Case Study

3M Product Chosen to Supply Fire Protection System for Telegraph Media Group

When Telegraph Media Group wanted a new fire protection system for its IT centre in Victoria Place, London, it needed a technology that would be environmentally sustainable, safe to discharge in occupied areas, and economical in its use of space. After careful investigation of a range of alternatives, it was found that these requirements would best be met by an installation using 3M™ Novec™ 1230 Fire Protection Fluid, an innovative clean extinguishing agent from 3M Company.

The project, which was managed by leading engineering consultant, Hilson Moran, involved the provision of fire protection for the building's basement area, which houses uninterruptible power supplies, and the second floor where the servers and communication equipment are located.

In the early stages, the client was considering inert gas systems for both areas. This approach would have satisfied the environmental requirements of Telegraph Media Group, but it soon became apparent that it had a number of shortcomings. The most important was that venting would be needed. This was impossible to arrange for the basement area and, because of the architectural value of the building, the venting scheme for the second floor would have required a very costly design to minimize visual impact.

In addition, the complex layout of the areas to be protected meant the cost of pipework and valves would be high. Finally, the inert gas cylinders would occupy a lot of floor space which, at Telegraph Media Group as in any building in Central London, is at a premium.

These considerations led Siemens Building Technologies, who had been appointed to design and install the system, to suggest the use of a chemical extinguishing agent. This would require no venting and would need a comparatively small amount of space for the cylinders. Additionally, the strong environmental profile of Novec 1230 fluid would effectively deliver Telegraph Media Group's environmental requirements.

"Given our aim that the new system should be environmentally responsible," said Lorrie Dannecker, Services Director at Telegraph Media Group, "it didn't take long to see that Novec 1230 fluid was a very attractive option. In comparison with other currently available extinguishing agents, Novec 1230 fluid is the runaway winner on environmental grounds, and it is also the agent that provides the largest margin of safety for use in occupied spaces."

The characteristic of Novec 1230 fluid that so impressed the Telegraph Media Group team includes a global warming potential of just one, similar to naturally occurring compounds.

The use of Novec 1230 fluid has additional advantages, the most significant being its wide margin of safety for use in occupied spaces. "Margin of safety" reflects the difference between the design concentrations necessary to put out a fire and the threshold concentration recognized by approval bodies as suitable for use in occupied spaces. Novec 1230 fluid is used at concentrations between 4% and 6% but is acceptable for use up to 10%. Therefore, its margin of safety for typical applications is between 67% and 150% - The largest margin for any halon replacement.

"Even though there was a price premium to pay for a Novec 1230 fluid solution, the benefits were decisive and the value was clear," said Lorrie Dannecker. "And we were also happy to be buying a solution which is virtually future proof – if Novec 1230 fluid is banned or restricted in use as a fire protection fluid based on ODP or GWP during the next 20 years, the Blue Sky℠ Warranty from 3M means that the company will refund the cost of the fluid."

Siemens found that adopting a system using Novec 1230 fluid made it possible to offer additional benefits. By abandoning the traditional design approach used for chemical agent systems, which has its roots in obsolete halon technology, Siemens was able develop a solution which would mount the cylinders in groups around the building's support columns.

Since this space around the columns is not useful for any other purpose, it means that the cylinders, in effect, occupy zero usable floor area. This arrangement would not have been possible with an inert gas installation, as many more cylinders would have been required.

In the computer rooms, the Telegraph Media Group has fitted the cylinder clusters with attractive housings, so that they present an aesthetically pleasing appearance that complements the other equipment in these areas.

"While Novec 1230 fluid wasn't the lowest cost option," said Lorrie Dannecker, "it has certainly provided us with the solution most appropriate to our needs. The extra cost for using an environmentally sustainable technology, with its wide margin of safety and flexible design characteristics, is money very well spent." ■

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