

BECAUSE WE BELIEVE IN THE VALUE  
OF MEASURED PROTECTION.

THE MOST ADVANCED SECURITY SYSTEMS FOR THE MOST  
DELICATE HAZARDS.



**W-FOG SYSTEMS**  
for the protection of

**HISTORIC  
BUILDINGS**



# WATER MIST

## IN HISTORIC BUILDINGS

Historic buildings are singular constructions with a high equity value that covers, generally, both the content and the building itself.

The denomination is wide, and joins different typologies, with multiple uses and diverse levels of governmental protection.

RG-Systems develops detail studies for the protection of each project, looking for the

balance between protection requirements and aesthetics, among the need for safeguarding the common property and keeping it intact.

Any activation has to pass an evaluation of the competent Administration and it is at this point where the W-FOG high-pressure water system is highlighted for its notable advantages compared to other fixed protection systems:

### PROTECTION OF THE BUILDING AND ITS ARTISTIC CONTENT LIMITS THE IMPACT OF THE DESIGN

### FACILITATES THE EVACUATION OF THE OCCUPANTS

### AVOIDS COLLATERAL DAMAGE FROM SPRAY NOZZLES AND DOWNSTREAM PRESSURE DUE TO MASS DISCHARGE

### MINIMIZES WATER CONSUMPTION, ACHIEVING A MINIMAL AND LIGHTLY INTRUSIVE INSTALLATION



# WHY USE RG W-FOG IN HISTORIC BUILDINGS

## MOST COMMON CONSTRUCTIONS:

*Religious: churches, mosques,  
convents...*

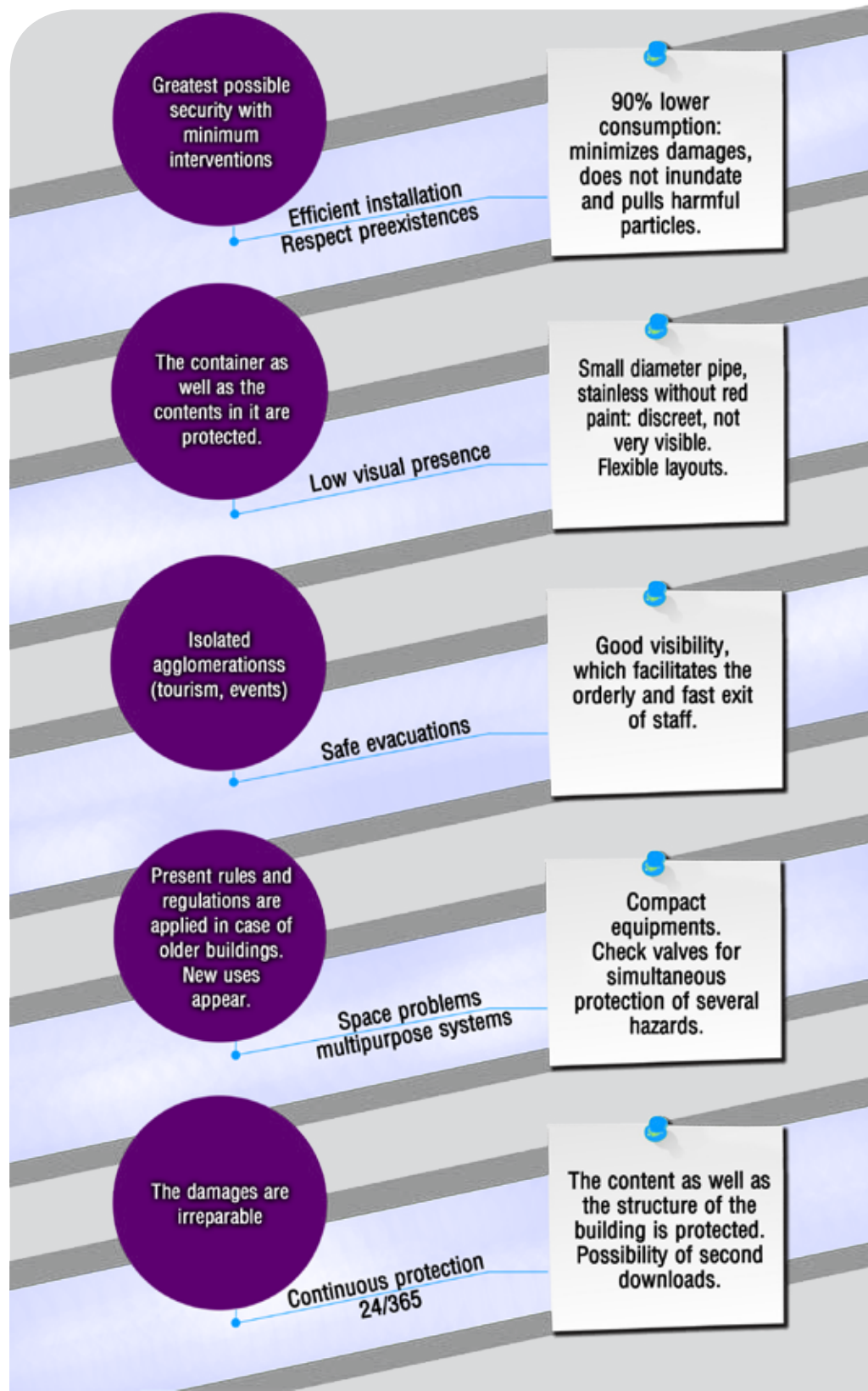
*Cultural: museums, libraries, archives,  
theatres.*

*Palaces, residences*

*Hotels and inns*

*Castles, forts*

**RG W-FOG optimises the  
extinguishing capacity  
of water thanks to the  
high technology of its  
components, equilibrando  
protección, limitación de  
daños y balancing protection,  
limitation of damages and  
controlling the impact of the  
installation.**





## DESIGN CONSIDERATIONS

**Deals with wide spaces, not segmented.**

**High fire load: paper, fabric, documents, furniture and finishings (wood, varnishes, paint)**

**The structure is a key element to protect**

**Sensitive materials (wood, masonry, visible steel,...)**

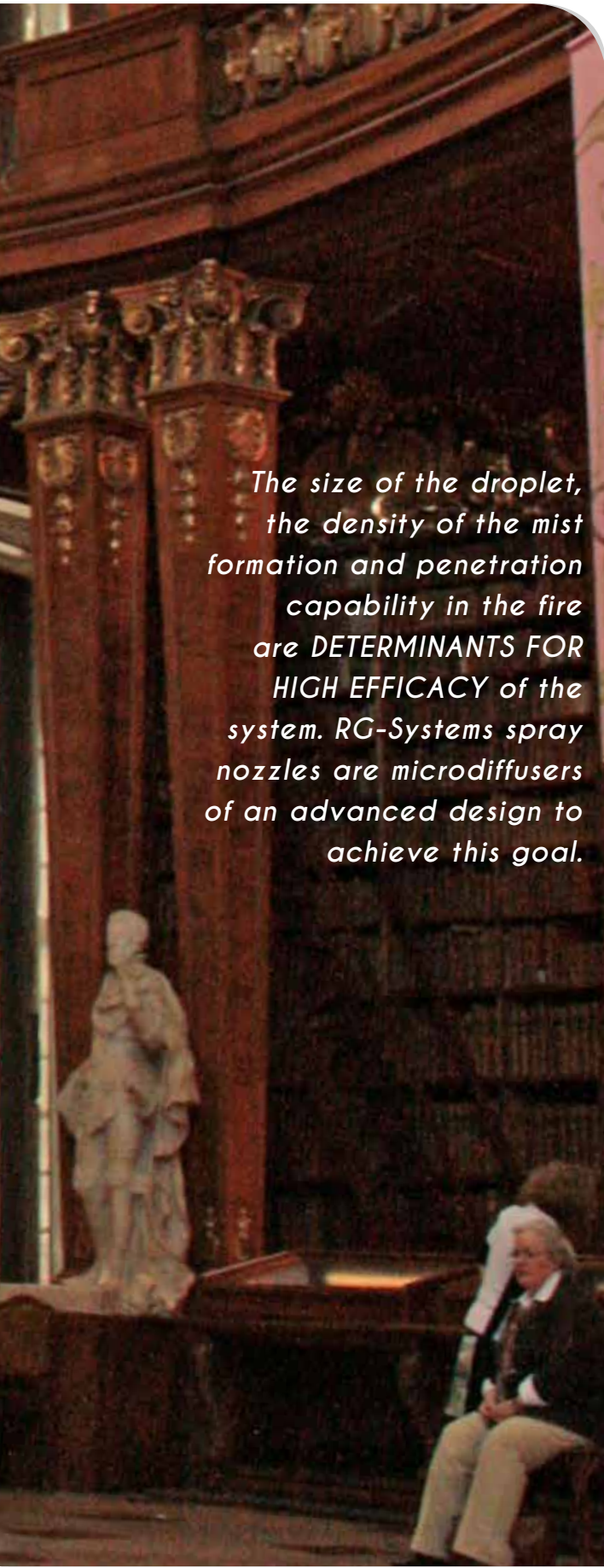
**Singular elements: murals, domes, roofs, wainscoting.**

**Occupants: tours and evacuation times**

**Uses in special hazards**

**Good integration**





*The size of the droplet, the density of the mist formation and penetration capability in the fire are DETERMINANTS FOR HIGH EFFICACY of the system. RG-Systems spray nozzles are microdiffusers of an advanced design to achieve this goal.*

## **FIRE SOURCES IN HISTORIC BUILDINGS**

These constructions, usually being remodelled or rehabilitated to varying degrees, are finding heterogeneous uses such as exhibition, halls, storage, office, store, restaurant, kitchens, lodging, etc. They are activities that contribute to keeping them in operation, but for those that were not engineered and that can constitute sources of ignition.

### **POSSIBLE SOURCES:**

#### ***Electrical***



#### ***Overheating***



#### ***Insufficient maintenance***



#### ***Renovati***

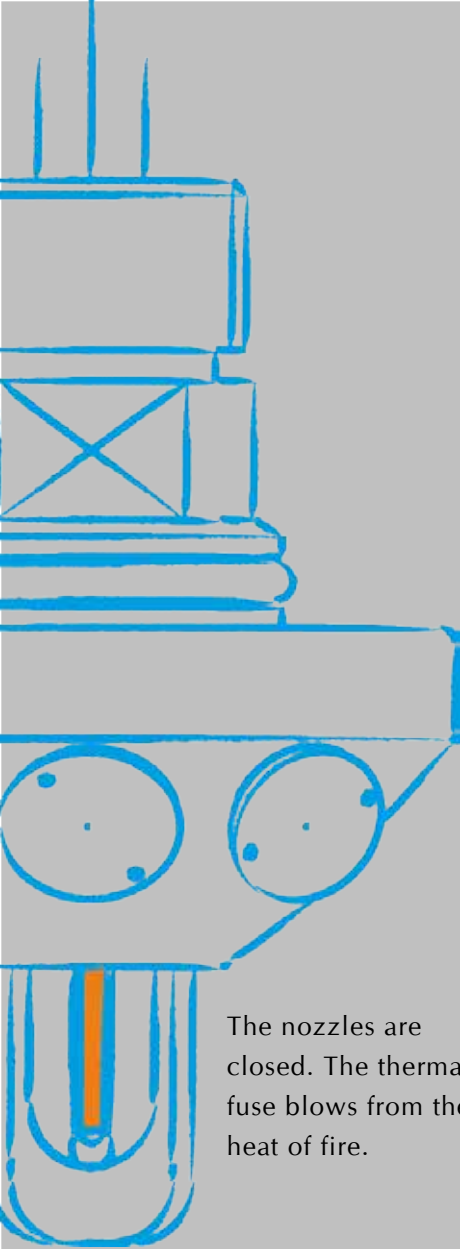


#### ***Human error, negligence and sabotage***



#### ***External causes (rays, spread from other uses or buildings)***





The nozzles are closed. The thermal fuse blows from the heat of fire.

**Direct accessories:** Tees and blocks expedite installation and the components used, making it less visible.

*It provides a double security that avoids false alarms and unexpected activations: the detection activates the equipment, but the discharge is not made if the nozzle fuse is not blown by high temperatures.*

# COMPONENTS

## SYSTEM RECOMMENDED: PREACTION



The piping is wet until the control valve, starting from there it is dry piping.

## COMPONENTS

**The pump unit is formed of**

- **Main pumps:** can be electric and/or diesel.
- **Jockey pump:** keeps the wet piping pressurised.

**Water tank:** guarantees supply of the design quantity. Can be connected to the supply network or duplicated for secondary discharges. Made up of the filter and the fill system.

**The control valves are activated with detection.**

Different **safety and control components** allow equipment to be monitored.

## OTHER VARIANTS:

### Wet piping systems:

Uses closed nozzles with a network of completely pressurised pipes. The discharge is produced if there is a source of heat. Detection is avoided.

### Deluge systems:

Frequently used for small hazards or where protection against accidental discharges is not required. In the case of activation, the discharge is immediate, over the entire surface area of the sector, protected by open nozzles.

### Dry piping systems:

Used in zones of climate extremes where there is a risk of the water freezing (which would damage the installation). The piping is pressurised with air or nitrogen and closed nozzles are used.

Water mist installations have a highly-proven efficacy, so all the critical parameters are defined and tested in real-world tests by external entities of broad international recognition.

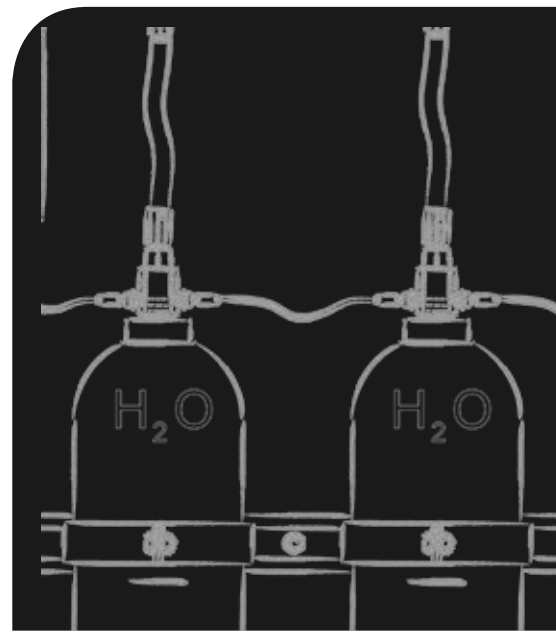
#### RG-Systems tests and documents:

- *The type of nozzle*
- *Minimum flow*
- *Distances between nozzles*
- *Range of distance from the nozzle to the source*
- *Operating pressures*

## Fire hose cabinets:

Manual protection in historic buildings has to continue prioritising effective action while at the same time being respectful of the historical-artistic environment of the area. REEL RG W-FOG water mist FHCs allow for much less water consumption.

Their high mist capacity and simple handling allow untrained staff (such as visitors, guides or workers) to be able to act quickly against the source with maximum safety guarantees, as well as minimal damage to the sheltered equity.



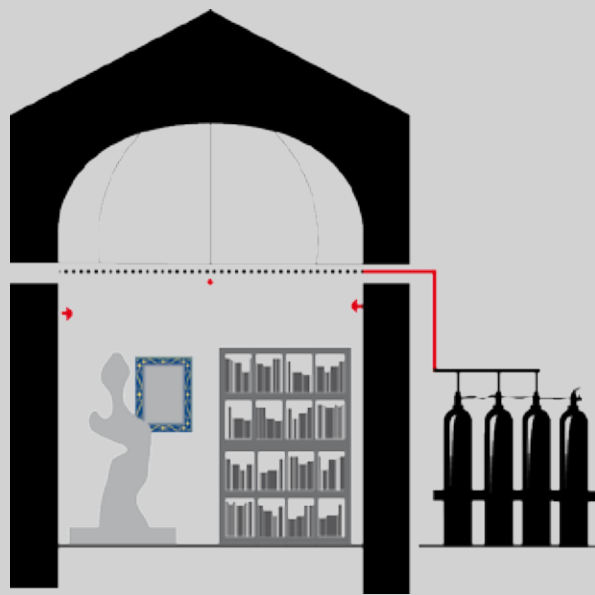
## INSTALLATION EXAMPLE

### Local application:

For the protection of point-based or unconfined sources (such as machinery) or if the airtight conditions are bad (ventilation, opening). It acts solely on the element involved.

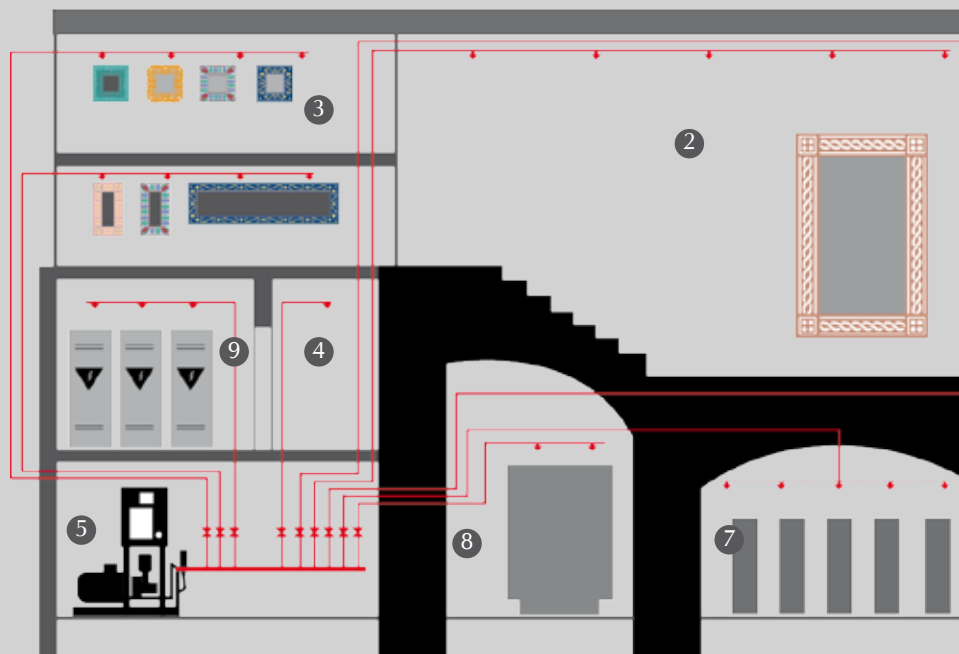
### Total flood:

Provides integral protection of high volume, including in ducts or communication spaces. It is used to determine that the room is sufficiently sealed and that the fire can affect it as a whole.



*Protection of point-based risks.*

*Complete protection of the entire building.*





The technical support provided includes all phases of project, with a total implication

## Group:

RG W-FOG allows for protection using accumulator groups of water pressurised with nitrogen, which acts as a driver.

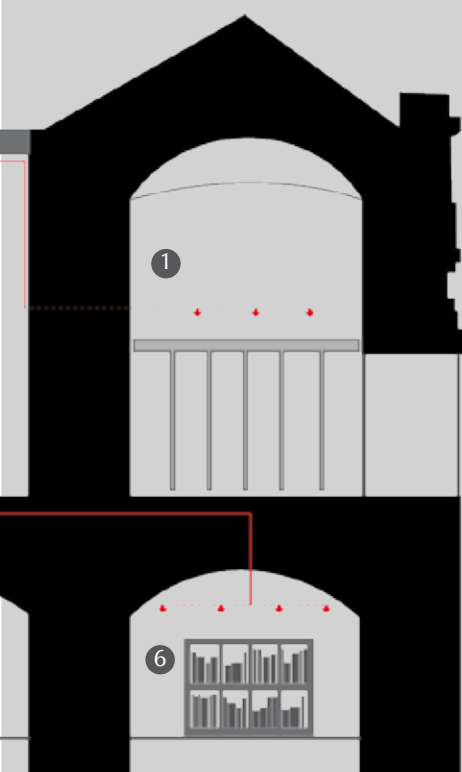
Main advantages:

- Size adjustable to risk needing protection.
- Operates without an external energy supply
- Does not need an extra supply of water
- Is used with dry piping and open or closed nozzles with a pressurised accumulator.

## Pump unit:

Units can be electric, diesel or mixed. They include a water tank and is used for various volumes of risks.

*In both cases, control valves can be used to protect various hazards simultaneously with the same equipment, sized according to the least favourable. In each area the most suitable approved nozzle is used.*



- 1 Vestibule
- 2 Common areas
- 3 Exposition
- 4 Hall
- 5 PCI
- 6 Storage
- 7 Archives
- 8 Boiler room
- 9 Electrical panels

## Project:

Design and calculation of the needs according to applicable.

## Installation:

Reduction in diameters and faster installation. Assessment during assembly.

## Post-sale:

Installation and maintenance manuals, responses, incident support.

## Training:

RG-Systems offers courses and provides support documentation with the latest technical advances.

## Guarantee and certifications:

External approvals and declarations of suitability.



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