



SPOTLIGHT



Pics: Linus Lintner



Nationalmuseum Sweden

The Nationalmuseum, Sweden's museum of art and design, located in Stockholm, reopened in October 2018 following an extensive renovation aiming to place it in a new light.

Over a seven-year period, Kardorff Ingenieure Lichtplanung collaborated with architects Wingårdhs on the project to design the natural and artificial lighting within the museum.

The Nationalmuseum holds a collection of 700,000 objects, and is the largest art museum in the Nordic countries. On its opening, in 1866, the museum utilised the power of daylight, with the entry hall, galleries and inner courtyards featuring large windows and glass skylights. However, over recent years, the museum has closed itself off to natural light.

Therefore one of the major aims for Kardorff Ingenieure in renovating the museum was to create naturally lit spaces and art exhibits, restoring the stunning views of the city and re-establishing the 'conversation between building and city'.

Using computer simulations, Kardorff Ingenieure studied the light and sun exposure of the historical building to use the potential offered by natural light, and to design the necessary protections. Sun and glare protection and the artificial lighting had to be carefully coordinated with one another, making onsite testing of many samples necessary to identify the most suitable materials.

While natural light inherently brightens the rooms during the day, purposefully directed artificial light was necessary to effectively present the artwork on display. This led to the installation of 1,500 spotlights of various kinds throughout the Nationalmuseum.

These artificial lights are used to unobtrusively show the architecture

and set the stage for the objects on display. Each room was considered individually, keeping in mind the historical architectural impression of the galleries to avoid impacting them negatively. For example, in the domed halls, lighting tracks span the gaps between the pillars in a way that is parallel to the visitor's line of sight.

The positioning of the lights was chosen so that not only free-standing works or those hung on the walls are illuminated. Most of the display cases are externally lit by spotlights, making them appear particularly light and transparent. In places where the lighting had to be integrated, it was done discreetly and minimally. Some galleries required special solutions: the wall-mounted luminaires designed specifically for the inner courtyards illuminate the impressive sculptures, while also serving to light spaces for events.

The spotlights in the gallery spaces were carefully chosen to match the requirements of the displays; all necessary lighting angles, amounts of light and myriad other criteria were defined before selecting what to use. The light cones are very homogenous, and contribute to the harmonious atmosphere in the galleries. Together with art restorers and curators, the light qualities of different spotlights were compared and evaluated in detail using original artworks.

Kardorff Ingenieure placed high priority on matching lighting atmosphere and mood to the innate character of each gallery, and on the light's ability to reflect changes in weather and time of day. Light is therefore able to lend a living aspect to an exhibit, contributing to a unique architectural experience.

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