

# outline

MOVEMENTS IN ARCHITECTURE

01 | 2013

## Resounding architecture

by LPR Architects

Interview with Daniel Libeskind

Museum Folkwang

It's all over – looking back at  
the Spanish museum boom

**ABB**



Specialists in designing museums and sensitively handling existing historical structures: Enrique Sobejano and Fuensanta Nieto

# The topic: the museum in the 21<sup>st</sup> century

*pulse* in conversation with Nieto Sobejano Arquitectos, Madrid

## **How did your office come to specialize in museum architecture?**

Museums establish always a link between the past and the future. A museum building is able to carry out the transformation of a public space as well as to establish a dialogue with the past, and this is probably the main reason that interests us.

## **Museum construction had experienced a real boom over the past ten years, especially in Spain, though this was of course brought to an abrupt end with the onset of the Eurozone crisis. What was your experience of this?**

In the past twenty years, Spain has developed an ambitious program of new museums and cultural buildings that the country needed and didn't have before. It must be borne in mind that the Spanish democratic and economic development took place decades later than in other European countries, which had the

chance of building many of their cultural and social institutions years before. Every time there is an intense construction activity, as happened recently in Spain, one can find positive and negative examples.

## **In retrospect, what role did the so called "Bilbao effect" play in these developments? And why has it up to now been so difficult to transfer this effect to other museum projects and cities?**

The "Bilbao effect" cannot be reduced only to a failure, as many want to see it now. It also had some positive effects on a political, journalistic as well as popular level. After Gehry's building, architecture became a subject of conversation among the public and in the media. The Guggenheim Museum with its immediate international success generated great expectations, but also favored a conception of architecture as spectacle which resulted in a set of formalistic and iconic followers.

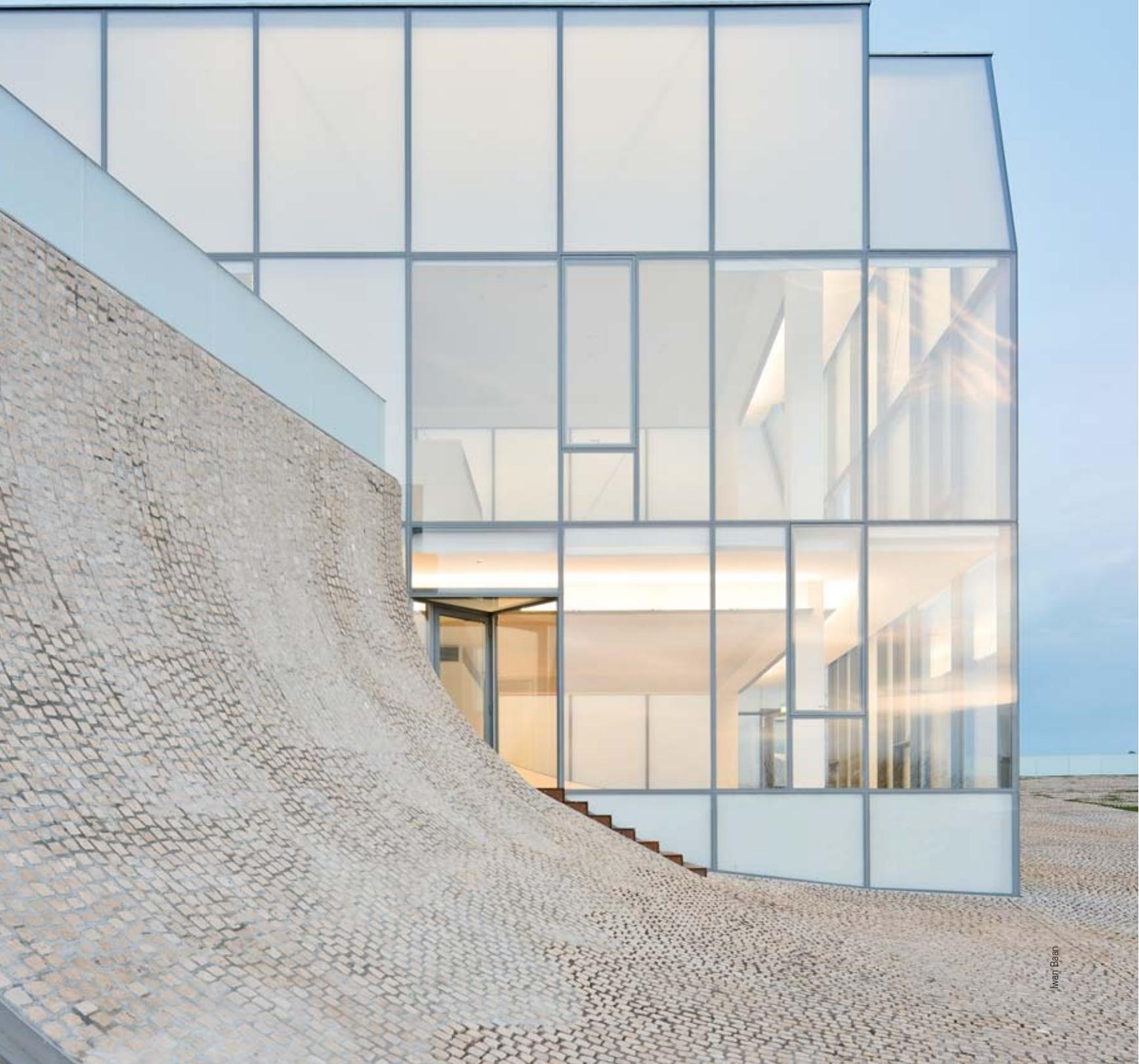
## **Are museums the modern cathedrals of our time? Holy sites that draw throngs of enlightened modern day pilgrims?**

There have been moments in the past when a particular program or architectural typology seemed to represent the Zeitgeist better than any other. That was probably the case of the medieval Gothic cathedral, the Renaissance palazzo or the social housing projects in the origins of the Modern Movement. The museum acquired perhaps that role in the past 20 years, though I think however that we are reaching a level of saturation, where the same artists are exhibited in similar spaces designed by the same architects.

Nowadays museums have become multi-purpose spaces, hosting events, festivals, commercial presentations, restaurants and shops. And all this is questioning the ever difficult relationship that exists between art and architecture.

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Prestige project on the Atlantic coast: Designed by Steven Holl, the "Cit  de l'Oc an et du Surf Museum" in Biarritz opened in mid-2011. Behind the concave facade the Museum acknowledges, among other things, windsurfing and surfing (left).

# Where art is at home

European museum architecture has experienced an unparalleled boom, which kicked off in a Basque port: The expression "Bilbao effect" was coined in relation to Frank Gehry's eccentric Guggenheim Museum, in whose wake not only spectacular but also oversized projects were realized. Nowhere else can this development be so vividly traced than in Spain, where following the real-estate boom museum architecture was successfully given a new vocabulary.

By **Klaus Englert**

The modern museum was born of the bourgeois spirit towards the end of the 18th century, when the royal seats were gradually dissolved and churches, palaces and castles lost their role as the sole places of artistic production.

However, this dissolution process was accompanied by the creation of new institutions: public buildings arose, which became the center of urban life and assumed an important democratic role for the strengthened bourgeoisie. The transition of the Prado from a royal to a public museum serves as an example of this. The project of Juan de Villanueva's pinacotheca goes back to the decision by Charles III to have the legendary Promenade Sal n del Prado built during his reign and to bring the most famous Italian sculptors to Madrid for the design of the majestic fountains. In 1786 he commissioned Juan de Villanueva, then the leading Spanish architect, to build a natural history museum, the "Real Gabinete de Historia Natural". However, construction work dragged on for decades because the arrival of Napoleon's troops, the occupation and destruction of the adjoining Retiro Palace, damage done to the building and the War of Independence made it impossible to continue building work. It was not until 1819, after Fer-

dinand VII took power, that Villanueva's building could finally be opened under the new name "Museo Real de Pinturas". The next turning point in the history of the Prado came in 1868, when Queen Isabella II was obliged to abdicate a few years before a republic was proclaimed: That year the "royal" was renamed the "national museum", and from then onwards was called "Museo Nacional del Prado".

## **The museum - a secular cathedral**

The first public museums came about in Germany at a time when the "modern monumentality of functional buildings" (Karl Scheffler) had been discovered for railway stations, factories and department stores. Fritz H ger's "Chilehaus" in Hamburg, built in 1924, also belongs to this "spectacular architecture". At the time many people thought the office building would join famous ranks of monumental buildings, which began with the Egyptian pyramids, the Lighthouse of Alexandria, the Mausoleum of Halicarnassus and extended to the Eiffel Tower in Paris. In other words, the history of the museum is closely connected with the history of huge buildings, secular cathedrals.



Roland Halbe

### **Bilbao – an unparalleled success story**

One of the most amazing phenomena of cultural development lies in the museum boom, which began in 1997 with the highly striking Museo Guggenheim by Frank O. Gehry in the port of Bilbao. However, since the start of the financial crisis five years ago, on a global scale the museum can no longer be separated from the explosive development of cities in booming Southeast Asian nations. In China, the land of limitless urban-planning and architectural projects, Gerkan Marg und Partner have built three cultural centers since the start of the year: one in Changchun, another in Changzhou and finally the three-section Tianjin Grand Theater with seating for 3,200. Meanwhile, Rotterdam-based studio MVRDV, which cannot realize any cultural buildings in the Netherlands at present owing to the constrained public finances, has built the Comic and Animation Museum in Huangzhou with 30,000 square meters of exhibition space. The Bilbao effect, which no longer plays a serious role in a Spain weakened by the crisis, has become a considerable economic factor in the Far Eastern "emerging" countries. Before the much invoked "effect" came about in Bilbao, located in the Basque Country, the city's politicians planned to have the new Guggenheim Museum located in the heart of the port quarter

Abandoibarra, in order to push forward the quarter's overall transformation. Naturally, nobody in Bilbao could have guessed the Guggenheim would become such a success story and in 2008, after the start of the financial crisis, would draw over a million visitors. However, it should not be overlooked that this achievement, which essentially no other city was able to successfully copy, also had its drawbacks. After all, no traces remain today of the original port development. Indeed, the onetime industrial city is now one of Spain's most expensive cities, which can be attributed to the fact that in the last 15 years the Abandoibarra quarter has developed into an international tourist hotspot. Gehry's expressive titanic sculpture has triggered an incomparable urban-planning and economic boom. First Santiago Calatrava built a bridge across the Nervión, then Norman Foster a modern metro line and Ricardo Legorreta an eye-catching hotel sculpture. Alongside many other renowned projects by Arata Isozaki, Carlos Ferrater and César Pelli and master plans by Zaha Hadid and Richard Rogers for the Zorrozaure Pier and the Garelano quarter, in the immediate proximity of the Guggenheim doyen Alvaro Siza designed a new building for the University of the Basque Country and Rafael Moneo the Deusto University Library.

Museum architecture rewritten: In projects such as the alterations to Museum Moritzburg in Halle the Spanish studio Nieto Sobejano succeeds admirably in forging a link between old and new (top). For the extension to the Städel Museum in Frankfurt/Main, Schneider+Schumacher successfully went underground. Large skylights provide natural daylight in the underground rooms (right).



### Oversized cultural projects

Since the Bilbao boom it has not only been numerous Spanish politicians who have relied on the visual appeal of their cultural buildings and called for their own "Guggenheim". Today, Manuel Borja-Villel, Director of Madrid's Museo Nacional Centro de Arte Reina Sofía, makes the following criticism: "Large, well-known centers are only built to create an attractive label. We have to live with these problems." In other words, a glittering shell providing excellent publicity is not a guarantee for either outstanding exhibitions or a convincing collection. Because many politicians and museum directors were loathe to accept this, since the late 1990s Spain has seen immense "construction sins" supported by lavish EU subsidies and massive real-estate speculation. The cultural area in particular was susceptible to such aberrations.

Numerous examples can be seen in the behavior of Francisco Camps, former premier of the Valencia region. In order to enhance the magnificence and brilliance of the Mediterranean metropolis he let himself be reeled in by Santiago Calatrava. During a dinner the star architect drew Camps an outline of a huge cultural project on a napkin, for which the premier was willing to pay any price. The cost of the resulting "City of Arts and Sciences" has meanwhile skyrocketed from €300 million to €1.3 billion.

The museum boom, which began with Gehry's Guggenheim Museum, was primarily restricted to museums for contemporary art, which fairly often claim they have created "global reference points". Given the sheer amount of competition this claim can only be made when the shiny shells are designed by international stars. This was recently the case in Oslo, where Renzo Piano designed, on the Oslo Fjord, Norway's first museum for contemporary art - the private Astrup Fearnley Museum, which boasts an impressive collection. What succeeded in the Norwegian capital owing to the choice of natural construction materials, the proximity to water and the incorporation of a sculpture garden, also succeeded in Hamarøy, in northern Norway, where American architect Steven Holl built the museum tower of the Knut Hamsun Center in the middle of a unique landscape. The literature museum, whose original design won the International Architecture Award in 2010, has appreciably increased the number of tourists visiting the structurally weak region. In Oslo and Hamarøy the image enhancement could be guaranteed, because alongside the crowd-pulling names and successful architecture, a convincing exhibition program is also presented.

It was a different situation when, in 2004, the Madrid-based studio Mansilla + Tuñón designed the MUSAC in León, Spain's



Klaus Englert



Iwan Baan

A milestone in museum architecture and an unprecedented example of the successful upgrading of a region: Frank Gehry's Guggenheim Museum (top). Designed by Zaha Hadid, the opera house in the Chinese city of Guangzhou affords dizzying views. Structures and spaces meander like the course of a river (center). David Chipperfield's extension to the art gallery in Wakefield is located between untouched nature and a typically British industrial landscape. The ensemble comprising ten different-sized, trapezoid cubes was nominated for the 2012 Sterling Prize (bottom).



Iwan Baan

largest container for contemporary art. The MUSAC, which in 2007 won the Mies van der Rohe Award, and the bold exhibition concept of collecting only very recent art were praised as long as the lavish funding was forthcoming from the city and regional coffers. But in subsequent years the museum, which covers 18,000 square meters, slid into a crisis. Owing to drastic funding cuts it was no longer possible to sensibly fill so much space. Similarly, in Herford in the German region of Westphalia, where in 2005 Frank O. Gehry built the MARTa in the style of a "small Guggenheim", people wanted to profit from the international Bilbao effect. At the time, curator Jan Hoet envisioned the development of "Germany's largest small town", because they had succeeded in developing "visions". But Hoet's visions were dashed by the harsh reality of the small Westphalian town, prompting him to resign, disillusioned, from his post just three years later. It quickly emerged that Herford could never become the little brother of Bilbao, because the MARTa lacks the charisma of the Guggenheim Museum. The architecture celebrates itself, leaving little for the art for which it was built. Borja-Villel's criticism of the excluding market value of the museum label also applies to the MARTa, because the spectacular shell leaves exhibition rooms inside that are difficult to show art in.

Fortunately, Spanish architects began to chart a different course a few years ago. Take as an example the studio Nieto Sobejano in Madrid, which in 2008 completed extending the Moritzburg in Halle, and in doing so achieved a balance between old and new that demonstrates great sensitivity for the material. The same is true of Francisco Mangado, who in 2010, in the midst of the financial crisis, built in the Basque capital Vitoria an "anti-Guggenheim" - the "Archaeological Museum of Álava", between existing residential buildings and a grand 16th-century palace. Mangado took on the task of modernizing the grand palacio (which houses a museum for playing cards) and combining it with the new building of the Archaeological Museum to create a homogenous ensemble. Indeed, he did an impressive job of complementing the Renaissance building with an independent additional structure, which clearly emphasizes its formal and material modernity and blends harmoniously into the old town.

The golden age of spectacular cultural buildings is finally over - at least in Spain. Meanwhile, Nieto Sobejano and Francisco Mangado have successfully rewritten the vocabulary of museum architecture after the real-estate boom.

**Klaus Englert** was academic adviser to the Zollverein development company in Essen. He has worked for several years as a freelance culture correspondent and architecture critic for the *Süddeutsche Zeitung*, the *Neue Züricher Zeitung* and the *Frankfurter Allgemeine Zeitung*. He is editor of *New Museums in Spain*, published in 2010 by Edition Axel Menges, Stuttgart / London.

Designed by Shigeru Ban, the Centre Pompidou in Metz, which opened in 2010, has already acquired several nicknames: The museum, which it is hoped will attract tourists to the northeast of France, has already been called a skate, oyster, and mussel (right).



# Gallery with a view

As part of the restructuring of the museums in Kassel, the Neue Galerie also underwent extensive refurbishment. The 19th-century museum building on "Schöne Aussicht" can look back on an eventful history, during which it saw numerous changes. Staab Architekten in Berlin were responsible for the current, delicate spatial layout and architecture, as well as the technical refitting.

By **Cornelia Krause** Photos **Werner Huthmacher**

Having been commissioned, the Berlin architects faced the classic assignment of building in an existing context following the closure of the gallery in 2006. They encountered an edifice whose original character was only preserved in the outside architecture, but which on the inside had been changed considerably as a result of numerous alterations. A brief history is useful for appreciating the new spatial concept. Built according to plans drawn up by the official building officer Heinrich von Dehn-Rotfelder, the structure initially housed the collection of Dutch Old Masters, which alongside that in Dresden and Munich was one of the most valuable in all of Germany. The design was based on Leo von Klenze's Pinakothek in Munich (1826-1836) with its skylight rooms and sidelight galleries. The prominent location overlooking "Karlsaue" park, however, only allowed a short building just under 90 meters in length, the ends of which protrude slightly from the facade. Like many other buildings, the famous art museum did not escape the devastating destructive force of the incendiary bombs dropped over Kassel in the fall of 1943, as a result of which the entire interior burned down. By contrast, the loggia on the upper storey and the iron roof structure were hardly affected.

Following a second bombing raid, the east pavilion with the main staircase collapsed.

## The post-1945 concept

Whilst the debate about whether to preserve or demolish the building and about the restructuring of the collections continued for years, the artistic directors of dokumenta III (1964), iV (1968) and V (1972) made use of the ruin left behind by the War, or rather those rooms that had been renovated on a makeshift basis for their purpose. This state of affairs prompted deliberation as to whether the building should be devoted to Modern art forever. Eventually, in 1976, "Alte Galerie" reopened as "Neue Galerie". The reconstruction and refurbishment work included several changes to the original structure. One significant alteration involved moving the main staircase from the east pavilion to the middle building. Based on its history and its collection, in the 1980s and 1990s the museum, in addition to serving as a temporary venue for the documenta, emerged as an exhibition space for painting, which primarily displayed 19<sup>th</sup> and 20<sup>th</sup> century art but also staged several temporary exhibitions.

The new foyer in the north-eastern section provides easy access to the individual exhibition levels (on the right).





### New layout and reopening

Anyone building in an existing context is always faced with the question of which era to commit to. However, Staab Architekten did not commit themselves to any; their sole aim was to emphasize the building's spatial qualities and unique features, and in the process create contemporary room sequences for the envisaged exhibition themes. Beginning with the 1970s wall paneling and flooring, which was removed and replaced by lime cement or polished concrete flooring throughout.

The museum was previously not accessible but is now barrier-free and can be reached via a combined ramp and stairs in the northeastern end section. Moving the main entrance here enabled a spacious foyer which, via two staircases opposite each other, links all the exhibition levels. Removing the existing staircase in the southwestern end section made an additional skylight room possible. Just as before the alterations, the rooms with works by

Joseph Beuys and Ulrike Grossarth remain in the main sequence of rooms on the ground floor. Sidelight galleries and the lobby facing "Karlsaue" accompany this enfilade. In the loggia above with its large windows the art is extremely restrained. The sublimity of the room, in conjunction with the sweeping view of the park landscape, lends it a contemplative feel.

Despite the contemporary interventions, the predominant color white, in conjunction with two gray tones, exudes dignity and a respect of the past. Staab Architekten succeeded, through a blend of dismantling and addition, in transforming the many structural changes into a new whole, without the function of the building as an art gallery being restricted in any way.

As with the Albertinum in Dresden, in Kassel the company was once again able to demonstrate its experience in dealing with historical buildings.

The new main entrance with barrier-free access (top). The loggia on the upper storey is a quiet, contemplative place (right).



# Temple of images

With the subtly restrained, but enormously effective extension to Museum Folkwang in Essen, David Chipperfield once again underpinned his reputation as a master of sensitive museum architecture. There is sufficient space in the generously proportioned ensemble, which is made up of six cubes, for the famous art collection to be displayed in all its magnificence.

By **Daniel Najock** Photos **Christian Richters**

The new building at Museum Folkwang in Essen opened some three years ago, just in time for the RUHR.2010 cultural festival, with the exhibition "Das schönste Museum der Welt" (The world's most beautiful museum). This meant that the structure was not only built in time, but also within budget. British architect David Chipperfield, who just a few months previously, after the reopening of Neues Museum in Berlin, had been the talk of the town on account of his artistic restoration and refurbishment, was responsible for the design and the smooth way the construction work proceeded. As opposed to other attention-seeking museum buildings in recent times, Chipperfield's design for Museum Folkwang is startling for its very restrained, straightforward architecture, which follows totally in the tradition of Modernism, and is in deference to the architecture of the old building and the long, eventful history of its world-famous collection.

In 1902 the art collector Karl Ernst Osthaus founded Museum Folkwang, the first museum devoted to Classical Modernist art, in his home town of Hagen. It is named after the Old Norse term for a "people's hall" (Volkshalle),









In the new exhibition rooms there is plenty of space for artworks to come into their own (left). The way to the foyer takes visitors through the interior courtyard, which serves the café as an outdoor terrace and in summer is used for open-air events (right).

which in the Poetic Edda represents one of the palaces in Asgard, the home of the gods. Following his death, Osthaus' heirs sold the collection to the City of Essen. The purchase was financed by a consortium of businesses in Essen, and this formed the basis of the Folkwang-Museumsverein. During the Third Reich the collection was disbanded on account of it being "degenerate art"; many of the works ended up abroad or, like the museum building designed by Edmund Körner, were destroyed in air raids in World War II.

#### **The 1981 extension was not very popular**

After the War it was several years before the Museum was rebuilt and works formerly in the collection could be repurchased. Eventually, in 1960, the building designed by the architects Kreuzberger, Hösterey and Loy opened

its doors. The design was based on the Mies van der Rohe school: The structure is straightforward, simple, and functional, with the transparent façade affording diverse views of the building's interior, and from Kahrstrasse even of a few of the artworks on display. This was wholly in line with Karl Ernst Osthaus' philosophy of bringing art to the people, and not people to art. Even today the listed building is regarded as one of the most successful post-War German edifices. Soon however, the amount of available space proved insufficient. As of 1981 an extension offered additional room, in which the Ruhrlandmuseum was also housed. The population of Essen never took to it though, and over the course of time too many urban planning and architectural inadequacies came to the fore. When this building also proved to be bursting at the seams and furthermore in need of refurbishment, the



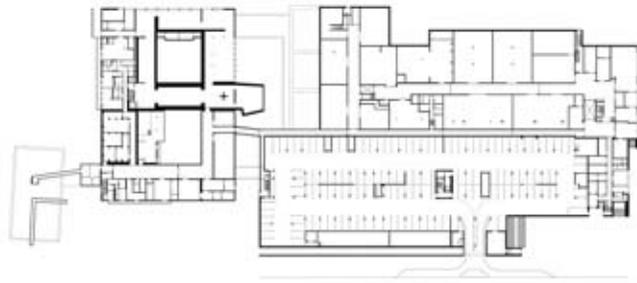
decision was made in 2006 to demolish it and build an extension. The Alfred Krupp von Bohlen und Halbach Foundation assumed the construction costs of EUR 55 million, at which juncture the City of Essen staged an international competition with a prior application procedure. The London-based architect David Chipperfield won over the jury with a design which enabled the museum to open onto downtown Essen, something that had long since been sorely missed, while at the same time integrating the old building in the ensemble, and indeed being clearly influenced by it.

#### **Views through fully glazed interior courtyards**

The composed, well-proportioned design complements the old building, retains its integrity and continues the architectural approach of an ensemble featuring structures, gardens, courtyards, lobbies with six further cubes at right-angles to one another, and four interior courtyards. These rest on a pedestal clad with concrete blocks, which balances out the lie of the land. Chipperfield also

based the design of the façade on the old building. Although by way of contrast with the old edifice a large part of the glass façade features opaque, shimmering green glass, here and there in the new building as well, large windows provide interesting views of the interior. There is also transparent glass at both points of transition from the old to the new buildings, and on the courtyard sides of the cubes. One of these courtyards serves as a forecourt for the museum. A spacious set of steps leads up to it. From here visitors reach the museum foyer, the Walther König bookstore, the café or the restaurant "Vincent & Paul" opposite. In the middle of the foyer a ticket desk welcomes visitors to the museum and also serves as an information center. Furthermore a gallery provides views of the upper story, which is reserved for the administrative wing. All the rooms with public access, however, are located on the ground floor. From the foyer the sequence of the exhibition rooms is clearly recognizable. Fully glazed interior courtyards, which afford orthogonal as well as diagonal views, structure it.

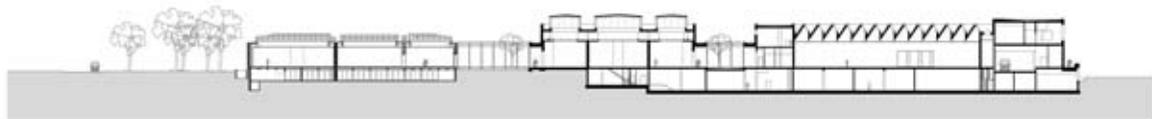
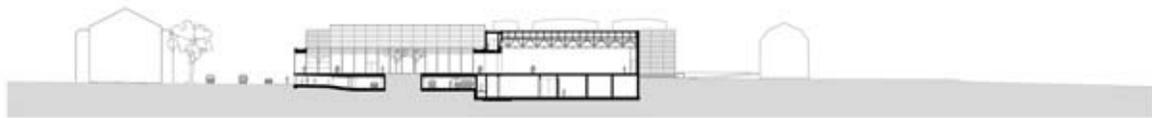
Composed, straightforward architecture: Through its shimmering green ceramic glass façade the new building at Museum Folkwang exudes refined restraint (top). David Chipperfield's design adds to the old building six cubes at right angles to one another and four interior courtyards (right).



Layout ground level



Layout semi-basement



Sections

### Exhibition space doubled

In their plans the architects focused their attention on the effect of natural light. It is of major importance for orientation within the building, and for presenting the art works. Given that their façades are made completely of glass, the interiors surrounding the courtyards are completely bathed in light; depending on its angle and intensity the impression given by the pictures and sculptures on display there changes. Almost 1,400 square meters in size, the column-free hall for temporary exhibitions, on the other hand, is evenly lit by means of a north-facing sawtooth roof.

Though a window allows additional light into the interior, its primary purpose is for looking in and out. By way of contrast the sensitive exhibits in the photo and poster exhibition cannot take natural light, and are exhibited using artificial light in completely sealed rooms. Together with the modernized old building, in which the Classical Modernism exhibition is still on view, the museum now boasts some 7,000 square meters of exhibition space, around twice its previous capacity.

## Project partners

### Developer

Neubau Museum Folkwang Essen GmbH, Essen

### Architects

David Chipperfield Architects, Berlin

### Opening

January 30, 2010

### Integrated products by ABB/Busch-Jaeger

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# The silent architecture resounds

From the outside, Helsinki's new concert house "Musiikkitalo" seems unpretentious. Inside, it houses six concert halls to suit different requirements, a school of music and a library. A Finnish studio, LPR Architects, has produced three interconnected building elements and has made sure that music never has to play second fiddle. The building resonates and is bound to attract visitors, including from abroad.

By **Lasse Ole Hempel**

At the opening, the hymn Finlandia by Jean Sibelius rang out; the waiters started pouring out the free champagne in the intermissions. After all, there was something to celebrate: Helsinki has a new concert house. And what made people's delight even greater was the fact that the discussions about this new building, known in Helsinki as "Musiikkitalo", had dragged on for almost 20 years. It was not until resources were pooled that the plans could be realized. The Helsinki Philharmonic Orchestra, the Finnish Radio Symphony Orchestra and the Sibelius Academy, Finland's only school of music, formed an operator consortium, thus meeting the construction costs of €188 million. Even during the premiere it soon became clear that the new building offered one crucial advantage over Finlandia Hall, designed 40 years earlier by Alvar Aalto. What distinguishes the "Musiikkitalo" is its outstanding acoustics. In this respect LPR Architects' concept really did fit the bill, with the studio, located in Turku, Finland, giving priority to the acoustics. The internationally renowned architect engaged for the project, Yasuhisa Toyota, was also involved in puzzling out the way that the sound should resonate in Hamburg's Elbphilharmonie, which is currently still under construction.

## **The building is crouching down in a hollow**

The large auditorium at Helsinki's Musiikkitalo boasts 1,704 seats and is located in the main building, through which the concert house is also accessed. The five smaller halls where, among other things, electronically amplified music performances, lieder recitals and opera piano rehearsals take place, are distributed over the flat, elongated building which also contains a restaurant and features a large underground area. The greened roof of this section of the edifice combines high and low levels of the park landscape and, rather like a small earthwork, merges into the Parliament Building's forecourt. The second section of the building, located between these, houses one third of the teaching rooms, reserved for the Sibelius Academy, and a library. As the architects report, what they were aiming for is a "quiet kind of architecture". Located in the immediate vicinity are the monumental Parliament Building and the Kiasma Museum of Art, designed by US architect Steven Holl. The new concert hall does not even attempt to outclass its prominent neighbors with extravagance façade designs. Instead, it looks as if it is trying to crouch down in the depression between the busy Manner-

In the large auditorium at the heart of the "Musiikkitalo", the rows of seating circle the stage in the shape of a crater. Strips of glass allow daylight to stream in and make for visual reference points between the auditorium and the foyer (right).





Arno de la Chapelle

heim Street and Töölö Bay. Verdigris copper façades form the transition to the greenery of the nearby park and to the Parliament Building. Generous, seaweed-colored glass fronts face the Kiasma Museum and the Baltic Sea.

### Crystalline acoustics

In the interior, concertgoers are greeted by darkened rooms whose cave-like quality engenders a feeling of security. Here, dark-stained birch panels meet grayish-black walls, ceilings and chairs. The corridors in the basement story feature different shades of gray. The large auditorium at the Musiikkitalo enjoys the privilege of being bathed in daylight. Here, only the dynamically crossed axes of the four ceiling spotlights can distract audiences from the music. The tiered visitor seating encircles the stage in the shape of a crater, for acoustic reasons more than anything else. In the "Frankfurter Allgemeine Zeitung" newspaper, one guest at the premiere,

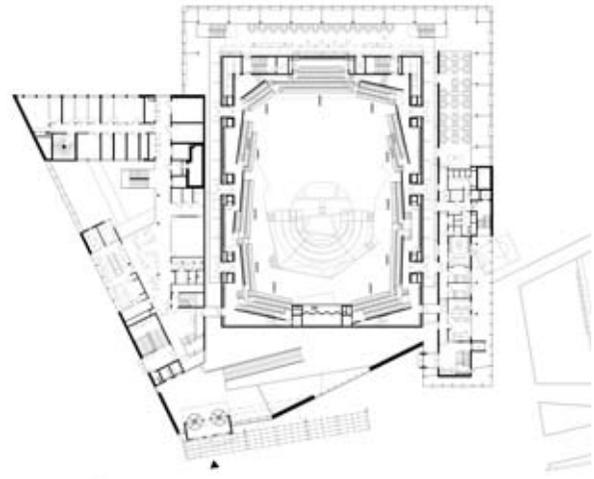
Jan Brachmann, described the acoustics in the large auditorium as "crystalline": "The double reed instruments, such as the oboes and bassoons, are particularly audible. The singers are not drowned out by the orchestra; the texts can be clearly heard, which is really fantastic."

The head conductor Sakari Oramo and the acoustician Yasushi Toyota were equally delighted, hugging each other during the final applause. Marko Kivistö from LPR was also called onto the stage and applauded. Yet it is not only owing to its acoustic qualities that the new concert house has found favor with its audiences, but also owing to its communications concept. For instance, as soon as concertgoers step through the doors to the foyer, soundproofed glass walls offer them a view into the room. Moreover, with the light-flooded foyer, its café and its exhibition space, the architects have created an open, transparent feel with a strong recreational quality to it.

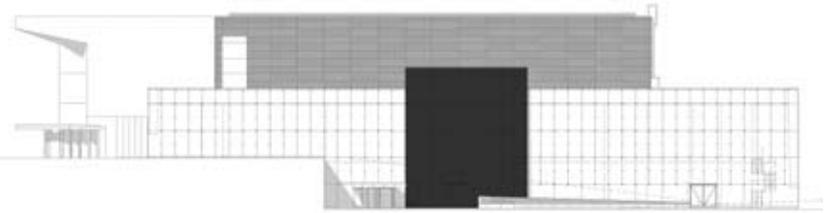
The concert house is divided up into three rectangular buildings: the greened expanse of roof on the lowest of these facilitates a transition to the nearby park (above). The complex includes the classrooms of a music school and a library (right).



Voitto Niemel



Layout level 4



View from the southeast

### Sharing in the boom in classical music

For LPR Architects the new concert house is a major success. The studio, which initially made a name for itself with sensitive renovation and maintenance work, won the two-tier competition back in 2000. Another eight years elapsed before construction work could commence on this prestigious project.

Helsinki is hoping that this new venue for classical music and opera will be able to attract international visitors, as well. The city is also hoping to draw a financially strong clientele from St. Petersburg. The interest in classical music is greater than ever before and relatively large distances do not put off the fans. In future, with the Musiikitalo, Helsinki will be one of the players in the orchestra of the major concert halls in northern Europe.

## Project partners

### Developers

City of Helsinki, Sibelius Academy, Finnish Radio

### Architects

LPR Architects Ltd, Turku (Finland)

### Construction period

2008 - 2011 (competition result: 2000)

### Integrated products by ABB/Busch-Jaeger

KNX system for the control of lighting and Venetian blinds: constant light control, presence detector, dimmer, central control and timing, blind actuators, touch panels



Large sun shields are employed in the Singapore National Library to prevent direct sunlight entering. The "Plaza" courtyard enjoys the same sun protection (left).

# Successfully combating the sun

In the subtropical climate of his home country, Malaysia, Ken Yeang has long been honing the principles of ecological architecture. With the Singapore National Library he proves that a consistently sustainable building can largely forgo energy guzzlers like air-conditioning systems and consequently make large-scale savings. The Singapore Building and Construction Authority awarded the building the Platinum Medal.

By **Christian Breising** Photos **T. R. Hamzah & Yeang Sdn. Bhd.**

Since studying at the London Architectural Association and the University of Cambridge, Dr. Ken Yeang, founding partner of the internationally active Malayan architecture studio T.R. Hamzah & Yeang, has repeatedly distinguished himself with matters concerning ecological and sustainable planning and building. By far the best-known evidence of his research was the bioclimatic or "green" skyscraper". It was in the 1990s that Ken Yeang developed the foundations of his work. He put his theory into practice in many publications and several spectacular buildings such as the Menara Mesiniaga in Kuala Lumpur. Especially in the subtropical climate of his home country Malaysia he applied his green principles to develop architectural counterparts to the prevailing fully air-conditioned structures. He also remained true to his principles in the case of the Singapore National Library, which is located in the same climatic zone as his native Kuala Lumpur.

## **A very attractive place for users with great views**

Covering almost 60,000 square meters, the soaring, 16-story National Library is a striking new building in the Bugis/Bras Basah district north of Singapore's city center. Behind the curving white facade with its projections and

recesses there are two independent libraries, namely the Lee Kong Chian Reference Library and the Central Public Library, not to mention a Drama Centre with its own stage and an auditorium seating 615. Inside, the building is divided into a rather square structure and a curving, banana-shaped block, which are joined to each other by bridges. The hugely popular National Library is not only used by schools and universities; the complex is fully accessible to the public. It opened in 2005, having replaced an old building. Crowning the building is an eye-catching glazed viewing platform called "The Pod". Three public panorama elevators, a café and a central inner courtyard known as the "Plaza" attract additional visitors every day. Moreover, the Plaza also connects two bustling shopping streets, Victoria Road and North Bridge Road. Alongside the partly green areas of the inner courtyards the sky courts, measuring 6,300 square meters in total, also make the complex an attractive place to spend time. Fascinating views out across the city can be enjoyed from the panorama elevators and "The Pod" viewing platform. The Singapore National Library represents both an architectural and ecological landmark, in the best sense of the word.



### **Fully glazed curtain façade**

In 1998, when the competition for the building was held, the developer did not specifically ask for a green building. It was thanks to Ken Yeang's design that thought was given to adopting a consistently sustainable approach. The main concern in Yeang's design was how a building containing sensitive cultural assets and thus needing a constant interior climate could be equipped and operated in an environmentally sound and energy-efficient way despite the subtropical climate. High humidity and extremely strong sunlight were the critical points, which had to be considered even when designing and equipping the building shell. As such, the façade design was of immense importance. The planners aimed for a "30° solar cut-off", meaning, when the sun is more than 30° above the horizon, that is between 10 a.m. and 4 p.m., no direct sunlight was to enter the building. For this reason very large sun shields (1.8 meters deep) were placed in front of the glass façade. In order to install them, the posts of the fully glazed curtain façade needed to be strong, namely 250 millimeters thick. Several of these shields continued on the interior of the building.

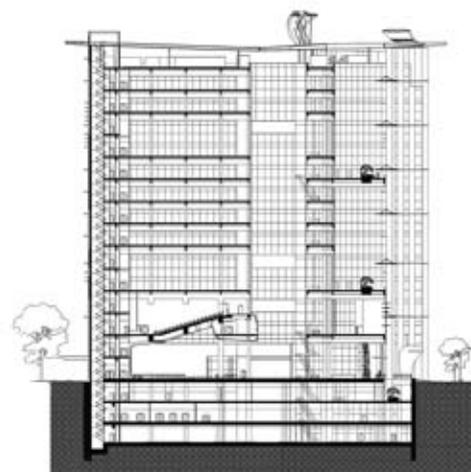
To avoid glare in the interior a special coating was chosen for the double glazing. Additional blinds are employed on the few days of the year when the sun's position is very low. As important as the sun protection measures are from a functional viewpoint, they also lend the building an arresting appearance, completely encircling it story by story. In some places, for example in front of the entrance "The Laneway", they resemble the wings of old biplanes. Moreover, as there is heavy rainfall almost daily, acoustic measures were necessary: the rain was not to echo from the façade elements and disturb the working atmosphere in the libraries.

### **KNX system delivers marked energy savings**

Inside the National Library the areas are divided into three different climatic zones. "Full Mode" refers to the fully air-conditioned and artificially lit libraries and Drama Centre. In "Passive Mode" daylight and natural ventilation come into play thanks to the intelligent alignment of building sections. In "Mixed Mode" - in the atriums, the "Plaza" and forecourts - natural ventilation is supported by a mechanical system. A KNX building automa-



Layout Level 2



Cross-section

The fully glazed curtain façade prevents direct sunlight entering the building during office hours and lends the building its striking appearance (left). Inside, the amount of artificial light is controlled by means of sensors (above).

tion system by Busch-Jaeger contributed appreciably to enhancing energy efficiency. Motion detectors switch the lights on when someone enters a room and off when they leave, while sensors automatically regulate the brightness depending on the amount of daylight. This permits a 33 percent energy saving over conventional buildings and even requires 16 percent less energy than was calculated in the planning phase. The annual potential energy savings amount to roughly US\$ 370,000.

The diverse efforts of the architects, the developer and the participating firms to create a "green" library have more than paid off. The Singapore National Library received the Platinum Medal, the Green Mark Award from Singapore's Building and Construction Authority.

## Project partners

### Operator

National Library Board, Singapore

### Architects

TR Hamzah & Yeang Sdn Bhd, Ampang, Malaysia

### Size

16 stories, height: 98 meters

### Integrated products by ABB/Busch-Jaeger

KNX lighting control: presence detector, brightness sensors for constant light control



Yazdani Studio

## Buildings for art

Unfurled cans of film, the train of a swirling Flamenco skirt, or dancing building cubes: Thanks to digital design technology, museum and cultural architecture can increasingly be inspired by what will in future be exhibited or presented inside.

### **Yazdani Studio: Bollywood Museum, Mumbai, India**

With an output of more than 1,000 movies a year, India's Bollywood certainly outclasses even Hollywood. And now the film mecca in the north of Mumbai is to receive a museum all of its own. To this end, the architects at the U.S. Yazdani Studio have come up with a design that is firmly steeped in the emotions and dynamism of Indian movies. If you look at the drawn-out building from the air, you soon see the resemblance to an unraveled spool of film, a strip that circles several times and almost seamlessly progresses from the ground into the façade. That said, the architects also had a famous line from a Bollywood hit in mind, relating to storms triggered by memories striking the heart in waves. The entrance area brings the famous red carpet to mind. And the strip then unrolls to form four sections of the building, slightly distinguished by their respective heights. Inside, things are very colorful and visitors can expect to experience the history and essence of cinema less by exhibits and more by interactive means. To this end, the rooms are partly designed in keeping with film sets. The museum's movie theater will host film festivals and other events and the facilities are rounded out by a restaurant, a conference center and a museum store. The spacious park outside is likewise used for a variety of events, with visitors able to enjoy open-air screenings of Bollywood classics or simply wander along the "Walk of Fame" that takes you once round the park.

**Kleihues + Schuwerk: National Arts Museum Oslo, Norway**

All good things come in threes: As early as the 1940s, the experts felt the existing National Gallery in Oslo was too small and Norway has dreamed of a national arts museum ever since, one that could house the major art, design and architecture collections. Designs from the two competitions held in 1972 and 1995 were not realized, and it was not until third time round that the authorities have had the courage to go ahead and realize the dream at long last. In their "Urban Transition" design (above) JaJa Architekten from Copenhagen refer to the changes in the urban fabric. The impressive historical waterfront will be redesigned in years to come, and the museum building with several distinct volumes and a façade structured by vertical strips blends in between the existing and the future buildings. Another Danish company, Henning Larsen Architekten, opted instead for a "Magic Box and Canyon" (below), whereby the box has a huge glazed atrium which offers a truly dramatic setting for the view out over the city and the fjord. However, it was the German firm Kleihues + Schuwerk that won with a somewhat introverted, restrained design: the "Forum Artis" (center) with a plain wall-enclosed courtyard between the new edifice and the existing building. The innate architectural gesture is, so Klaus Schuwerk contends, "long-living" and "a sustainable design", meaning it is appropriate for a museum that houses national treasures. The second floor of the new building is a completely glass-clad block, transparent and yet a bright magnet that combines the theme of "preservation" with the radiant symbolism of openness.



MIR AS



Kleihues + Schuwerk Gesellschaft von Architekten mbH, NEUMEYER TREESE



Henning Larsen Architects



MUS Architects

**MUS Architects: International Flamenco Museum, Jerez de la Frontera, Spain**

With their eye-catching design for a cultural center devoted to both teaching flamenco and documenting the dance, Poland's MUS Architects last year made it as far as the final of the international architecture competition. The temperament and passion of the style of music and dance that arose in Andalusia are reflected in MUS's design of the façade for the "International School Museum of Flamenco". Inspired by the bata de cola, the swirling train of a Flamenco skirt, the architects came up with a structure consisting of many individually folded layers. In two of the corners, these layers are drawn upwards and thus create a street-side entrance to the building. At one of these eye-catching points a café tempts visitors into the building. By contrast, the side turned away from the street takes the shape of a large ramp and leads up to the roof terrace, which can thus be used for open-air events. Inside the building, an elegantly curved ceiling dominates, which is divided into two parts roughly similar in size. The so-called "Urban Square" is intended to function as a meeting point and space for events, and can be individually designed by means of flexible furniture. Glass walls separate the other half from the public hustle and bustle. Here, the dance school, the administration wing, the auditorium and finally the museum stand in a row. The building's design concept first emerges clearly at night, when the interstices of the individual strata are illuminated and give the façade an impressive touch of lightness.



HPP Architekten

**HPP: DFB Museum, Dortmund, Germany**

The FIFA World Cup six years ago in Germany gave birth to an unprecedented wave of football euphoria, which in turn prompted a museum dedicated to the most popular sport in Germany. With its countless long-standing soccer clubs, North Rhine-Westphalia seemed the obvious location, and it was Dortmund, with a plot near the railway station, that was chosen. The international architectural competition was won by HPP Architekten, whose design is now being implemented. They opted for a block on stilts with a wedge cut into it, wrapped in a perforated and semi-transparent metal façade. Inside, a raised gallery level combines the foyer, fan shop, hospitality outlets, and exhibition areas as well as a seemingly floating volume that houses an interactive permanent exhibition. By means of various projection media, visitors are familiarized with the game of football chronologically, from kick-off through to the final whistle. The museum is scheduled to open at the end of 2014.

**3XN: Cranko Ballet School, Stuttgart, Germany**

The buildings designed by Danish architects 3XN are definitely no silent artifacts, but with their inviting shapes and open design, emphasizing communication, encourage dialog with their users. The competition for the new building for the John Cranko Ballet School in Stuttgart was firmly in keeping with this philosophy. The very term "a dancing building" shows that here architecture is in motion. The new Stuttgart talent academy, named after its founder, world-famous choreographer John Cyril Cranko, is located on a slope in the immediate vicinity of the New State Gallery designed by James Sterling. To adapt it to the topography, 3XN created a structure of six boxes stacked on top of one another, twisted around a central axis. Through the device of this simple yet effective spatial layering, the building opens out in different directions: from the demonstrative urban zone at the lowest level through to the sweeping view out over the Neckar Valley on the top floor. All the functions of a dance boarding school (practice, common and class rooms as well as the students' boarding apartments above) are connected via a central stairwell. The interaction of spacious ceiling openings with the rotated blocks creates marvelous lines of sight between the individual sections, fusing them to create an atmospheric whole.



3XN



# “Innovative ideas always win through”

Daniel Libeskind made his breakthrough as an architect with his attention-grabbing Jewish Museum in Berlin. Since then, he has become one of the most influential architects in the world. In an interview with *pulse*, he talks about his understanding of museum building projects and about the special meaning that not only memory and history, but also communication and democratic discourse, have for his work.

By **Lasse Ole Hempel** Photos **Bitter Bredt**

**Mr Libeskind, museums are commonly seen as unifying elements, binding together the past and the present.**

**You are known as an architect with a special interest in history and memory. So is museum design the sort of project that particularly appeals to you?**

The word „museum“ comes from the Greek Muses, from art. No matter what sort of museum it is, as we enter it we are unavoidably confronted with memory. In my work, memory and history aren't footnotes but rather the basis on which an architectural project develops. As an architect, I deliver and develop the space in which to experience history and memory.

**In that sense, do you think of a museum in the first instance as a social and communicative place?**

Exactly that. Even in a museum of contemporary art, which at first sight isn't about history, memory still plays an important role. Without memory there would be no fantasy either, no creativity. We wouldn't know where what direction we were moving in and where we were coming from. It's important to give meaning to

memory. In my work, this means designing the space with that in mind, using materials, using light and the right dimensions, for instance.

**Are you always happy with the way in which your museum buildings are used?**

We shouldn't be looking at the museum as a static structure but rather as work in progress. The museum isn't a container that's just filled with contents, with exhibits. If you've got an interesting building, you get a dynamic entity - a space that stimulates new ideas. Those are the museums that come to my mind, buildings that offer visitors, and therefore the public as a whole, new possibilities and stimuli.

**The museum as a living organism ...**

Absolutely. Museums should always be in a position to react to developments. Even if the building itself is static and immovable, it can still offer interesting spatial structures, it can arouse curiosity and face up to the desires and aspirations of the future – not just display the past.

The museum turned on its head: the enormous exhibits find space on the slanting walls at the Military Museum in Dresden (right).





**You have recently completed an extension of the Military Museum in Dresden – a really eccentric wedge-shaped construction and one that is reminiscent of the V-formations of British bombers that once destroyed the city. How were you able to get such a daring proposal through?**

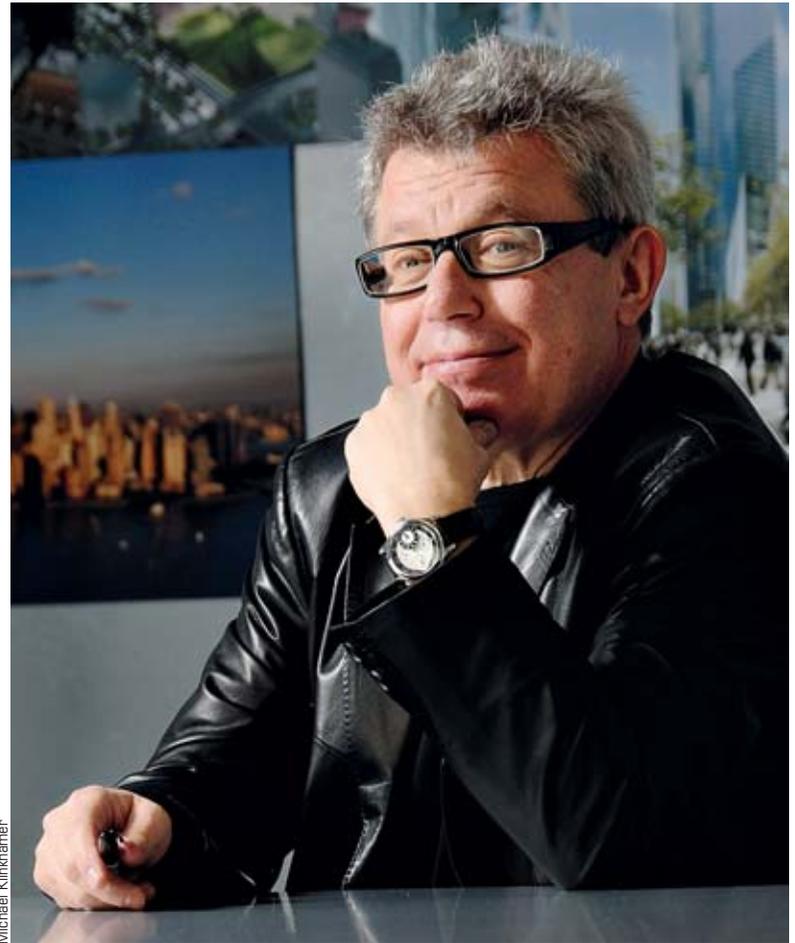
Every project that breaks new ground is challenging. But I also think that new ideas will always win through in the end. As far as the Military Museum in Dresden is concerned, in the first instance it was a question of getting a cognitive process going. I think what made my proposal stand out was the fact that it touched on what a military museum in Germany could actually be, and everything that goes with that. The panel regarded my thoughts and ideas as very relevant. Of course, working on such a project is far from easy. Creative projects demand responses – whether they're questions or whole controversies. From my point of view it's always a matter of asking questions and promoting a dialogue. It should always be about more than just offering technical solutions. If visitors start asking themselves questions, then the architecture has performed its function.

**Frank Gehry's Guggenheim Museum in Bilbao and your Jewish Museum in Berlin are among the most significant architectural icons of our times. Are museums the cathedrals of our time, holy places to which the enlightened public make pilgrimages?**

Museums have acquired a whole new meaning – they are far more than a design alone. Many of those in authority have come to understand that it's not just a matter of design, but it's also about the genesis of the ideas that are exhibited there. I am working at the moment in Wuhan in China, on a museum dedicated to an important pioneer of modern Chinese industry. For the population there, the building will become a centre of attraction because it offers them the opportunity to build an awareness of their past. The museum is also intended to be an iconic structure representing a China that is undergoing such meteoric development.

**In Europe, the financial crisis has put a real damper on construction, and not just of museums. What is going to happen there?**

At times of economic uncertainty, people are more likely to challenge conventions and I'm quite sure that there's a growing interest in lasting architectural solutions - solutions that promote communication. In times like this, the only projects that survive in the end are those that take creative risks and really look to the future.



Michael Klinkhamer

After his international breakthrough with the Jewish Museum in Berlin, Daniel Libeskind took on a range of other museum projects. The extension to the Denver Art Museum (below), completed in 2006, bears Libeskind's unmistakable signature. The architect drew his inspiration in part from fossilised crystals. The Military History Museum in Dresden has been spectacularly and graphically expanded by means of a wedge-shaped extension (left).





**One project that you will be able to realise in Germany in the coming years is Lüneburg University. You teach there as well, and you have yourself initiated a dialogue around the creation and development of the new university building.**

As you probably know, there is no Architecture Faculty there, so I'm exchanging views with educationalists, for example, with people from the cultural sciences and with lawyers. We're working together to develop this new campus, replacing the previous one, a converted barracks. In the democratic and open process that has been created, it's also a matter of what makes a university nowadays. Who can benefit from it, how can the public become part of university life? I'm really pleased that this unusual project is becoming a reality. And on top of that, the university will also be a good example of real ecologically sustainable building practices.

**You give the impression of enjoying working in Germany.**

I do indeed really enjoy working in Germany. The people are very intelligent, very creative. There is a great acceptance of differences, of the unusual and there is a great sensitivity towards historic buildings. It's said again and again that Germany is the economic engine of Europe. I'd say

rather that Germany is constantly active at a spiritual and cultural level - in theatre, in music and in architecture too.

**Yet you closed down your Berlin office once the Jewish Museum was completed.**

... But there's a good chance that we'll re-open it. We have offices in Zurich and Milan but since we're planning an apartment block in the heart of Berlin right now, on the Chausseestrasse, we'd like to have a base there again.

**What do you think of the sorts of technical solutions implied by the term "smart home"? Are you pursuing the opportunities that have developed in that area in the last few years?**

Architecture has to change and respond to the fact that our resources are finite, to take some responsibility. I'd like to support developments such as intelligent building technologies. And in essence, that means a return to basic architectural values – if you look at traditional buildings you can see how much intelligence there is in them. It's a matter of cultural achievement. I'm convinced that using technically innovative and sustainable solutions, architecture around the world is going to change significantly.

Memory and history: the Libeskind-designed Imperial War Museum North (left) opened in Manchester in 2001. In his Jewish Museum in Berlin, impressive shapes and forms depict the Holocaust as an irreversible catastrophe (right).



# Wood

Materials are the soul of architecture. They lend character to buildings and atmosphere to rooms. But what do architects think of classic materials today? *pulse* sought their opinion.

Answers from **Renzo Piano Building Workshop**

**What advantages did wood offer for your project – the recently opened Astrup Fearnley Museum in Oslo?**

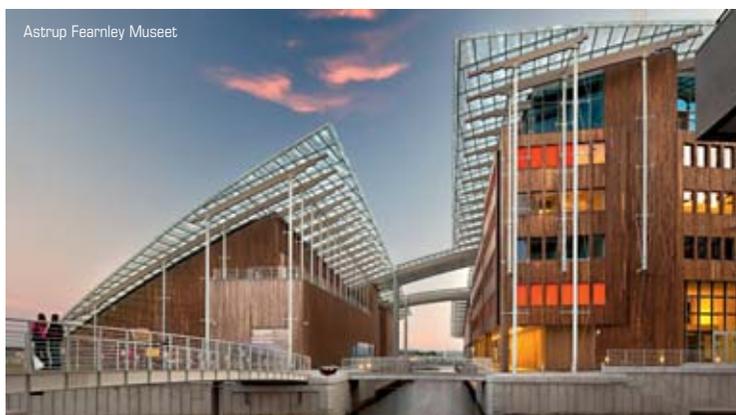
Wood is a living material, it ages, it changes over time, giving the building a nice soft grey appearance. The location of the Museum is at the seaside and thus the climatic conditions are hard on the materials used: natural timber does not rust or lose paint, it looks better over time and when it is damaged or suffers rot, it can be substituted easily and economically.

**Which sorts of wood did you use?**

The wood used for the facades is Aspen, a relatively soft timber from a tree which grows in Scandinavia and elsewhere. The only treatment was by means of an accelerator used on all the wood to obtain the soft grey appearance of the planks in the façade. For the beams that support the glass roof, we used laminated pine wood, which is stronger and better for structural applications. These were impregnated with a transparent paint, to protect the wood and guarantee their structural performance over time.

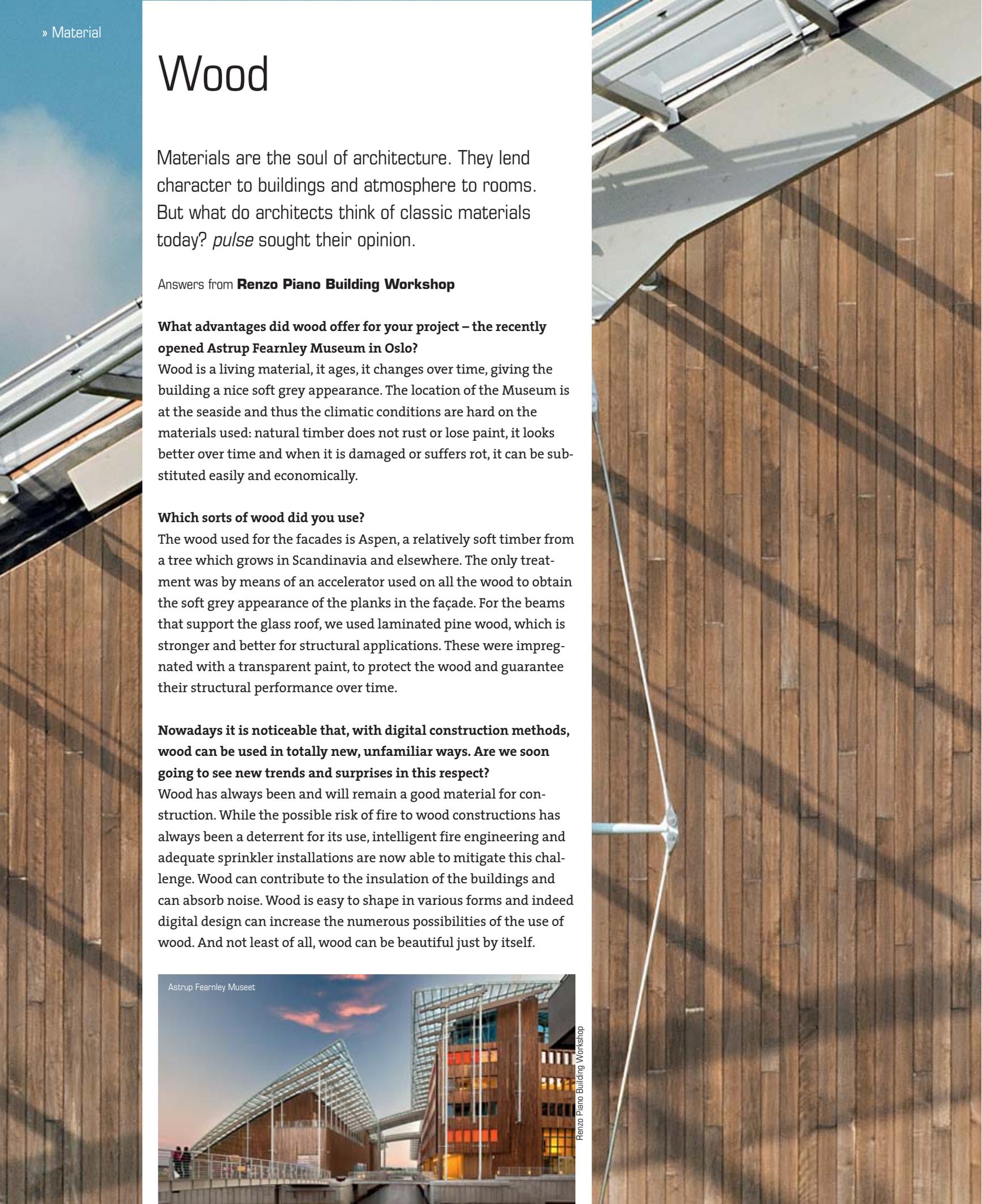
**Nowadays it is noticeable that, with digital construction methods, wood can be used in totally new, unfamiliar ways. Are we soon going to see new trends and surprises in this respect?**

Wood has always been and will remain a good material for construction. While the possible risk of fire to wood constructions has always been a deterrent for its use, intelligent fire engineering and adequate sprinkler installations are now able to mitigate this challenge. Wood can contribute to the insulation of the buildings and can absorb noise. Wood is easy to shape in various forms and indeed digital design can increase the numerous possibilities of the use of wood. And not least of all, wood can be beautiful just by itself.



Astrup Fearnley Museet

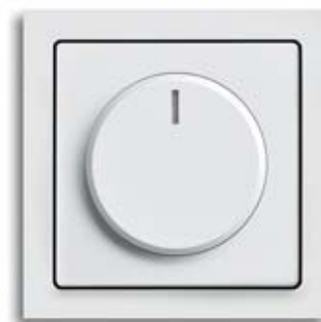
Renzo Piano Building Workshop







Busch touch dimmer



Busch rotary dimmer

## Busch-Dimmer® for LEDs – For the efficient and convenient control of lights

Light plays an important role in interior design and creates a pleasant and relaxing ambience. Artificial light can design, provide contrasts, set architecture impressively into the scene or discreetly light up a background. During the last few years artificial light has gone through an amazing development technically. With Light+Building 2012 – and here many observers agree – the LED could finally establish itself. In the long term it will no doubt replace the energy-saving lamp which has in the meantime become very popular. LEDs redefine the use of light and only need one fifth of the energy of conventional lamps and have a very long service life. In the meantime, the technology has also matured to the point where the LED can no longer be called a "cold light" but dazzles with its versatility.

However, up to now it was not possible to optimally dim LEDs. In cooperation with Philips – the world market leader in LED lamps – ABB/Busch-Jaeger has developed

high-quality dimmers which perfectly harmonize with the new efficient light sources. The Busch-Dimmer® was developed for dimming the modern Philips Retrofit LEDs which were selectively fitted with incandescent lamp sockets or high and low voltage halogen sockets. With them the dimmer produces the same results as with incandescent lamps. The cooperation between ABB/Busch-Jaeger and Philips also guarantees perfect function for future LED lamps. The dimmer can, of course, be combined with other lamps – such as incandescent lamps, 230-volt halogen lamps or low-voltage halogen lamps.

### Touch dimmers and rotary dimmers

The technology of the LED dimmers is transistor-based. They do not generate humming noises and are therefore ideal for operation in hollow walls. The Busch-Dimmer® can also be adjusted according to personal preference and is offered both as touch dimmer and rotary dimmer. Dimming and switching is also possible via button, timer



The Busch-Dimmer® was developed for dimming modern Philips Retrofit LEDs (left).

Light creates a pleasant and relaxing ambience. Dimming adds a further design option. Dimmed light lends rooms not only that special atmosphere – it also noticeably reduces energy costs. Dimmed lights use less power; even a voltage reduction of as little as five percent in case of incandescent lamps saves energy and increases the service life by 200 percent.

and with the touch dimmer also via infrared remote control with adjustable brightness settings or movement detector. The brightness setting selected prior to the last deactivation is stored for the next activation. The knob of the rotary dimmer is lit up during the deactivated state, making it easier to locate it in dark rooms. Especially pleasant, instant and manual dimming is guaranteed by the potentiometer with soft-latch.

Dimming lights creates not only a pleasant atmosphere, it noticeably reduces energy costs. Dimming reduces the volume of current flowing to the lamp. Even a voltage reduction of as little as five percent in case of incandescent lamps saves energy and increases the service life by 200 percent. This effect is not merely of advantage in the home – especially in the commercial sector where numerous lights are on day and night are costs reduced and maintenance intervals extended.



Halogen lamps change their colour to a red-yellow hue when being dimmed. This warmer light has a welcoming effect and lends rooms a cosy atmosphere. A unique effect made possible with the Busch-Dimmer®.

# What is the German term for the Old Norse word "Folkwang"?

*pulse* asks a competition question in every new issue. The winners each receive a book.

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### Answer

The German term for the Old Norse word "Folkwang" is

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### The prizes:

ABB/Busch-Jaeger will raffle one copy of the books **New Museums in Spain** (Axel Menges Edition) and **Kuehn Malvezzi**, photographed by Candida Höfer (published by Verlag Walther König). Closing date for entries: March 31, 2013. The winner will be announced in the next issue. Winners of the last competition: Volker Schulze-Naumburg from 83236 Übersee and Helmut Knies from 36266 Heringen-Kleinensee.

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### Living

Whether in one's own four walls or in rented accommodation, in the country or in the city - home should be where we feel comfortable.



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