

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



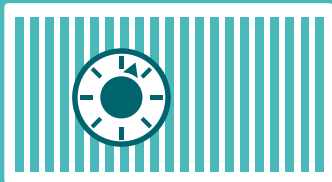
Obsolete electrical installations



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



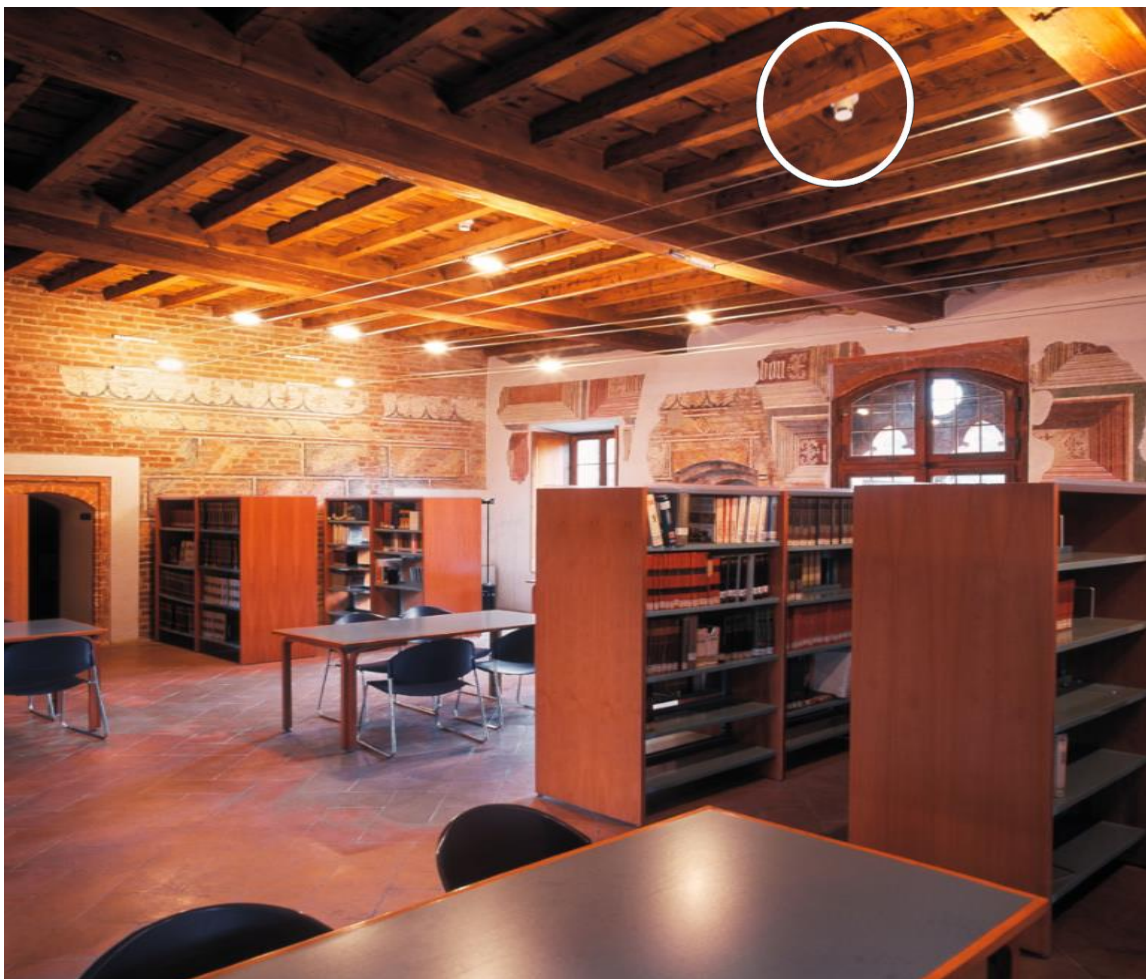
Protecting buildings and historical assets ... to ensure maximum protection of

- Cultural heritage buildings and interior structures
- And unique historical objects ...

without affecting the aesthetical value and historical integrity of the building structure

Fire Safety

How to integrate modern fire and life safety requirements while preserving the authenticity and historical character of the building

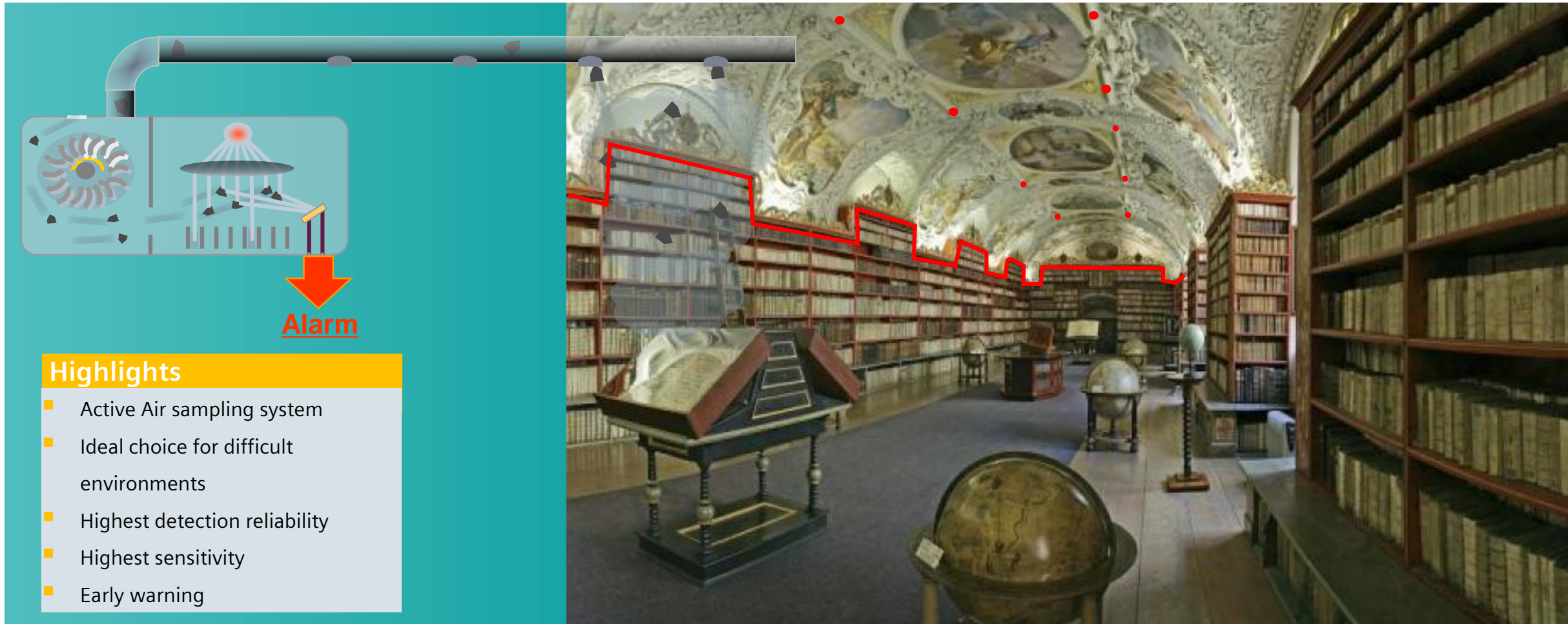


What if:

- 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

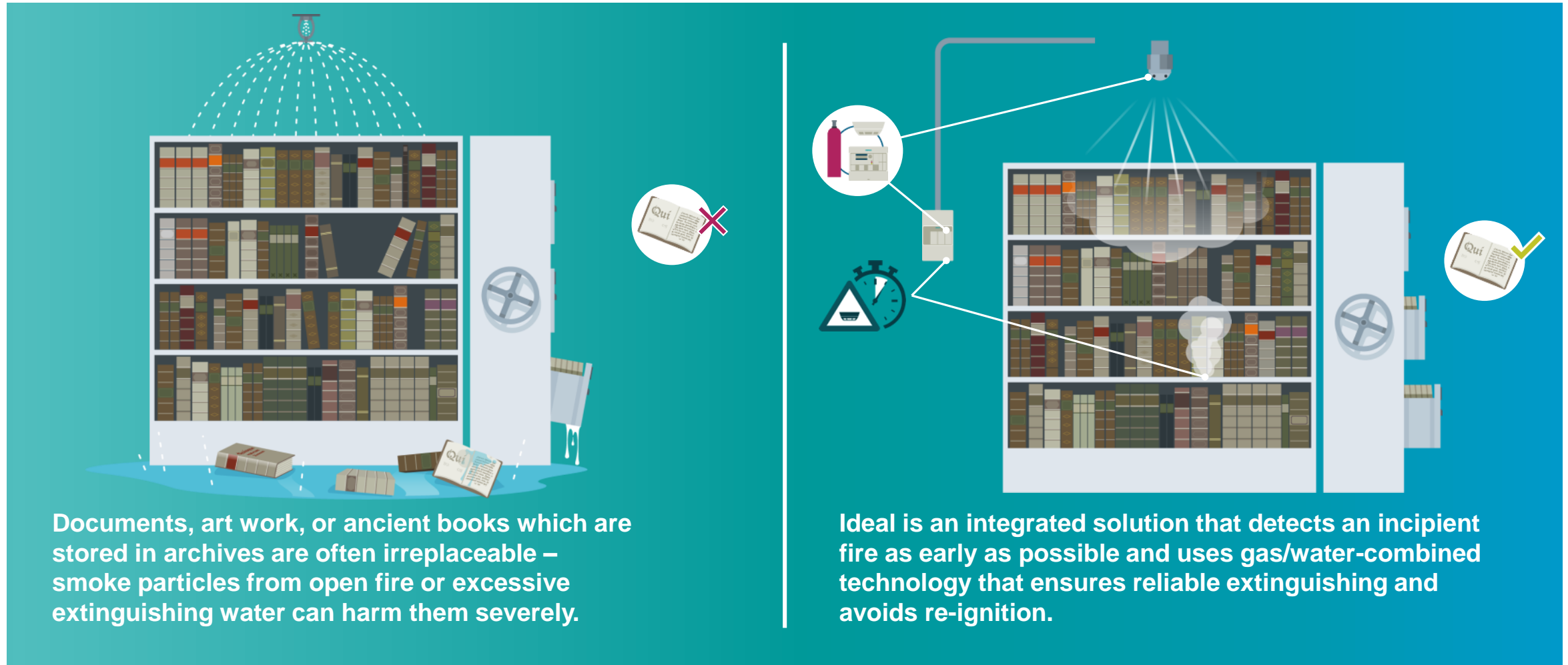
Make detection invisible as ex. Aspirating Smoke Detectors



....without affecting the aesthetical value and historical integrity of the building structure

Extinguishing – Protecting the irreplaceable

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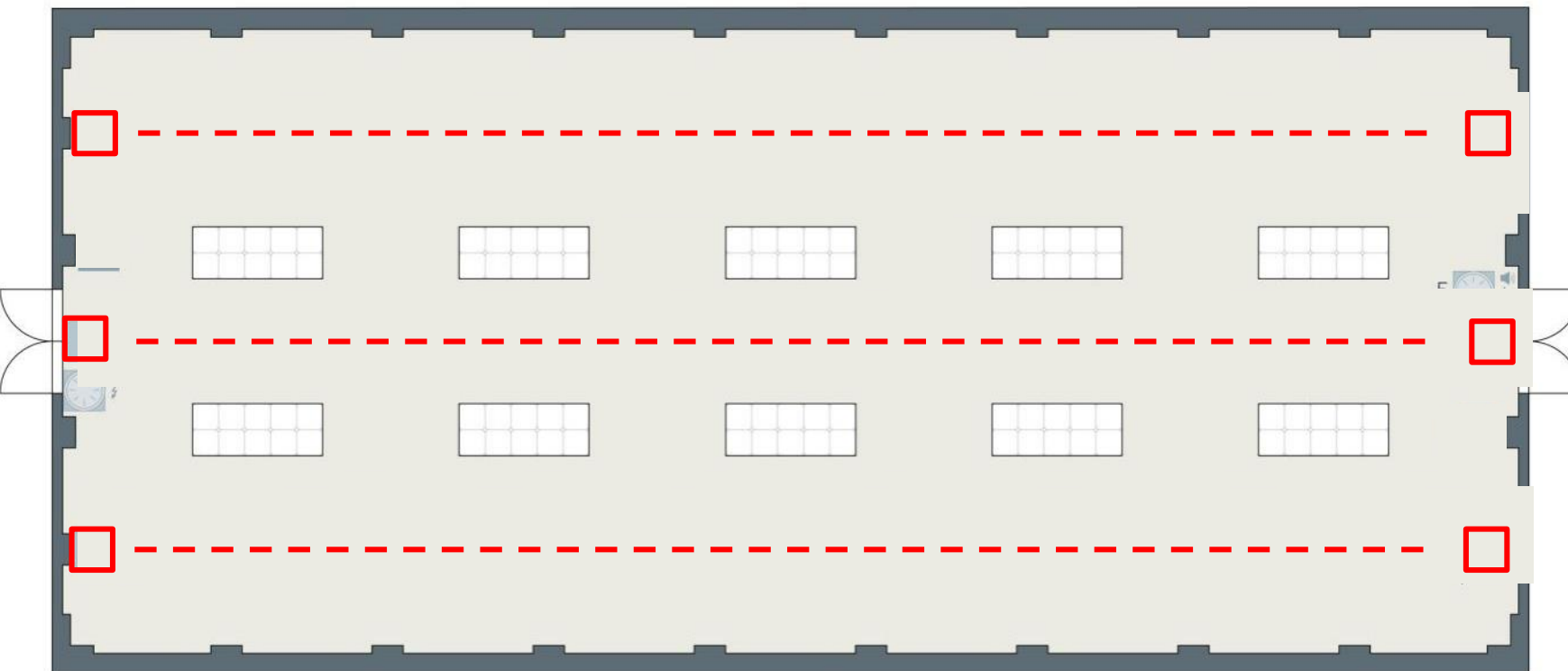


What if a ceiling is high and no technical equipment is accepted

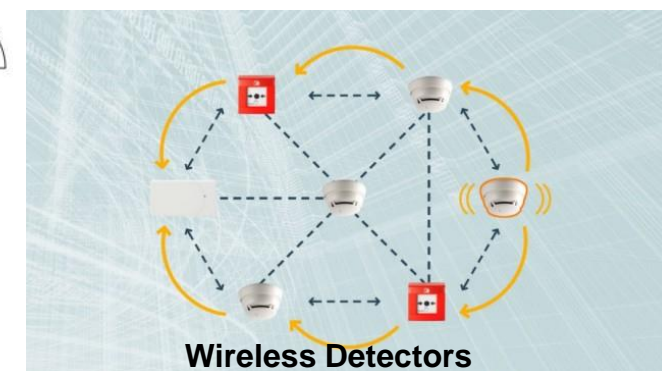
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Fire Detection in exhibition halls



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

- 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



Structure

Preserve interior architectural details of high cultural and historical significance

- 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



Historical objects

Avoid irrevocable damage caused by fire or inappropriate extinguishing agents

- Early response before fire becomes damaging
- Reliable detection eliminates false alarms
- Tailored and non-damaging extinguishing solutions

Command & Control Security Room

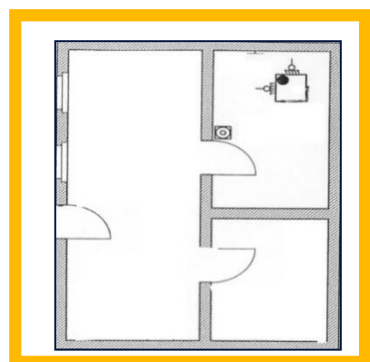
Integrated Management Security Platform:

- Fire detection with wireless devices;
- Intrusion alarm;
- Access control;
- Video surveillance;
- Maintenance Services & Technical Assistance

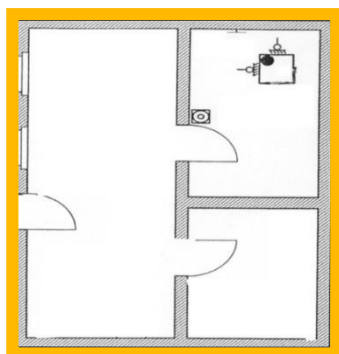
Security Elements

How to protect?

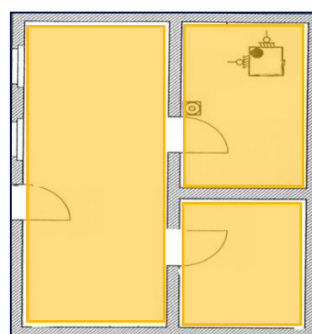
The protection principles



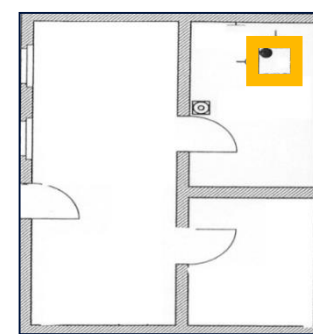
 **Perimeter surveillance**



 **Periphery surveillance**



 **Room surveillance**

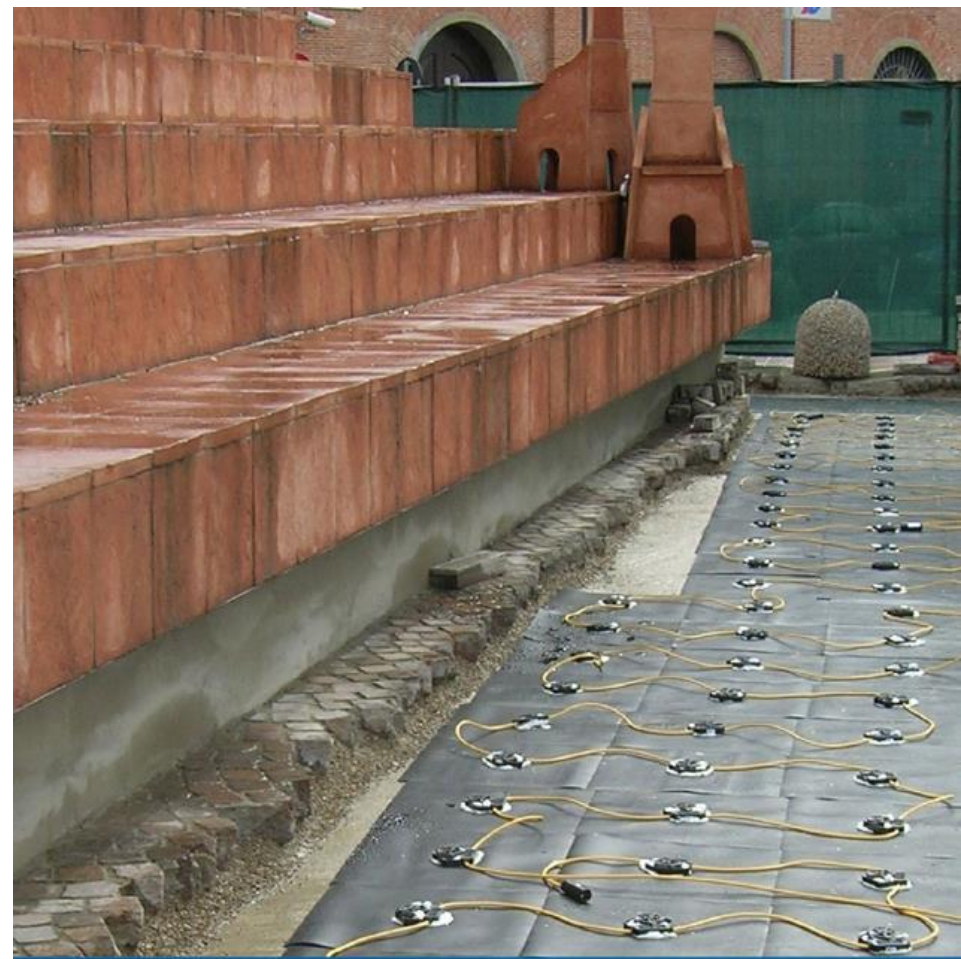


 **Object surveillance**



How to protect Historical Buildings from the outside perimeter

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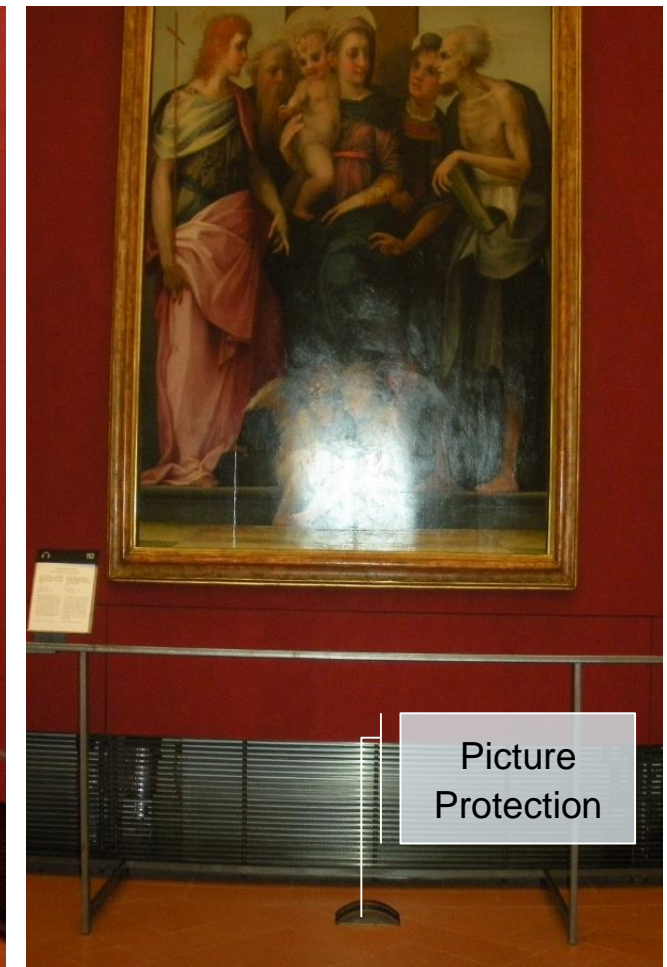
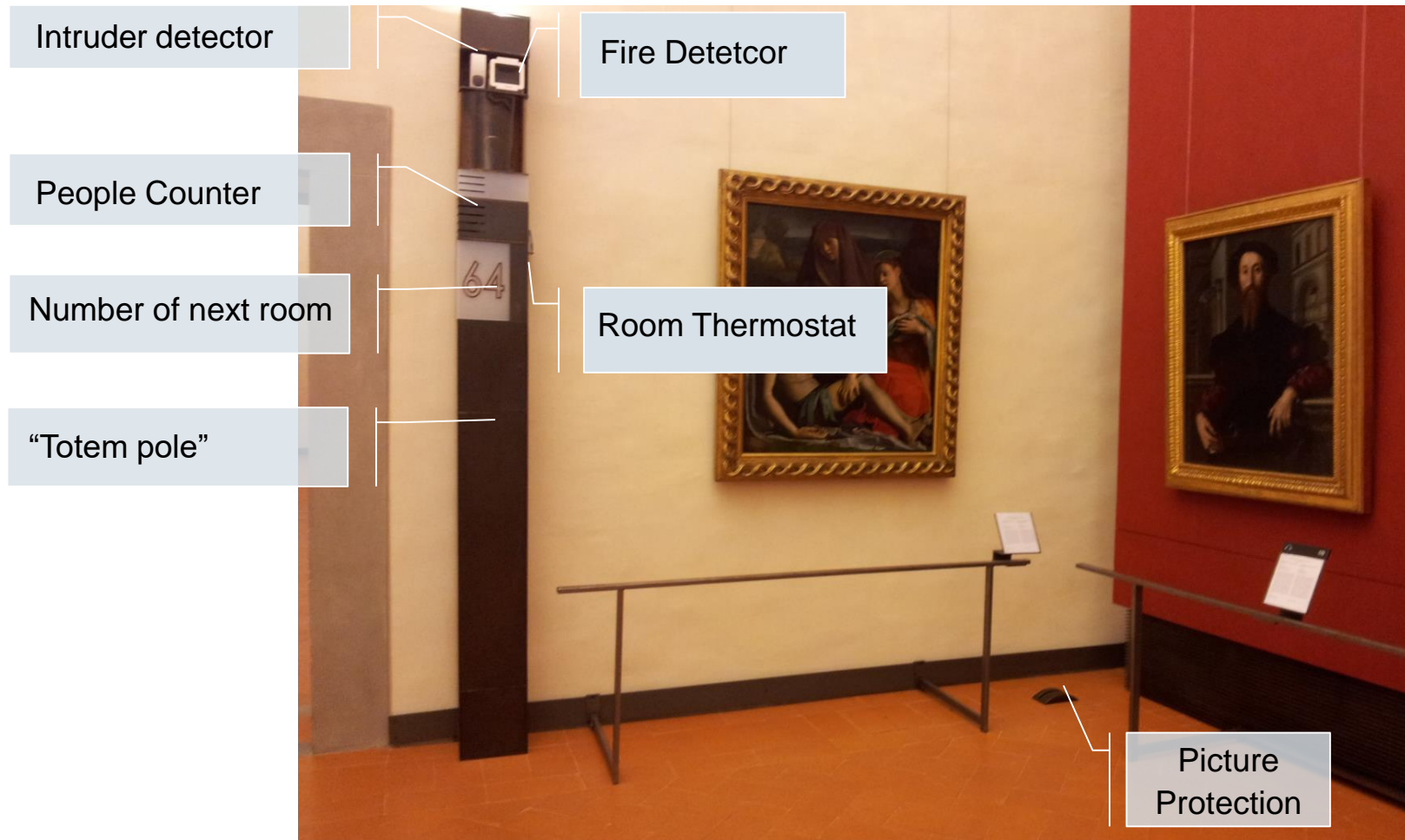
How to protect a wall but invisible?

Example: seismic protection system for outdoor application

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What do you see?



How to deal with changing exhibitions

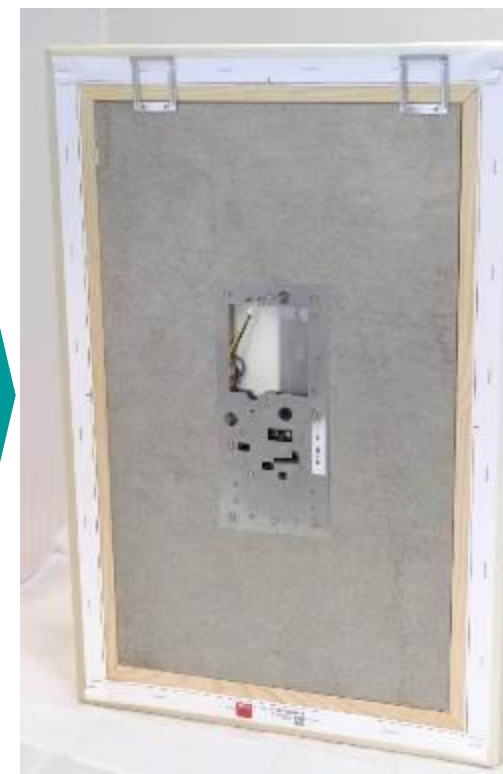
Example: Zurich Art Museum

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Secure in 4 steps

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Palácio de Vila Viçosa

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Fire Safety & Security Systems:

Fire detection;
Intrusion alarm;
Maintenance Services & Technical Assistance

Elements of protection Maintained

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

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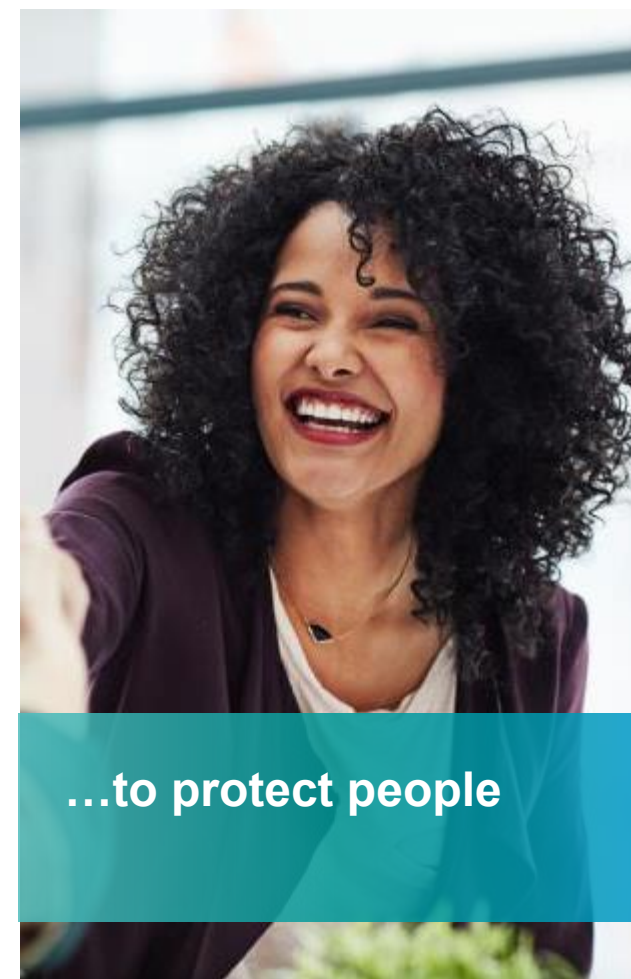
...to reduce risk



...to increase building
efficiency



...to become more
secure



...to protect people

Contact



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