

FIRE SAFETY: KEEPING UP THE PRESSURE

Fire safety in high-rise buildings has, rightly, been very much in focus since the devastating Grenfell Tower fire in June 2017. **flow** takes a closer look at the role pumps play in fire safety.

An important consideration in any high-rise building is the use of a sprinkler system and pumps are a key element of these systems. The job of the pump in a sprinkler system is to boost the water pressure when it drops below a specified threshold so they are particularly relevant in applications where it is unlikely that the local water system would be able to provide enough pressure to meet the needs of the fire sprinkler system or in applications where the water supply is provided from a ground level storage tank.

It is well known that pumps are one of the major users of energy in any system and one of the biggest challenges facing building services engineers today is to reduce energy consumption within their buildings. So, for most pump systems, energy efficiency is a key consideration. However, this is a secondary requirement in safety-related applications.

“For fire systems, energy efficiency is not the most important driver. The building services engineer will be more interested in ensuring that the system complies with the necessary approval bodies,” said Bob Tichband, General Manager at SPP Pumps. “Keeping up to date with legislation is one of the biggest challenges facing pump manufacturers today. We have always found that the British Pump Manufacturers Association (BPMA) provides us with a great source of information on both compliance issues and European regulations and this is very helpful.”

SPP Pumps has supplied pumps for sprinkler systems in some high profile buildings – including the Shard – which at just over 309m is currently the tallest building in Western Europe – and the 41-storey Gherkin which stands at 180m tall.

A SPECIALISED SOLUTION

Bob explains that high-rise buildings require the use of very specialised pumps that should be precisely customised for each application to ensure they offer the correct number of stages and the correct positioning of outlets.

“Specifiers working in the building services sector will be looking for proof that the pump is able to meet the high pressure demands of the sprinkler system and that it will enable the system to supply water at different pressures depending on which level of the building it is needed,” continued Bob. “An important feature of the SPP Pumps offering is the number of stages and outlets that we can provide. This makes them more configurable and allows the pumps to offer a bespoke solution for an application.

“We can also provide pumps in a vertical configuration which helps building service engineers save space in their often overcrowded pump rooms. Space is always a premium in a building – pump rooms are dead spaces so they need to be designed to take up as little room as possible. Vertical



configuration of the pump can reduce the footprint of the pump by around 60%.”

Created specifically for use in fire system applications SPP Pump’s multi-stage, multi-outlet (MSMO) centrifugal pumps can help to reduce the quantity of pumps needed to efficiently operate a fire system. They can also help reduce pipework and valves and eliminate the need for water storage tanks on intermediate floors; and this can help reduce the loading on the building.

“The cost and space saving implications of good pump design in sprinkler systems can be significant,” concludes Bob. “Power requirements will be lower, pump rooms can be smaller and, in line with EU legislation, pressure reducing valves shall not be used as a means to prevent over-pressurisation of sprinkler.” Driven by electric motors or diesel engines, these MSMO pumps are able to satisfy any specification set out by the Loss Prevention Certification Board (LPCB) for automatic sprinkler protection in high rise and multiple storey buildings. ➔

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