A legacy safe for the future

TO KEEP AN INTERNATIONAL LEGEND'S MEMORY SAFE, STATE-OF-THE-ART WATER MIST SYSTEMS HAVE BEEN INSTALLED IN INDIRA GANDHI'S FORMER RESIDENCE, WRITES FOGTEC'S CORNELIA HAUSWALD.

In New Delhi, located on Safdarjung Road, shining in white, lies the former residence of Indira Gandhi. The residence of the first female prime minister of India, who fell victim to assassination in 1984, now houses the Indira Gandhi Memorial. Numerous photographs, furnishings, and contemporary documents give the visitor insights into the personal and political life of one of the most significant and enigmatic figures of modern India. Their arc spans the childhood of Indira Gandhi, her political career and activities, the Nehru-Gandhi family, and the Congress Party. Some of the most emotional artifacts at the memorial would have to be the sari that Indira Gandhi wore at her violent death along with the impressions of her final footsteps, preserved under glass.

The Indira Gandhi Memorial is one of the most important places of remembrance in all of India. Its rooms and exhibits are of great value and, because of their nature, require special protection. As a result, the official Central Public Works Department hired Fogtec to install its water mist system there to protect against fire.

In the Indira Gandhi Memorial, protection against fire is today provided by nozzles installed unobtrusively on the walls, and fed by small pipelines and a pre-action pump system. In addition, wall hydrants with high-pressure water mist guns facilitate fast manual intervention at strategic points in case of fire.

Effective, environmentally-friendly technology

Water mist systems can be installed in existing buildings in a space-saving manner, unobtrusively, and without any great effort – even in buildings with sophisticated architecture. Where conventional sprinkler systems can cause a large amount of water damage to buildings and exhibits because of the water volumes applied, this risk is minimal with water mist systems, which utilise only a fraction of this water volume. The danger of possible smoke contamination to persons and property is also reduced. The water mist absorbs the smoke, binds the smoke particles, and washes out water-soluble gases.

Since this type of fire fighting system uses water, this system technology represents an environmentally-friendly and low-damage method that helps protect buildings and sensitive exhibits. Fire fighting systems that work on the basis of chemical extinguishing agents can usually not be used in sensitive museum environments.

Water mist works according to a simple but effective principle: water is pressed through special jets at a pressure of up to 200 bar. The resulting mist of droplets with a small diameter averaging 0.01 mm multiplies the reaction surface available for cooling and removes energy from the fire much more quickly and effectively than conventional systems can. This cooling effect not only supports the firefighting effort; it also helps protect and screen people, property, and structural elements against the effects of heat. In addition to the cooling effect, there is also an oxygen displacement effect: the water droplets rapidly evaporate, removing energy and oxygen from the fire. Since the evaporation takes place in and near the flame zone, where the temperature is high, the other cooler areas can be used as escape routes. The evaporation process multiplies the volume of the water, which displaces oxygen from the seat of the fire, leading to a suffocation effect – like that of an inert gas.

Open to new technologies

Water mist is becoming more and more important in fire fighting worldwide, and its use is becoming prevalent not only in the area of high-class buildings, but also in road and rail tunnels.

In India, the spread of industrial sites across the entire subcontinent – coupled with the assumption of responsibility for safety standards by individual federal states – has led to a process of rethinking in the area of safety. Consequently there is a trend away from conventional technologies and towards new technologies, including high-pressure water mist. The special significance accorded to fire protection in India is also demonstrated by the founding of the Fire Protection Association of India and the Fire and Security Association of India (www.fsai.in) in the years 1999 and 2002 respectively. Both associations have set as their goal to sensitise the Indian public in the topics of safety and fire safety and to push for special safety standards. In its vision, the Fire and Security Association of India formulated the goals as follows: 'To establish life safety and security as an important human obligation in the economic development of the country and use this as an index for future investments and growth of the nation to become a world leader.' Fogtec is a member of both associations and is actively participating in the expert dialog.

'We are very proud that we have been permitted to install our systems in the Indira Gandhi Museum, the DLF Archive, and the Sanjay Gandhi Post Graduate Institute Library. In addition to protecting buildings of this type, high-pressure water mist plays an important role above all in the automotive industry – in providing protection for the widest variety of test cells,' says Jackson Jose who, with his team, has been leading the Indian subsidiary of the German company Fogtec and is also active in the Asian area and the Middle East. All well-known automobile manufacturers, such as ARAI, Tata Motors, Bajaj Auto, Mahindra & Mahindra, and Maruti Suzuki are now trusting in the fire protection systems that are made in Germany.

Jackson Jose heads up the Indian subsidary of Fogtec.