



SUPPRESSION



The Warsaw Spire is Poland's second tallest building.
(Photo: Przemyslaw Szablowski/Shutterstock)

Francisco García is key account manager, Marloff

Inspired protection

The protection of a three-building office complex in Poland with a high-pressure water-mist system has delivered a number of benefits, writes Francisco García.

Simulations had shown that the use of the high-pressure system would lead to cost savings in passive fire protection in the Warsaw Spire's structural shell and core.

Constructed by Belgian real estate developer Ghelamco Group, the complex's main tower in Warsaw stands 220m tall, making it the country's second tallest building and the 14th tallest in the European Union.

The state-of-the-art fire suppression system chosen for the Warsaw Spire was the Hi-Fog water-mist suppression system from Marloff. It includes specialist high-pressure spray heads that convert water into small droplets, which increases the overall surface of the water. These small droplets absorb heat more quickly and cool the source of the fire more rapidly than droplets from traditional sprinklers, preventing the fire from spreading. Most importantly, the fast control and suppression of the fire play a significant role in assisting a safe evacuation.

A pump unit provides pressurised water from the lower levels of the building to the top floor, the 49th, with no

intermediate pumping stations. Water is fed to the system from two tanks equipped with automatic refill, ensuring the 60-minute discharge duration required by NFPA.

Installing the active fire protection system made it possible to reduce some of the passive fire protection stipulated by Poland's fire safety regulations in high-rise buildings. Simulations showed that the use of fewer passive fire protective materials in the over-ground levels, in both the building shell and core, would be compensated by the cooling capabilities of the Hi-Fog system. The use of the high-pressure water-mist system led to a significant reduction in costs for passive fire protection materials of 25%, when compared to the use of traditional sprinklers.

The general technical director of Ghelamco Poland, Arnold Neuville, said that the flexibility, smaller dimensions and ease of adaptation of the high-pressure water-mist system were particularly welcome, adding: "It provides key advantages, such as minimal damages in the event of a fire and the ability to use the system in IT rooms."