

# Dual protection for irreplaceable books and artwork

The Royal Library, Copenhagen, Denmark



The Royal Library in Copenhagen is the national library of Denmark. The Royal Library stores a huge collection of irreplaceable books and artwork. It has buildings dating back from 1604 up to the newest one that has recently opened – and it is in this building where the security experts of The Royal Library have decided to concentrate most of their security resources and all the knowledge they have about security.

When they looked at the threat scenario, the experts came to the conclusion that fire is the biggest threat for their principal material: irreplaceable books. Furthermore, books pose an even greater challenge, as fires in combination with books do not behave like standard fires in other materials. Hence, The Royal Library was very thorough when evaluating the proper extinguishing solution for their new storage building. A team with consulting engineers and fire department representatives supported them. They even brought books and shelves to the Siemens test center in Switzerland for a real fire test. Sinorix™ H<sub>2</sub>O Gas has finally been chosen as the ideal extinguishing solution.

The whole evaluation process was done in close cooperation between The Royal Library and Siemens. An integral fire protection concept was developed - not only comprising extinguishing but also fire detection and services – to ensure substantial protection for these irreplaceable assets.



Sinorix H<sub>2</sub>O Gas protects Irreplaceable books and artwork

#### ■ The Royal Library, Copenhagen

- Denmark's national library was founded by King Frederic II around the year 1648
- It stores a huge collection of books and artwork, i.e. two pieces of everything that has been printed in Denmark since the 17<sup>th</sup> century

#### ■ Reliable protection of irreplaceable collections

- Main focus: evaluation and installation of the right extinguishing solution to reliably protect the irreplaceable books in case of a fire incident
- Fire detection and services need to be part of the offering to ensure integral protection

#### ■ Comprehensive fire safety solution from one single source

- Early and precise detection with aspirating smoke detectors
- Fast and controlled alarming with reliable fire control panel
- Dual protection with highly efficient extinguishing solution
- Tailored exactly to the specific application and risk of fire – from risk assessment, system design, installation, and commissioning to maintenance

#### ■ Efficient extinguishing solution

- Sinorix H<sub>2</sub>O Gas has been chosen because it is ideally suited to protect irreplaceable documents, artwork and books - even smoldering and deep-seated fires have no chance
- The combination of nitrogen and water offers dual protection: while nitrogen displaces the oxygen, water mist lowers the ambient temperature – resulting in reliable extinguishing and effective prevention of reignition
- The system is thereby tailored to bring the exact amount of water for the specific risk of fire
- Sinorix H<sub>2</sub>O Gas minimizes secondary damage with its fine spraying technology: the very thin layer of water which is generated is usually harmless because the water normally evaporates within a few minutes

#### ■ Sustainable protection of The Royal Library's principal materials: books

- Siemens was able to fulfil the customer's high expectations of protecting his valuable books by offering extensive evaluation support, system design, installation, commissioning as well as on-site testing and maintenance – thus resulting in an integral fire safety solution tailored to his application and risk of fire for optimal protection

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### Highlights

- Effective and reliable protection of Denmark's national library with a huge collection of irreplaceable books
- Tailored integral fire safety solution from one single source
- Highly efficient extinguishing solution for dual protection: reliable extinguishing and effective prevention of reignition
- Ideally suited to protect the Royal Library's principal materials – books
- The two natural extinguishing agents are chemically neutral and safe for the environment and people
- Approved system according to VdS 2380 (S307002)

The information in this document contains general descriptions of technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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