

# Hillmoore Fire Protection Limited

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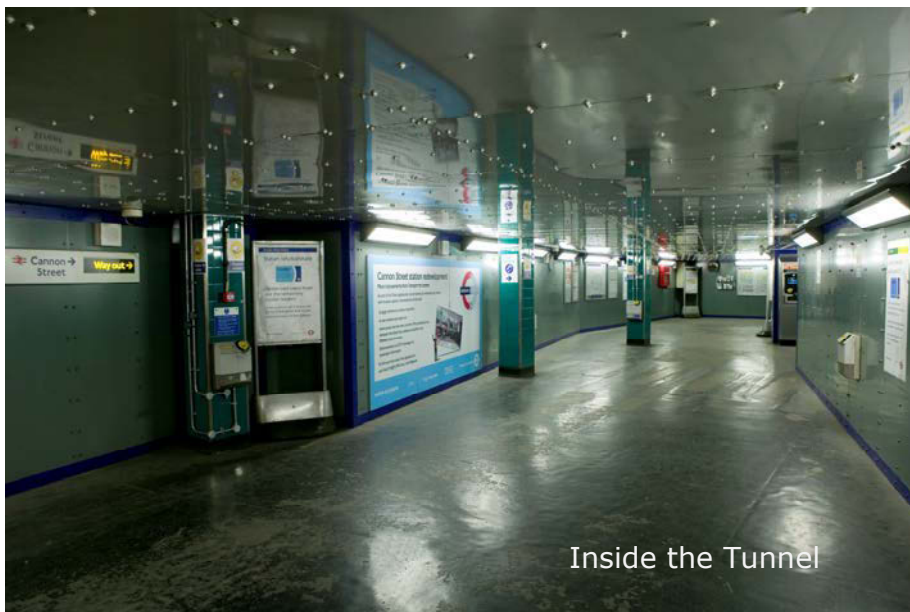
## An Underground Christmas Tale

**H**illmoore Fire Protection commenced business five years ago as a specialist fire protection contractor and is extremely proud of its successful working relationship with London Underground and associated companies.

During this time, Hillmoore have carried out all forms of passive fire protection throughout the underground network including fire stopping, above ceiling cavity fire barriers, protection of structural steelwork, protection of ductwork and multiple fire surveys. They have in fact worked on over 150 stations.

Their most challenging project so far however was to build a fire rated passenger tunnel with high quality specific aesthetic requirements within the entrance to Cannon Street Underground station. The critical main area of this was to be built in-situ within a four day programme over the Christmas shut down period - starting Boxing Day night. Adding to the complication was that the original agreed design which had already been accepted was in partnership with another company. This 'partnership' fell through in the last week of November.

At this point, with less than four weeks to go, Hillmoore's management along with the approval of the Project team of the main contractor, Laing O'Rourke, decided to re-design the construction of the tunnel, get LUL acceptance and still achieve the programme deadline. Having already worked on the station over a two year period, Laing O'Rourke had the confidence in Hillmoore that the tight programme could be achieved.



Inside the Tunnel

The purpose of the tunnel is to achieve the safe transit of passengers from the street entrance into the main stairs, through the middle of a construction site. All around it being the main redevelopment of Cannon Street Station. The tunnel therefore had to be structurally sound, suitable for passenger loadings at peak times, relatively lightweight so as to not exceed the structural loading capacity of the existing station flooring, aesthetically pleasing, have additional framing behind the finished surface to take services fixings, and fire rated. Design had to be quick, as the only way to achieve programme was to get the majority of the construction materials pre cut and manufactured off-site and delivered ready to install.

The fact that Hillmoore employ all of its labour directly also became a major benefit in the overall process. Not only did the design have to be carried out but it was to be built in four days using triple labour shifts over 24 hour working. Thankfully, the majority of Hillmoore's site workforce agreed to give up their Christmas break and pull out all the stops to achieve the difficult and very tight programme.

**H**aving carried out the basic design and gone through multiple consultations with LUL and Laing O'Rourke, a suitable construction was arrived at which satisfied all of the structural calculations, the passenger loading requirements, aesthetics and the minimum one hour fire rating. Two weeks to go until installation!!

The final design incorporated a lightweight steel channel frame at relatively small centres which had to be manufactured to the designed size along with additional bracings and supports. Ace Sections Limited in Dudley were given the task of manufacturing the frames component parts and asked to do it within a one week period. The fire protection board decided on was FM Blue, a metal faced fibre reinforced cement board, supplied by Firemac Limited in East Lothian. This had to be supplied to site in pre-cut sizes to match the framing system. The internal finish was to be aluminium sheeting, pre-coloured with an LUL specified colour polyester powder coating. For this Hillmoore went to ASD Metal Services Limited in Tonbridge who were given the task of not only pre-cutting the aluminium sheeting to the correct panel size but also the powder coating – one week please. The foregoing were the basic major elements but there were additional requirements as well: fire rated door, fire rated glazing, contrasting colour coded powder coated angles for all internal edges.

Having carried out the designs, received LUL approval and ordered the materials, Hillmoore waited with bated breath hoping that the promises made by the material suppliers could be met. In order that materials could be placed on site, this had to be done in the dead of night during LUL engineering hours prior to the Christmas break. One by one, on the designated night shift, lorries turned up at site with the materials. Hillmoore's men unloaded the thousands of component parts and placed them in the designated area – ready for Boxing Day.

Adding to the complexity of it all, Hillmoore had to work in close co-operation with various other trades on site including the installation of cables, lighting, alarm systems and other services all to be fixed to the completed tunnel. This made the whole project a confined and congested area.

With Christmas Day over, all thoughts turned to the task ahead. Hillmoore management and the first shift of operatives arrived on site late evening to commence installation. Twelve multi man shifts and four days later, the required critical main area of the passenger tunnel was completed to the satisfaction of the main contractor and the client – the station could open on time.



Rear view construction of the Tunnel

**Hillmoore Fire Protection** would like to thank its nominated suppliers for their high quality and timely deliveries, the Laing O'Rourke project management team and London Underground. The company is also indebted to their skilled site operatives for giving up their Christmas break and making the whole project possible.

