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Milan Cathedral



Report

Bringing majestic dimensions to life: The relighting of Milan Cathedral

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to use LED technology for a new aesthetic standard of quality, all the more, as the one-off investment in high-quality lighting tools promised to pay for itself in the long run through savings in energy and maintenance costs. Keeping the mounting location at over 30m along the base of the vault also meant that the existing electrical installation could stay in place. The luminaires remain out of sight for the visitors, but can be aligned optimally to illuminate objects and surfaces in the interior. The crucial step towards a differentiated lighting concept was the decision to use a significantly larger number of luminaires with different outputs and beam geometries to offer an optimal solution for the specific lighting tasks in the room. The higher number of luminaires located in a place that is difficult to access would have caused significant maintenance problems with conventional technology - the low-maintenance LED luminaires, in contrast, afford the creative scope required for the lighting design.

The concept by Ferrara Palladino integrates several components. First, the uniform illumination of the Gothic vaults, which are staged for the first time using this approach. The ceiling washlighting reinforces the sense of height and lightness in the interior. Indirect light blends with additional zenithal illumination of the ground "to produce a kind of light carpet that connects the different spaces and creates a milder overall impression," as Pietro Palladino describes it. Within this ambient lighting, accent lighting adds contrasts that direct the attention - onto the rhythm of the slender columns, but also onto individual prominent objects such as sculptures of saints, altars and paintings. These lighting tasks, where distinct brightness contrasts need to be created across a distance of 40m or 50m, require spotlights with a very narrow beam, yet high lumen packages, as ERCO is able to offer thanks to its innovative Spherolit LED lenses. The designers did not specify an electronic lighting control system, but structured the lighting in switchable groups to allow the selection of light scenes appropriate for different occasions and usage situations.

Bottom line: A sustainable solution



The lighting concept with ERCO LED luminaires was tested in a virtual environment using the lighting design software DIALux. Calculations at this stage revealed that the energy consumption would reduce by almost two thirds despite the higher number of luminaires compared to the old system - the investment in light quality therefore can also be calculated in financial terms through savings in energy and maintenance costs. But even mock-ups in practice proved that the LED luminaires of the Parscan range impress with a brilliance and precision that bridges even significant lighting distances. As a standard, the Parscan spotlights also met the other requirements of the lighting designers, such as a functional life of more than 50,000 hours, integrated dimmers for brightness adjustment during installation and lockable alignment. Their compact design was equally well received: "The individual luminaires with their compact dimensions blend unobtrusively into their surroundings," Palladino concludes with satisfaction.

The individual luminaires with their compact dimensions blend unobtrusively into their surroundings

And what about the energy balance? Despite the higher number of now 784 luminaires, the connected load effectively reduced from 70kW to 23.7kW. A success that has earned the project an A+ rating for energy efficiency and ERCO as the supplier an Environment-Friendly Innovation Award 2015 by Italian environmental organisation Legambiente. As a result, the relighting of Milan Cathedral points the way both aesthetically and in functional terms for energy-saving measures through innovative lighting in sacred buildings and other historic monuments.



About the author: Martin Krautter works as a freelance author and journalist in Offenbach am Main. After studies in industrial design at the HfG Offenbach, he was with ERCO in Lüdenscheid as head of media relations and the editorial team from 1998 to 2013. www.m-krautter.de

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