



## Wembley Park station

Fire detection services



“Updating the fire detection systems at Wembley Park station to an automated fire detection system will bring the station’s facilities up to date, whilst ensuring the millions of passengers who pass through the station each year enjoy a safer and more secure experience”

Project Manager  
JNG Construction & Engineering Ltd

**Wembley Park station in north west London is the nearest London Underground station to the Wembley Stadium and Wembley Arena complex. The station features six London Underground tracks, with the two Jubilee line tracks in the centre flanked in turn by the slow and fast Metropolitan line tracks and accommodates over 15 million passengers each year.**

Historically, Wembley Park Station was covered by a station-wide analogue addressable fire detection system to Category L1 in back of house areas, and manual only in public areas (Category L5 overall). Alarms to all areas of the station were provided by a separate PA/VA system, classified as a communications asset. The loop detection circuits within these areas provided coverage to areas outside of this scope.

L.B. Foster Telecoms (TEW Plus Ltd) was subcontracted by principal contractor JNG Construction & Engineering Ltd, to install automatic fire detection services across the station

## Requirement

The works at Wembley Park station required the modification of the existing fire protection loop to provide automatic detection coverage to suit the new room layout, in accordance with BS 5839 Part 1 2017 Category L1. The existing station fire alarm system required modification and extension to provide coverage to all areas of the proposed Wembley Park Back Up Control Facility (BUCF).

## Health & Safety

L.B. Foster Telecoms (TEW Plus) is committed to the highest standards of health and safety for our people and the contractors with which we work. The rail network is a hazardous place and we comply with London Underground's Contract Standard S 1552 (QUENSH). We worked in collaboration with the principal contractor to achieve this, ensuring works were conducted in accordance with relevant policies and procedures. This includes:

- > ensuring our staff carried up to date Sentinel Cards
- > providing a qualified and experienced site person in charge to supervise staff and ensure the site was set up correctly
- > undertaking drug and alcohol testing in compliance with London Underground's requirements
- > taking part in daily site briefings with the principal contractor and collaborating with other contractors' operatives
- > using site specific risk assessments, method statement and work plans
- > maintaining accurate records of site attendance by operatives
- > checking operatives wear full PPE correctly.

## Our solution

L.B. Foster Telecoms (TEW Plus Ltd) worked with principal contractor JNG Construction & Engineering Ltd, and Transport for London to design, install and commission new automatic fire detection services, as part of works at Wembley Park station.

## Automatic Detection

The station's existing fire detection loop was modified to provide automatic detection coverage to suit the new room layout in accordance with BS 5839 Part 1 2017 Category L1. The existing station fire alarm system was also modified and extended to provide coverage to all areas of the proposed Wembley Park BUCF.

A Junction was installed in place of the existing detector to provide an extended loop to a Heat detector located in the Kitchen and Beacon to the Toilet area. The detection loop was extended from this point to the new Switch

Room to provide automatic detection, a manual call point and damper interfacing.

Alarm was provided in the BUCF by the PA/VA system, as part of the communications scope of works. Alarm was also provided in the Switch Room by a loop driven base sounder. All junction boxes were labelled 'fire alarm junction box'. Automatic detection devices comprise multi-sensors and heat spaced in accordance BS 5839 Part 1 2017.



## 4 – Way Kentec Damper Control (SID 3/610)

As part of new ventilation systems being carried out, two new Fire Dampers were installed within the new Switch Room 3/610 to maintain compartmentation segregation in the event of a fire. These Dampers are fail-safe driven and monitored by a new local Damper Control Panel which closes the dampers in the event of a local automatic fire detector activation within the Switch room.

The new DCP was mounted in the new Switch room in a position with full access for

maintenance. The fire dampers status circuits from the new Switch room DCP were 3 core 1.5mm enhanced fire cables. This were run in the fire trunking, with a secondary conduit used to connect to each damper. The 230v circuit from the DCP to the dampers was housed in a 25mm galvanised conduit. Mains supply cables were installed using 2core 2.5 enhanced fire rated cables. Each damper supply was provided with a double pole metal clad fused spur with secrecy key and neon indicator.

## Additional Fire Dampers in BUCF)

Two new fire dampers were installed in the BUCF under the mechanical scope of works. These dampers are monitored by the Damper Control Panel located in 3/776 Plant Room (DCP4 – L1/64), which will close the dampers in the event of a local automatic fire detector activation within the Plant room or the BUCF.

To add the two new Fire dampers status circuits from the Plant Room DCP to both, new Smoke damper CMS were run in the ceiling within the Plant Room and BUCF.

Each conduit houses 1no Soft Skin enhanced fire cable London Underground approved 3 core and CPC for status monitoring. The new 230v circuit is in LSF singles housed in a 25mm galvanised conduit. Mains supply cables were installed using London Underground Limited approved Soft Skin enhanced fire rated single cables. Each damper supply was provided with a double pole metal clad fused spur with secrecy key and neon indicator.

