Historic Buildings and Heritage
Risks and Solutions
Thomas Pedrett
Typical risks in historical buildings and museums
Passive & Natural Elements – High Probability

- Structures are not fire resistant – wood and other traditional, combustible building materials
- Obsolete electrical installations
- High fire load – furniture, furnishings, books etc.
- Heating equipment
- Lightning
Typical risks in historical buildings and museums
Human made elements

- Renovation works
- Arson
- Large numbers of visitors
- Intrusion / Hold Up
- Vandalism & Sabotage
Loss of unique, non-renewable historical values...

**Windsor Castle**
7 classified buildings lost per month in UK because of fire (1992)
Restoration costs $40 million

**La Fenice**
Venice opera house, presents an example of fire victim falling several times.
(1836 / 1996 )

**Anna Amalia library**
50 000 irreplaceable books and unique collections lost (2004) Restoration costs €80 million
Fire Safety & Security in historical buildings and museums
The major tasks & challenge ...

Keeping people safe and meeting legal obligations
Life safety and the rescue of people is the no. 1 concern

Protecting buildings and historical assets
... to ensure maximum protection of
• Cultural heritage buildings and interior structures
• And unique historical objects ...

without affecting the aesthetical value and historical integrity of the building structure
How to integrate modern fire and life safety requirements while preserving the authenticity and historical character of the building

What if:

- Ceiling is untouchable
- Installation, wiring cables, not possible
- No ceiling is available (Free Space)
….without affecting the aesthetical value and historical integrity of the building structure

**Make detection invisible as ex. Aspirating Smoke Detectors**

- Active Air sampling system
- Ideal choice for difficult environments
- Highest detection reliability
- Highest sensitivity
- Early warning
Documents, art work, or ancient books which are stored in archives are often irreplaceable – smoke particles from open fire or excessive extinguishing water can harm them severely.

Ideal is an integrated solution that detects an incipient fire as early as possible and uses gas/water-combined technology that ensures reliable extinguishing and avoids re-ignition.
What if a ceiling is high and no technical equipment is accepted
Fire Detection in exhibition halls

Detection through reflection

Wireless Detectors
The tailored offering from Siemens to protect unique, irreplaceable historical assets …

**Buildings**
Provide fire protection without changing the buildings’ structure and character

**Structure**
Preserve interior architectural details of high cultural and historical significance

**Historical objects**
Avoid irrevocable damage caused by fire or inappropriate extinguishing agents

- Siemens patent detection ASA technology is the basis for full building protection, early and reliable detection, structured phased evacuation and protection measures in fully integrated fire protection systems
- SWING wireless mesh technology for high operational availability and reliable detection
- Practically invisible ASD-systems provide very early and reliable detection
- Reuse of existing cables
- Early response before fire becomes damaging
- Reliable detection eliminates false alarms
- Tailored and non-damaging extinguishing solutions
Command & Control Security Room

Integrated Management Security Platform:
- Fire detection with wireless devices;
- Intrusion alarm;
- Access control;
- Video surveillance;
- Maintenance Services & Technical Assistance
Security Elements
How to protect? The protection principles

Perimeter surveillance  Periphery surveillance  Room surveillance  Object surveillance

Video surveillance  Security analytics  Access control  Intrusion detection
How to protect Historical Buildings from the outside perimeter
How to protect a wall but invisible?
Example: seismic protection system for outdoor application
What do you see?

- Intruder detector
- Fire Detector
- People Counter
- Room Thermostat
- Number of next room
- "Totem pole"
- Picture Protection
How to deal with changing exhibitions
Example: Zurich Art Museum
Secure in 4 steps
Fire Safety & Security Systems:
- Fire detection;
- Intrusion alarm;
- Maintenance Services & Technical Assistance
To maintain a heritage, you need to maintain the way you protect it.

Keys to protection

• Modernization and extensions
• Performance Service
Your focus remains on creating perfect places

...to reduce risk

...to increase building efficiency

...to become more secure

...to protect people
Contact

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