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Protecting priceless historic artefacts at the Maritime Museum of Barcelona

How do you protect centuries-old treasures from the ravages of time? The Maritime Museum of Barcelona is taking on this challenge with the latest technology. Thanks to the Testo Saveris 1 surveillance system, the museum not only protects its historical artifacts, but also adapts to the special requirements of a 13th century building - preserving art and culture for generations.

The Customer

The Maritime Museum of Barcelona (MMB) is a public museum dedicated to the conservation of maritime culture. It is one of the leading institutions for maritime heritage. Apart from the exhibition of its artefacts, the MMB's main objectives are the study, conservation, and dissemination of Catalonia's maritime heritage. Additionally, the museum is in one of the most emblematic monumental complexes of the city, the former Royal Shipyards of Barcelona. The uniqueness of this building, dating back to the 13th century, requires a holistic approach and extensive measures regarding the conservation and preservation, since the historic building was not originally intended to be used as a museum. The complex is composed of a succession of Gothic, almost church-like naves supported by stone pillars and covered with a gabled roof.

The Challenge

The durability of the historic artefacts held by the Maritime Museum of Barcelona requires the application of preventive conservation measures. In the background, a large group of conservation and restoration professionals take care of the preservation of the assets held by the museum. Their efforts need to be constant in order to prevent their deterioration. Proper handling and correct storage and exhibition conditions in regard to optimal climate and light conditions are the key to long-term conservation. The measures taken help to minimize and avoid restoration treatments and, in the worst case, damage to century-old, priceless artefacts.

Therefore, all spaces and activities directly related to the museum‘s collections need to be monitored closely. What sounds like a solvable task, turns into a substantial challenge given the fact that the MMB holds a wide variety of objects of all origins, materials, and sizes. Among them are paintings, navigation instruments and charts, books, photographs, coins, and even a collection of historic ships, including a detailed replica of the 16th-century royal vessel of Don Juan of Austria.The Maritime Museum of Barcelona has six preservation rooms, five within the shipyard building itself and one off-siteoutside the city of Barcelona. Depending on the type of object and the materials, the assets are placed in specialized reservevaults. Each of them requires specific conditions for itspreservation.

The Solution

The diversity of the artefacts brings complexity into the task of environmental monitoring at the MMB. The museum currently has 22 sensors distributed between the exhibition rooms and the reservation rooms. In 2008, the Maritime Museum of Barcelona has entrusted Testo with the controlling of these conditions, chief among which are temperature and humidity.The museum has been collecting data with data loggers for some time before the executives decided to invest in a more complete monitoring system. The choice was made in favor of the Testo Saveris 1, only after having tested two other systems, which turned out to be less precise and less flexible considering the uniqueness of the 13th century building.

Did you know?

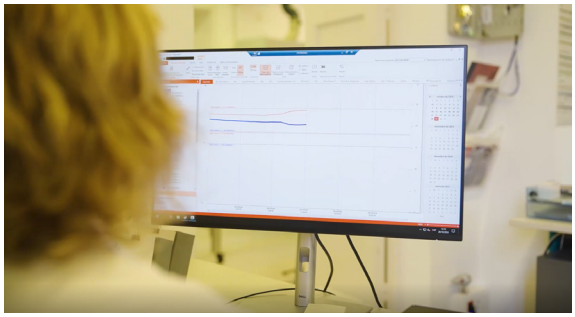
Relative humidity (RH) plays a critical role in the preservation of historical artifacts. High humidity can lead to swelling, warping, and mold growth in wood,while excessive moisture promotes mildew and discoloration in leather. For paper, high humidity causes wrinkling and weakens the material, making it more prone to mold. Textiles, particularly natural fibers like cotton and wool, also suffer from mold and fiber weakening under such conditions. Conversely, low humidity can make woodcrack and split as it contracts. Leather becomes brittle and prone to cracking, paper turns fragile, and textiles lose their elasticity and tensile strength, increasing the risk of damage. Metal objects are particularly susceptible to corrosion when humidity exceeds 60%, though they remain stable under dry conditions. Ceramics and glass are less affected by moisture. Additional environmental factors include light exposure, which fades colors and weakens organic materials, airborne pollutants that degrade surfaces, and pests that thrive in humid environments, damaging wood, paper,and textiles. Hence, a well-monitored and consistent environment is essential for safeguarding artifacts against these damaging influences.

Walls of stone and massive gothic pillars also required industry-leading data transmission technology. Only a highly capable monitoring system such as the Testo Saveris 1,which is also widely used in the pharmaceutical industry, allowed the MMB to cover the entire exhibition space and the preservation rooms. The Testo Saveris 1 has been working for more than a decade now. However, this does not mean that the MMB has to rely on ageing technology. In 2021, in the course of an extensive remodeling effort, the museum took advantage of the possibility to update the existing version of the Testo Saveris 1 system, implementing state-of-the-art Wi-Fi data loggers.

The advantages of the Testo Saveris 1

The Testo Saveris 1 software offers real-time checks of all data with a few clicks through the Dashboard. In only a few seconds, the MMB's conservationists can check the conditions in all of the spaces where data loggers are located. This has proven very useful and timesaving. In being able to configure maximum and minimal limit values in each space, the system can ensure optimal conditions for every object. In case of any anomaly or deviation, the system sends an alarm, allowing the staff to react instantly and check if any significant changes can be detected, for example a faulty air conditioning system.

The users at MMB emphasize that the Testo Saveris 1 is an easy-to-use program. The processing of data in easy to analyze graphs or lists makes the daily use of the system efficient and effective. Over time, all the recordings can be used to produce annual reports. In the end, the automatically collected data assists the Maritime Museum of Barcelona inprotecting its priceless cultural assets and artefacts.



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