



# RIDGE

**5010580 – CROYDON FRAS:  
REGINA ROAD 1-87 CONDITION  
SURVEY**

**MULALLEY & CO LTD**

20/04/2020

Version 1.1



**5010580 - CROYDON FRAS: REGINA ROAD 1-87 CONDITION SURVEY**  
**MULALLEY & CO LTD**  
**27/04/2020**

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# 1. EXECUTIVE SUMMARY

This survey should be read in conjunction with the Fire Risk Assessment (FRA) and the FRA should be reviewed with regards to implications on existing systems and their suitability to achieve the requirements.

Several deviations from British Standards and good practice have been highlighted in Section 9;

- including a lack of smoke control on floors 8-10 due to the incorporation of the second stair
- dry risers on alternative floors
- lack of escape signage and shortfall in the emergency lighting coverage
- inconsistent cable colours for fire alarm cabling
- fire extinguisher not serviced
- lack of or poorly sited emergency light fittings
- lack of escape signage.

The report also highlights as a duty of care items outside the scope which should be reviewed as they are considered hazardous or may develop into a hazard.

## 2. INTRODUCTION

### 2.1. Purpose of the survey

Ridge have been appointed by Mulalley & Co Limited to undertake a non-intrusive survey of the site with a view of identifying system serving fire detection, notification and fire suppression where installed.

Comment will be made where necessary on the assessed condition of the assets and where the systems do not appear to provide adequate cover and further investigation is needed.

This report should be read in tandem with the Fire Risk Assessment (FRA). This report should be reviewed as to the implications and suitability of the existing provisions to achieve the strategic objectives of the FRA.

### 2.2. The Site

The site is located at:

Regina Road 1-87  
South Norwood  
SE25 4TW

### 2.3. General Layout

The building consists of eleven floors and roof plant. Each floor contains four flats totalling 44 flats.

The four flats open directly onto a lobby with a separate stairwell. A second stairwell links the eighth floor to the tenth floor. The lobbies were served by lifts that alternated so that only one lift stopped at each floor above ground. The lift did not extent to the tenth floor.

A bin chute is accessed of the main stairwell via a lobby.

A roof top lift motor room and water tank room are accessed through a ceiling hatch on the tenth floor. Two enclosed spaces are accessed through the lift motor room. One of the spaces houses a containerised plant room associated with radio transmitters mounted on the roof.

The electrical supply entered the building through an intake room located on the ground floor, adjacent to the bin store. The intake room was accessed off the main stairwell.

The Figure 1 below shows the general layout of the ground and tenth floors.

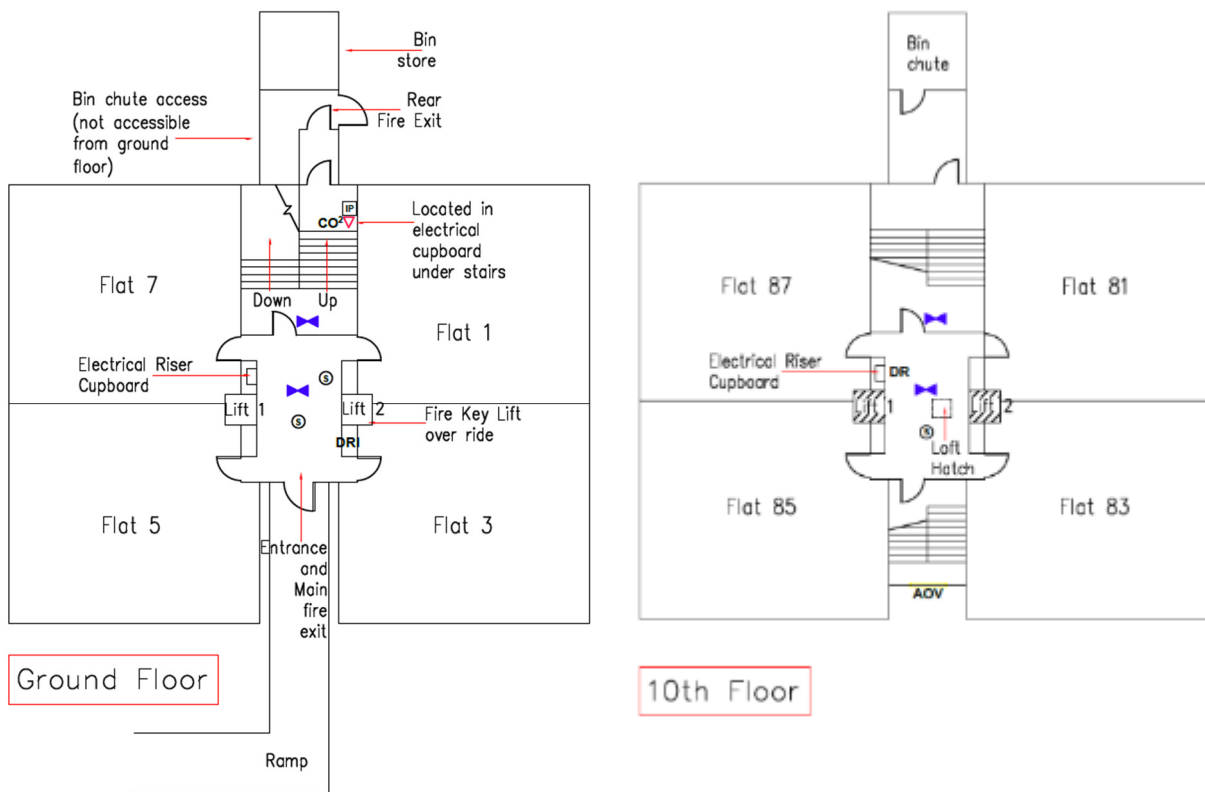


Figure 1: General layout of the ground and tenth floors

## 2.4. Limitations

The survey was limited to the communal areas and did not extend into the flats.

The survey undertaken was non-intrusive and did not include the removal of covers, opening-up and exposing of hidden services.

Operation of devices was not checked, and assessment was a visual inspection only.

Record information of testing regime and of current certification was not verified unless documentation was located on site.

The roof top enclosed areas were not inspected as they were infested with birds and contained a high quantity of guano.

The rooftop area also housed a packaged mobile ground station plant room which was not accessible.

## 3. FIRE ALARM

### 3.1. Control & Indication Equipment

The building is protected by a C-Tec XFP Series analogue addressable fire alarm panel providing 16 zones. The panel is believed to be a XFP50 model operating off a single loop. The system uses Apollo fittings and is anticipated to be operating on the XP95 protocol.





*Figure 2 Fire alarm panel.*

The panel did not indicate any alarms and was in normal status.

No smoke detection was provided within the lift motor room, electrical intake room or the stairwells. Based on the level of coverage, it is assumed that the fire alarm system has been designed to BS 5839:Category L5.

### **3.2. Cables & Wiring**

The system consists of a mixture of original MICC cable painted to with the ceiling colours and thermoplastic red cable (Figure 3).

BE EN 5839 calls for the cable colour to be uniquely distinguishable from cables used for other services and to be a single colour throughout the building. The building incorporates both white and red cables and sections where the cables have been painted. Sections of the installation should therefore be rewired to comply with the requirement.



*Figure 3 Mixture of cables and colours.*

### **3.3. Detectors**

The building uses Apollo optical smoke detectors. To provide protection, the detectors are located within a metal cage (Figure 4).



*Figure 4 Optical smoke detector and protective cage.*

A Firesafe battery operated smoke detector is located on the 5<sup>th</sup> floor. The device is not believed to form part of the main fire alarm system and may have been installed by one of the residents to provide an audible alarm of fire in the lobby (Figure 5).

This detector will not interfere with the operation of the main system, but consideration should be given to the effect potential alarms will have on other tenants on the floor.





*Figure 5 Potentially redundant detectors.*

The smoke detector located in the lift lobbies appear to be at a distance greater than 1.5m from the lift.

There is no smoke detector in the stairwell between 8<sup>th</sup> and 10<sup>th</sup> floors and it is not clear as to what triggers the operation of the Automatic Opening Ventilation (AOV's). We recommend that a detector is placed at the head of the stairwell.

### **3.4. Audible & Visual Alarms**

No audible or visual alarms were identified on site other than those integral to the fire alarm panel, this should be reviewed in line with the buildings fire strategy.

### **3.5. Manual Call Points**

No manual call points are provided.

### **3.6. Interface with other systems**

#### **3.6.1. Sprinkler system**

A system flow switch is located within the sprinkler riser at each level and is interfaced with the fire alarm system to form a separate zone (Figure 6).



*Figure 6 Sprinkler fire alarm interface.*

#### **3.6.2. Lifts**

The presence of a fire alarm interface with the lifts was not confirmed on site and should be confirmed with the lift or fire alarm maintenance companies. If absent, an interface should be installed to control the lift in the event of a fire event.

#### **3.6.3. Gas supplies and Services**

There was no evidence of gas usage on site.

#### **3.6.4. Ventilation**

There were no ventilation system serving the common areas.

### 3.6.5. Access Control Systems

The fire alarm system is not interfaced with the access control system.

## 3.7. Zone Charts & Documentation

The fire alarm zone chart is produced on the sprinkler schematic and is located on the wall adjacent to the fire alarm panel. The building is shown divided into twelve zones, each zone representing a floor, as indicated in Figure 7 below.



*Figure 7 Fire alarm zone chart.*

No smoke detection is provided within the stairwells and as such are not shown as a dedicated zone.

A fireman's information box is located on the wall in the ground floor lobby (Figure 8). The contents of the box could not be checked.



*Figure 8 Fireman's information box.*

No maintenance logbook was located on site.

## 4. SMOKE CONTROL

### 4.1. Openable Vents

An AMPAC Firefinder panel is being utilised to control AOVs located on the lift lobby of each floor (Figure 9). The panel is believed to be model SP1X 16 Zone.



Figure 9 AOV control panel.

The panel was in a state of fault during the survey indicating that the battery was missing or failed, and the mains had failed. The Fault Warning Routing Equipment (FWRE) and the Fire Alarm Routing Equipment (FARE) lamps were lit indicating that if connected to a monitoring centre, an alarm will be raised (Figure 10).

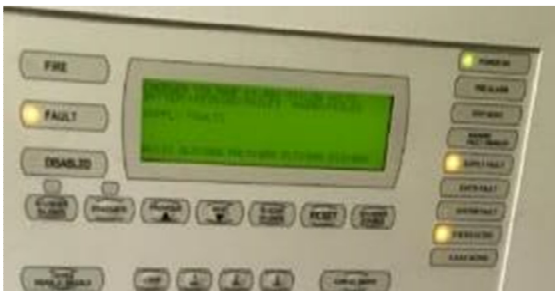


Figure 10 AOV control panel fault lights.

The control panel supply panel located below the AOV panel was not showing a fault (Figure 11).



Figure 11 AOV control panel supply.

The AOVs were provided by magnetic held central pivot gravity driven windows (Figure 12). A local key switch was provided to allow the testing of the window.



Figure 12 Typical AOV.

Windows were provided either side of the AOV, allowing general ventilation of the lobby.

On the upper floors, served by the secondary stairwell, the AOVs are located in the stairwell and not the lobby. This should be checked against the fire risk assessment as there is no smoke clearance from the lift lobby. Building regulations would require the installation of a smoke riser with a footprint of 1.5m<sup>2</sup> or a link to the external façade of 1m<sup>2</sup>. It is not clear how this can be accommodated in the current building.

The head of the primary stair core is fitted with a louvre in the ceiling (Figure 13). The configuration and operation of the louvre could not be confirmed as it was not clear how access was gained above the louvre.



Figure 13 Primary stairwell AOV.

Operation of the louvre should be confirmed in relation to the smoke vent strategy.

The AOV test switch on the fourth floor was damaged and should be replaced (Figure 14).



Figure 14 Damaged AOV test switch.

## 4.2. Smoke & Fire Dampers

There were no visible smoke and fire dampers.

## 4.3. System Control & Wiring

The AOVs were controlled from the system described in 4.1 above. Primary wiring from the panel to the local test switches is MICC cables with a white sheath. Cabling from the test switch to the AOV appears to be flexible cable. It could not be seen if the cable is fire rated.

The operation of the smoke control system is automatic and not considered to be firefighting. BS 8519: 2010 calls for the cabling for smoke control dampers to be Category 2, providing 60 minutes fire protection. We recommend that the final link be reviewed and upgraded to 60 min fire resistance as failure of a cable on one floor may affect other floors.

# 5. FIRE SUPPRESSION

## 5.1. Sprinklers

A sprinkler system is installed on the site. The sprinkler system takes a supply from the shared domestic water / sprinkle tanks located in the roof plant room. The roof tanks are served by a water pump set located in the sheds to the rear of the building. The tank should be sized to supply enough water to operate in the event of a fire event and the ground floor pumps are not required to operate and therefore do not require a fire rated supply. The domestic pumps do have red fire alarm cabling entering the control panel and are believed to be linked to the fire alarm panel.

The sprinkler system is augmented by the installation of a single sprinkler pump located within the tank room (Figure 15). The sprinkler pump was supplied by fire rated cable from a locked off isolator located in the first-floor electrical cupboard. The fire resistance of the supply cabling could not be confirmed but should be 120 minute rated in accordance with BS 8519.



*Figure 15 Sprinkler pump.*

The isolator was located immediately adjacent to the incoming supply but the configuration of the connection to the supply could not be confirmed. Mains supply travels through the building to the first floor and did not appear to be fire rated but may be deemed to be in fire separated compartmentation. This should be confirmed, and fire separation installed if absent.

The sprinkler pipework was distribution through the building through a dedicated riser (Figure 16). The sprinkler system coverage was limited to the flats and the ground floor bin store.



*Figure 16 Sprinkler riser.*

## **5.2. Fire Fighting Rising Mains**

A dry riser inlet was located at the base of the dry riser, within the ground floor lift lobby (Figure 17). BS9990 recommends that the inlet is located on the outside face of the building and visible from the pumping appliance. The position of the inlet on the ground floor has prevented the installation of an outlet valve to serve the ground floor.



*Figure 17 Dry riser inlet on ground floor.*

We recommend that the riser is modified to provide an inlet on the face of the building with an outlet at ground floor in line with BS9990.

Riser outlets (landing valves) are provided on even numbered levels. Even floors were not provided with an outlet. BS EN 999 calls for landing valves on every floor and the omission of valves on each floor would result in the need to run hoses through the stairwell preventing doors from closing, compromising smoke and fire separation and creating congestion in the stairwell for escape.

We recommend that valves are provided at each level in line with BS 9990.

The dry riser outlet signs were missing on several outlets and should be replaced.



Figure 18 Dry riser outlet with no sign.

The testing regime of the dry riser could not be confirmed and should be checked and tested if absent.

### 5.3. Fire Extinguishers

CO<sub>2</sub> fire extinguishers are provided in the lift motor room and ground floor electrical intake room. Comment on the provision of extinguisher is provided in the fire risk assessment.

The extinguishers showed that the date for the next service had been missed. A date for the service of the extinguishers should be arranged.



Figure 19 Extinguisher out of test.

## 6. EMERGENCY LIGHTING AND SIGNAGE

### 6.1. Emergency Lighting

Emergency lighting is provided by a combination of dedicated fluorescent bulkhead fittings, circa 300mmØ circular fittings and a number 300mm LED bulkheads.

The lamps of the circular fittings could not be determined through the diffuser but are believed to be 2D fluorescent. There was evidence on site that some fittings have had the 2D fluorescent fittings replaced with Kosnic LED board replacements <https://kosnic.com/kosnic-led-dd-range/>.



Figure 20 Typical emergency lighting.

The wall mounted fitting on the ground floor rear corridor did not appear to be an emergency fitting and should be replaced (Figure 21).



Figure 21 Ground floor rear corridor.

The escape signage is non illuminated and relies on the emergency lighting system to illuminate the sign. The positioning of emergency lighting should be reviewed against the positioning of signage and additional fittings provided or relocated as needed. This should be reviewed in line with the complete system.

The lift lobbies are illuminated by a single ceiling mounted fitting. This may not be sufficient to provide illumination along the escape route and provide sufficient illumination to the escape signage and should be reviewed. Where two light fittings are installed, the proximity of the fittings will create shadowing which should be reviewed in line with the general emergency provision.



Figure 22 Ground floor rear corridor.

The light fitting is not central to the lobby and the layout of the lobby creates areas where the lighting may not reach leading to areas that do not meet the current minimum requirement. We recommend that the lighting levels are checked.

On the stairwells, emergency lights were provided on the primary and secondary landing, but the stairwell appeared dark. The general and emergency lighting on the stairwell should be checked against requirements (Figure 23).



Figure 23 Stairwell with general lighting on.

There were no emergency lights provided at the final exits. New emergency lights should be provided.

A multi gang emergency lighting test switch panel is located in the electrical cupboard on the first floor. The keys are annotated with the circuit to which they area associated but not what fittings they control.





Figure 24 Multi gang emergency lighting test switch.

## 6.2. Escape Signage

The directional signage is provided through non-internally illuminated signs. The escape directional signage needs to be reviewed in line with the fire risk assessment as the direction of escape cannot be identified in some locations. The provision of emergency lighting will need to be reviewed in line with any modification to the escape signage as additional emergency lights may be required.

There was no directional escape signage from the lift lobbies (Figure 25). The directional signage should be reviewed in line with the fire risk assessment.



Figure 25 No directional signage from lift lobbies.

The directional signage on the ceiling of the down stair leading from the ground floor lobby to the lower level exits is downward facing and will not receive any light from the emergency lighting and should be relocated.



Figure 26 Down facing escape signage.

Provision of directional arrows should be considered and at the bottom of the stairwell serving floors 8-10 to direct flow towards the primary stairwell. This should be reviewed in line with the fire risk strategy.

## 7. COMMUNICATIONS SYSTEMS

### 7.1. Emergency Voice Communications (EVC)

There is no emergency voice communication system.

### 7.2. Intercom System

Entry into the building is via a fob entry system on the main and rear entrance. The main entrance allowing visitors to call specific flats.



Figure 27 Door entry arrangement.

The door entry system is controlled by a panel located in the lobby on the first floor.



Figure 28 Door entry arrangement.

## 8. LIFTS

There are two passenger lifts serving the development. While both lifts serve ground floor, one lift serves the odd numbered floors and one services the even numbered floors. Neither lift extends beyond the ninth floor. The lifts are rated at 8 passengers or 600kg.

The lift motor room is located in the roof space. Access to the lift motor room is through an access hatch on the 10<sup>th</sup> floor using a ladder. The ladder is padlocked to the wall in the secondary stairwell.

The ground floor lift was fitted with a fireman's key.

## 9. OTHER

### 9.1. Asbestos

The panels above the door linking the lift lobbies to the primary stairwell were labelled as containing asbestos.

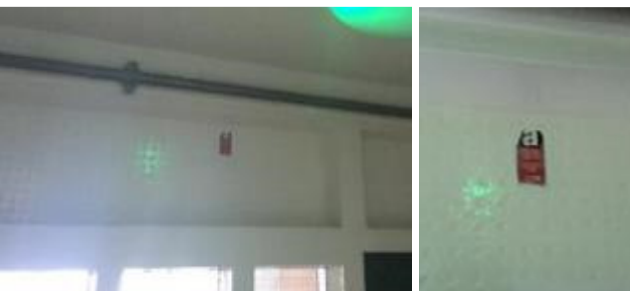


Figure 29 Asbestos label on stairwell partition.

### 9.2. Rubbish and Debris

On the day of survey, some rubbish was located around the final exit from the primary stairwell. This included a gas cylinder. It was not known whether the cylinder contained gas, but the area should be cleared as it created a hazard.



*Figure 30 Rubbish stored outside the primary stair final exit.*

### 9.3. Earthing and Lightning Protection

An earth strap was present in the electrical intake room which appeared to be disconnected. The bar should be investigated to confirm whether this is deliberate or whether it should be connected.



*Figure 31 Disconnected earth bar.*

### 9.4. Fire Doors

The door to the primary escape stairwell on the ground floor was sticking open and should be modified to ensure free movement.



*Figure 32 Fire door sticking open.*

### 9.5. Door Hanging off.

The door to the external water pump room had a broken bottom hinge and on opening, almost fell off. The door should be rehung to remove the hazard.



*Figure 33 Dangerous door.*

## 9.6. General Lighting

The general lighting throughout the building appeared to be on a time clock. The appearance in the lift lobbies and stairs, even on the bright day of the survey was dark and uninviting. Consideration should be given to the installation of motion detection fittings to realise energy savings while providing a brighter fresher appearance.

## 9.7. General Signage

The bin chutes incorporate a step between the stairwell and the chute lobby. There is a warning sign on the entry to the lobby and chute but not on exit. On exiting, you are faced with the stairs and the impact of a fall is magnified. We would recommend that a warning is placed on the inside of the door in addition to the one on the outside.

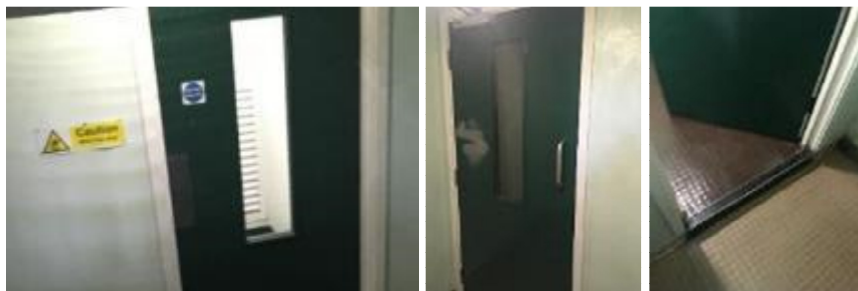


Figure 34 Step to the bin chute.

## 10. RECOMMENDATIONS

### 10.1. Firefighting & Associated System

1.	Review and replace all cabling so that a single colour cable is used.	Prov Sum: £10000
2.	Remove 1No battery operated smoke detector.	£20
3.	Install fire alarm interface to lift.	£750
4.	Provide a smoke detector at the head of the stairwell serving floors 8-10 to trigger the opening of the AOVs.	£1500
5.	Provide fire alarm sounders throughout communal areas.	Prov Sum: £5000
6.	Review the smoke clearance from floors 8-10 as not connected to the smoke shaft or louvre. Budgetary allowance.	£2500
7.	Confirm presence of maintenance record either on-site or off.	Note
8.	AOV control panel showing fault. This should be within existing maintenance contract.	N/A
9.	Confirm fire alarm link to primary stair louvre and install fire alarm interface of absence.	£750
10.	Replace 4 <sup>th</sup> floor AOV test switch.	£300
11.	Replace AOV flex with fire rated cables. Allowance for 10Nr AOVs.	£1000
12.	Confirm rating of fire rated cable to sprinkler and replace if not enhanced cable. Allowance for 60m clipped direct.	£750
13.	Provide 120min fire protection to incoming mains cable from ground floor to first floor. Allowance for enhancements to 6Nr riser doors. Allow 1m <sup>2</sup> per floor.	Prov Sum: £1500
14.	Provide additional sprinkler outlets on 5Nr floors. Allow 5Nr.	£1200
15.	Extension of dry riser inlet to façade. It is not clear how this can be achieved and special allowance may be required from the firefighting services. No allowance made.	NOTE

16.	Provide signage to dry riser outlets. Allowance for 6Nr signs.	£200
17.	Test the dry riser.	£1500
18.	Inspect 2Nr fire extinguishers.	£80
19.	Review lighting with regards to directional signage, illumination levels and uniformity in lift lobbies. Allowance for installation of 11Nr new fittings and relocation of 11Nr fittings.	£3200
20.	Review lighting with regards to directional signage on stairwells. Allowance for the installation of 33Nr fittings and relocation of 25Nr fittings.	£7600
21.	Install 2Nr final exit lights.	£400
22.	Install escape signage. Allowance for 48Nr signs.	£500

## 10.2. Other Site Observations

1.	Remove rubbish from final exit door.	£160
2.	Check and reconnect earthing.	Prov Sum £750 for survey only
3.	Fix ground floor fire door to allow free operation.	£250
4.	Fix door hinge on external water pump room.	£250
5.	Install motion detection in lift lobby luminaires. Allowance for 11Nr floors.	£2500
6.	Install step warnings on inside of bin store doors. Allowance for 10Nr.	£100

## 10.3. Clarifications and Qualifications.

- Assumes locations will be clear of asbestos
- Assumes one continuous site visit to undertake the works identified as a whole
- Assumes uninterrupted access to work locations
- Making good after removal or relocation of items is assumed to be by others
- Excludes Modifications to existing installation unless expressly identified
- Costs estimation based on information available within this report
- Excludes periodic maintenance plans
- Where access is required it is assumed this will be coordinated and undertaken by others
- No allowances have been made for repeat visits
- No allowances have been made for management of interfaces with other trades
- Includes for trade specific OH&P
- Quantities stated in the MEP report should be treated as indicative and subject to detailed design.
- Assumes works will be coordinated to coincide with other works in the area by the required trades.
- In relation to item 1 in 10.1 assumes replacement of fire system cabling only



# RIDGE



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