D2 Fire and Security Ltd
Yard 4 North Lockside
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Tel: 01634 713000 opt 3
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Dilapidation Report

Site: **Euston Tower**
Address: **Regents Place, Euston Road, London**
Date: **02/11/2021**
Engineer(s): **Sam Noakes, Ben Spink**

Introduction

We have been asked to carry out investigation works into the current state of the system and rectify faults where possible. The System is a 10 panel Gent Sentri/SMS network in a 38-storey building which is being stripped back to shell & core with no occupied areas except for the retail units on the ground floor –all of which have their own systems.

System particulars

Manufacturer	**Gent By Honneywell**
Protocol	**SMS/Sentri**
Design Category	**Unknown**
Floors	**Basement, Ground, L1-35 & Roof**
Number of Nodes	**9 panels + 1 Network Node**
Number of Loops (in use)	**34**
Number of Devices	**2040**
Number of Faults On Arrival	**617**
Cable Type	**MICC 2L1.5 (90%), FP200 Gold 2c+e 1.5 (10%)**
Device Age	**Circa 10 Years**

System layout

Upon interrogation of the device list extracted from the fire alarm panels, it is evident that each floor is on its own loop with very few exceptions. As the system has evidently been converted froman old 4 wire conventional system, the stair cores are all on their own individual loops across nodes8&9. All PA/VA outputs are also on their own loops fed by node 2.

The layout of the fire alarm's infrastructure differs throughout the building. O&M information foundin the engineering office on level 35 suggests that there was a refurbishment project c.2002 on levels21 upwards. On these floors there is a junction box per floor for fire alarm loops and PA/VA A&B circuits in the south core comms riser, it is at this point that we can easily disconnect the field wiring to each floor whilst leaving the core areas unaffected leaving a connection point available should the intention be to re-fit those floors after the strip out is complete at a later date.

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On all tenant floors from 1-20, the cabling appears to come in and out of the old short circuit isolator enclosures left over from the pre-existing conventional fire alarm system indicating that the cabling has been re-used and would therefore be from the 1995 refurbishment in the best case but could possibly be older than that. Again, as with the upper floors, it will be possible to isolate the field wiring and leave the core areas unaffected.

On each floor there is a central toilet core with fire detection and voice alarm devices installed, we have been asked to keep these live but to do so would entail rewiring them on most floors as the cables have been damaged going in/out of the toilet area. Coupled with the fact that the intention is for the building to remain unoccupied or be refurbished completely.

Summary of faults

The vast majority of the faults are missing devices and short circuits which appear to have been caused by old pyro cabling failing. The system has been heavily modified through the years leaving the system unstable and virtually impossible for cable monitoring, due to the amount of junction boxes and radial circuits.

The number of faults has been greatly reduced by running the loops up to the problem devices as radials and disregarding the faulty devices and cabling in between. Repair of the MICC circuits would not be possible due to the age and level of disruption that the cables have already endured thus far, these would need to be identified leg by leg and replaced in FP or circuits replaced entirely. This would also leave potential for issues in the future.

In summary the faults are mainly caused by disruption to the current state of the existing cabling. In my opinion the cabling through out site is beyond repair.

The system is derived from an old conventional system and has been adapted through out the years to create an addressable system, inclusive of loop isolators which are designed to cut the circuits when any form of short circuit is presented onto the loop.

Please see below for photos of the current state of the fire system through out.

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Damaged pyro causing short circuit on level 32

Pyro joint causing short circuit due to earth link touching both pairs

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Joint boxes for both VA/FA located in risers from levels 21 – 34, loops could be strip back to these risers.

Multiple joint boxes and old zone isolators across all floors.

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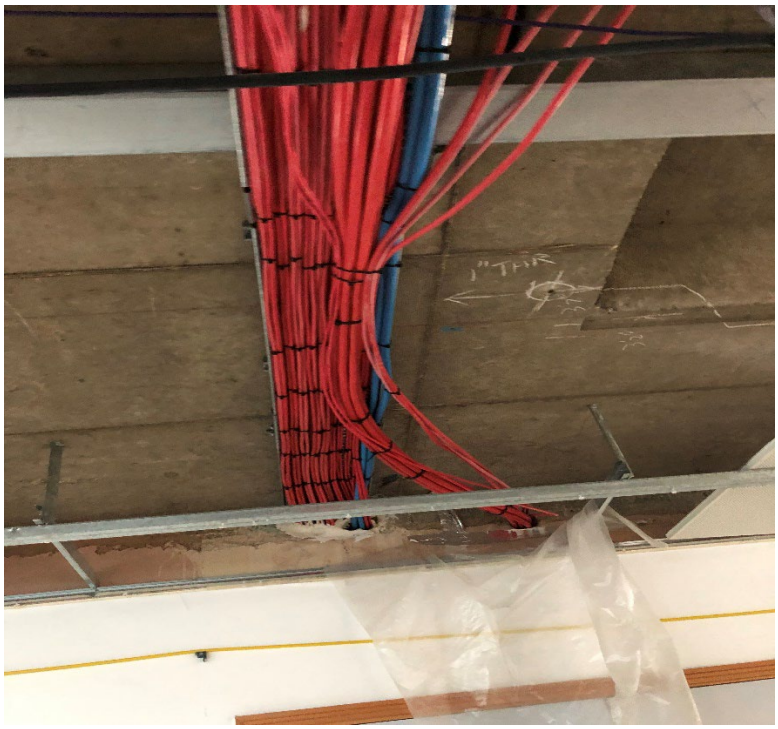
Pyro cable damaged causing short circuit on loop, Level 28



Level 24 multiple cables running through the floor to old VA rack now being used as a joint box

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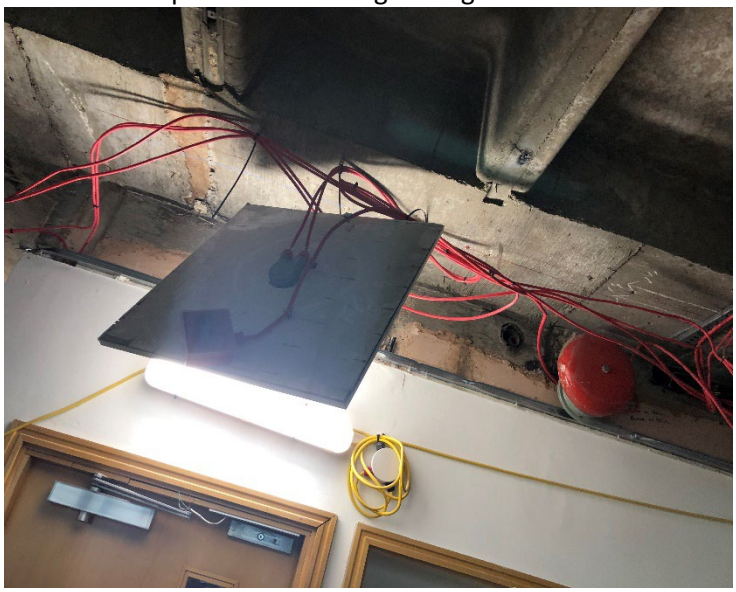
Level 24 multiple cables running through the floor to old VA rack now being used as a joint box



Old Cabling / mcp from previous system.

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Level 3 – Old FA system panel used as JB to feed loops for new gent system / panel in adj riser.

Old Cabling / Smoke from previous system.

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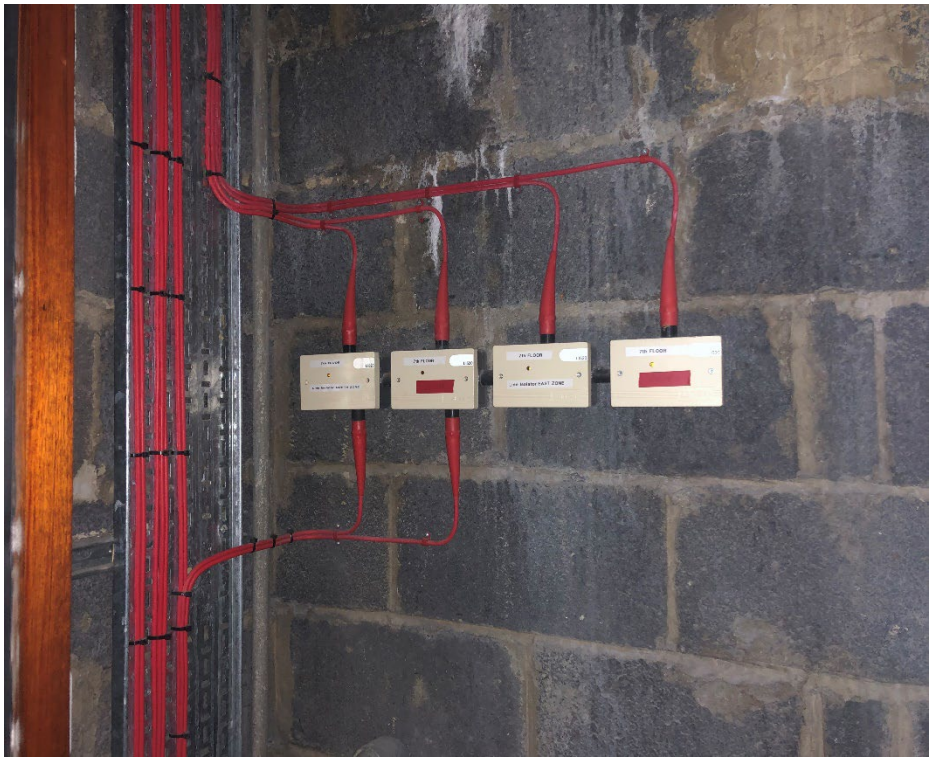

Isolators from old risers installed on most floors as using as feed wring for the loops on each floor.

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Proposal

Due to the cabling throughout being beyond repair it leaves us with one option moving forward, to leave the building with a stable and compliant system.

- **Shell and Core**

  We propose a strip out of all existing fire alarm and PA/VA systems back to the south core comms riser (as per levels 21 upwards). Once all cabling has been stripped back to the core, we then re cable using FP200 gold a minimal system consisting of devices leading to fire exits, covering of risers and flue like structures.

  We will be able to re utilize detection and PAVA speakers throughout, although there may be the possibility of faulty devices in which we may have to swap for new, as per quote.

  Below shows a screen shot from the mark up indicating the proposal, red highlighted devices will be re cabled and equipment re used. All other equipment not highlighted will be stripped out.