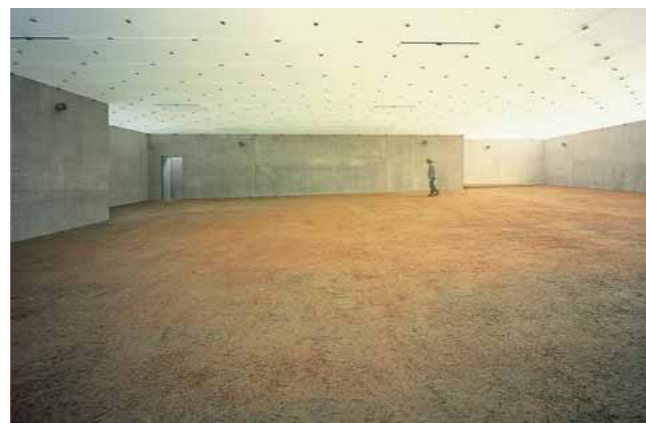
LIGHT

In Eliasson’s game of sensual perception, light plays a central role. Holger Broecker counted a total of 146 works of the artist in the 2004 exhibition catalogue “Your Lighthouse” which were to do with light. In this respect, light should by no means be interpreted in the case of Eliasson as metaphoric in the sense of “enlightenment”. For him light is not so much a carrier of significance as of atmosphere – and naturally a means to form spaces.

Eliasson’s works of art using light reflections follow the tradition that was created by Laszlo Moholy-Nagy’s “light-room modulators” and the kinetic light sculptures of Nicolas Schaeffer. Even when they are impressively effective with their spotlights, colour filters and rotational mirrors, they are never primarily just a construction, but produce their effect by numerous reflections, refractions and superimpositions of light.

In the case of “Sun Reflector” from the year 2003, an installation at the institute of physics of the University of Stockholm, Eliasson utilises rotating mirrors placed above the upper lights of the atrium to produce light reflections inside the building. On sunny days they reflect a wave-like band of light onto the white plastered atrium wall, which, due to the movement of the mirrors in the wind, appears to ripple like a water surface.

In a second group of works, Eliasson works with “bodily” light, combining light sources with water or fog. The installation “Thoka” at the Hamburg Arts Centre (1995), his first larger appearance in Germany, is a good example: between the close of the exhibition and midnight, the area behind the glass façade of the building was filled with artificial fog and lit up by yellow spotlights. During the day the work of art was



turned off, only the machinery, which kept it going, remained visible. Generally speaking, Eliasson uses coloured light mostly according to the principle “less is more”. The change of perception that monochromatic light causes is most distinct in the installation “Your inverted veto”: the exhibition room is separated from the entrance area by ceiling-high blue plastic tarpaulin. Yellow spotlights plunge it into an unreal light; inside the blue film appears black. At intervals of three and a half minutes, white light superimposes on the yellow light and the visitor returns for a moment to his usual perceptive world. Then the cycle begins anew.

The fact that Eliasson’s installations are not only a matter of light phenomena, but also a matter of our perception in particular, becomes more apparent with an optical apparatus which he has designed. Since 1999, the “Camera obscura” emerges repeatedly in Eliasson’s work; the most prominent one was located as the central element of the “blind pavilion”, Eliasson’s contribution to the Biennale 2003 in Venice.

Also, since the end of the 90s Eliasson is occupied with kaleidoscopes, which in his case can reach lengths of up to eight metres. One of the first was the work “Well” in the garden of the villa Medici (1998): here the viewer looks down into a mirrored tube of two metres, which is buried in the soil. In “Your now is my surroundings” (2000), in the Tanya Bonakdar Gallery in New York, the look is in another direction. A high narrow room with a glass roof is panelled with glass mirrors from head level upwards, the glazing of the ceiling has been removed. The viewer has his head in a kind of enormous, vertical kaleidoscope. He can see himself, the roof structure and the outside world reflected a hundred-fold without being able to really orientate himself in the room. The borders between in front of and behind, inside and outside disappear in this fragmented picture.

ARCHITECTURE

Are Eliasson’s installations “architectural”? Carsten Thau, philosopher and professor at the Royal Academy of Arts in Copenhagen, at which Eliasson also studied, writes in the exhibition catalogue “Minding the world”: “Eliasson carries architecture into the world of the art.” Thau sees Eliasson in the tradition of the Russian constructivists and utopian engineer architects such

“I see myself as a mainstream artist, which is why my work is easily accessible... I like it that it can be entertaining, even if the public could see through this entertainment construction. It is a matter of responsibility and ethics in connection with that which is said and that which is done.”

Olafur Eliasson



as Buckminster Fuller, as well as the garden architects of the 18th and 19th century with their “follies” and waterworks.

The most obvious formal parallels to Eliasson’s work are to be found not so much in “architects’ architecture” as in the frontier between civil engineering and utopia. Eliasson’s igloos made of regular pentagons and hexagons are small versions of Buckminster Fuller’s geodesic domes – in other words, a type of building which was influenced by the greatest possible material efficiency and which cast a spell over the individual with its boldness and mathematical beauty alike.

With his domes, Buckminster Fuller created functionally neutral coverings for exhibition areas, motorcar garages or greenhouses. On the other hand, Eliasson never designs his

Opposite and pages 30–31 The mediated motion, Bregenz Art Gallery 2001: By bringing the (human made) landscape inside the house, Olafur Eliasson lets visitors experience the Zumthor building anew and differently. The three exhibition levels contain a water pool, a slanted level made of contaminated earth, and finally a foggy valley with a suspension bridge.

Below Seeing yourself seeing, Museum of Modern Art, New York 2001: The title of this installation is programmatic for all of Olafur Eliasson’s work. The visitor sees the outer world through the narrow mirrored strips of the panelled glass area – and at the same time sees himself looking.

room sculptures as purely wind and weather enclosures, but lets them become part of his optical perception experiments. In the installation “La situazione antispettiva”, which he did for the biennial art festival 2003 in Venice, he placed a “gigantic polished spaceship, which has just landed from a foreign galaxy” (according to curator Gitte Ørskou) in the middle of the Danish pavilion. The “spaceship” consists of 250 conical kaleidoscopes made of polished stainless steel, which turn inward and to the outside in an alternating fashion. From the outside the viewer sees a prickly, space-filling object; from the inside he sees himself and the other visitors, reflected and refracted a thousand-fold in the midst of the semi-darkness.

Eliasson’s installations can be described as a kind of preliminary stage to architecture: they move in an original, “pure” stage of the architectural idea, which is not yet distorted by room programs, user wishes, regulations and the structural environment. Eliasson proceeds with the highest precision: By dispensing with anecdotes and redundant messages, he creates the possibility for the viewer to perceive his environment and himself more intensively. By this escalation Eliasson breaks open apparently fixed images and routines. He sharpens our view of space, which is so often “produced” in everyday life architecture with great carelessness and more likely tolerated by the user than experienced.

THE VIEWER

“In a certain respect, it might be asserted that Olafur Eliasson is not creating works of art. He is creating situations “, writes Gitte Ørskou in the exhibition catalogue “Minding the World”. Eliasson almost never confronts the viewer with his work head-on. He invites to go around or to go in and thereby makes the viewer nolens volens a part of the work of art. In a text to “The Mediated Motion” in the Bregenz Art Gallery (2001) he addresses this to the visitor directly: “This exhibition depends on your movement, your involvement to become a part of it, to allow yourself to experience it.” For this reason, with Eliasson one will always be looking in vain to trace a message by the artist, which art critics attempt to do again and again. His request to the visitor is: Find your own message. I can help you at the most to notice things more consciously.

Almost programmatic for Eliasson’s work are the titles of



the two installations “Seeing yourself sensing” and “Seeing yourself seeing” from 2001. Strips of mirror are attached to a pane of glass at regular intervals; the strips of glass between them with the same width remain free. In this way, the viewer sees himself “when seeing” and he sees the outside world at the same time. Two persons, who are facing each other on both sides of the installation, can communicate at the same time with their mirror image and their opposite number.

Although Eliasson’s installations are planned in minute detail, their surprise nevertheless always depends on the vigilance and frame of mind of the onlooker. For this reason, a scientifically objective “truth” is out of the question. Gitte Ørskou explains this opinion in the exhibition catalogue “Minding the World”: “Das Ding an Sich”, which was the German philosopher Immanuel Kant’s locution for the utopian idea about things in the world existing independently of the individual human being – that is to say, independently of the subject – is replaced in Eliasson’s grasp by what Kant himself called ‘Das Ding für Uns’ – that is to say, the idea that things in the world only exist by virtue of our sensing of them.

“The ‘Your’ is characteristic in this connection, which emerges in the title of many works. In an interview for the installation “Your denudation inverted” (1999), an artificial geyser in the inner court of the Carnegie museum of art in Pittsburgh, he said: “I decided to say “Your natural denudation inverted”. Pointing out that “your” experience is central rather than my ideas about it”. This strategy also belongs to Eliasson’s work: Let the things happen and watch how the viewers deal with it. In Pittsburgh, for example, the onset of winter transformed the trees, which were “shrouded in fog” from the geyser, into bizarre ice sculptures. They were similarly part of the work, according to Eliasson, and it became more understandable, when he said: “I did this specially for the courtyard of the Carnegie, and installing it elsewhere is possible but then it is another piece for me.”

Subliminally, Eliasson addresses in many works the question: how do museums mediate the reception of art? When preparing for the “Weather Project”, Eliasson concerned himself according to his own statement intensively with the structure of the institution Tate. “The house is oriented towards drawing numbers of the public and brings to some extent

people into the museum with partly supermarket-like aesthetics, who have never been in a museum before. I have my problems with this, because the whole thing becomes too much like an assembly line”, he admitted in the magazine “Kunstforum International”. And on another occasion: “The museums, in particular the large museums, market the experience of art and the feelings of the visitors. I see that as extremely problematic.” The “Weather Project” is by no means a head-on attack of modern art marketing. On the contrary, Eliasson wanted to make the context behind the exhibition “transparent” – a term which he willingly uses when it concerns revealing his means.

A SCHOOL OF SEEING

In many ways Olafur Eliasson teaches us to see again – and to understand how we see. Our direct perception, often blunted in everyday life by the incessant flood of irritations, is permanently questioned by him. The look in the mirror, otherwise routine, wins a new meaning with him again. He opens up natural phenomena and cultural institutions to us and puts them in a new light by reconstructing them and discloses them at the same time as a reconstruction. Because, according to Eliasson: “Without memory there would be no recognition – no value systems – no sense of time – and finally, no expectations. Such a thing as a primordial sensation doesn’t exist, only culture.”



PHOTO BY TACITADIAN

Top left Ice pavillion, 1998: Pavilions and other small pieces of architecture are repeated continuously in Olafur Eliasson’s work. Here he uses water as a building material and nature as a “construction worker”. And nevertheless: the planning is the work of man.

Above Olafur Eliasson.



PHOTO BY GIORGIO BOATO

Left La situazione antispettiva, Art Biennale Venice 2003: This “sensory perception cocoon” was the centre piece of the “blind pavilion”, the Danish contribution to the Biennale. 250 kaleidoscope-like openings channel, break up and multiply the view into and out of the “room in a room”.

Below The Weather Project, Tate Gallery, London 2004: Eliasson’s strategy to “construct” natural phenomena reached its climax in this installation. The monochrome spotlight reduces the sense of perception of the room to two colours: yellow and black.



PHOTO BY JENS ZIEHE



13°N 56°E
06.2002
04.00

13° N 56° E
06.2002
04.00

Österlen, Sweden

Photographed by
Per Magnus Persson

The Half-Finished Heaven
by Tomas Tranströmer

Despondency breaks off its course.
Anguish breaks off its course.
The vulture breaks off its flight.

The eager light streams out,
even the ghosts take a draught.

And our paintings see daylight,
our red beasts of the ice-age studios.

Everything begins to look around.
We walk in the sun in hundreds.

Each man is a half-open door
leading to a room for everyone.

The endless ground under us.

The water is shining among the trees.

The lake is a window into the earth.



Den halvfärdiga himlen Tomas Tranströmer

Modlösheten avbryter sitt lopp.
Ångesten avbryter sitt lopp.
Gämen avbryter sin flykt.

Det eviga ljuset rinner fram,
även spökerna tar sig en klunk.

Och våra målningar kommer i dagen,
våra istidsaleljters röda djur.

Allting börjar se sig omkring
Vi går i solen hunderatala.

Var människa en halvöppen dörr
som leder till ett rum för alla.

Den oändliga marken under oss.

Vattnet lyser mellan träden.

Insjön är ett fönster mot jorden.

GLASS AS A STRUCTURAL MATERIAL

Below On top of the ruins of an 18th century tea pavilion, Rotterdam architect Dirk Jan Postel erected a pavilion with glazed walls, which at the same time supported the strongly cantilevered roof. The walls consisted of 2 x 10 mm laminated glass and were fixed to the block work and the underside of the roof by bolts and steel angles.



PHOTO BY CHRISTIAN RICHTERS

Text by Rob Nijse.

Building at the limits of the possible: In the last 20 years, load-bearing glass constructions have triumphed in architecture. One of their pioneers, Rob Nijse from the Netherlands engineering office ABT, explains the achievements on the way towards the new age of glass architecture.

GLASS IS A FASCINATING material. It combines remarkable and even contradictory properties. You can look through it, and yet water, which penetrates almost everything, cannot pass through it. On the one hand it is strong and almost unbreakable, on the other hand one scratch lets it break easily.

The quest to introduce this material into the world of structural engineering has only been going on for a few decades, but it is my sincere conviction that in another few decades people will regard structural glass to be as trustworthy as for instance steel and reinforced concrete. One should not forget that steel/iron as building material is only about 200 years old and concrete even only about 100 years.

GLASS BEAMS

Glass for windows and even floors has been used for a long time, although in small measurements. Glass beams, however, are one essential step ahead from the early days of the Roman Empire. The idea of a glass beam is in itself very tempting but also dangerous: if glass breaks, it breaks completely, because the cohesion of the material is lost. An overload or a stone thrown at it results in a total and sudden failure of the beam. This is also unacceptable because we like to have some kind of warning mechanism in our structures that will be activated when there is a problem. A steel beam, for instance, warns by excessive deformation or plastic yield.

Glass in itself gives no such “warning” sign. It is only the invisible gluing together of individual panes, a process called laminating, which enables us to make a safe beam. Laminating of glass was invented in the early 1900s when – so the story goes – a scientist accidentally dropped a glass bottle filled with glue and as a result found two glass fragments glued together invisibly on the floor, a few days later. In the evening papers on the same day, he read about a girl who died in a car because she had been injured by a broken windscreen which smashed when hit by a piece of gravel. He realised that if the windscreen had been built of two layers of glass, glued together invisibly, this tragic accident might never have happened. This idea was an initial impulse for the industrial production of laminated glass. Another major impulse came when the chemical firm DuPont de Nemours invented a transparent foil called pvb (polyvinylbutyrate), which glues glass sheets together. Produc-

tion takes place under pressure in an autoclave at a temperature of around 250°C. The glass sheets and the foils or plies are rolled together under considerable pressure. The result is a perfect, transparent piece of glass, composed of two, or even up to ten individual layers of glass. In this way, safe glass beams are produced not by making one beam but by gluing two or more beams together. If a malevolent person throws a stone at your precious glass beam, he can only break the outside glass layers. These broken layers keep on sticking to the central ones and therefore protect them.

For these reasons, the concept of a glass beam was “up in the air” in the 1980s. Various members of the international community of structural engineers carried out studies. But who would dare to put the first glass beam in a real building? The psychological barrier was enormous, because we know from everyday practice that glass breaks easily. Clients and contractors have a tendency to avoid risky experiments. The building industry is one of the most conservative industries. New developments need an enthusiastic client willing to take a certain risk. The engineer naturally has to assume the obligation to analyse all possibilities of unwelcome effects of the proposed innovation. The introduction of glass beams is a good example of a cautiously accepted innovation.

GLASS FLOORS

Glass panels in the floor of a room have been known for quite some time but only in small sizes. However, it was the introduction of a disco dancing floor with coloured lights from underneath in the 1970s movie “Saturday Night Fever” which gave the glass floor a real impulse. Architects began thinking about integrating glass floors into buildings. This implied, of course, that they had to be transparent. Walking on a big transparent floor is exciting but also a frightening thought to many. Besides, in the case of an abnormal fear of heights (acrophobia), people are afraid because our logical thought processes cannot accept the fact that something transparent will carry our weight safely. There was a film made in the 1950s by a big glass company in which a mother places her baby on a table where half the table top is made of glass. She walks around the table and calls to her baby to crawl to her over the glass section of the table top. Despite the fact that his mother,

a person he loves, calls him, the baby refuses to crawl across this surface. This behaviour is typical of people who have to walk over a glass floor. Even if the engineer proves that it is ten times safer than a wooden floor, people simply don't trust it. And, admittedly, even I have to take a deep breath before stepping on a transparent floor. Therefore, it is wise to make at least part of a glass floor translucent rather than transparent. People feel safer although the difference between a translucent and a transparent glass panel consists in no more than a translucent foil that is only 0.46 mm thick!

Architects and many users are excited at the possibility of 'walking on air' and experiencing a building in three dimensions. Since safety is a major design criterion, it will be clear that all glass floors have to be made from laminated glass. Also, we have to be aware of the fact that walking on the glass will create scratches on the surface due to sand or gravel stuck to the soles of shoes. So we have to ensure that this scratched zone is not in a tensile loaded area, for then the scratches would act as a stress concentration point resulting in further stresses in the glass. Often people think of glass as being slippery to walk on. In fact, in dry conditions it is not slippery at all. Tests have shown that the surface conditions of glass are more or less comparable to natural stone or tiles. However, when wet, glass becomes a potentially slippery surface. One of the ways to avoid this danger is to use a special type of glass that has been given the following treatment: a glass panel is heated to the point where the surface melts and becomes slightly syrupy. Then grains of sand or small parts of broken glass are scattered onto it. Because of the slightly molten glass surface, they sink halfway into the surface. After cooling down and rehardening, the result is a super-rough surface even when wet. The advantage with this treatment is that the surface does not wear easily; the scattered sand or grains adhere well to the glass and protect the original glass surface.

This process of melting and rehardening reminds me of an old but unfortunately invented story told in Arab chronicles about the structure of one of the Seven Wonders of the ancient world, the Pharos of Alexandria. This very tall and big lighthouse was said to have its foundations connected to the rocks by "claws of glass". On second thoughts, this is not entirely out of the question. Glass could be melted easily and poured into cracks in the rocks. Once solidified, it could take enormous pressure so it is worthwhile considering a new application of this old construction method.

GLASS COLUMNS

While we have been able to make glass floors, glass roofs, glass walls and glass beams, the last structural element still resisting its transformation into glass is the column.

In general, a column is a difficult element in a structure. Architects and clients do not like columns; they stand in the way and they block the view. If it is impossible to reduce them in number, architects ask for them to be made as small as possible.

Structural engineers, by contrast, love columns: they

reduce the span of beams and floors, and make structures less complicated. So how do we overcome this aversion by architects? I like to quote from a text by Le Corbusier on his Villa Savoye: "Proudly they stand a-straight the columns; the soldiers of architecture, carrying their load." This goes a little way to help as no one would dare contradict so great an architect as Le Corbusier.

But engineers should make columns more attractive, too. One way to do this is to make their shape more expressive, which I tried for instance in a study on the shape of columns for the restaurant of the Educatorium project. As a starting-point for the structural design of these columns, we asked the architect to look into how columns collapse.

There are three ways in which this can happen. The first one is under pressure by crumbling, slowly yielding under too big a compression load. The second is by buckling under pressure, and suddenly breaking in the middle. In most cases, this is critical. The third is by breaking due to shear force. I made a number of column designs relating to each type of problem. The intention was to choose a typical column for each location and thereby give the space around the column identification. Unfortunately, the cold wind of financial constraints only led to a variation in size and in a round or square cross-section with an identical cross-shaped column (the so-called Mies van der Rohe quotation).

Another way to make columns more attractive and less repulsive to architects would be to make them out of glass. Although glass performs well under compression, there is the danger of buckling, which makes it hard to conceive a safe glass column. Buckling will result in tensile stresses and miniature cracks in the surface will spoil the construction. Therefore, safe structural glass elements have to be double or triple layer or more. If one part fails for whatever reason, the remaining parts must still be able to carry the load so that the damaged element can be replaced. But will a glass column not be the utmost achievement in a structural application? Imagine high-rise buildings resting on mysteriously shining beams of light (bear in mind the immense potential bearing force of glass); a dream would have come true. The journey on the road to realise this has, however, only just begun.

GLASS WALLS

Walls separate areas in a very physical way. Glass material offers the possibility of creating a real physical separation between two spaces, while at the same time allowing full insight into what happens beyond. In principle, walls have two different functions: inside buildings they chiefly serve acoustical and optical requirements. As part of the façade, they protect the inside of the building from the outside climate.

Regarding the structural aspects, a wall is just a special type of column. It is only far wider than thick. Therefore, the remarks we made concerning columns could be repeated here. Instead we will concentrate on the question of how glass walls may be designed. Basically, we are following in the footsteps of the builders of gothic cathedrals. For the glory of God, they

sought to make the walls of their churches as transparent as possible. They were only familiar with blockwork walls with windows in, but with stone and glass they achieved almost immaterial walls with colourful stained-glass windows. The invention of the kinked high-rise arch, the flying buttress and the pier buttress led to enormous heights. Starting with a maximum height of 15 m, in Beauvais (1245) they reached the enormous height of 48 m.

But Beauvais marked the end of this development: in 1284, during a heavy storm, the straight parts of the vaults collapsed. It is amazing that those light-weight structures were built in a time when there was no theoretical understanding of how arches of beams or plates work and no computer programs existed which were able to deal with such spatially complicated structures. People then simply used their common sense. They learned from failures (which we do not see any more because only the successful solutions have survived) and tried each time to make things a little higher and a little more slender.

Today, that method of working is no longer acceptable. Most of all, we have to erect safe structures with no chance of collapse. Fortunately, we now have a sound theoretical knowledge about structures and we do have computers that can calculate the stresses and deformations of very complicated spatial structures.

For safety reasons, nowadays we always use laminated glass for structural elements. The critical collapse criteria for a wall will be buckling or plying. Therefore, a glass wall must have a considerable thickness and hence quite a few layers. We could improve on this aspect by making a corrugated glass wall, but this type of glass has only recently become available. The Casa da Musica in Porto is the first building to have these walls. Another critical point is how to get the loads from the structure resting on top of the glass wall into the glass wall without causing too many concentrated stresses. The support should be as centralised as possible and an elastic material (neoprene) should be incorporated. Also, the detail at the bottom of the wall, where the forces have to go into the foundation, has to be designed with these starting-points in mind.

GLASS FAÇADES

A façade is a special type of wall. It separates the inside from the outside. The difference in position implies that this special type of wall has to satisfy substantial requirements in terms of building physics. Also, the wind force on façades pulling and pushing against them, as well as temperature-induced movement and water-tightness, play an important role. These requirements make the design and building of façades a difficult but challenging task – which, however, offers engineers the opportunity to devise appealing structures: "Every disadvantage has an advantage," to quote the famous Dutch soccer player Johan Crujff.

Glass plays an essential role in the façade. With its transparent property, it opens up our buildings to the outside world. This psychological effect is very valuable. People may enjoy the view of the outside world and are not divided from it by a

solid closed wall. Especially in the colder regions in the world, this is an essential aspect. Houses and offices can be kept comfortable much more easily without having to give up the possibility of looking outside. But the introduction of glass into the façade has opened up the building not only from inside to outside but also from outside to inside. Certainly in modern architecture there is a tendency to open up buildings by using very large façades that are as transparent as possible. The visual borderline of what is inside or outside of a building cleverly merges into one. However, creating complete glass walls leads to new problems concerning the comfort inside the buildings. In winter, warmth passes easily through the glass façade, and in summer the heat of the sun is absorbed inside leading to excessive temperatures.

A single glass panel is not a good insulator, warmth travels easily through it. The introduction of double glass was a major improvement. The closed-up small gap filled with air in between the two glass layers provides good heat insulation. Double glass improves the comfort in the building, avoids condensation in winter and reduces the amount of energy required to heat the building. Nowadays, double glazing is improved even more by filling the gap in the insulated panel not with air but with inert gases such as argon and by vaporising thin layers of precious metals on the glass surface.

The heat insulation rate has been improved to a degree that a new danger is now present: in summer, the heat cannot escape! Air-conditioning is not a good solution to this problem. Architects and engineers need to be more critical of automatically constructing façades with insulated glass panels, as they have been doing for decades now.

Rob Nijse is a director of ABT Consultancy for Construction Engineering in Arnhem. He has specialised in experimental structures in glass, concrete and steel, collaborating with architects such as MVRDV or Rem Koolhaas for the Dutch EXPO pavillion in 2000, the Educatorium in Utrecht and the Casa da Música in Porto. Since 2003, Rob Nijse has been a part-time professor at the University of Gent. In the same year, his book *Glass in Structures* was published by Birkhäuser.

TOWARDS THE SUN ARMADA

Text by Thomas Geuder.
Photos by Torben Eskerod.

Land is in short supply in the Netherlands, and not for nothing have the Dutch become masters in the spatial organisation of cities and entire swathes of land. In 's-Hertogenbosch, ten apartment blocks were built on a former industrial area, uniquely identifiable buildings offering the residents a highly diverse living space.





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The main part of the car journey from Maastricht to Amsterdam runs through the southern Dutch province of North Brabant. Approximately 30 kilometres from Eindhoven lies the province capital 's-Hertogenbosch, which, amongst other things, forms a useful traffic intersection between the country's railway lines. The historic city centre is worth a visit – not least for St. John's Cathedral, dating back to the 14th century, or the 'Oeteldonksgemintemuseum', the only carnival museum in the Netherlands.

Upon entering the city, your attention is drawn by the new 'Paleiskwartier' ('Palace Quarter') of the city, lying directly next to the railway tracks in a former industrial area. In the mid-nineties, a major project was started here to provide a model for the future for new buildings in the region. The master plan for the area, developed by city planner Shyam Khandekar from Benthuisen in The Hague, mainly set out the division of the area into squares with urban blocks of buildings surrounding them. A long, narrow water basin was created in the centre of this area, providing relief from the austerity of the master plan and marking the cen-

tre of the new city quarter. Here, Khandekar decided to deviate from his block building scheme and planned construction along the basin with 'houses that contrast in a delicate way with the perimeter blocks around the park and will continue to radiate warmth and quality over the years'.

In 1998, a restricted competition was held for the construction of these houses. The winner was Building Design Partnership (BDP) from London. They designed five pairs of buildings, positioned at the water-side at an angle slightly off ninety degrees. It is the cutting-edge look of the buildings that really catches the eye: like the sails of a great fleet, the metallic façades line up along the basin, further emphasised by the gabled sides partly jutting out into the water – an allegory that soon gave the project its name 'Armada'. When describing his designs, architect Tony McGuirk from BDP talked about 'longhouses' and 'tallhouses' along the 'long-water', marking the centre and the heart of the new residential quarter. Obviously the look is a play on the ever-present elements of wind and water in the Netherlands, chosen deliberately as the main theme of the design,

Previous Like the sails of a great fleet, the façades of the 'Armada' residential development line up along the water basin. Their external form is striking, not only from a creative point of view, but also due to the sophisticated design concept that takes account of the effect of the wind and sun.

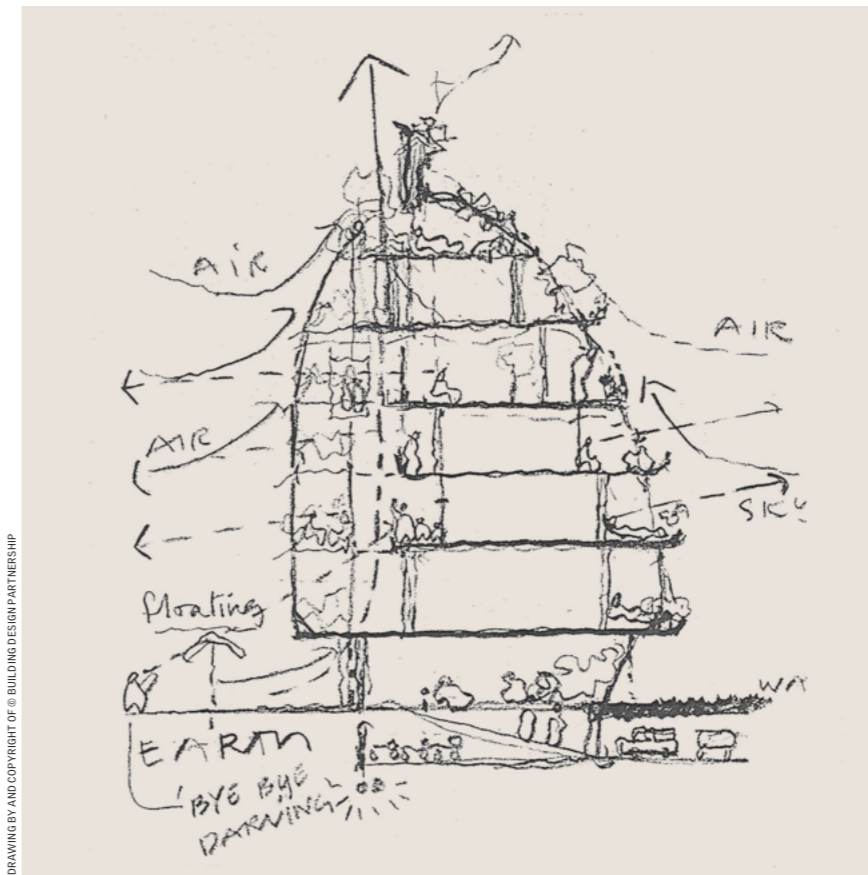
Left Site plan.

Opposite In order to ventilate the relatively deep rooms well, the air is sucked in via the individual storeys and sucked upwards by the chimney effect. This effect is reinforced by the small additional "sail" on the roof.

but it is worth a look behind the scenes – it's not just a question of simply copying a somewhat clichéd image. Behind the eye-catching form lies a technological design concept that not only makes the residential blocks visually appealing but also gives them an ecological purpose.

'Microclimate' was the key concept and inspiration for the architects in their designs. The aim was to create an ideal 'climate of well-being' for the residents both indoors and outside. It starts with the urban development itself: wind turbulence gusting between the individual houses has been reduced by positioning the buildings at angles to one another. The buildings are also positioned in such a way as to prevent them overshadowing one another, so that all south-facing façades capture the sun. The water in the long basin, with the underground car park for the residential blocks below it is used to pre-heat the houses in the winter and to cool them in the summer.

The south façades act like a climate shield, making optimum use of the sun and daylight: stainless steel panels curve out and down from the roof over the façade, reflect-



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ing the light of the Dutch sky. Cut-out holes in the 'sail' have been made at regular intervals on the façades, fitted with VELUX roof windows in the upper part of the façade. Reflected by the wide balconies, the sunlight streams through these openings deep into the interiors, bathing them in natural light. At the same time the solar energy is captured and used to provide natural heating for the interiors on days that are cold but sunny.

The north sides of the buildings speak a different architectural language: here you will find the entrances to the individual apartments. However, this area is far more than just a stairway for the residents. Protected in an enclosed glass façade, the galleries can be seen as an extension of the living area. Within the 'winter garden' atmosphere, people can meet for a chat or display their flowers and orange trees, a feature of almost every Dutch household. This mid-space between outside and inside also makes a fantastic play area for children. The areas between the buildings possess similar qualities: greengarden areas run down to the water and are a favourite meeting place for the Armada residents during the summer months.

Alongside the striking architectural form, the secret of the success of the Armada project is the social concept of the design. The residents have plenty of opportunity to meet one another. Designed as pedestrian-friendly, as the master plan intended for the entire quarter, the area is linked via a footbridge to the centre, which is located just behind the railway tracks. Semi-public spaces, such as the richly planted gardens between buildings and the 'winter gardens' on the north side of the blocks, protected from the wind and weather, are ideal locations for meeting and communication. The balconies and terraces also provide plenty of opportunity for interaction. The stunning look and communication-promoting atmosphere created by the architecture give the residents an immediate sense of identification with their homes – no wonder that the 'Armada' residential development in 's-Hertogenbosch was given the 'Best Loved Building' award by the Society of Architects in the Netherlands at the start of 2004.

Facts	
Location	's-Hertogenbosch, NL
Building type	Multi-family housing
Funder	BV Ontwikkelingsmaatschappij
Developer	Credo Integrale Planontwikkeling BV
Architect	Building Design Partnership, London, GB
Completion	2003

Below (left) Wide balconies spring out into the sun from the south façades. They capture the sunlight, carrying it far into the interior and bathing the rooms in natural light. The balconies are also a favourite place for communication amongst the residents.



Below (right) Clad in stainless steel, the south façade curves out beyond the gabled sides, enhancing their sail-like look. The façades of the lower 'long-houses' are clad in horizontal cedarwood panels, while the high 'tallhouses' are brick-faced on the gabled sides.



Bottom Daylight streams through wide openings in the façade deep into the rooms, rendering the use of artificial light almost obsolete. The sun can also be put to efficient use to heat the interiors.



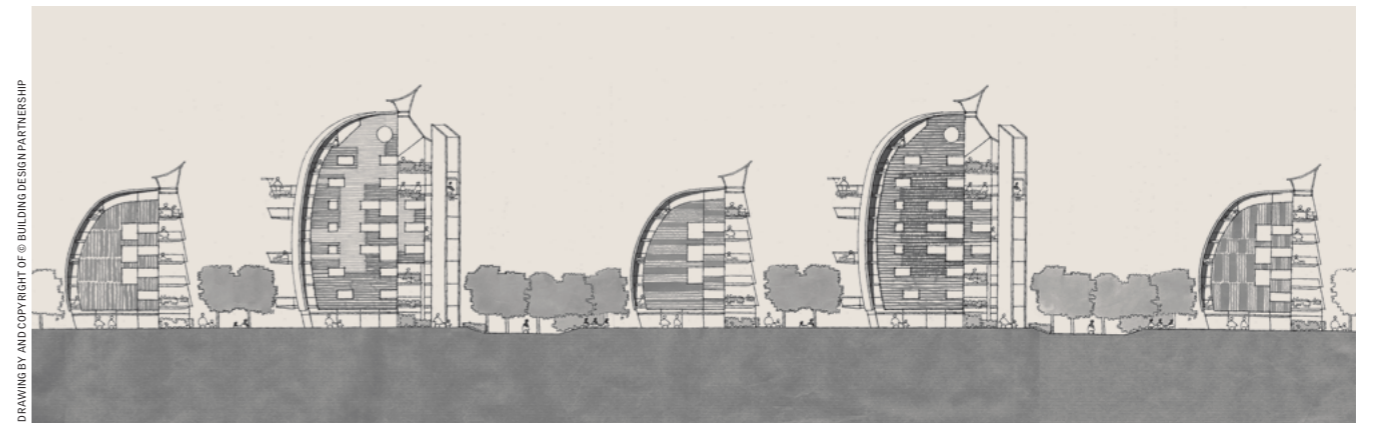
Below (left) The flowing form of the building is continued in many of the architectural details: the emergency exit stairs wind up from the ground like the threads of a screw; even the streetlights follow the curve of the façade.



Below (right) The south façades act like a climate shield, making optimum use of the sun and daylight. Sunlight reflects off the stainless steel panels, lighting up the north side of the neighbouring block. The light pours into the building interiors through the cut-out holes in the 'sail', which are fitted with various types of window.



Bottom The areas between the 'sails' are laid out as gardens, running down to the water's edge. These semi-public spaces provide the Armada residents with a leisure area they can enjoy together.



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VELUX PANORAMA

Architecture with VELUX from all over the world.

LIGHT CATCHER HAUS WILLIMANN-LÖTSCHER IN SEVGEIN

Facts	
Location	Sevgein, Graubünden, CH
Building type	Single-family residence
Owner	Willimann-Lötscher family
Architect	Bearth & Deplazes Architekten AG, Chur, CH
Completion	1998

A clearing at the edge of Sevgein, a village with 220 inhabitants in the Swiss canton Graubünden, became the site of the new home for the five-member Willimann-Lötscher family. Seen from the side of the hill, the house, designed by architects Bearth & Deplazes, is narrow and tall like a tower. Further downhill, it becomes wider, opening up to the wild and ro-

mantic valley of the Vorderrhein. It is not until the observer walks around the building that its whole length becomes apparent. Each room has exactly one window, which allows the light to enter the house at a certain angle and, in the other direction, allows a framed view of the outside surroundings. In the living room, the whole façade window wall facing

towards the valley has a single undivided pane of glass, providing the occupiers with a breathtaking panoramic view. To keep construction costs low, the house was built as a wooden-frame structure made of prefabricated elements, in which the windows were already fitted. The owners attached the wooden planking of the façades themselves,

but according to the exact plans of the architect. Altogether, three plank widths were used, which lend structure to the outside of the building and give the house its own unique and special character.



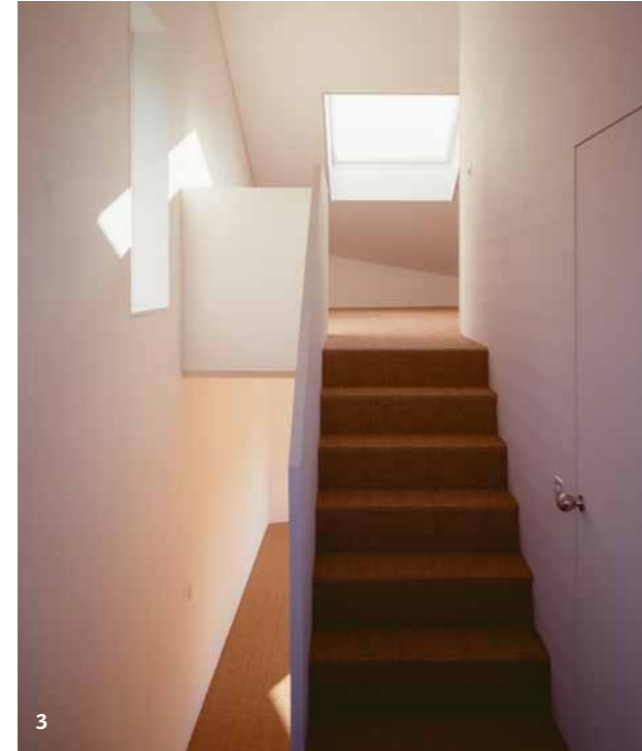
1

1. From the exterior, the panorama window of the living area seems like a supersized picture frame, catching the far view into the landscape. But the interior also becomes a "picture" for those viewing from the outside.

2. Towards the valley, the living room façade consists completely of glass, providing the inhabitants with a panorama view of the landscape of Graubünden.

3. A staircase located in the middle of the building provides access to the living floors, organized as split-levels. At the top of the staircase, a roof window opens the view towards the surrounding panorama of the Alps.

4. The façade of the house consists of vertical wood siding with dark varnish in three different widths. These were assembled into elements and especially provide those parts of the façade without windows with a unique and non-conventional design.



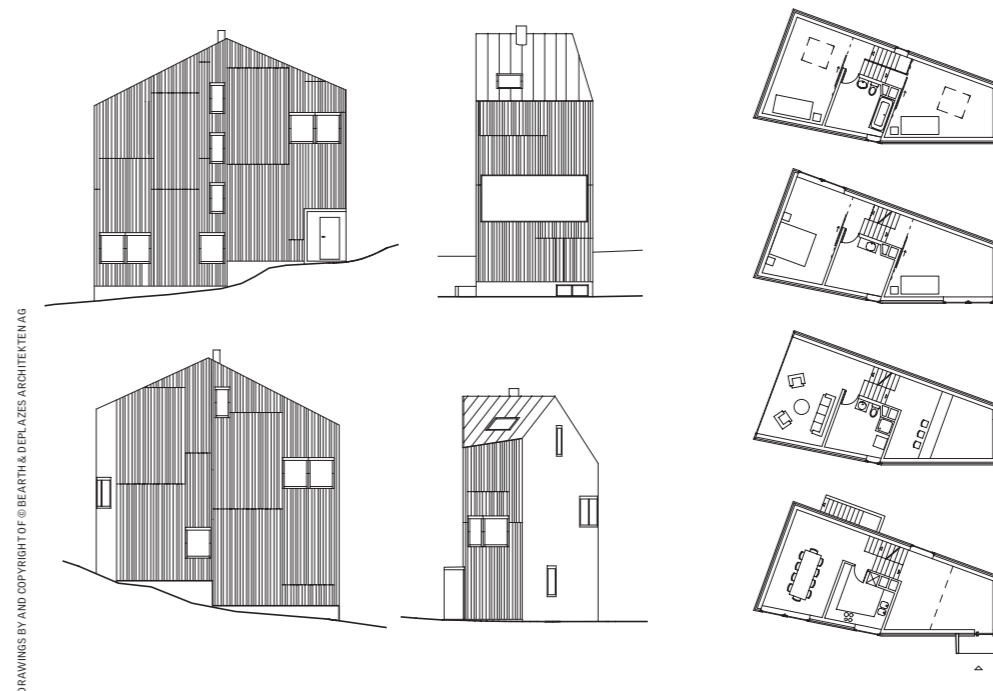
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4



2



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Far left (clockwise from top left)
North façade
East façade
West façade
South façade

Left (top to bottom)
Floor 3
Floor 2
Floor 1
Ground floor

BUILDING WITH NATURE CUBINA-MARCO HOUSE IN DAS, Cerdanya

Facts

Location	Das, Cerdanya, E
Building type	Single-family residence
Owner	Cubina-Marco family
Architect	Carles Gelpi Arroyo, Barcelona, E
Completion	June 2004

Cold and snowy winters as well as hot and dry summers are characteristic of the natural landscape of Das in the Comarca Cerdanya, in the heart of the Pyrenees. Bordering the town with a population of 165, at an elevation of 1200 meters, is where the residence "La Cerdanya", designed by Architect Gelpi Arroyo, is located.

A slanted roof with large eaves is typical for this region. This way of building, determined by the climate, was also utilised for this house – next to another important element: a dry masonry wall of natural stone constitutes the visual and functional

"backbone". It divides the residence into a building volume oriented towards the south and two differently sized auxiliary tracts with a shared interior courtyard, the patio, in the north.

The building is accessed alongside the wall: in the south, the "day zones" with a living and dining area with transparency towards the garden, kitchen and library. The two northern building volumes house the "night zones", where the façades, also clad in slate to a large extent, remain closed, with the exception of a few ceiling-high openings with wood

shutters. The parents' suite with bedroom, dressing room and bathroom is located in the west, a guest room and two graciously sized children's rooms with one bathroom each in the east. Even if the areas for parents and children/guests are divided strictly, the interior courtyard adjoins both and is accessed and used by both. Thus, all inhabitants may profit from the spectacular view of the mountain panorama offered here.

One floor below, built into the landscape slope, are the service areas, such as garage, heating and storage as well as the apartment of the house

1. The residence "La Cerdanya" lies in the heart of the Pyrenees, bordering the small town of Das. From here, a far view extends towards the idyllic mountain panorama.

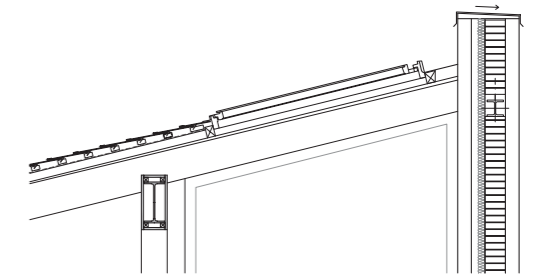
2. A natural stone wall constitutes the "backbone" of the building. The loads of the slanted roof are supported here. The transition from access corridor to the lower level of the living room is accentuated by the roof windows, integrated immediately below the ridge beam.

servants. The sports room is quite narrow and has direct access to the swimming pool on the outside.

Slate and wood as choice of materials reflect the rough mountain climate. All the more astonishing is that one finds here a very light and open building. The continuous slate flooring, the light provided by the interior courtyard bordering the wall, as well as the equally distributed light from above enable a strong connection to the exterior. The roofing consists of slate as well. Slanted towards the exterior, it is visible as a slim edge from the patio.



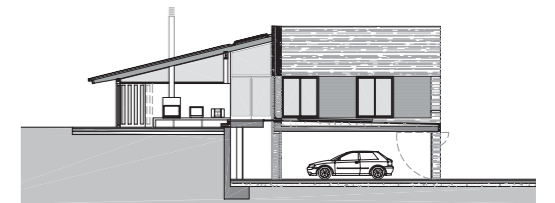
PHOTOS BY EUGEN FONTS



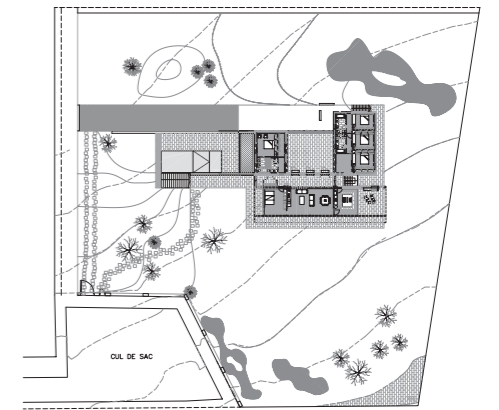
Skylight detail



Longitudinal section



Cross-section



Site plan

DRAWINGS BY AND COPYRIGHT OF © CARLES GELPI ARROYO

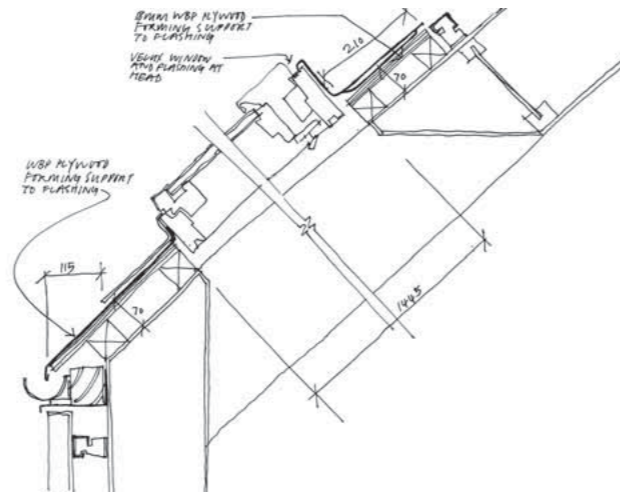
BLACK AND SLENDER BLACK HOUSE IN PRICKWILLOW

Facts

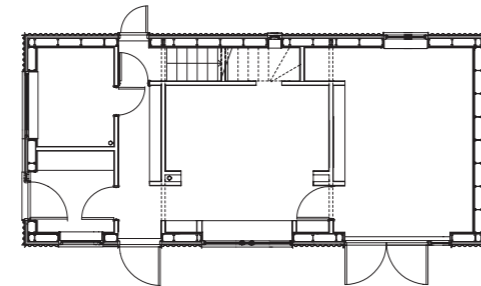
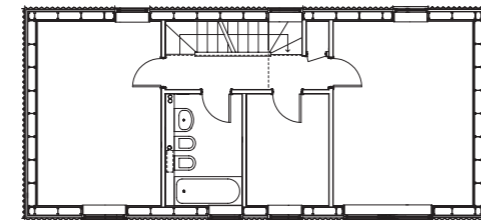
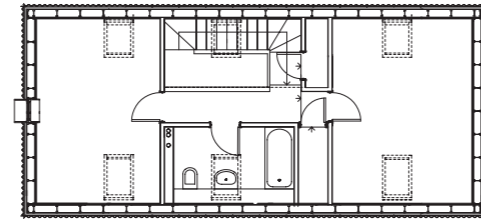
Location	Kingdon Ave., Prickwillow, Cambridgeshire, GB
Building type	Single-family residence
Architect	Mole Architects, Prickwillow, GB
Completion	2003

The region of Ely in the English County of Cambridgeshire north of London is characterised by the drained moor landscape of the "Cambridgeshire Fens" and many old country barns with dark cement-based fiber board exteriors, which all seem as if a giant had rolled the dice on a flat surface. Their exterior has been adapted by architect Meredith Bowles for his design of the "Black House" in Prickwillow: the entire façade and the roof are clad in black corrugated cement-based fibreboard siding. The vertically applied siding makes the slender proportions of the house seem yet more slender and tall, emphasised by the fact that the house is built on stilts. The dominant colour black of the façade is interrupted by windows and doors in varying sizes, the colours of which provide a playful accentuation. Only exceptions are the

roof windows, which adapt to the dark building exterior. The building interiors present themselves as unexpectedly light, illuminated with natural light in abundance through the windows, arranged according to the movement of the sun and the view of the exterior. A central core consisting of kitchen, bathrooms and staircase is surrounded by living room and bedrooms as well as Meredith Bowles' architectural office "Mole Architects". Colour accentuations in green and pink continue the ideas present in the façade into the interior. The building, having received the RIBA Award 2004, among other awards, consists to a large part of recyclable materials and is equipped with a heat exchange unit, using the warm air vented from the interiors to pre-heat the fresh air intake and hot water.



Roof window detail



Top to bottom
Roof level
Upper level
Ground level

DRAWINGS BY AND COPYRIGHT OF © MOLE ARCHITECTS



1. Vertically applied siding consisting of corrugated cement-based fibreboard underscores the slimness of the building. The horizontals are highlighted by the mullion covering the butt joints of the fibreboard panels.

2. Altogether, six roof windows – three in each roof surface – provide the rooms in the upper level with daylight. Intensely patterned wall covering, an exception in the house, provides visual coherence of the staircase.

3. The Black House stands out from the rest of the village. However, the architecture of the building is nevertheless inspired by regional examples, most notably the country barns of the Cambridgeshire Fens.



PHOTOS BY JOHN DODDART

HOUSES BY THE VILLAGE GREEN
 NY MOESGÅRD IN SKÅDE

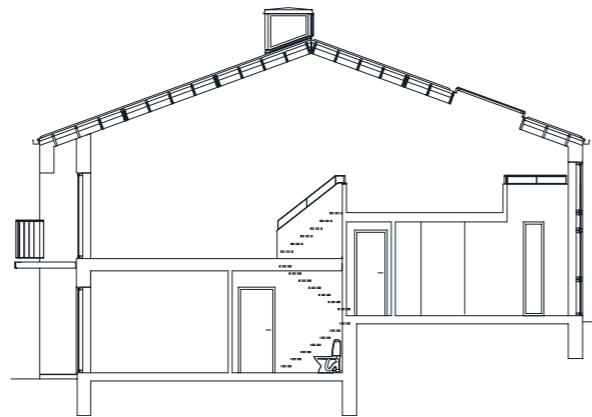
Facts

Location	Skåde, Århus, DK
Building type	Townhouses
Owner	Tryg-Baltica Ejendomme
Architect	C. F. Møller
Completion	1999

The houses of the residential development Ny Moesgård in Skåde follow the steep slope in three rows. They are arranged in a way that allows almost all of them to enjoy the view towards the surrounding forest and the not-too-distant sea. At the bottom of the slope, a small meadow, which has been left in its natural condition, has become the "village green" as a shared free space for all the houses of the development. The manifold shape of the development with its many level changes is continued into the interiors of the houses: from single-storey to four-storey, everything is present in Ny Moesgård. However, even the largest houses with 124 square metres area do not have more than three rooms. The reason was a regulation by the local authorities with the intent to avoid the settling of families with many children, due to the fact that the local elementary

school had reached its capacity. The architecture derived benefit from this: the building interiors are ample, lofty and light, double-storey interiors are frequent.

The masonry buildings with pale yellow stucco exterior are unusually deep at 12 metres and separate themselves distinctly from the surrounding forest and meadow landscape. The window frames and doors of the buildings are made of dark wood and contrast with the light coloured façades; the zinc roofing reflects the sunlight. Prominent "light chimneys" take over the position of the chimneys of traditional iconography. They are located directly above the roof ridge and introduce daylight into the open, central staircase. Openings in the interior walls literally direct the light into the most remote corners of the houses.



Cross-section

DRAWINGS BY AND COPYRIGHT OF © C. F. MØLLER

1. The buildings with their pale yellow stucco exterior are arranged to follow the steep slope. Between the three rows of houses, grass covered areas create the green centre of the residential development.

2. The houses appear as to have been cut from a single slab. The gutters are hidden and all windows are flush with the stucco façade.



1



2

PHOTOS BY TORBEN ESKEROD

LIGHT OF TOMORROW

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CLAES CHO HESKE EKORNÅS

Winner of International VELUX Award 2004 for Students of Architecture



less of grades, there was about a 3-year waiting list to apply for a masters in psychology that gave you a license to practice. I ended up with a bachelor's degree in cultural and science studies.

D&A What made you choose to study architecture in the end?

CCHE Throughout my childhood I always liked to draw, paint and build things. In between my high school years I went to the USA as an exchange student where I got total freedom in the art class. The thought of working within a creative profession came to mind again, and by chance I picked up an application for the architecture school in Oslo right before the deadline. I actually finished the work I had to submit at the post office...

D&A Do you feel that your multidisciplinary background gives you a specific approach towards architecture?

CCHE I have drawn many lines from my university studies to my studies of architecture, especially many elements from my social studies. Within every field of specialisation there is a danger of becoming narrow and single-minded. It's important to be open to other fields outside of your specialisation in order to put things into perspective.

My approach to architecture has been case-related, trying to understand and decipher the programme of each building I

Left Claes Cho Heske Ekornås won the International VELUX Award 2004 for his final-year design, a museum for the Korean artist Nam June Paik. Besides architecture, his interests are photography, film and art, philosophy and technology.

design. On the surface my works are often referred to as being slightly 'crazy and wild'. If that is the case, it is just a product of my 'own' academic approach. My concepts have gone through a systematic and methodical analysis, and are linked with both visually graphical and physical models.

D&A What is your opinion about recent Norwegian architecture? Is there a lot of exchange with other countries?

CCHE Compared to Denmark, Finland and Sweden we have a lot of catching up to do within the architectural field. They have a history to refer to, and present, while we in Norway only have 1000 year-old stave churches (which I do like) to refer to.

Only in the last few years have the words design and architecture become public work and something which is on the agenda in Norway. If one could name a common factor, I would say that elements such as light and weather and a close adherence to nature have a strong influence on the architecture. We have been restricted to small windows and thick walls and tilted roofs due to climate and tradition.

But we are up and coming. Technology and exposure to the international scene has carved a way for new possibilities, demonstrating that not everything has to look like a wooden hut. Right now there is a record in building activity in Norway. Larger projects also have a new-found international interest, such as the new opera to be built by

Snøhetta architects. Renowned foreign architects are participating in the competition for projects in Norway. For example, OMA, together with Space Group, won the design for a new district at the harbour in Oslo, and next to it Renzo Piano is going to build a museum in collaboration with the Danish Louisiana Art Foundation.

D&A What effects does all this have on the labour market for young architects in Norway?

CCHE Fortunately I had a job to go to after finishing my diploma, but that was not the case for many others at the time. Nowadays, only 1.5 years later, it is easier to get employment.

D&A Have you ever studied abroad? If so, did you feel that there is a different approach to architecture in your host country?

CCHE I had intentions to study architecture abroad, but it never came to be. I think we are privileged at AHO (Oslo School of Architecture and Design), compared to foreign schools. In some courses there are up to four teachers for a class of 30 students.

My impression of some of the foreign schools is that they are probably more technical and pragmatic in their approach. While some of the foreign exchange students in my class had a 'finished' project after two weeks, some of us were still dwelling at the concept stage.

D&A Which architects do you favour?

CCHE I respect architects that don't approach the project programme from the given face value. The ones that try to

cross style borders and social perceptions are those that I find interesting. Instead of being content with doing the safe thing, you should at least try to test things out and be visionary in order to meet the social development in society. By that I don't necessarily refer to social building. Programmes should sometimes be challenged. As architects we must hope that we can in some way contribute and be part of social development, and not be lagging behind it.

D&A For the international VELUX Award, you designed a museum for the famous Korean artist Nam June Paik. Were there any links to the 'real' competition for the Nam June Paik Museum which was held about one and a half years ago?

CCHE Parts of my work for the international VELUX Award were actually taken from the diploma I did six months earlier. That's why I didn't give winning the award much thought, since it was originally not designed for the competition.

D&A In the project you establish a multi-disciplinary fusion between art, architecture and the human being. Have you already worked on a real project together with artists or scientists? What experience do you expect from this collaboration?

CCHE I haven't had the opportunity to do so yet, but I would like to do more work with video and films, since it is a media that is related in many ways to architecture, e.g. perceptions, light, staging etc. For my diploma I had some discussion with my aunt Marianne Heske, who is also an artist and knew Nam June Paik personally.

D&A What fascinates you most besides art and architecture?

CCHE Besides being a techno and science freak, I have a fascination with movies and animated films. If I had more free time I would spend it on photography and drawing/painting. In the future I would also like to do something within furniture design.

D&A Your birth parents are from Korea. Do you still have personal links to the country?

CCHE At 4 years old I got adopted by my Norwegian parents. Apart from visiting Korea together with my parents in 1998 I don't feel particularly attached to Korea. What fascinated me was that much of the old architecture was comparable with old Norwegian handcraft architecture. Both countries have a strong tradition of adhering closely to nature and this is reflected in the architecture.

D&A What did winning the International VELUX Award mean to you?

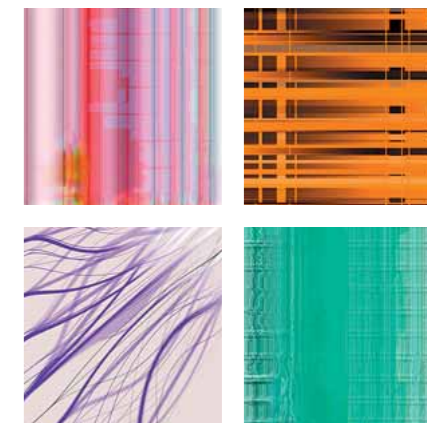
CCHE For this competition, I sent in an edited version of my diploma project. I was quite surprised to receive a phone call from Mr. Glenn Murcutt, the jury leader, who told me that I had been awarded first prize. To be given this award has really boosted my self-confidence, in view of the number of participants, and the outstanding selection of jury members. It also confirms that what I have been working on throughout my studies is valid beyond the local setting. Aside from winning this award, I would like to emphasise the seriousness of the VELUX competition and the work the jury put into it. There

are not many awards for students and young architects that deal with conceptual "school" projects in this way.

D&A What are your plans in the near future – both from a personal and professional point of view?

CCHE I have now started working for Jar-mund/Vignsnaes Architects (www.jva.no). In Norway at least they have a reputation for being a 'breath of fresh air' on the architectural scene. So far, I have been given engaging tasks and feel I will learn a lot from this practice. For the time being, I am quite happy to have the opportunity to work here, as there will be many interesting projects coming from this company. They are the only company from Norway represented at the Architectural Biennale in Argentina.

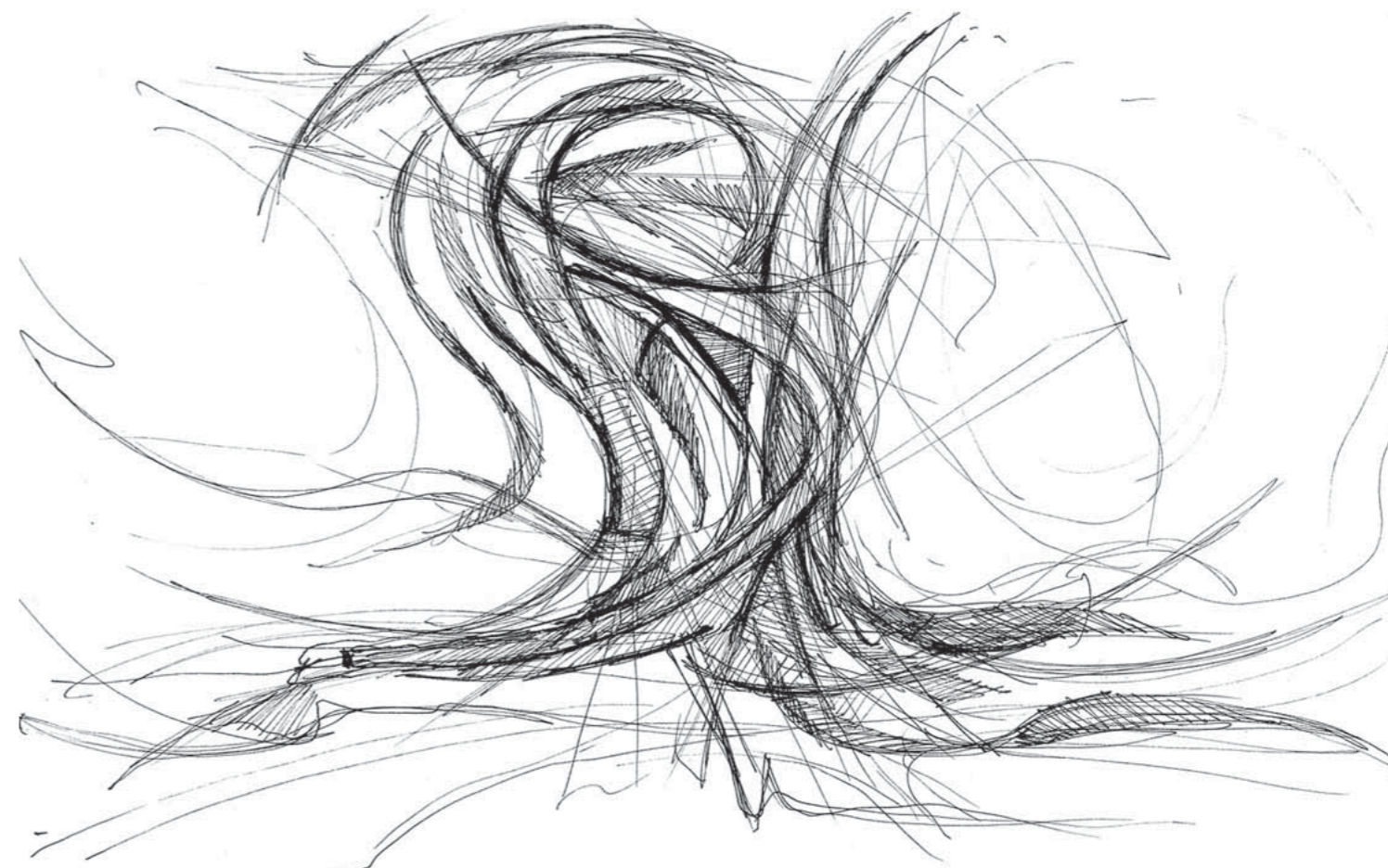
In the future I would want to have my own practice with some fellow partners. Maybe work abroad? It is hard for me to even predict one year ahead, and therefore it is only possible to follow one criteria, and that is to enjoy what I do. If 'enjoy' means 24-hour working days or working in Siberia then so be it, I'm open-minded to whatever the future brings!



Opposite Landscape - Lightscape: the museum is completely integrated into the hilly terraced environment. Claes Cho Heske Ekornås sees the light penetrating to the outside through the façade as a built-up landscape, landscape as built-up light.

Above In the preliminary drafts, Claes Cho Heske Ekornås delved into the design aspects of borders, structure, fading and duality.

Below With numerous free-hand sketches, Claes Cho Heske Ekornås defined the museum's setting in the hilly landscape.



BOOKS

REVIEWS
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CLAUS EN KAAAN ARCHITECTEN

The Royal Netherlands Embassy in Mozambique

NAi Publishers 2005
ISBN 90-5662-420-2

This book about the new Netherlands Embassy in Mozambique's capital Maputo is one of the few publications on architecture in which both elements coincide: a team of architects which has mastered the art of using daylight and a photographer with the skill to produce a fitting pictorial record of this artistic achievement. Christian Richters' large-format photos present the architecture of the Embassy in all its changing moods of light: the glass façade giving onto the street is set back behind the portico to entice dazzle-free southerly light (we are in the Southern hemisphere, after all) deep into the office rooms, the northerly façade with its multitude of vertical light slits create a stark but playful contrast in the entrance hall, and the rooflights are distributed around the building to supply even the ancillary rooms with a generous helping of natural light.

Felix Claus and Kees Kaan are

masters in the art of lending grandeur even to buildings of modest dimensions. But this volume, surprisingly handy despite its 190 pages, does more than document top-class architecture. Alongside Christian Richters' architectural pictures, photographs by Maarten Laupmann and Vincent Panhuyzen provide a haunting record of life on the streets of what is still a poverty-stricken metropolis with its 1.24 million population: footprints in damp concrete, wall paintings with advertisements for washing agents, street markets, beach scenes, and again and again post-war-modern concrete architecture. Maputo has a scarce but modern architectural heritage, which is presented by the Portuguese architect José Forjaz at the beginning of the book. He traces the history of a rapid rise, an equally fast decline and a rebirth: in 1887 Maputo became a city and in 1898 the capital of the Portuguese colony of Mozambique, which gained its independence in 1975. This was when the decay of architecture started: ten years later only six architects worked in the whole country. A revival began after the collapse of socialism, when the first architectural faculties were founded. Presently Mozambique is culturally (and architecturally) strongly dependent on South Africa.

Not earlier than on page 85 the book approaches the embassy itself. In a plain but knowledgeable manner Hans Ibelings explains the architecture of the embassy and its manifold relations to the surroundings, a decaying villa district. Whilst Ibelings often ascribes a "clichéed exoticism, an overly dutiful adjustment or, controversially, a lack of empathy to buildings in foreign countries (from the perspective of the architect), he succinctly finds the opposite for the embassy: "It looks as if it has

always been there." The building's relative modesty (despite its exquisite details) is also a reaction to the still precarious social situation in the country: a palace, even a water basin in the garden initially suggested by Claus en Kaan (which could have been regarded as a waste of the valuable resource drinking water) was out of the question.

The architects themselves describe the learning process, which is inherent to building in a foreign context, in the subsequent essay. They experienced the planning and construction of the embassy as a six-year adventure, which started with the decision by the Dutch Ministry of Foreign Affairs to build five new embassies in Africa, included more than 25 visits to Maputo and finally ended with the official opening in May 2005. The different building cultures in The Netherlands and Mozambique became apparent in building tolerances sometimes measured in centimetres and the surface finishing made by hand.

Rob Gaunt of the South-African partner practice EQF responsible for the realisation, and Jan Willem Smit, project manager of the Ministry of Foreign Affairs, picked up the narrative thread in their contributions. Smit writes about the first encounter of clients, architects and building site as well as the approval procedure, ("a sort of shop that sold building permits as well as goods"). The reader learns astonishing and sometimes amusing details of the daily building routine in a developing country; for example the putative timber supplier who prided himself on being able to supply enormous amounts of tropical wood and, when asked to show the customer his warehouse, pointed towards the jungle behind his hut.

Anecdotes like these characterise the book's narrative style, which is

pleasantly human despite the building's official function. One or the other building detail remains without explanation, but that only makes the environment of this architecture stand out even clearer. The publishers have even included a ten-page architectural city guide of Maputo at the end of the book.

PETER EISENMAN

Barefoot on white-hot walls

Peter Noever (editor)
Hatje Cantz 2004
ISBN 3-7757-1561-4

He is a "master of hesitation, a virtuoso in indecision and a magician who keeps things in suspense", writes the director of the Viennese Museum for Applied Arts, Peter Noever, on Peter Eisenman at the beginning of the book "Barefoot on white-hot walls". The American, to whom the MAK, early in 2005, dedicated an exhibition and the catalogue reviewed here, is in the centre of attention at a time when other masterminds of architecture increasingly turn towards building and away from the orisation. But not Eisenman: during the 2004 Architecture Biennale in Venice he was awarded the Golden Lion for his life's work, and probably, that can be assumed, rather for his theory than his realised work. Possibly the last real deconstructivist "removes space from its usual fictionalisation and purpose in order to rethink it without being able to reinvent it", writes Noever in the introduction to the catalogue. Or in short: he places opinion above form.

For the Viennese exhibition Eisenman realised a field from 30 white cubes inside the museum's exhibition

hall, with each of them containing a "diagram" (in Eisenman's terminology a kind of spatial conceptual sketch) of one of his buildings. His buildings also form the focus of the catalogue, which with its layout perfectly reflects Eisenman's architecture: black-and-white, abstract, diagrammatic and additionally (with a format of 24 x 32 centimetres) extremely bulky. The presented mixture includes theoretical papers by Eisenman, description of realised and imaginary projects as well as appraisals by critics. The book is primarily addressed to an insider circle of Eisenman-experts and friends of profound theory. It is normal that more questions are raised than answered. Peter Noever shall be recited one last time in this respect: "Whoever proffers Eisenman cheap applause, naive approval or even an invitation to build in this city has missed the point and severely misunderstood the project."

NEUE SAKRALE ARCHITEKTUR

Phyllis Richardson
Deutsche Verlags-Anstalt 2004
ISBN 3-421-03494-X
English:
New Spiritual Architecture
Abbeville Press 2004
ISBN 0789208350

Daylight has always had a special role to play in spiritual architecture: largely divorced from functional necessity, the hands of the architect turn light into a means of lending significance and effect to room design. An unforgettable example is the "Church of Light" in Osaka, Japan, in whose altar wall architect Tadao Ando inscribed two light slits which join to

create a cross. "New Spiritual Architecture" not only documents the versatile use of light with large-format photos, it also records the changing paradigms of spiritual culture. "Religion is currently being redesigned", as expressed by the American Wall-paper* magazine. Especially in western countries traditional confessions are replaced by new religious sects, or they open themselves up towards new liturgies and new forms of buildings. In her book Phyllis Richardson documents the new plurality of beliefs with 41 churches, synagogues, mosques, and temples from all over the world. Her selection is divided into five chapters according to size, location and demand of the houses of God: "New Traditions", "Interventions", "Places of Refuge", "Sublime Icons", and "Modest Splendour". This is comprehensible, but rather meagre: in the endeavour to trace latest tendencies in spiritual architecture, the author has limited herself almost completely to architectural phenomena and seldom refers to religious contents. Depictions of historical models, which every design for a religious building has to examine, are restricted to individual cases. The historical models listed by the author in the introduction only go as far back as Le Corbusier's chapel "Notre-Dame-du-Haut" in Ronchamp (1955). As a pure collection of projects "New Spiritual Architecture" is quite acceptable: the book illustrates excellent architecture and stimulates to reflect on the theme "spirituality". A second survey with a comparable worldwide and inter-confessional horizon is presently not available.

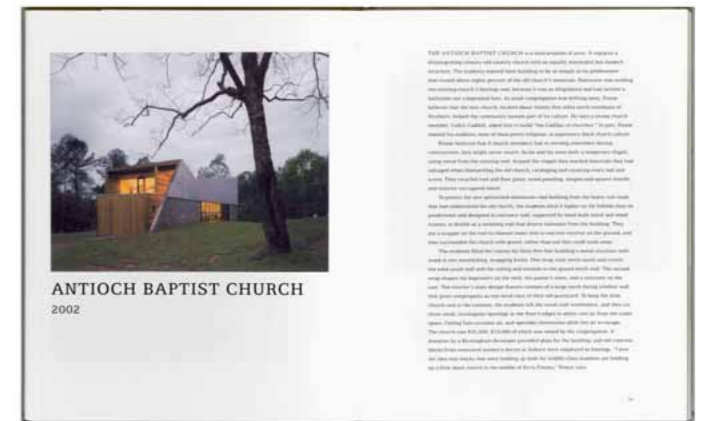
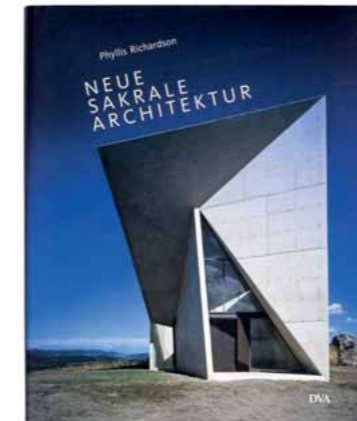
PROCEED AND BE BOLD

The Rural Studio after Samuel Mockbee

Andrea Oppenheimer Dean, with photographs by Timothy Hursley
Princeton Architectural Press
2005
ISBN 1-56898-500-2

In 1992 Samuel Mockbee founded an institution in remote South Alabama, which became renowned: critics have already compared the "Rural Studio" with Frank Lloyd Wright's Taliesin West. But Mockbee's institution is different, more social: the students of the Rural Studio do not only plan residential and community buildings for the poor, primarily coloured residents of the Hale County, they also construct these houses themselves and raise funds. Over the last 13 years they have repeatedly proved that it is possible to construct functional and aesthetically appealing residential buildings with 35,000 or 30,000, and sometimes only 5,000 dollars. "Proceed and be bold" documents the Studio's last four years since the death of its founder "Sambo" Mockbee. The only weak point of the book is the rather abrupt introduction: readers not aware of the Rural Studio and skipping the front blurb have difficulties keeping up with the narrative speed. The book somehow clings to the openness of the people in America's South: without further ado Andrea Oppenheimer Dean comes to the present, the background story is initially of little interest. Repeatedly the author lets the persons concerned speak: Mockbee's successor Andrew Freear, the tutors, the students and their clients, to whom they often develop intense personal relationships.

The photographs by Timothy Hursley document the students' (sometimes excessive) wealth of ideas, which is expressed in house walls from carpet tiles or tyres filled with concrete. It is hard to imagine a stronger contrast between the European architectural education, which is sometimes out of touch with practice, and the symbiotic co-operation of teachers, students and the local society, which has taken shape in the work of the Rural Studio. It also becomes apparent, how far building in times of architectural pride and joy has departed from its original objectives: to give shelter to people. However, so the author concludes, in the meantime a change is noticeable in the planning culture of the Rural Studio: the buildings are adjusted to the mainstream, are less improvised and principally larger. The latest example is a centre for the aged for more than one hundred inhabitants, which was completed by the Rural Studio in Akron. How will the development continue? Stephen Freear doesn't know the answer. Not even Samuel Mockbee has ever had a "master plan" for the Rural Studio, he says. It is almost to be hoped that despite this book and several exhibitions lately presenting the work of the Rural Studio, the public interest keeps within bounds so that this unique institution can peacefully continue to pursue its work.



BOOKS

RECOMMENDATIONS

European architects recommend their favourite books in D&A.



1



2



3

- 1 Paul de Ruiter
- 2 RCR Arquitectes
- 3 Peter Ippolito

2 RCR ARQUITECTES RECOMMENDS

El Croquis 123: Toyo Ito 2001/2005

El Croquis Publishers 2005

Once again, the work of Japanese architect Toyo Ito is the main subject of an edition of Spanish magazine *El Croquis*. The focus this time is on his projects over the last five years, including the Sendai Mediatheque, the Matsumoto Performing Arts Center and the two pavilions that Ito constructed in Bruges and in the grounds of the London Serpentine Gallery in London in 2002.

Event Cities 3 Concept vs. Context vs. Content

Bernard Tschumi
The MIT Press 2005
ISBN 0262701103

Bernard Tschumi, the Swiss-born architect and author who has adopted New York as his home, has published three books over the last five years, combining the presentation of his projects with discussions of architectural theory. 'Event Cities 3' focuses on the triangulation of architectural concept, context and content, with the author concluding that a balance between the three is not always necessary. Projects documented include the new Acropolis Museum in Athens (under construction), further museum projects in Sao Paulo, New York and Antwerp, a campus athletic centre in Cincinnati and a speculative urban project in Beijing.

L'architecture moderne depuis 1900

William J.R. Curtis
Phaidon Publishers 2004
ISBN 0714894184

English:
Modern Architecture since 1900
Phaidon Publishers 1996

One of the most significant works on 20th century architecture is now available in French. Richly packed with 650 illustrations, the book not only looks at the modern protagonists, such as Wright, Mies and Le Corbusier, but also traces their roots right back to the 18th century. Special emphasis is placed on 'sub-locations' of modern architecture, such as India, Brazil or Mexico, with the history of ideas and ideals as expressed through architecture also forming a crucial part of this classic.

1 PAUL DE RUITER RECOMMENDS

Olafur Eliasson

Madeleine Grynsztejn et al.
Phaidon Press 2002
ISBN 071484036X

The sculptor, installation artist and photographer Olafur Eliasson is one of the stars of the contemporary art scene. With his penchant for using industrial materials such as steel and plate glass, his works are perceptual representations of natural phenomena: the world will long remember his installation 'Weather Project' at the Tate Gallery in London. This book begins and ends in Eliasson's own words: in a 30-page interview, he discusses the characteristic traits of his art with Daniel Birnbaum while in the open letter 'Dear Everybody', he addresses the visitors moving through his installation 'The mediated motion', displayed in 2001 at the Kunsthhaus Bregenz. This volume is rounded off with an in-depth analysis of his works by Madeleine Grynsztejn and an extract from the writings of the philosopher Henri Bergson.

Superstudio Life Without Objects

Peter Lang, William Menking
Skira 2003
ISBN 88-8491-569-4

This 'first great monograph' (according to the publishers) on the Italian group of architects in Florence in 1966 appeared at the exhibition of the same name in 2003, with the two authors as curators. It combines more than 200 projects and images produced by Superstudio in the 60s and 70s, as well as design objects and the polemic statements that Superstudio published in the form of storyboards. The unforgettable landscape visions of the group, with grid groundplanes stretching to infinity, are naturally a significant part of this book.

Metamorph

K.W. Forster (Editor)
Rizzoli International Publications
2004
ISBN 0847826651 (3 Volumes)

The central theme of last year's Architecture Biennale in Venice was 'Metamorph' – a concept used by Swiss architectural historian and curator of the Biennale, Kurt W. Forster, to examine the transformation of architectural forms in contemporary architecture. The three-volume catalogue, published by Rizzoli in New York, documents not only the main show 'Metamorph' with its 200 buildings and projects, but also the various country pavilions and numerous other special shows such as 'Morphing Lights, Floating Shadows' (on architectural photography) or 'Città d'Acqua' (Cities on Water). The book offers a compact, comprehensive overview of current world architecture.

Content

Rem Koolhaas
Taschen Verlag 2004
ISBN 3-8228-30790-4

It's cheap (only 9.99 in Europe), looks like a store catalogue and is stuffed full of facts and contentious visions of the future: with his follow-up to 'S.M.L.XL' and 'Shopping', Rem Koolhaas has turned his attention to a wider audience than ever before, going way beyond mere architecture. Koolhaas and his co-authors take the reader on an encyclopaedic world journey from West to East. The future of the Ruhrgebiet (Ruhr Basin) in Germany, a possible future European flag and the evolution of terror – all are laid out in random style like a collage. 'Content' can scarcely be considered a book in the classical sense; it is more similar to a magazine or reference book.

3 PETER IPPOLITO RECOMMENDS

Xtreme Interiors

Courtenay Smith, Annette Ferrara
Prestel Verlag 2003
ISBN 3-7913-2970-7

In 2002, the Prestel Verlag published 'Xtreme Houses' – an anthology of exciting architectural experimentation, displaying the most radical and unusual domestic architecture of the present day and achieving high sales volumes due to its diversion away from the architectural mainstream. This is the follow-up - 'Xtreme Interiors' – showcasing 40 interior design projects that follow similarly extraordinary principles. It's not just a question of architects' drafts; the scope of the book ranges from DIY to installation art, with projects including a house in the slums of South Africa, a NASA space capsule, the first Big Brother house in Hilversum in the Netherlands and the villa belonging to an American security expert, which almost resembles a high-security prison.

Das Denken des Leibes und der architektonische Raum (Reflections on the Body and Architectural Space)

Wolfgang Meisenheimer
Verlag der Buchhandlung Walter König 2004
ISBN 3-88375-841-8

Wolfgang Meisenheimer has followed the changing relation between human perception and the urban environment for 30 years. In this new book, he presents diverse anthropological expressions of architecture and their ethical dimensions. This attractive little book is not an easy read, but it provides the reader with great food for thought upon repeated reading.

The Wirtz Gardens

Jacques Wirtz, Patrick Taylor,
Marco Antonio Valdivia
Exhibitions International 2004
ISBN 90-7670-436-8

In 1950, Jacques Wirtz founded a landscape architecture firm in Schoten, Belgium. Wirtz International has since developed into a thriving company, planning gardens in Europe, Japan and the USA. The emphasis is placed on harmonisation with the surrounding architecture, be it a university campus, business park or the grounds of a museum. This luxurious two-volume set presents 57 private and public gardens, most of them never before seen in publication. An essay by Patrick Taylor introduces the reader to the world of the landscape architect.

The Terragni Atlas

Daniel Libeskind, Attilio Terragni &
Paolo Rosselli
Skira 2005
ISBN 8884917328

Giuseppe Terragni (1904-1943) was a pioneer in the Italian Rationalist movement, producing some of Italy's most significant 20th century buildings. Celebrating the centenary of his birth, Daniel Libeskind, Paolo Rosselli and Attilio Terragni present the architecture of Terragni through the juxtaposition of archival images and contemporary photographs. The book takes the reader on a journey in time and space through Terragni's achievements. Daniel Libeskind's essay highlights the greatest of Terragni's works, such as the 'Casa del Fascio' and the 'Novocomum', and illustrates how current Terragni remains in the world of contemporary architectural debate.

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