

A modern era palace for Spain's royal treasures

The new Royal Collections Museum in Madrid is destined to house the most exquisite artefacts from two regal dynasties. Opulent exhibits should, however, not come at the cost of excessive energy consumption. To keep an exceedingly modest resource footprint, the building relies on state-of-the-art automation expertise from SAUTER.

While the Royal Collections Museum is a modern marvel, its origins date back as far as the 1930s. The government's long-standing plans to create a Museum of Arms and Carriages remained, however, paralysed for many decades. In the end, it would take almost exactly 70 years for construction to finally begin in 2006.

Over this time, the initiators' ideas for the royal exhibition space took further shape. The collection's scope was extended to also include exhibits such as the royal jewels, accessories and precious tapestries of the Houses of Habsburg and Bourbon. Fittingly, the museum should be situated in close proximity to the Royal Palace and Almudena Cathedral in Campo del Moro Park near old Madrid's western boundary.

Preserve historic places

The Royal Collections Museum's winning design by the renowned Spanish architects Emilio Tuñón and Luis Moreno Mansilla honours this illustrious neighbourhood. It treats the building as a new, but fitting element of the surrounding landscape, which is characterized by an elegant combination of artificial and natural accents.

The structure preserves La Almudena Square, the open forum connecting Palace and Cathedral, and does not encroach on this major tourist attraction. Following the linear traces of existing structures, the new building artfully extends the base wall and the Royal Palace's features on three levels.



Create modern spaces

Each of the three exhibition floors is conceived as a pavilion of just over 100 by 16 metres with ceiling heights of up to 8 metres. In total, the museum occupies 14 levels above and below ground, including public foyers, art storage facilities and delivery bays, offices and engineering spaces. Roughly 20,000 of its gross floor area of 50,000 square metres are dedicated to exhibition spaces.

The building's recognizable façade was crafted from great blocks of Gris Quintana granite, which were hollowed out to be used as cover for the museum's reinforced concrete structure. However, not only modern masonry, but also historic stonework posed great challenges for the project. The discovery of archaeological remains during excavation work meant that plans had to be partially redrawn after construction began. The most respectful solution was to integrate a substantial section of ancient city wall into the building.

High-tech for efficient operation

Patrimonio Nacional is the public body responsible for the historical-artistic heritage of Spain and the Spanish Monarchy. It is dedicated to the care of all so-called Royal Sites, such as palaces, gardens and even monasteries. The Royal Collections Museum will finally provide it with the long sought-after facilities to showcase the artistic and historical wealth of the many treasures under its auspices. In addition to this core mission of preserving the past, Patrimonio Nacional was also committed to building a site that would conserve as much energy as technologically possible. For this reason, the building had to satisfy the high demands of the Spanish energy class B, the highest qualification for a building of its kind.

The efficient technologies of SAUTER, the company's experience with museum buildings, its outstanding regional references, and – not least – favourable cost convinced the general contractor to award SAUTER with the complete building automation solution for the Royal Collections Museum.

Reliable room automation

Besides sustainability, reliability is an absolute must for any museum. Room conditions have to help preserve artefacts and create a comfortable environment for a highly variable number of visitors. Inefficiencies can become very expensive, very quickly.

The BACnet/IP solution based on the EY-modulo 5 building automation system ensures that all components run in concert to ensure the required room conditions. It provides facility management with the means to closely monitor and precisely control the state and operation of all attached equipment. For this purpose, the system integrates over 3,100 data points.

The SAUTER solution for the Royal Collections Museum at a glance:

- SAUTER novaPro Open building management suite
- SAUTER modu525 modular automation stations
- SAUTER ecos500 room automation stations
- SAUTER ecos3 room operating units