LIQUID LEAK DETECTION SYSTEMS

Case Study

TTK WATER LEAK DETECTION SYSTEM IN A MUSEUM IN PARIS, FRANCE

Project Background

An invisible place for museum visitors, the stock rooms are an essential part of a museum. Much more than a simple storage area, it is also a consultation, restoration, photography, and quarantine area sometimes requiring acclimatization. According to the French network of museum professionals, 80% to 90% of French museum collections are kept "in stock".

To insure these collections are safe from any kind of damage, it is important to adopt adequate safety measures for the entire areas. Water leak monitoring and detection is one of them.

Cooling units, water pipes networks, sprinkler systems, welfare areas are amongst numerous zones to be monitored besides the stock rooms within a museum building.

Project Requirement

1. In this project, zones to be monitored are spread on eight floors, requiring a large number of sensing cables. The client required a powerful and reliable water leak detection system capable of monitoring these large areas and detecting multiple simultaneous water leaks with precise location in case of leakage.

2. Low smoke zero halogen featured material were required to fit the fire safety requirements.

PROJECT OVERVIEW

Project	A Museum in Paris* *: Due to client confidentiality, the client name has been removed from this project study.
Location	Paris, France
Application	Museum building
Project Type	New Project
Project managed by	TTK France
Contract Scope	TTK assures engineering, material delivery, installation and annual maintenance of the leak detection systems.
Completion Date	2021
Technology	Digital monitoring unit FG-NET, satellite device FG-BBOX, water sensing cables from the FG-EC range.

Areas to be Protected

- Stock rooms and art galleries
- Technical areas (Low voltage general boards; boiler rooms)
- Cooling units
- Chilled water piping networks
- Sprinkler systems
- Welfare areas

TTK's Solutions

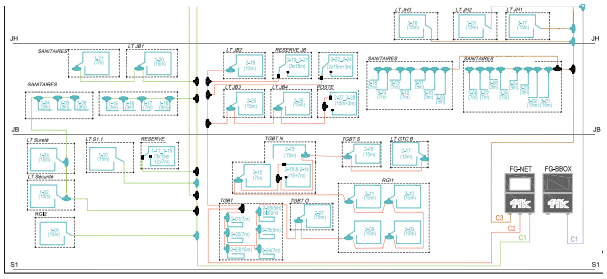
Monitoring panels:

Considering the extensive surface of the monitoring areas, TTK France recommended a combined digital leak detection monitoring solution, consisting of one monitoring control panel FG-NET and one satellite device FG-BBOX.

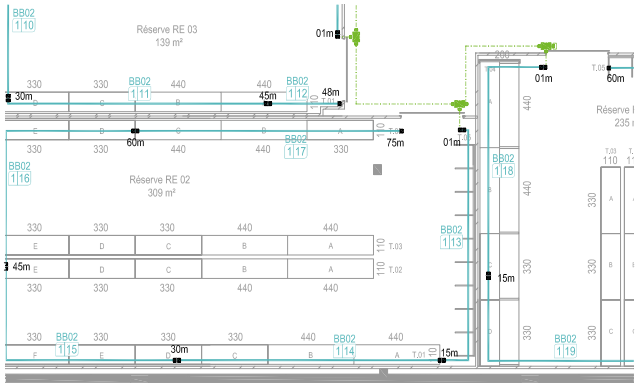
Monitored by the FG-NET via a standard Ethernet, the FG-BBOX has the same advanced functionalities as FG-NET and can manage two additional circuits of sensing cables. All commands and controls are centralised within the FG-NET as the FG-BBOX does not have a display screen.

In the event of a leak on a sensing cable connected on FG-BBOX, the alarm is directly shown on the FG-NET. Precise information, such as leak time and pinpoint location is displayed on an interactive map on the centralised monitoring panel.

On this specific project, almost 1 km length of sensing cables in total were installed and connected to the 3 circuits on the FG-NET panel and a fourth on the FG-BBOX panel. Utilizing the FG-BBOX in this installation is ideal as it allows an easy extension of the existing leak detection system (expected in the near future).



Extract of TTK leak detection system synoptic drawing



Extract of TTK leak detection system drawings for stock rooms

Sensing cables:

Water sensing cables are installed in the perimeter of each stock room and technical room allowing an early detection of water coming from outside of the rooms.

Each sensing cable used in this museum is made with Low Smoke Zero Halogen material (reference FG-EC, FG-ECS), and emits limited smoke and no halogen when exposed to high sources of heat.

Over fifty national and regional museums throughout France are equipped with TTK leak detection systems. TTK's intelligent sensing cables are also installed within the Le Louvre museum - Abu Dhabi, which Grand Opening took place in 2017.

FG-NET monitoring control panel (left) and its satellite device FG-BBOX (right)

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