Central Depository of the National Library in Prague

Building management for the National Preservation Collection.

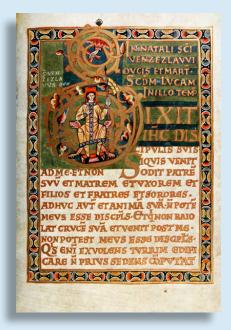
"Literature is the immortality of speech" (August Wilhelm von Schlegel) – the operator of the National Library of the Czech Republic must ensure the right conditions in its buildings. In order to achieve this objective, the Central Depository of the National Library in Prague has been refurbished with reliable and efficient technology made by SAUTER – a solution for monitoring the specific environment required for preserving rare national literature. Its experience in implementing reliable automation systems in buildings such as museums gives operators the assurance that SAUTER is the right decision for their projects.

The collection of the National Library currently includes over 6.5 million volumes – a collection which grows by approximately 80'000 titles every year. It does not just outrank every other library in the country, but its vast collection also places it among the most valuable libraries in Europe as well as worldwide. Its historical collections are mostly of Czech and European origin and revolve around the Bohemica as well as the social and natural sciences. Among the most valuable documents is the Vysehrad Codex from the year 1085. The book, also known as the Coronation Gospels, is considered to be the most important and valuable manuscript in Bohemia.

The original building, constructed back in the year 1556, is located in the Clementinum in the Old Town of Prague. Although the setting of a historic building would usually be considered ideal for storing precious artefacts, it does not meet the requirements of a modern library for preserving such important volumes. Combined with the logistics of storing an ever-growing collection, the decision was made to build the Central Depository in the south-eastern municipal district Hostivar. With construction finished by the end of 2012, millions of books were transported across the city in the following year. At times, lining all the books up next to each other would have added up to a length of 35 kilometres. A collection of this importance and value hence requires the right environment with a reliable and efficient building management system (BMS) for preserving history – a solution which SAUTER was able to provide.

Providing the right climate

When it comes to storing precious, historical artefacts, the right environment plays an essential role in their preservation. Apart from considering factors such as exposure to light rays, in particular sunlight and fluorescent light and not placing shelves against outer



Codex Vyssegradensis

The Codex Vyssegradensis (Czech Kodex vyšehradský, Codex from Vyšehrad, also known as the Coronation Gospels of King Vratislaus II.) is an illustrated pericope book. It was made in 1085 for the coronation of the first Bohemian king. The Codex consists of 108 parchment leaves of 41.m × 34 cm and is the most important illuminated manuscript of the 11th century in the Czech Republic. It is part of the country's national cultural heritage and is located in the National and University Library in Prague, signature Ms. XIV, A 13.

Source: Wikipedia



walls or near windows, the actual room climate may have the largest influence on the volumes. Consequently, the Central Depository needed a reliable system to reduce fluctuations in temperature and humidity, since these are especially damaging and can accelerate their degradation and decay.

Already during the initial construction phase of the Central Depository, some rooms were equipped with strict climate control, in particular those designated for safeguarding the national preservation collection. Following the refurbishment of the Central Depository from October 2018 to March 2019, the new BMS was then based on SAUTER's proven and reliable solution for building management – the modulo 5 technology. The first phase involved the installation of 10 BACnet automation stations modu525, with the final number later adding up to 29. Among its main and most important functionalities is controlling the cooling and heating systems as well as the aircondition units with special functions for temperature and humidity control.

High-end technology made by SAUTER

In addition to ensuring the right environment for the historical artefacts, the specific character of the building also required the right amount of attention. With a proven track record of successfully implemented projects covering comparable requirements and similar technology management, SAUTER convinced the building operator that its technology would be the right choice to ensure efficient energy management while simultaneously guaranteeing a highly reliable operation. Implementing its solution in accordance with the most common and important quality management norm, namely ISO 9001, only underlines the expertise of SAUTER. The implemented solution is based on SAUTER modulo 5 – a modular and configurable system for integrated building management. The components of the modulo 5 product family are perfectly suited for combining room automation with energy supply. The interaction among the automation stations modu525 hence achieves the technological efficiency required for meeting the specific requirements of this project. Furthermore, SAUTER implements the open communication protocol BACnet as a standard in its modulo 5 systems. The protocol, especially suited for building automation, allowed combining different components of the Central Depository without having to establish complicated interfaces.

For the specific challenges of this project, SAUTER used the modular automation stations modu525 to regulate, control, monitor and optimise the heating, ventilation and air-conditioning systems. These collect thousands of data points, which are then visualized and managed by the BACnet-certified building management software SAUTER Vision Center. With its intuitive design and high userfriendliness, it can easily be used without prior knowledge and gives the operator a quick and easy oversight. This is especially important in situations, in which fluctuations in temperature and humidity need to be prevented – for example in the Central Depository of the National Library of the Czech Republic.

