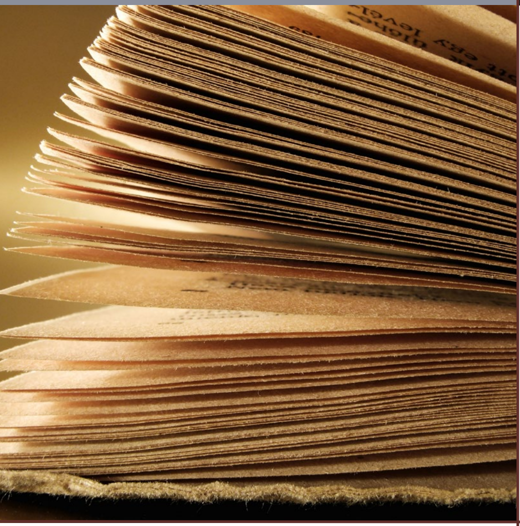
SPECIAL HAZARDS PROTECTION

AUTOMATIC FIREFIGHTING SYSTEMS IN ARCHIVES AND LIBRARIES

SIEX



Hazard type

OBJECTIVES:

Minimize loss by fire at the source.

Limit fire and smoke damage.

Limit damage due to the extinguishing agent.

The term “archive” can be used to describe an collection of filed documents or the premises or record rooms which house written, graphic or audiovisual files produced by any public or private institution, preserved with the purpose of ensuring citizens’ rights or serve as sources for research.

Along the same lines, libraries can be defined as places where books are stored. However, this concept has long been overtaken by the concept of the book and audiovisual collections and the institutions that create them and make them available to the public, to meet users’ needs.

Originally they were more like what we know today as archives, since they emerged with the aim of conserving documents, recording events linked to religious, political, economic and administrative activities.

The main purpose for protecting this type of facilities is to protect these assets, given the high value of existing content, although safeguarding human life and building integrity are also important.

They contain elements of untold value—unique and irreplaceable items—hence the need for indefinite preservation.

Sources of fire

The fire load in this type of location is inherently high, given the high concentration of combustible items such as paper (books, documents, maps, etc.), cardboard and electrical components which may develop faults. Materials on shelves, ceilings, floors, paint and other possible materials represent an additional fire load. Other possible fire sources may be human error, attacks or sabotage which are frequent in this type of installation.

Fire can be devastating, not only in terms of fire damage but also due to additional factors such as: smoke, fumes and heat, which can considerably damage existing components and structures.

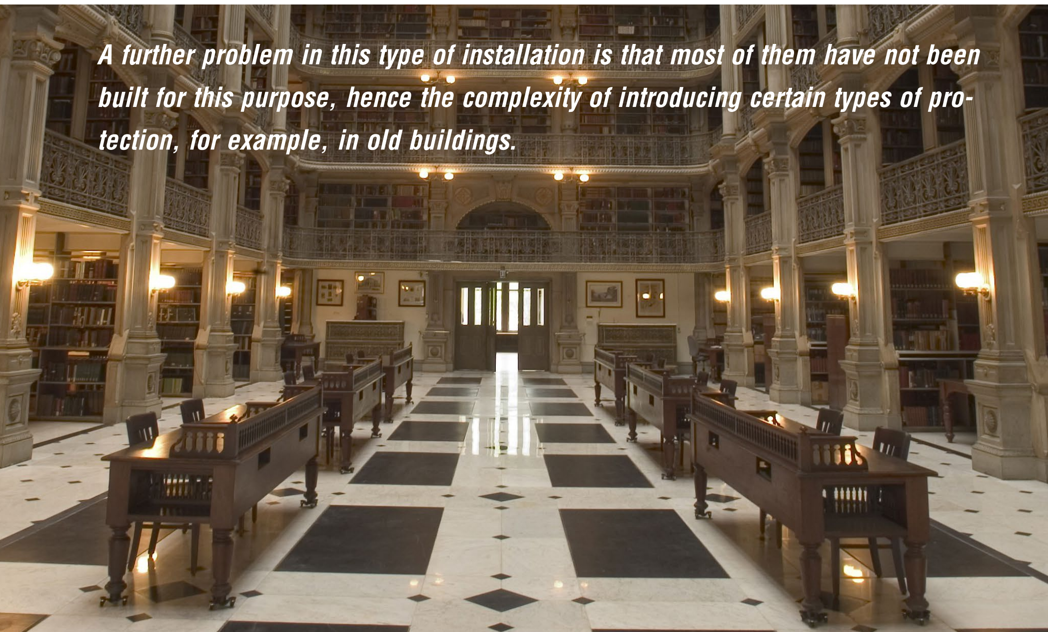
WHY DO FIRES SPREAD IN ARCHIVES AND LIBRARIES?

- No automatic extinguishing.
- No compartmentalization.
- Old installations.
- Continuity of combustible material.
- Delay in discovery - taking steps.

An emergency procedure is not always a guarantee of success, since a large percentage of losses are produced while the facility if closed (more than half the material damage in libraries and over 70% of the material losses in places of worship) .
The chances of fire also increases in refurbishment conditions or installation of new exhibits.

Fire is the greatest threat which cultural institutions face, because consequences are usually irreversible.

A further problem in this type of installation is that most of them have not been built for this purpose, hence the complexity of introducing certain types of protection, for example, in old buildings.



BACKGROUND

Fires in La Fenice (Venice), Liceu (Barcelona), Windsor Castle (St Georges Hall) and the Chiado District (Lisbon) are examples of fires affecting buildings of cultural interest.

According to U.S. statistics*, the major causes of fires are arson and electrical cabling. From 1980 to 1998 these causes accounted for 50% of fires, 33% between 1999-2002.

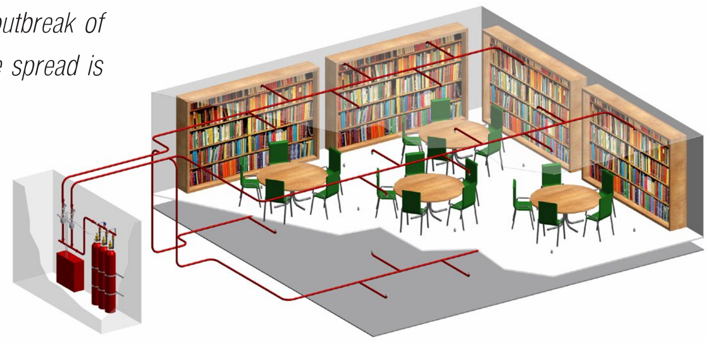
Arson was the leading cause of fire in libraries and places of worship in the 1980-2002 period. In museums they were the third leading cause in the 1980 - 1998 period (85% of material losses) and the second in 1999-2002.

** NFPA 909: Anexo B*

SIEX recommendations

The most effective protection method for spaces of this type is TOTAL FLOODING (as long as leak tightness is guaranteed),

involving the release of extinguishing agent into the enclosure at a concentration that ensures that the outbreak of fire is put out and its possible spread is contained



DESIGN GOALS

In addition to considerations for other hazards, special attention is paid to:

- Building structure - limiting damage to building materials.
- Architectural elements - limiting impact of the fire safety strategy to the architectural design.
- Premise operation - limiting damage to critical equipment and minimizing downtime due to fire activity.

LOCATION OF CYLINDERS

After studying the characteristics of the space to be protected, the type of agent and the storage units, two possible locations can be chosen for the storage units:

As close as possible to the hazard to be protected, if there is sufficient space and if a room has not already been appointed.

In a room has been expressly designated for the cylinders, which could be farther away from the hazard.

SIEX-HC™ S-FLOW

NEW

By storing HC-227ea gas at pressures between 50 and 60 bar we ensure that gas is discharged at distances which would be unthinkable with less pressure. This extends the possibility of using selector valves, saving on gas quantity, storage systems and space.

INERT-SIEX™ CFT

NEW

Adaptation of all inert agent equipment to systems with a constant pressure valve to ensure a more uniform, safe and controlled discharge.

FITNESS BY SIZE

The size of the spaces to be protected is of paramount importance, as well as the location of cylinders with regard to protected hazards. Both will influence both the storage pressure and the choice of agent.

Small rooms

- INERT-SIEX™
- SIEX-HC™ 227
- SIEX-NC™ 1230

Medium-sized rooms

- INERT-SIEX™
- INERT-SIEX™ CONSTANT FLOW TECHNOLOGY
- SIEX-HC™ S-FLOW

Large rooms

- INERT-SIEX™

SOLUTIONS

As market leaders, we offer the widest variety of extinguishing agents and application systems which address the multiple needs of modern buildings. All have been installed in the protection of this hazard and are characterized by:

QUICK RESPONSE
NON-TOXIC
NO RESIDUE
ELECTRICALLY NON-CONDUCTIVE

SIEX INERT

IDEAL FOR OCCUPIED AREAS
OBTAINED FROM THE ATMOSPHERE
LOW-COST AGENT
EXCELLENT VISIBILITY FOR EVACUATION
CHEMICALLY NEUTRAL
STORAGE PRESSURES OF 150, 200 AND 300 BAR.
LONG PIPE RUNS.

Inert gases stand out as one of the most environmentally friendly products, the result of research and development driving us to meet the most demanding expectations.

Our wide range includes:

INERT-SIEX™ 01 – Argon.

INERT-SIEX™ 55 – 50% argon and nitrogen.

INERT-SIEX™ 100 – Nitrogen.

INERT-SIEX™ 541: 52% N_2 + 4 % Ar + 8% CO_2.

SIEX HC 227

SIEX-HC™ 227 is considered one of the most widely used fire protection equipment with chemical gases. The HFC-227 extinguishing agent (heptafluoropropane) is an efficient, clean and safe gas, acting through physical and chemical transfer, absorption of flame and fuel heat and interrupting the chain reaction.

IDEAL FOR OCCUPIED AREAS
INCREASES THE SAFETY MARGIN
HIGH EXTINGUISHING CAPABILITY
STORAGE FROM 24 TO 60 BAR.
NON-CORROSIVE
NON-CORROSIVE ELECTRICAL AND ELECTRONIC

Our commitment

CHOICE OF SYSTEMS

SIEX has the widest range of products and systems to suit different needs, both as regards pressures and extinguishing agents.

COMPETITIVE PRICE

Optimizing all of our processes make us more and more competitive worldwide.

SPECIALIZED ENGINEERING

Our highly qualified staff ensure the best service for customers both as regards technical advice on the choice of system, and solving any problems that might arise after installation. Backed up by our extensive experience and a track record of successful projects.

INNOVATION

At the forefront of innovation in every product we develop, ensuring the technical features offered.

QUALITY GUARANTEE

All products meet the highest quality requirements and internationally recognised official approvals.

OTHER SPECIAL HAZARDS PROTECTED BY SIEX:

- WIND GENERATORS
- ELECTRIC GENERATORS
- TRANSFORMERS
- DATA CENTERS
- SOLAR ENERGY
- OIL AND GAS
- TELECOMMUNICATION
- TURBINES
- ARCHIVES AND LIBRARIES
- HOTELS
- HOSPITALS
- EDUCATIONAL FACILITIES
- STEEL INDUSTRY
- MACHINE TOOLS
- PAINT SPRAY BOOTHS
- ELECTRICAL PANEL ROOMS
- CLEAN ROOMS
- PRINTING INDUSTRY
- TIMBER INDUSTRY
- OFFSHORE PL

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