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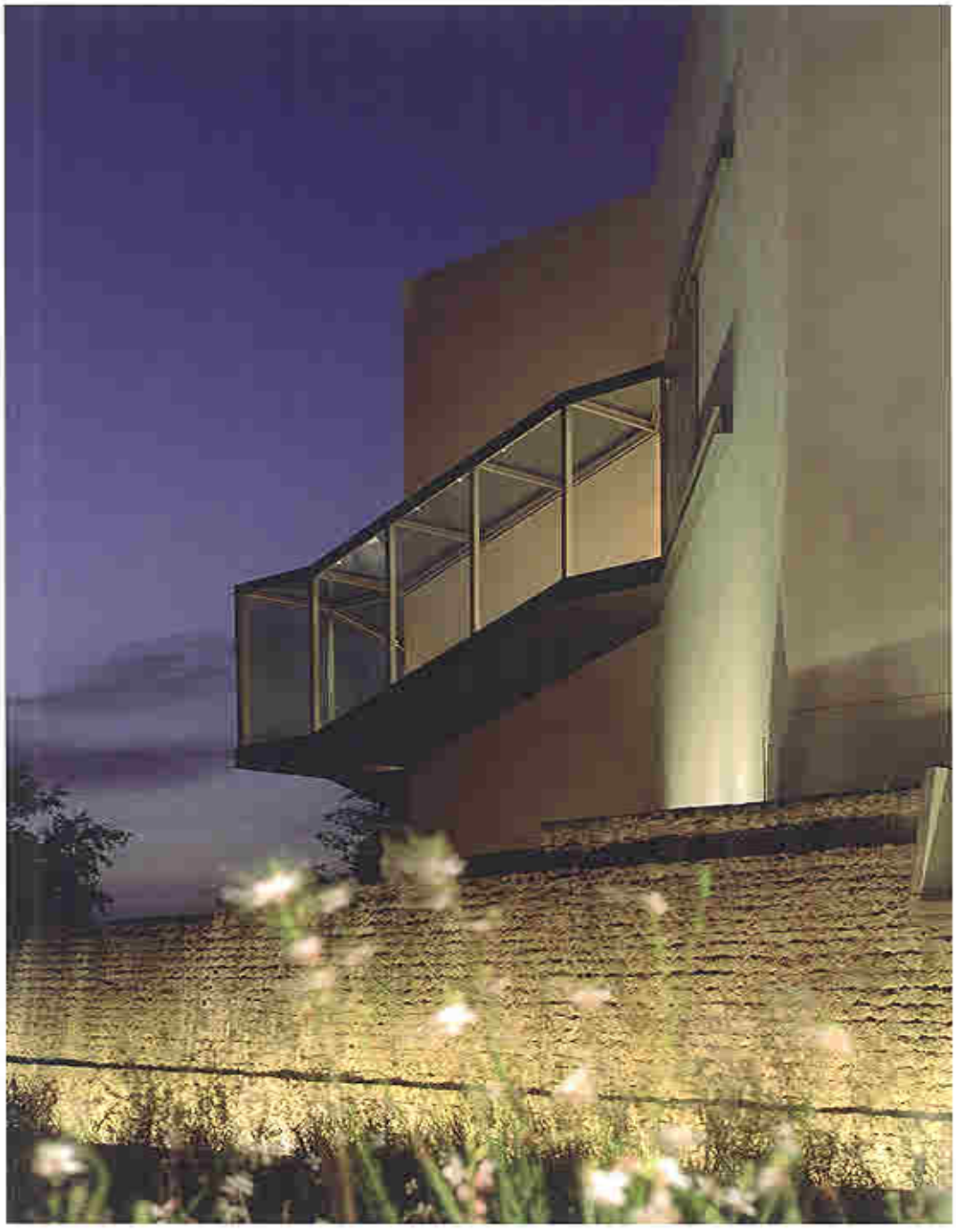


The Luxembourg art museum MUDAM by I.M. Pei, built on the walls of an old fortress, is a veritable lighthouse of culture. Its appearance at night will change how Luxembourg is perceived. Architectural lighting not only shapes our immediate surroundings but also creates striking

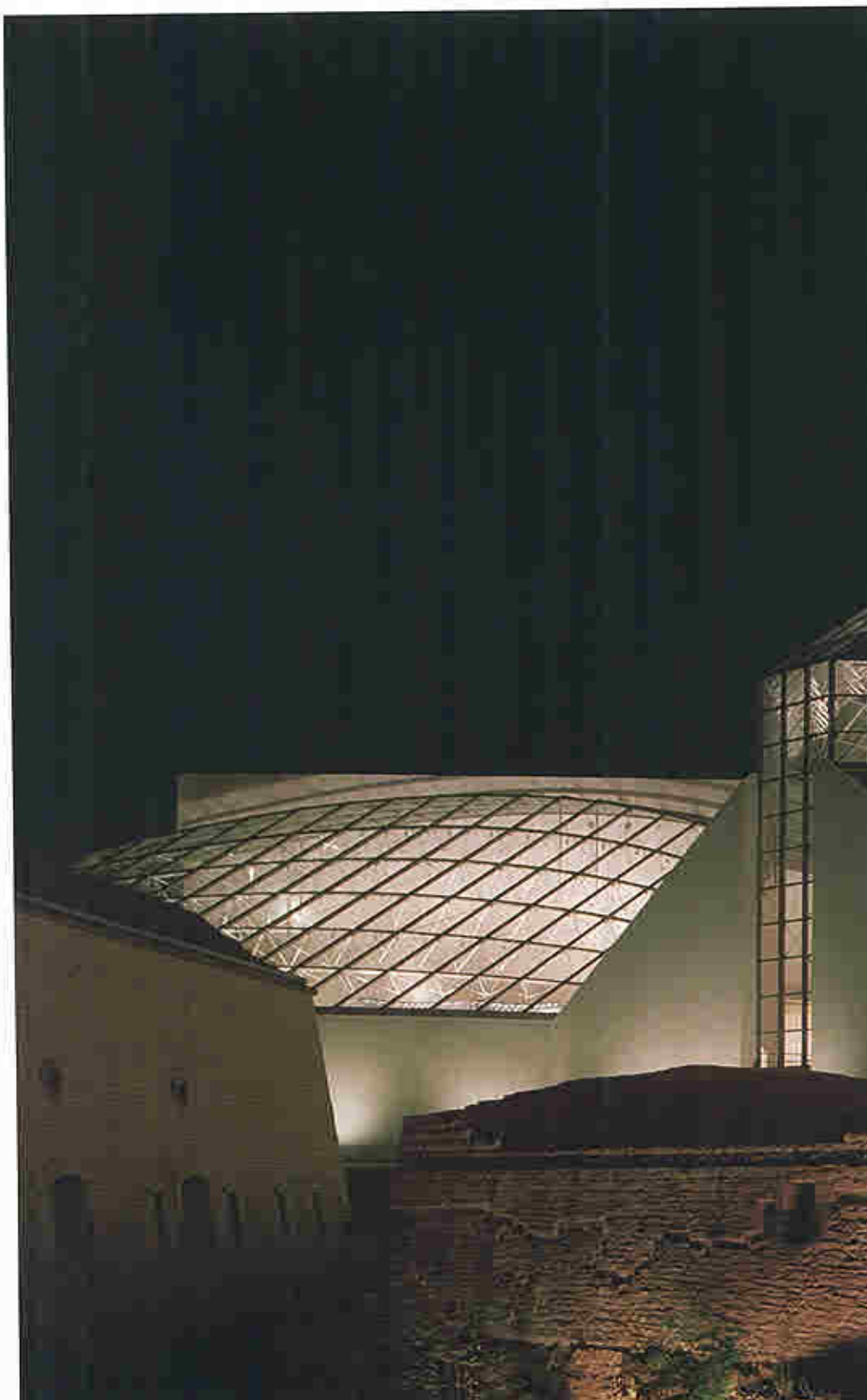
MUDAM, Luxembourg: a lighthouse of art

The first large art museum in Luxembourg, MUDAM, or the "Musée d'Art Moderne Grand-Duc Jean" to give it its full name, is a "lighthouse project" for the cultural policy of the little Grand Duchy in the heart of Europe.

For those foreign visitors who initially thought of Luxembourg as some abstract financial location or as the administrative headquarters of the European Union, the varied topography of the old fortified city probably will come as an initial surprise. The city suburbs, each reflecting a different era of the city's development, jostle for position on high plateaus between the deeply cut serpentines of the River Alzette. High bridges link the city's historical core to the train station district and its Wilhelminian palaces in the south and to the Kirchberg plateau in the west. This is where the first European Parliament buildings were built in around 1960. Following on came the administrative headquarters of banks and financial service providers; forming an office-block city devoid of any urban charm.

On the strategically advantageous peak of the plateau, pointing towards the old city, lie the ruins of Fort Thüngen. This Vauban bastion is surrounded by a park complex known as "Drei Eicheln" (Three Little Oaks) – named after the roof decoration of the fortress's three domes. Wanting to press the Kirchberg plateau further into the general consciousness of Luxembourg at the end of the 1980's, the then prime minister Jacques Santer was particularly instrumental in establishing and building a museum for contemporary art. It was scheduled for completion in 1995 because Luxembourg had been elected the European cultural capital for that year. Like his political colleagues Mitterrand and Kohl, he also commissioned the architect I.M. Pei and together they chose the "Drei Eicheln" location – as a "bridgehead" between the two halves of the city.

It actually took until 2005 for the museum to finally open – hampered by repeated political criticism and significantly scaled-down from its original scope in an attempt to cut costs. Yet more time will elapse before the park surroundings have been landscaped and the fortress complex completely restored. Nevertheless, the fact that Luxembourg's cultural policy has combined with an architect of world-renown to create a true "lighthouse project", in the best and literal sense, is hard to overlook – not least because the building, when dramatically illuminated at night, so prominently advertises its role of providing modern art with a space and an appropriate setting in this city.

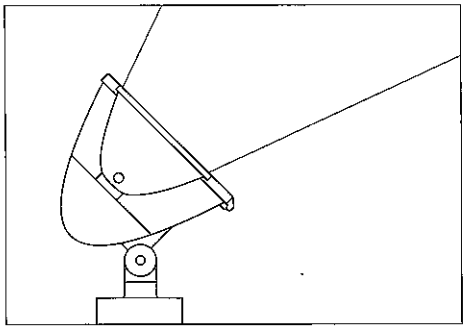


Architecture: Consortium of Pei Cobb Freed & Partners, New York, and Georges Reuter Architectes, Luxembourg
Lighting design: ARUP, London; Fisher Marantz Stone, New York; Projekt Licht – Andreas Thiel, Saarbrücken
Photos: Bernd Hoff, Düsseldorf

www.mudam.lu

The museum's frontpiece (below) faces south towards the old city beyond the River Alzette – the entrance (right) lies on the other side of the building and establishes the connection to the new cultural centre that is being built on the Place de l'Europe.

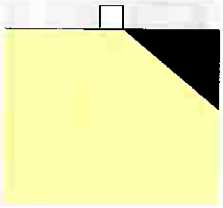
Focalflood floodlights
Floodlights with axially symmetric light distribution provide uniform illumination of objects or surfaces. The light distribution has a point of focal emphasis.



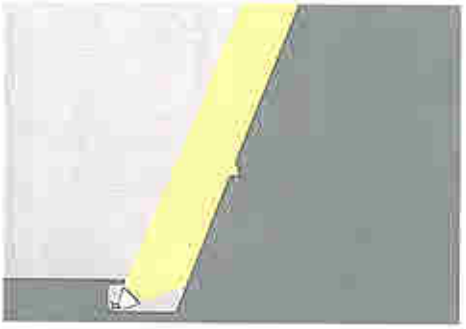
The lockable joint allows the angle of inclination to be set exactly to the degree.

To illuminate the surfaces effectively and economically, the lighting designers arranged a row of Focalflood floodlights for

The new museum stands on the foundations of the old fortress. It therefore follows the same arrowhead plan layout of the former "Fort Thüngen", which has been partly restored and converted to a fort museum. The illuminated moats now glow magically underneath the bridges leading to the museum entrance at the northeast point of the building.



Lightcast downlights in concrete housings produce an inviting carpet of light under the porch. In the area closest to the wall, washlights have been installed to provide additional vertical luminance.



Along the entire historical fortress wall, the lighting designers have arranged hundreds of linear floodlights in a special installation trench. The grazing light creates a dramatic impression and emphasises the highly varied surface of the old walls. This exactly follows what the architect had in mind, "What interests me is how to harmonise past and present so that they mutually reinforce each other".

Focalflood facade luminaires
The IP65 rated floodlights are fitted with warm white T16/28W linear fluorescent lamps. The connection housing in the mounting bracket enables practical through-wiring.

Time, Place and Purpose: I.M. Pei and his architecture

I.M. Pei at the opening of the German Historical Museum in Berlin 2003.

Bank of China, Beijing (2001).

In his conversations with the journalist Gero von Boehm, Ieoh Ming Pei once said that light is of overarching importance for his buildings. Even though he was primarily talking about natural light, an unusually sensitive use of architectural lighting is a characteristic running through all of Pei's work. ERCO has had repeated opportunities to work together with Pei and his respective technical designers on lighting solutions for significant projects. The results were often just as innovative as the actual building itself – one only needs to think of Pei's most popular work, the glass pyramid of the Louvre!

It is not just his personality and works that make Pei so fascinating but also his life; It seems to prefigure the current phenomenon of globalisation and the new dynamism of China. Born into the family of a leading banker in Canton, China in 1917, he left home at 17 to study abroad. His chosen destination was the USA and his chosen subject was architecture which he studied at the MIT in Boston, graduating with a Bachelor of Architecture in 1940. The onset of wars, first between China and Japan, then of WWII, forced him to stay in America. It was to be several decades before Pei was able to set foot in his homeland once again. The young Chinaman was not the only one stranded on foreign shores, the protagonists of the architectural modern age, Gropius and Breuer, were there also and became his teachers at the Harvard Graduate School of Architecture. After completing his post-graduate studies in 1946, Pei stayed on at Harvard, working as an assistant and lecturer and the collegial relationship with his professors grew into a friendship. Nevertheless, Pei soon came away from the doctrine of "International Style", developing instead the idea of a culturally, historically and geographically conditioned, individually styled architecture that sees the design as a function of time, place and purpose.

After these years within the academy, Pei sought and found practical challenges as head architect at the company of Webb & Knapp under the charismatic building tycoon William Zeckendorf. Working together with Zeckendorf, who must have had an enormous political instinct and who Pei also described as a hugely generous person, the young Harvard graduate was able to design and implement residential building projects on a grand scale throughout the USA. In addition to giving him experience in technical aspects and urban-planning issues, this phase of his career taught Pei how important it is to analyse the power structures behind a building contract. Pei privately concluded that it is against this background that Pei became independent in 1955 opening his own design offices, I.M. Pei & Associates in New York, although he did still work exclusively for Zeckendorf until 1960. The breakthrough in the architectural community came with a nested cube design at the National Center for Atmospheric Research in Boulder, Colorado (1961–67). The NCAR is located in the foothills of the Rocky Mountains and is a bastion for researchers. It was also in the 1960's that the architect, who seems to have a contagious smile on almost every photograph of him, was to meet the young presidential widow Jacqueline Kennedy. Pei freely admits that it was primarily because they got on so well together that he received the direct contract for the Kennedy Library – a project that was to take several years (1965–79), but one that opened the door to a new group of property developers. Commissioned by the power-holders of the world, Pei was from now on able to operate above and beyond any political disputes and resistance. With friendly persistence and seemingly boundless patience, he could ensure his architectural ideas were eventually pushed through.

Whereas princes would have once immortalised themselves with castles and bishops with cathedrals, the edifices of the Modern age are public museums. They are also the cornerstones of Pei's further work and range from the National Gallery of Arts (1968–78) in Washington, the extension of the Louvre commissioned by François Mitterrand (1983–89), the Miho Museum in Shiga, Japan (1991–97) and the German Historical Museum in Berlin (1997–2003) to the new MUDAM in Luxembourg (1999–2006). Another strand of Pei's biography is his professional return to China: the "Fragrant Hill Hotel" was built from 1979–1982, followed by buildings for the Bank of China in Hong Kong (1982–1989) and Beijing (2001). Both threads come together and culminate in what is probably the Pritzer prize winner's most personal work from 1983, the new museum in Suzhou, the place of his childhood.

MK

Literature:
Gero von Boehm, "Light is the Key," Conversations with I.M. Pei (Munich: Prestel, 2000)
Ulf Meyer, "Bau Politik! I.M. Pei als Architekt der Mächtigen," in Eldorado Catalogue, Luxembourg: MUDAM, 2006

Website of the Pei Cobb Freed & Partners

The new museum in Suzhou reflects the city's traditionally styled gardens. Pei's family originates from this city and he used to spend the summers of his childhood here with his grandparents.

I.M.Pei (left) and the lighting designer Claude Engle inspecting a mock-up of the lighting for the extension of the Louvre in Paris in 1984. The opportunity to work together on this groundbreaking project also gave ERCO a breakthrough as an international brand for architectural lighting.

Once hotly debated, now on every picture postcard, the glass pyramid (1983–89) of the Louvre in Paris has become an icon of the French capital and the prime example of successful architectural lighting.

The Miho museum near Shiga (Japan) is spectacularly situated in a country park. The museum primarily displays treasures of Asiatic art.

For the German Historical Museum, Berlin, whose collection is housed in the former arsenal building on the "Unter den Linden" street, Pei designed an annexe with rooms for rotating exhibitions. The contract was awarded in 1997 directly by the then German chancellor Helmut Kohl.

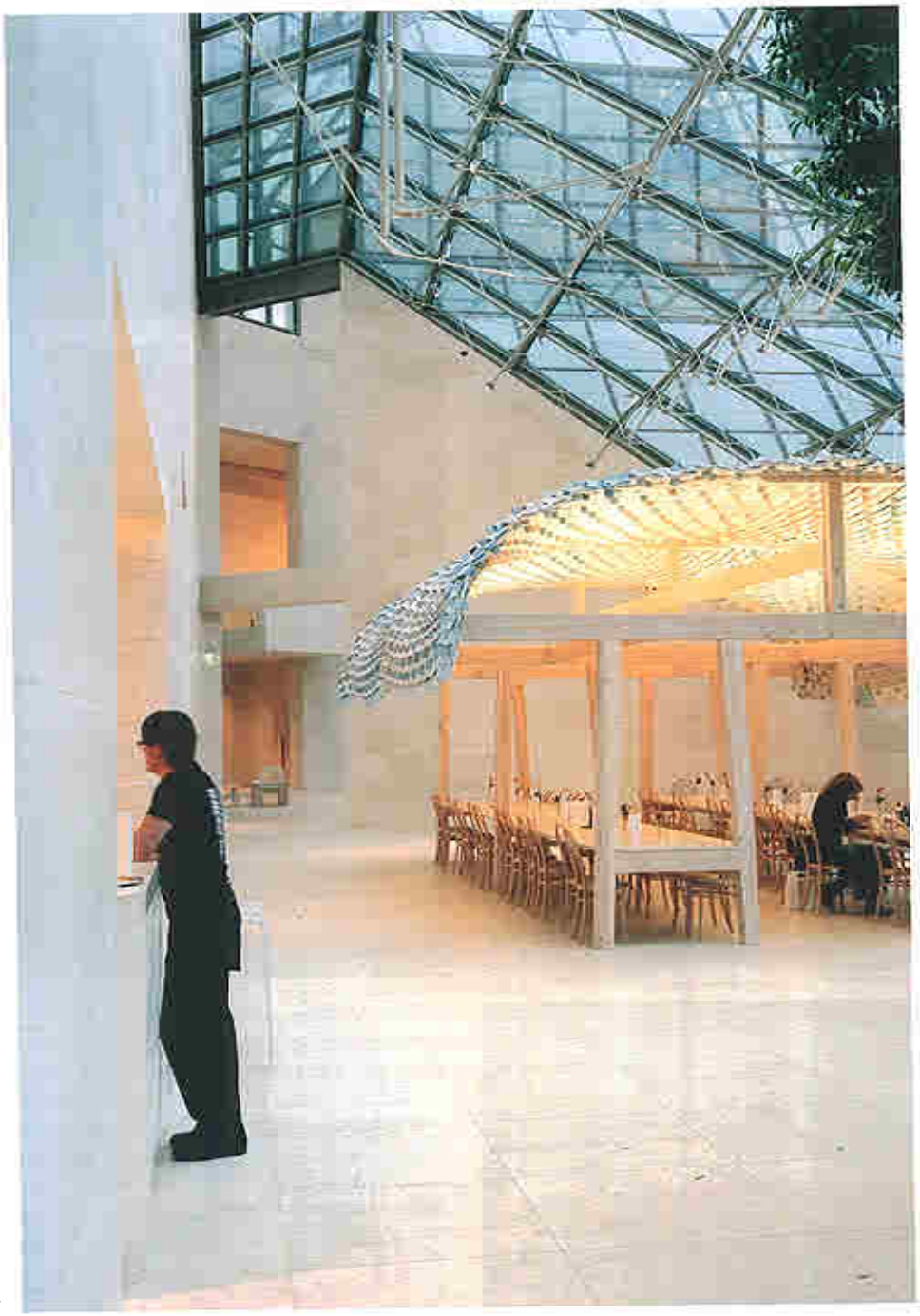
MUDAM, Luxembourg

The Pei building from the inside: a concept on the test bench

With its protracted planning history, MUDAM reminds us that architecture should be judged by rather longer timescales than we are used to in our fast-paced age. An ambitious curatorial programme and a collection of modern art, which has been systematically built up since the year 2000, ensures the new museum has equal appeal to both avant-garde art-lovers and those more conservatively inclined. The sensibilities of the latter are placated by the tastefulness of Pei's typical surface designs and proportions, preparing their minds for the audacious creations of contemporary artists. Almost 115,000 visitors have already been counted in the first year – a previously unheard of figure for Luxembourg.

After the rather intimate entrance foyer, the large central hall under the pyramidal glass roof is a celebration of space, of lines of vision and of the view of the fort, the city and the landscape. The museum layout is easily comprehensible, offering commensurate space for all important art genres on three floor levels; whereby, link passages, footbridges and stairways dramatically connect the large halls and small studios. Two spacious sky-lit halls provide classic painting gallery conditions, whereas the windowless rooms on the basement level offer space for media-intensive art forms. In MUDAM, the museum café and gift shop, which are often just an afterthought in other art galleries, are not only spacious but also conceptually integrated parts of the museum tour. Both these service facilities follow their own, original curatorial strategies, with features such as wooden pavilions and felt shingling designed by the Bouroullec brothers.

The clean, geometric shapes and high-quality surfaces in Pei's buildings benefit from lighting concepts that predominantly work with ceiling-integrated downlights and wallwasher lighting. This approach can be seen in the ancillary rooms, whereas the exhibition galleries are fitted with ERCO's future-safe DALI tracks that can be flexibly fitted with luminaires to suit the required situation. The transparent roof and facade surfaces, built of glass and steel, also have tracks and spotlights for lighting the room and objects. As in the glass pyramid of the Louvre, spotlights are also mounted in concealed fashion on the transition from the wall to the glass surfaces in order to add focused scenic lighting to the filigree support structure.



The museum's café is an integral part of the curatorial programme – inviting visitors to "be the artist's guest". Luxembourg's celebrity chef Léa Linster together with the artists Tal Lancman and Maurizio Galante, who also look after the museum gift shop as curators, designed

Track-mounting the DALI-compatible Parscan spotlights for low-voltage halogen lamps allows them to be unobtrusively integrated into the support structure of the transparent surfaces.

The specially built chandelier, consisting of 16 metal cylinders, contains individually focusable directional luminaire inserts cradled in cardan joints and originating from the Gimbal product range.

The hand of the architect can be seen in typical features in the central hall. From this point onwards the building starts to open up, offering specifically chosen views that interweave the interior with its near and distant surroundings.

The combination of an ambitious programme and classical-modern architecture is well received by the public: healthy visitor figures confirm the concept of MUDAM.

Arranged like satellites, separate little studio rooms are connected to the main building via glazed bridges.

The tectonics of the architecture is optimally brought out by the inconspicuous ceiling-integrated lighting with downlights and wallwashers.