



EXHIBITION “LADIES ONLY” IN PERFECTLY MONITORED CLIMATE

The Hohenzollern family came to Brandenburg 600 years ago, in 1415. Twelve Prince-Electors, seven Kings and three Emperors made Prussian, German and European history for almost 500 years.



The painting of Queen Augusta of Prussia, exhibited in a perfectly climatized room.

The women at their side have mostly been overlooked by the historians. By turning the spotlight on them, the Foundation for Prussian Castles and Gardens (SPSG) has paved the way to discovering hitherto unknown aspects of Prussian and European history.

Besides the oldest authentic woman's dress in Brandenburg (c. 1460), and the coronation cloak of Queen Augusta, the Foundation for Prussian Castles and Gardens (SPSG) presents some 300 exhibits from national and international donors in a total exhibition area of 900 square metres.

Room climate in exhibitions

Climate and lighting are influential factors in the state of preservation of museum exhibits, because they can cause damage by accelerating chemical and biological degradation processes. In recent decades, the exhibition sector has developed a standard for conservation conditions in exhibitions. In those with the most varied works of art, temperatures of 18–22°C and relative humidity around 50%RH with slight variations, and lighting of 50 to 200 Lux, are striven for, depending on the sensitivity of the materials.

Preventive Conservation Department

Since 2014, the Foundation for Prussian Castles and Gardens has had a department for “Preventive Conservation” with a staff of two. In this, it follows a line of development in many castle administrations and museums.

Theater “Ladies Only”

The theater in Charlottenburg has no central air-conditioning system. The room climate is influenced by the massive building shell, with masonry walls some 80 cm thick, solid, reinforced concrete ceilings and floors, and composite windows with double glazing. To reduce warming through sunlight, the windows on the south side have been given temporary external sunshades for the duration of the exhibition.

Challenges and requirements on measuring equipment arising from the exhibition concept

Ms. Undine Köhler, a Restoration graduate, explains that “the SPSG has hitherto had no experience with using the building as an exhibition area. For this reason, there were, in general, very high demands on the quality and availabili-

ty of measurement data. All decisions on the control of mobile air conditioning equipment and ventilation are made on the basis of measurements in the individual rooms.”

The concept for the exhibition combines a large number of works of art made of the most varied and sensitive materials. Mr. Wulf Eckermann, head of the Preventive Conservation department, sums up, “We observe measurement curves and developments over days, months, years. We don’t so much work with absolute criteria, exceeded threshold values, etc. We have no fixed processes and tolerances, as they do in industry. We want to understand situations, become familiar with buildings, assess influencing parameters, optimize measures, motivate colleagues.”

“ The Rotronic measuring system was convincing because of its high degree of data security, but also because of its flexibility, low maintenance costs and simple operation.”

Wulf Eckermann
Stiftung Preussische Schlösser, Germany

The wireless data loggers

Suitable for a wide range of humidity and temperature monitoring tasks. Wireless transmission – possible over distances of up to 100m – saves the user wiring costs, and the data can be collected and recorded from inaccessible points quickly and easily. Thanks to the combination of wireless transmission and data logger, the greatest possible reliability against failure is ensured. Up to 100 devices can be configured and read out via the HW4 software. Uses: meteorology, foodstuffs industry, building technology, museums, environmental/laboratory equipment, research & development, pharmaceutical/chemical/logistics and textile industry.



Deciding factors in the choice of measuring system were, in addition to the long-term stability, precision and reproducibility of the HygroClip2 probe, the capability of measuring right at the work of art, the flexibility with regard to parameters, the low maintenance effort, simple operation and data security.



Left to right: Wulf Eckermann and Undine Köhler, Preussische Schlösser; Roland Scheurich and Christoph Arnsward, ROTRONIC.

The measurement of CO₂ in the room air, for example, is not a conservation requirement, because it has no potential to damage the works of art. However, the CO₂ content in the exhibition rooms is an important criterion for air quality and hygiene, and thus for the comfort of the visitors and the working conditions of the custodians. Mr. Eckermann says, “The rooms are ventilated individually, a general assessment of the air quality and exchange with outside air being made via the CO₂ content. However, only the slightest variations in the climatic values are permitted.”

Wireless data loggers for active monitoring

To monitor the climatic conditions reliably and flexibly, LOG-HC2-RC wireless data loggers are used. The measured values are recorded locally and safe from manipulation in a memory with a capacity of 500,000 values, and simultaneously placed in the room in ultra-low-power mode. With no cabling requirement, and without provision of an infrastructure such as a LAN or power outlets, the loggers are mounted unobtrusively on walls and in glass cases, thus impinging only minimally on the exhibition concept.