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Phänomena Science Center, Lüdenscheid

Report

Phänomenta, Lüdenscheid / Deutschland

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- Project: Phänomenta, Lüdenscheid / Germany
 Architecture (design): schneider+schumacher, Frankfurt am Main / Germany
 Architecture (construction and implementation): KKW Architekten, Altena / Germany
 Photographer: Thomas Mayer, Neuss / Germany
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- Architecture: schneider+schumacher, Frankfurt am Main / Germany
- Photography: Thomas Mayer, Neuss / Deutschland
- Place: Lüdenscheid / Deutschland
- Country: Germany
- 09.02.2016
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The Phänomenta Science Center in Lüdenscheid, Germany, is a highly interactive and exciting science museum featuring an array of experiments, models and demonstrations, enabling participatory exploration of the world of physics, ranging from electricity and magnetism to optical and acoustic illusions.

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A spectacular new construction has now expanded the existing exhibition space, consisting of an entrance building from which a 76-metre high tower emerges. This blends strikingly into the cityscape of the North Rhine Westphalian city of Lüdenscheid - location of the ERCO company headquarters since its foundation in 1934.



Architecture and light in unison

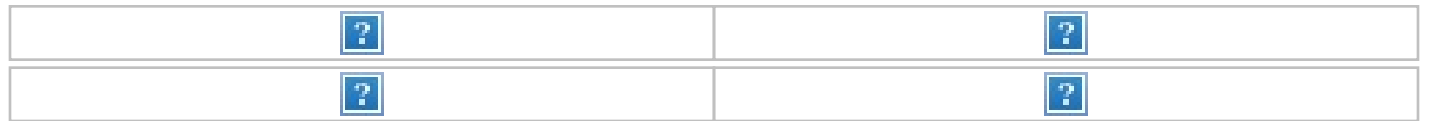
The lighting concept of the Phänomenta was precisely designed for the exhibition. Upon entering the museum, visitors have already become attuned to the atmospheric exhibition design characterised by light. In-ground luminaires for outdoor applications illuminate the underside of the canopy roof, lighting the entrance zone discreetly and invitingly with indirect light. Recessed luminaires in the entrance area and corridors blend discreetly into the architectural concept, providing glare-free general lighting.



A sophisticated lighting concept for the tower

The architects planned the tower with a rhythmic, freely constructed design, enabling it to have a different appearance according to the angle of view. A particular challenge in terms of lighting design was the illumination of the tower, and this concerned finding a solution that merely illuminated the building but not the complete surroundings. The result was intended to be unobtrusive but still impressive. In-house lighting analyses came to the conclusion that indoor lighting achieved better results than floodlighting on the outside. ERCO Powercast lighting tools were used, which are ideal for powerful accent lighting. Extremely precise photometrics avoid spill light. The housing is highly

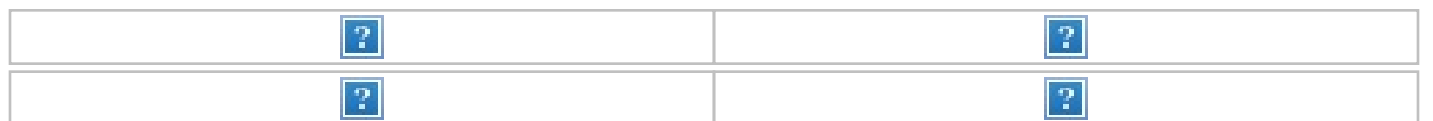
resistant and the luminaire features maintenance-free lighting technology, making it extremely efficient and reliable. A Foucault pendulum is suspended in the centre of the tower, its 30-metre length being almost half as long as its archetype in the Panthéon in Paris. This fixture clearly demonstrates the Earth's rotation and is located in the centre of the new exhibition.



From almost complete darkness to high illuminance levels

From almost complete darkness to high illuminance levels

The exhibits are illuminated by ERCO track spots and downlights that create a variety of light situations. Experiments take place for example in almost complete darkness, and rooms contain 360° projections and installations that demand high illuminance. In the so-called Phänorama, the Skim recessed luminaire even fulfils both lighting needs: when webcams mounted to the tower project a real-time panorama of the city of Lüdenscheid onto the walls, the dimmable black downlight blends almost invisibly into the background. If the space below the pendulum tower is fitted out with chairs for events though, Skim creates pleasant lighting levels. Optec spotlights with flexible applications illuminate individual exhibits in the other mainly dark exhibition rooms. The light distribution patterns are matched precisely to the size and shape of each exhibit, enabling them to arouse the curiosity of visitors as individual objects while generally guiding people in an intuitive way through the exhibition. ERCO products are also used in the old Phänomenta building - Optec spotlights illuminate the exhibition indoors, whilst Grasshopper projectors outdoors illuminate the facade with grazing light. All luminaires are digitally controllable via DALI.



Luminaires used

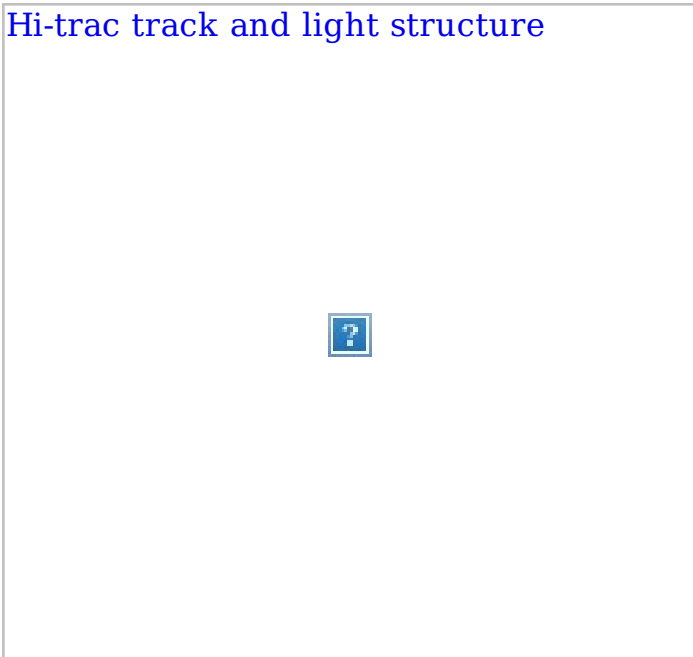
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Grasshopper

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