



# C440 – Bond Street Station Main Works, Fit Out, M&E

## Interim Maintenance Responsibilities Post Revenue Service

C440-XRL-Z-STP-C125-50003

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This document has been reviewed by the following individual for coordination, compliance, integration and acceptance and is acceptable for transmission to the above stakeholder for the above stated purpose.

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### 2b. Review by Stakeholder (if required):

Stakeholder Organisation	Job Title	Name	Signature	Date	Acceptance
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## 1 Introduction

The purpose of this document is to identify the level of system and operational completeness at Bond Street Station (BOS) upon reaching Revenue Service (RS) for the Elizabeth Line, and the associated coalition of responsibilities for system operation and maintenance.

At the point RS, LU will take responsibility as Infrastructure Manager (IM) for the Elizabeth Line Bond Street Station. As a part of this transfer certain facilities and systems at BOS (hereinafter referred to as 'assets/systems') that have achieved the required level of assurance will pass from Crossrail (CRL) to LU who will take over maintenance responsibility.

Any remaining facilities and systems not meeting the required level of assurance at RS will pass from CRL to LU by Staged Completion (SC3 ROGS). Formal handover of the assets in accordance with the Element Completion and Handover Report (ECHR) and CRL Handover Strategy and Plan will take place at some point after SC3 ROGS.

The period between RS and SC3 ROGS is referred to in this document as the Interim Maintenance Period. This document covers the maintenance arrangements that will apply at the Elizabeth Line BOS for the duration of the Interim Maintenance Period

Prior to commencement of SC3-ROGS this document will be reviewed to address any Interim Maintenance Arrangements required between SC3-ROGS and Handover that may require a potential extension of the Interim Maintenance Period. This will be based on the defined scope, more specifically the fully assured assets/systems and available ROTA, for SC3-ROGS.

The principal requirements regarding maintenance responsibility, at the point of RS are that, where CRL have fully assured assets/systems in accordance with CRL procedures, Standards and legislation and the required documentation has been reviewed, verified and accepted by LUCT, then LU Asset Performance & Capital Delivery will take on maintenance responsibility for those assets.

### 1.1 Positioning of this Document

The Earliest Opening Programme Elizabeth Line Configurations Ref [1], which was issued under CRL1-CEC-00595 and CRL1-CEC-00601 (revised), introduced three stages of completion:

1. SC1 Readiness for Trial Running of the Routeway. (Enacted)
2. SC2 Readiness for Trial Operations of the Routeway. (Enacted)
3. Revenue Service (RS) (Basis of this Submission)
4. SC3 Readiness for Trial Operations of the Stations.

Subsequently Crossrail's technical assurance team developed Ref [2]. This document was issued under CRL1-CEC-00595, CRL1-CEC-00666, CRL1-CEC-00601 (revised) and CRL1-CEC-00619 (revised).

The document provided a set of functional requirements for the four configuration stages noted above.

Following receipt of these sources it was necessary to take the generic definitions and develop a detailed scope for C440 to deliver. C440 have subsequently produced this readiness plan for RS in addition to a Migration Strategy which determines latter staging requirements.

## 1.2 Reference Document

The following reference documents have been used as the basis for the development and creation of this document submission;

Ref	eB Document Number	Rev	Document Title
1	CRL1-RFL-N2-STP-CR001-50003	3.1	Earliest Opening Programme Elizabeth Line Configurations
2	CRL1-XRL-O7-RSP-CR001-50003	3.1	EOP Configuration States- SC1 SC2 SC3 Definition Paper
3	C440-XRL-T-RGN-C125-50001	1.0	C440 Transition to Revenue Service
4	CRL1-XRL-O8-AAG-CR001-50002	8.0	Operation & Maintenance Boundaries – Supplement 1 – London Underground Stations

## 1.3 Definitions

**Revenue Service:** Introducing passenger movement and fare paying customers within reduced areas of BOS with defined areas Operational. From RS BOS will include Elizabeth Line services and some assets/systems will be managed by LU as the IM. The split of these assets/systems are captured in the IMA.

**Staged Completion (SC3 ROGS):** The process of bringing assets into operational use before Handover. For BOS this will mean bringing everything else into use, not already transferred at RS. It will also mean that all maintenance responsibility will transfer from C440 to LU IM. The detail of this transition will be defined within the Migration Strategy.

**Handover:** Full transfer from CRL to LU and RfLi of operational and maintenance responsibility. Signed Element Completion Handover Report (ECHR) and Element Completion Handover Certificate (EHC) required.

**Interim Maintenance Period:** The period of time between RS and SC3 ROGS to which this Interim Maintenance Arrangement applies. This could extend past SC3 ROGS if assets/systems remain incomplete.

**LU IM:-** London Underground Infrastructure Manager

**LU APCD:-** London Underground Asset Performance & Capital Delivery. The body that will undertake maintenance on behalf of LU IM.

**ACC:-** Access Control Centre. London Underground's call centre for receiving and processing fault calls.

**First Line Response:** The act of attending immediately in the event of a fault. Attendees will attempt to resolve the fault within the Service Level Agreements (SLA) captured in section 5.

**Second Line Response (Buddy agreement):** A partnership arrangement where 1<sup>st</sup> line response is unsuccessful whereby either London Underground or Crossrail as the first line responder are unable to remedy the fault, further works will be undertaken between the partnership in order to close the fault.



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**CRL rectification process:** If a fault has been identified as an installation or warranty related defect. CRL will investigate and seek rectification. In some cases the rectification maybe undertaken by LU APCD.

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## 1.4 Abbreviations

Abbreviation	Description
AC	Air Conditioning
ACC	Asset Control Centre
BoH	Back of House
BOS	Bond Street Station
CMS	Cable Management System
C231	Engie Principle Contractor and Care and Custody contract
C412	CSJV Principle Contractor – contract now novated to C231
C440	Crossrail Management of C231 Contract
eB	Enterprise Bridge – CRL Electronic Depository / Data Management System
ETH	Eastern Ticket Hall (Hanover Square)
FoH	Front of House
HAZID	Hazard Identification
HV	High Voltage
iAC	Interim Acceptance Certificate
ICD	Interface Control Document
iPAC	Interim Partial Acceptance Certificate
LU APCD	London Underground Asset Performance & Capital Delivery
LUCT	London Underground Crossrail Team
Routeway	Elizabeth Line Railway
SC1	Stage Completion One (Trial Running)
SC2	Stage Completion Two (Trial Operations)
WTH	Western Ticket Hall (Gilbert Street)

## 2 Geographical Boundary for Revenue Service

The ensuing description provides an overview of the areas transferred to LU and associated control at RS. Further detail of specific Back of House rooms/areas are provided within the Revenue Service Readiness Plan, for example Welfare facilities, Cleaners Store Rooms, Equipment Rooms etc.

The following Front of House areas will be transferred.

- Eastern Ticket Hall Hanover Square Entrance and Booking Hall (Level -0 and +0.5)
- Eastbound Platform
- Westbound Platform
- Platform level passageways AP2 and AP3, including all Cross Passages and transitions to escalators and lift facilities
- All Lift and Escalator facilities and areas
- Western Ticket Hall Level -3 Interchange and AP1 (Transition Corridor into the existing London Underground Station)
- Western Ticket Hall Intervention and Escape Routes, inclusive of ESS1, ESS2, ESS4 & ESS5
- Eastern Ticket Hall Intervention and Escape Routes, inclusive of ESS7 & ESS8
- Western Ticket Hall Davies Street Entrance and Booking Hall (Excluding +0.5 to +3)

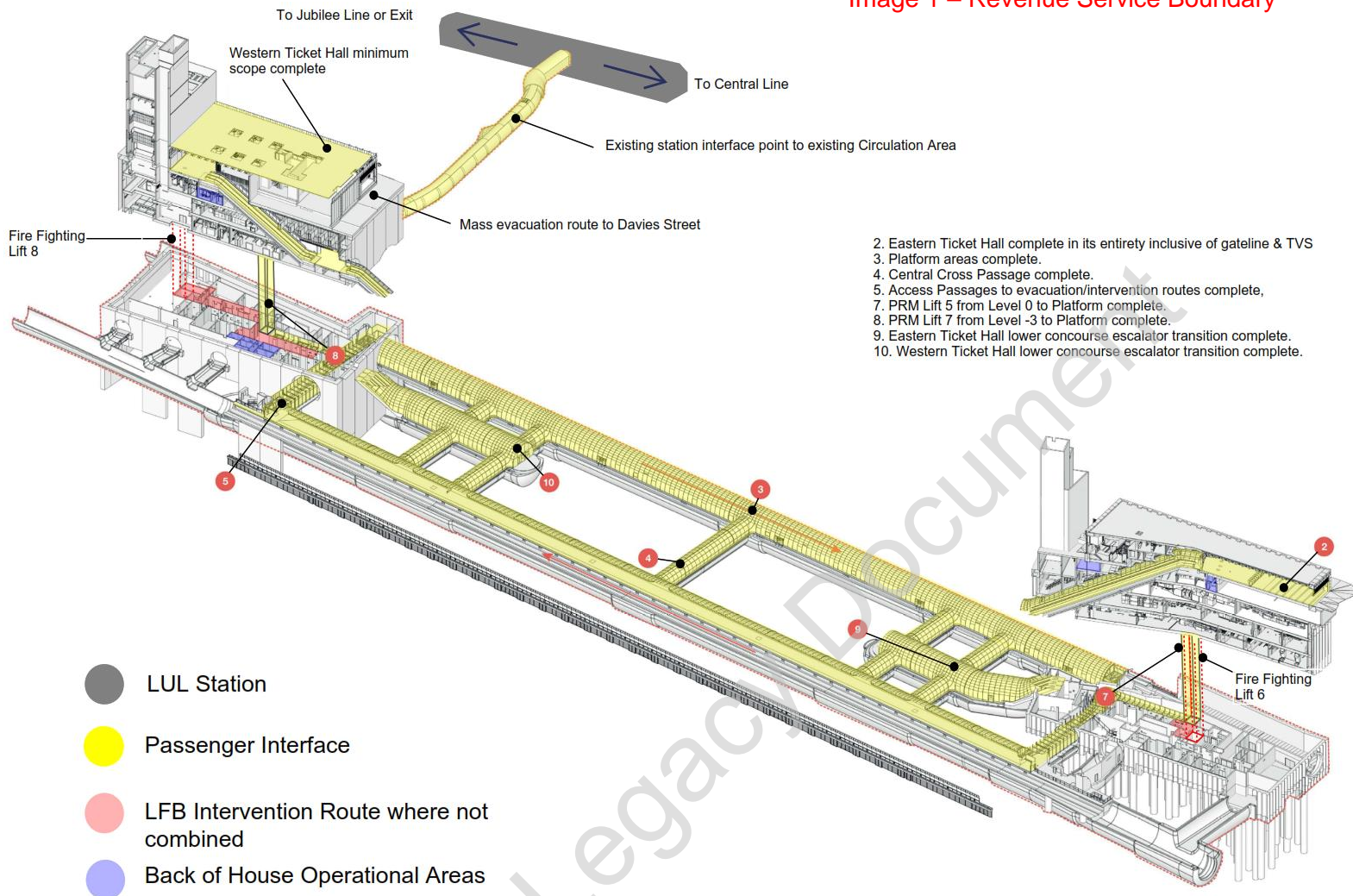
At RS the aforementioned areas of the Elizabeth Line BOS facility will transfer to LU, albeit some assets will not be complete, either physically and/or in terms of engineering assurance. It will nonetheless become LU IM's responsibility to manage and control the whole of the defined area, consequentially restricting access to C440.

Further to the areas demarcated within this section, externally controlled and managed areas will interface or effect LU IM, whether via functionality and maintenance, through or via access or proximity to the areas provided through the completion of the RS scope. These areas are as follows.

- Oversight Development (OSD) – The station boxes to both western and eastern ends have provision for future OSDs, although both sites are under the control of the OSD developers.
- Tunnel Ventilation and Trace areas – Tunnel Vent Fans and associated areas, Draught Relief/UPE, OHLE and HV facilities, Platform Extract and Track/RFLI controlled Rooms/Areas etc. (Refer to Section 6.6. for access arrangements)
- Urban Realm – Outside the urban environment is being enhanced to provide a safer and aesthetically improved approach to the station. These works are in part being undertaken by C440 however external stakeholders undertake the remainder, for example the Western Ticket Hall OSD Urban Realm.



Image 1 – Revenue Service Boundary



Note\* All areas left blank will be retained as under the CDM site with all operational assets accessible and under configuration control via the C231 C&C team

BoH areas and associated corridors and passageways facilitating access to equipment or operational rooms whether LU or RFLi as appropriate, will always be accessible and clear of obstructions, under the configuration control of the Bond Street Project Team. Further boundary information is provided within Appendix 1 of this document.

During the course of completing Staged Completion 2 (SC2) the associated access routes to operational rooms have been completed to facilitate clear routes of access for stakeholders. Works within rooms not transferred over to either RFLi or LU are to be retained as part of the CDM site. It is the intention that the aforementioned access routing and passage will be available as PPE free, rooms not transferred will remain as PPE areas.

Due to the staged sequence being implemented at BOS, interface and impactful commissioning will be undertaken progressively until final certification is achieved for SC3ROGS, therefore intrusive works and commissioning will be ongoing subsequent to the introduction of RS under an agreed Migration Plan and associated configuration control.

## 2.1 Scope introduced at Revenue Service

To facilitate the baseline proposal whereby BOS opens for RS utilising the Eastern Ticket Hall (ETH) and Western Ticket Hall (WTH), the following scope will be prioritised and consequentially will be required to be physically complete, commissioned and assured.

A Revenue Service Readiness Plan has been developed Reference Image 1 and IM Boundaries provided within Appendix 1, which provides detail of system requirements and the associated levels of completion required in order to meet the LU minimum requirements for RS. A Migration Strategy will be developed upon acceptance of this submission to confirm impacting scope and the associated sequencing and timeline of the associated activities, an overview of its minimum content is provided within Section 2.2.

SC2 scope is assumed to be complete in advance of the ensuing scope.

- Escalators ETH Platform to Ground Level, WTH Platform to Interchange and Interchange to Ground Level.
- PRM Lift 5 sited within the ETH & PRM Lift 7 in the WTH including all interfaces.
- Fire Fighting Lift 6 sited within the ETH & Fire Fighting Lift 8 in the WTH including all interfaces.
- Fire Systems completion including over and back testing and LU Interface.
- Fire Compartmentation across all front of house (FOH) areas providing a full compartment between CDM Site Areas, FoH and BoH areas.
- BMS Network complete.
- HVAC provision provided to critical equipment rooms and welfare and staffing areas
- PA/VA System complete (Front of House areas operational)
- CCTV System complete in front of house areas including external and escape routes.
- WTH Gate Line complete.
- ETH Gate line complete.
- WTH & ETH Revenue and TVM services complete.
- WTH & ETH, Interchange Level and Platform Level CiS complete.
- Air Release Completion in the ETH and WTH Pressurised Shafts.
- Automatic Fire Door Completion throughout Front of House areas.
- Radio completion throughout the station.
- SOR Integration (Interim service)
- SCADA completion to operational systems described within this section.
- LVAC systems, Door alarms and L&E monitoring infrastructure wiring complete.
- Lighting and Power completion to all Front of House areas.
- All LVAC Systems UPS, ATS, Dist Boards etc complete.
- All architectural finishes and fittings in the following areas.

This shall include all furniture, signage, flooring (including Matwell), panelling, cladding, glazing, compartmentation and doors;

- a) Eastern Ticket Hall Ground Level including +0.5 Level
- b) Western Ticket Hall Ground Level
- c) ETH Escalator Barrel
- d) WTH Platform to Interchange Level Escalator Barrel
- e) WTH Interchange Level to Ground Level Escalator Barrel
- f) WTH Interchange Level
- g) WTH AP1 Corridor
- h) Platform Cross Passages
- i) Lift and Escalator equipment rooms
- j) All final doors throughout the BiU Boundary
- k) All external finishes to the Eastern Ticket Hall
- l) All welfare and staffing facilities

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## 2.2 Anticipated Certification Levels at Revenue Service

The following tabulated reference depicts the anticipated certification levels, per system, achieved as a minimum to support the RS milestone.

System	T&C Level	T&C Phase	Justification
BMS	PAC	3.0	The BMS network will be complete, with local control functionality throughout,
CCTV	Integration (Phase 3) Test Results with agreed limitations	2.2	CCTV commissioned & integrated for the scope of the ETH RS Staged Completion with essential functionality in order to safely operate the station with CCTV coverage in the following key areas: <ul style="list-style-type: none"> <li>a) Both Platforms</li> <li>b) All Escalators</li> <li>c) ETH Gate line &amp; Booking Hall</li> <li>d) All Evacuation Routes ETH &amp; WTH</li> <li>e) Entrance</li> <li>f) Entrances, exits &amp; all external doors (that are part of the operational building)</li> <li>g) All Lifts</li> <li>h) All monitored doors (that are part of the operational building)</li> </ul>
CIS	Integration (Phase 3) Test Results with defects	2.2	Full scope for operational areas of ETH RS Scope including Totems at Level Minus 5  *Note this is not mandatory requirement for LU minimum requirements
CMS	IRN	2.1	Full scope - entire element (note that secondary CMS is not part of this package but included per system)
EAB	AC	3	Full scope - entire element, AC cannot be 100% as ESD will be certified at Phase 2.3 for the ETH RS Scope.
ESC	F45 & CDRL	2.2	Full scope - entire element - with integration to SCADA provided

System	T&C Level	T&C Phase	Justification
ESD	iAC	2.3	Full system AC cannot be provided where full system load is incomplete. e.g. Western Ticket Hall switch rooms serving gateline, tech walls, Jewers Gates, Roundels, TVMs, Coffe Lighting etc etc. However for all systems that comprise the ETH RS Staged Completion scope, all statutory certification will be provided. E.g. BS5266 Emergency Lighting, NICEIC Certification and Calculation Support and Site Assurance Packs etc.
FAD	AC	3	Full scope entire element with exception of isolations in WTH to enable site works to continue.
F/S	AC	3	Full scope entire element but FAD iAC prevents full AC
HCV	PAC	3	Local Cooling, AHU Plant and Auxiliary Plant will be functional, assured and available. However they shall be provided under local control with no BMS therefore full AC will be unachievable until fully integrated (further staged completion or handover).
LIF	F54 & CDRL	2.2	Full scope - entire element - with integration to SCADA provided
LIG	Field Wiring Complete to IRN	2.1	No DALI (lighting control) provided for Revenue Service. However, compliance with statutory emergency lighting compliance (BS5266) will be fulfilled and certified as part of this staged completion. Note: No requirement under LU minimum scope requirements.
PAVA	Integration (Phase 3) Test Results with defects	2.2	Full scope and integration  Acoustic compliance will not be achieved in the WTH Level 0 but will remain isolated, areas such as the WTH will be subject to a site based risk assessment from the Comms assurer. BoH full scope
PUH	PAC	3	Working pumps & associated drainage system will be installed, assured and commissioned for the ETH RS Staged Completion. Critical pumps will alarmed to SCADA (already in operation). All HWS and CWS including Drainage to Welfare and Cleaners/Staff facilities will be complete. Non critical sumps (localised flooding) will be in service, and associated alarms provided within the SOR.

System	T&C Level	T&C Phase	Justification
RAD	Integration (Phase 3) Test Results with defects	2.2	Full scope delivered including Thales integration and PVCQ testing proving full coverage of CONNECT. GSMR solution tbc - being workshopped between CEG/LU/RfLi /C660 & C440 (BOS Radio Team) tba
SCADA	Integration (Phase 3) Test Results with defects	2.2	In adherence with RfLi mandatory SCADA requirements, all Critical SCADA (already in operation) plus Monitored Doors and Lifts & Escalators via SMS will be included.
SPA	AC	3	Complete scope - entire element - will be provided of the pressurisation and air release systems. No AC for ESD prevents full AC here.
TEL	Integration (Phase 3) Test Results with defects	2.2	Automatic & CRL telephones will be provided in above ground areas (areas above ticket hall level) as specified in the design. Automatic telephones will be provided at head wall and tail wall of CRL platforms to enable contact with RCC. Critical, operational and equipment rooms will be provided with Automatic telephones to support maintenance and operational activities.  Induction loops will be provided at PHPs in Front of House Areas and places of safety.

### 2.3 Migration Strategy

The Migration Strategy will set out to align interfacing works and systems integration within LU Station as well as maintaining critical systems operational under EiTO on the Elizabeth Line. The document will introduce, through stakeholder agreement, lines of communication, controls, and protocols in which the works will be undertaken. The document will in addition identify and or establish the following.

1. Establish cross-functional representatives and lines of communication.
2. Matrix of key stakeholders
3. Develop an Organisation Chart and reporting line for each stakeholder
4. Develop an ICD to identify key boundaries and responsibilities
5. Hold an all-stakeholder Lessons Learnt Workshop to identify key issues experience across the other LU stations which could reduce impactful delay, the outcome from the workshop(s) to be recorded within the migration risk assessment report. *Examples – CCTV Autofocus issues, Door Forces CEG/LUCT acceptance*
6. Create a risk assessment report to determine all relevant risks to the migration, including opportunity costs and compliance issues
7. Develop an Access Strategy and WPP schedule to clearly identify methodology and mitigation of risk identified within the risk assessment report
8. Determine technical constraints, timeline and T-Minus requirements, sequencing and commercial requirements or constraints
9. Agree project management system for all parties, documentation depository and evidence capture

10. Identify whether the migration can be undertaken in phases and associated hold points clarified
11. Agree stakeholder acceptance requirements, who accepts, who signs what and when.

The document shall be written by the RS C440 Systems Engineer and developed with all key stakeholders and form the basis of the final configuration statement, using workshop forums prior to final submission for acceptance.

### 2.3.1 Resource Schedule

During the development of the Migration Strategy a consequential resource schedule will be developed to mitigate key risks whilst ensuring interfacing works does not have a detrimental impact to the operation of both the Elizabeth Line and the LU operations.

The resource schedule shall interpret stakeholder impacts and relieve stress points where identified.

The schedule will consider the following support provisions.

- Additional support from C440 trained operatives/crowd control in the event of evacuation and communication protocols for interfacing with the SOR. (Pre-Revenue Service)
- Access Controller – controlling access to key areas as a direct contact for contractors and RfLi maintenance crews.
- Additional Operatives to manage and mitigate the Western Ticket Hall interface.
- RfLi/RCC interface manager specific to BOS.

## 2.4 Works post Revenue Service

At RS the Fire system (having achieved ATU) and PA/VA system will be completed in their entirety with the station radio system integrated and brought into beneficial use with the existing station. It is at this stage that the full complex will be required to be operate under LU rules, QUENSH standards and conditions.

After RS there will be elements of outstanding works to complete to achieve Handover. These cover the work sites listed below:

- Western Ticket Hall Upper Levels and Lower Level Back of House areas (WTH)
- Eastern Ticket Hall Lower Level Back of House areas and Upper Levels Plant Areas (ETH)
- Platforms & Tunnels final assurance (P&T)

The works scope defined within this section completes critical systems and results in several outstanding activities to complete in order to meet the requirements of SC3ROGS.

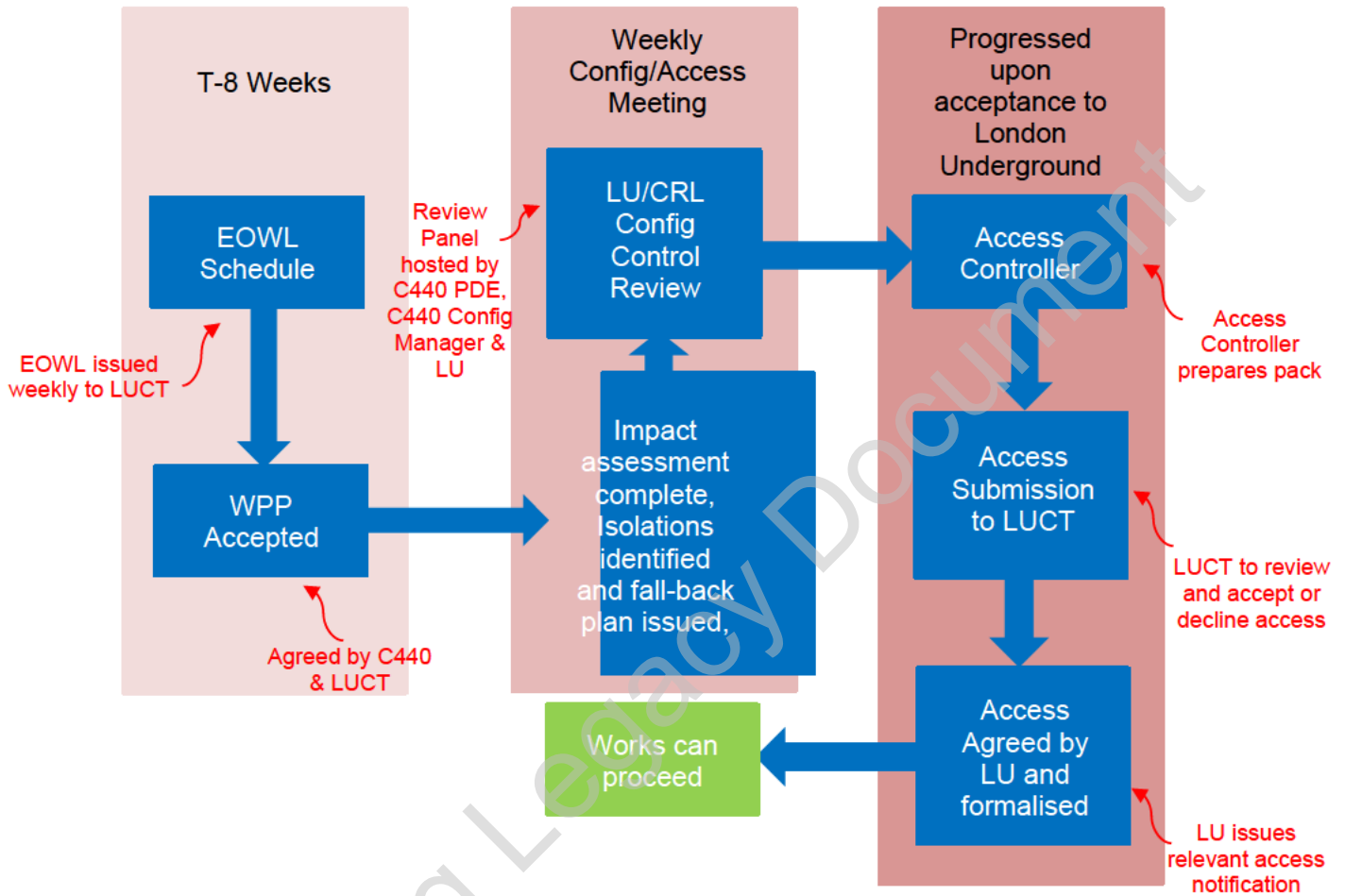
Consequentially, works will continue within rooms which inevitably necessitates several systems upgrades and commissioning activities. These works will be detailed within the resulting Migration Strategy coupled with the mitigation and control methodology required to maintain the operational status of the station.

The project Configuration Management Plan will be updated to include specific reference, process and the associated mechanics required to maintain fluidity of the C440 close out works that is acceptable to LU without impacting operational or functional status.

Where HV/LV switching is planned between source supplies by RFLi, LU ACC will be made aware 14 days in advance of the event to enable manned standby. An assessment will be made by C440 thereafter relative to the operational impact in the form of an impact assessment, detailing assets impacted where applicable and any risk to the operational station. The resulting assessment will be formally issued to LU APCD and ACC accordingly.

A full list of works that will still need to be completed after RS will be provided within an Element Outstanding Works List (EOWL). There is no planned major decommissioning or major installation works expected to take place after RS more so extension to systems installed as part of RS.

A weekly meeting will be convened as described below to align construction, access and configuration control into a singular forum.



**Figure 1.0 – Process to be agreed by LU, timelines for project submissions in accordance with the project configuration control plan.**

## 2.5 Specialist Tools and Equipment

All relevant specialist tools used to access, maintain, or alter/remove an operational asset will be provided by C440 prior to RS with associated literature for the use of the equipment. This shall include any specialist access equipment required to undertaken maintenance activities. This needs to be done by T-2 for RS.

## 2.6 Key Suiting

Key suiting shall be undertaken across the station, all keys will be provided to LU with access controlled via the project access controller for works by C440 and via the Station for London Underground or stakeholder works or maintenance activities.

## 2.7 Temporary Assets in place during Revenue Service

There are no planned temporary provisions to implement for Revenue Service.



## 2.8 Asset Data

Where it is intended to place assets/systems under LU APCD maintenance for both reactive and planned activity, i.e. Fire, PAVA & Radio (Connect) as per the draft schedule. It was agreed that to proceed and achieve, the Bond Street Project team will provide populated LU Ellipse Control Forms/TLF447's for those assets LU are accepting.

In order for fault reporting to be enabled approved fire plans will be required so that space can be loaded to Maximo.

## 2.9 Site Familiarisation

Site familiarisation will be provided in accordance with the T-Minus schedule agreed with LU for RS. Specific familiarisation will be provided to safety critical systems such as Fire, PAVA and Radio (Connect) prior to the RS date.

Subsequent familiarisation sessions will be held as asset/system milestones are completed.

CRL acknowledge that familiarisation sessions may need to be repeated for some asset/systems as there could be significant configuration changes.

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### 3 Interim Maintenance Arrangements

Below details the split between reactive and planned maintenance for each asset/system.

System/Asset	First Line Response	Planned Maint. Responsibility	Notes:
Fire Detection	LU APCD	LU APCD	Some outstanding works may remain where systems/interfaces are introduced post RS.
Fire Suppression including Water Mist	LU APCD	LU APCD	Some outstanding works may remain where systems/interfaces are introduced post RS.
PA/VA	LU APCD	LU APCD	
SMS / MICA	LU APCD	LU APCD	Already under maintenance by LU APCD so no change.
Connect Radio	LU (Thales)	CRL C660	Connect would be available under beneficial use, any works on the combined radio network by C660/RFLi would require prior agreement with Thales and LU. Alterations and commissioning post RS will form part of the Migration Strategy, maintenance of the wider network infrastructure until Phase 3.0 testing is complete would still remain C660's responsibility.
LFEPa base station	LU APCD	LU APCD	Already under maintenance by LU APCD so no change.
CCTV	CRL C660	CRL C660	Primarily the CCTV will only cover front of house areas, staged completion will sequentially introduce further coverage.
Automatic Telephones ('Crossrail Phones')	CRL C660	CRL C660	This system will ultimately become the maintenance responsibility of RfLi (see Note 1 below). LU Operator doesn't need the use of these phones unless the above ground radio is not available
Clocks	CRL C660	CRL C660	CRL C660 responsibility will only extend to the CRL areas LU Operator does not need these for RS.
CRL Customer Information Screens (CIS)	CRL C660	CRL C660	This system will ultimately become the maintenance responsibility of RfLi (see Note 1 below).
StID's, SID's, ESUBS	CRL C660	CRL C660	This system will ultimately become the maintenance responsibility of RfL and LU (see Note 1 below).
Central Data Network (CDN) RfLi asset	CRL C660	CRL C660	This system will ultimately become the maintenance responsibility of RfLi.  For any LU station equipment connected to the CDN network, LU are responsible from the RJ45 outlet plate closest to the LU station asset (see Note 1 below).
Passenger Help Points (PHP's)	CRL C660	CRL C660	Supported from CDN (see above)  Front of House PHPs will be operational for RS, Fire call points operational and induction loops live



System/Asset	First Line Response	Planned Maint. Responsibility	Notes:
Electrical (LV)	CRL C440	CRL C440	There is a split of maintenance responsibility within the LV system between LU and RfLi. RfL will ultimately become responsible for their parts of the system however C440 will retain the responsibility for the RfLi parts in the short term (see Note 1 below).
Electrical UPS	CRL C440	CRL C440	There is a split of maintenance responsibility within the UPS system between LU and RfLi. RfL will ultimately become responsible for their parts of the system however C440 will retain the responsibility for the RfLi parts in the short term (see Note 1 below).
Lighting	CRL C440	CRL C440	Lighting will be under Care and Custody of C440 inclusive of statutory testing and periodic inspections etc
Lighting Control	Not Applicable	Not Applicable	Not complete at Revenue Service
Power (HV)	RFLi	RFLi	This system will ultimately become the maintenance responsibility of RfLi. (See Note 1 below).
Power (Station to Station earth bonds)	RFLi	RFLi	Already under maintenance by RfLi so no change.
HVAC	CRL C440	CRL C440	Includes Chillers, AHU, Auxiliary Plant and Temp AC configuration on the WTH
Building Management System (BMS)	CRL C440	CRL C440	CRL C440 will undertake daily checks for alarms as part of the buddy agreement.
Stair Pressurisation & Air Release	LU APCD	CRL C440	Stair Pressurisation & Pressure Release systems will be functional in operational areas but maintained by C440
Smoke Management Pressurisation & Extract (means of escape)	LU APCD	CRL C440	OPE and Smoke systems will be tested weekly (fans run) but C440 will maintain in accordance with current LU Maintenance Standard S1075. OPE Operation must be coordinated with the RCC
Water Distribution System	CRL C440	CRL C440	If bringing into use, a water risk assessment and written scheme will be required.
Pumps & Drainage	CRL C440	CRL C440	High water level alarms will be provided via the BMS. Interim alarm provision will be provided until the BMS system is fully complete. Xylem provision to be delivered.
Critical Sump	RFLi	RFLi	Already under maintenance by RFLI so no change.
Escalators & Lifts	Maintained by LU (Pan TfL) after Form 45 / Form 54		Revenue Service scope TBC
Signage	CRL C440	CRL C440	Includes way finding, SID No's, Statutory Signage and Emergency Exits

System/Asset	First Line Response	Planned Maint. Responsibility	Notes:
Premises Assets 1	LU APCD	CRL C440	Those assets forming the external envelope of the new station complex, including walls, glazing, roofs, doors, gates and primary internal elements, including floors and floor finishes, internal walls and "premises" elements of the platform edge screen together with any associated premises assets that allow safe access to and maintenance of the premises elements described, including walkways, edge protection, fall arrest systems etc.  This exclude Platform Screen Doors (PSD).
Premises Assets 2	LU APCD	CRL C440	All remaining Premises assets not described under Premises Assets 1 above.  Known snags will be captured within the project EOWL schedule and will be made available to LU APCD and Operations at RS.
Civils Assets	LU APCD	LU APCD	All station civils structures including rooms, platforms, tunnels, public circulating areas and passages, back of house areas, vent shafts etc.
Hydraulic flood barrier	LU APCD	CRL C440	Completed and available and brought into Beneficial Use with alarms still under C440 maintenance.
Welfare Facilities	LU APCD	CRL C440	

Note 1. See the LU/RfL maintenance boundary document for clarity on the areas of responsibility Reference 4.

Note 2. Where LU APCD are shown as the maintainer this work will be undertaken by either LU's own Direct Labour Organisation (DLO) or one of LU's external maintenance contractors. For this document it is simply shown as LU APCD.

Note 3. A definition of what 'first line response' means for each system are defined within Section 6.0 of this document.

Note 5. Faults will need to be attended to within the timescales are detailed within Section 5.0.

## 4 LU IM Maintenance Information Requirements for RS

The information requirements listed below are reflective of the system elements detailed within Section 3.0 of this submission that LU APCD will be undertaking reactive maintenance or undertaking planned upon.

In addition to the below listed requirements, the project will provide technical partnering as described within Section 6.5.3. to assist and escort LU APCD in the event of a fault and will hold live site files of each system described below.

The following narrative details the level of information anticipated by LU from C440 at RS. No information will be provided for systems maintained by RFLI or the C440 project.

Item	Required for	
	1 <sup>st</sup> line	Planned Maint. Responsibility
<b>Fire Assets (fire detection, Water Mist and suppression systems)</b>		
'As built' or consolidated 'redline' drawings for fire detection and suppression systems (priority 1 and 2 minimum, priority 3 desirable)	Yes	Yes
O&M manuals (including data sheets for new equipment) (priority 1 and 2 manuals)	Yes	Yes
Damper panel schematics (inside damper panels)	Yes	Yes
Main fire control panel message lists and 'cause & effect' matrices	Yes	Yes
Asset Data issued to IM	Yes	Yes
Asset Data Loaded	N/A	Yes
Care and custody records for fire systems	N/A	Yes
Warranty information	N/A	Yes
<b>Fire Interfaces (Water Mist, Connectivity to BMS, Gateline, L&amp;E etc)</b>		
'As built' 'redline' drawings for fire interface relays and interfacing systems (priority 1 and 2 minimum, priority 3 desirable)	Yes	Yes
O&M manuals (including data sheets for new equipment) (priority 1 and 2 manuals)	Yes	Yes
BMS and Interface schematics (connectivity)	Yes	Yes
Main fire control panel message lists and 'cause & effect' matrices	Yes	Yes
Asset Data issued to IM	Yes	Yes
Asset Data Loaded	N/A	Yes
Care and custody records for fire systems	N/A	Yes
Warranty information	N/A	Yes



Item	Required for	
	1 <sup>st</sup> Line	Planned Maint. Responsibility
<b>Communications Assets (PA/VA and Connect Radio systems)</b>		
'As built' or consolidated 'redline' drawings for systems listed above (priority 1 and 2 minimum, priority 3 desirable)	Yes	Yes
O&M manuals (including data sheets for new equipment) for systems listed above (priority 1 and 2 manuals)	Yes	Yes
Asset Data issued to IM	Yes	Yes
Asset Data Loaded	Yes	Yes
Configuration files (Electronic files for all applicable equipment put on CD held in CER)	Yes	Yes
Warranty information	N/A	Yes
<b>SMS MICA</b>		
'As built' or consolidated 'redline' drawings for the SMS and interfacing systems (priority 1 and 2 minimum, priority 3 desirable)	Yes	Yes
O&M manuals (including data sheets for new equipment) for the system listed above (priority 1 and 2 manuals)	Yes	Yes
Asset Data issued to IM	N/A	Yes
Asset Data Loaded	N/A	Yes
Configuration files (Electronic files for all applicable equipment put on CD held in CER)	Yes	Yes
Warranty information	N/A	Yes
<b>Premises Assets (Front of House and LU Operational Areas)</b>		
'As built' or consolidated 'redline' drawings for assets listed above (including demarcation layout drawings in operational areas)	Yes	N/A
O&M manuals (including data sheets for material & equipment, spares listings, specialist equipment and tools) for the areas and boundaries listed above (priority 1 and 2 manuals)	N/A	N/A
Asset Data issued to IM	Yes	N/A
Installation Records (loading and weight information)	N/A	N/A
Warranty information	N/A	N/A
Test Information and associated schedules for illuminated signage	Yes	N/A
Signage scheme layouts	Yes	N/A
Fire Compartmentation Records	Yes	N/A
Door Schedules	Yes	N/A
Furniture Schedules	Yes	N/A

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Item	Require For	
	1 <sup>st</sup> Line	Planned Maint. Responsibility
<b>Mechanical Asset interface to Fire Systems (HVAC, smoke management pressurisation &amp; Air Release)</b>		
'As built' or consolidated 'redline' drawings for systems listed above (priority 1 and 2 drgs)	Yes	N/A
O&M manuals (including data sheets for new equipment) for systems listed above (priority 1 and 2 manuals)	Yes	N/A
Asset Data issued to IM	Yes	N/A
Asset Data Loaded	N/A	N/A
Care and custody records for mechanical systems	Yes	N/A
Warranty information	N/A	N/A
<b>Civils Assets (inc. Hydraulic and manual flood barriers)</b>		
'As built' or consolidated 'redline' drawings for systems listed above	Yes	Yes
O&M manuals (including data sheets for new equipment) for systems listed above (priority 1 and 2 manuals)	Yes	Yes
Asset Data issued to IM	Yes	Yes
Asset Data Loaded	N/A	Yes
Care and custody records for the above systems	N/A	Yes
Warranty information	N/A	Yes
<b>General</b>		
Agreed Element Outstanding Works List (EOWL) in place	Yes	Yes
Specialist tooling required for any of the above to support first line response	Yes	Yes
Technical Partnering arrangements inc. PPM	Yes	Yes
Approved fire plans and space loaded to Maximo	Yes	Yes

**Note 1.** Some of the information required by LU APCD's maintainer (e.g. testing and commissioning documentation) will come via the engineering assurance route and population of the handover documents.

## 5 Fault Report Durations

The tabulated data below sets out LU IM's required service response times for the systems brought into operational service at Revenue Service and is set out according to the priority of an arising fault. Varying levels of abatement charge (in the form of 'service points) are levied within TfL where particular asset types are out of action beyond the contractual times shown. This detail is provided for information purposes to show the implications of assets being out of action beyond these times.

	Priority Level	Priority Name	Description	Action	Service Level
Reactive	1	Emergency	Faults which present an immediate and serious risk to the customer or operational safety or security, involve critical assets or which significantly restrict or prevent normal operation and use of the building/facility/site	Attend	Within 2 Hrs
				Permanent rectification OR Interim rectification & make safe	Within 4 Hrs
				Further attendance and permanent rectification	Within 48 Hrs
	2	Urgent	Faults which are not deemed as Level 1 but which adversely affect the customer or operational safety or security or restrict the normal operation of the building/facility/site without disruption or inconvenience.	Attend	Within 4 Hrs
				Permanent rectification OR Interim rectification & make safe	Within 24 Hrs
				Further attendance and permanent rectification	Within 48 Hrs
	3	Non-Urgent	Faults which impinge on the normal operation or use the building/facility/site, but which do not cause immediate disruption or inconvenience.	Permanent rectification	7 days

Table 1.0 – Premises, Civils & Drainage





	Priority Level	Priority Name	Description	Action	Service Level
<b>Reactive</b>	1	Emergency	Faults which present an immediate and serious risk to the customer or operational safety or security, involve critical assets or which significantly restrict or prevent normal operation and use of the building/facility/site	Attend	Within 2 Hrs
				Permanent rectification OR Interim rectification & make safe	Within 4 Hrs
				Further attendance and permanent rectification	Within 48 Hrs
	2	Urgent	Faults which are not deemed as Level 1 but which adversely affect the customer or operational safety or security or restrict the normal operation of the building/facility/site without disruption or inconvenience.	Attend	Within 4 Hrs
				Permanent rectification OR Interim rectification & make safe	Within 24 Hrs
				Further attendance and permanent rectification	Within 48 Hrs
	3	Non-Urgent	Faults which impinge on the normal operation or use the building/facility/site, but which do not cause immediate disruption or inconvenience.	Permanent rectification	4 Days

Table 2.0 – Fire Discipline



	Priority Level	Priority Name	Description	Action	Service Level
Reactive	1	Emergency	Faults which present an immediate and serious risk to the customer or operational safety or security, involve critical assets or which significantly restrict or prevent normal operation and use of the building/facility/site Faults which present an immediate & serious risk which are; <ul style="list-style-type: none"> <li>• Safety related</li> <li>• Consequentially Line or Site service affecting or</li> <li>• Have the potential to generate significant consequential equipment or property damage.</li> </ul>	Attend	Within 2 Hrs
				Permanent rectification OR Interim rectification & make safe	Within 4 Hrs
				Further attendance and permanent rectification	Within 48 Hrs
	2	Urgent	Faults which are not deemed as Level 1 but which adversely affect the customer or operational safety or security or restrict the normal operation of the building/facility/site without disruption or inconvenience.	Attend	Within 4 Hrs
				Permanent rectification OR Interim rectification & make safe	Within 24 Hrs
				Further attendance and permanent rectification	Within 48 Hrs
	3	Non-Urgent	Faults which impinge on the normal operation or use the building/facility/site, but which do not cause immediate disruption or inconvenience. No impact on safety.	Permanent rectification	7 Days*
	4	Routine	Faults of a routine nature or those which present a minor restriction on normal operation of the building/facility/site. No impact on safety	Permanent Rectification	Within 3 Months *

\*Shall be measured from notification to the Supplier by the Company

Table 3.0 – Electrical Discipline

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Asset Class	Sub-Cat	Priority
CCTV	TtT & OPO	P1A
	Station	P2B (critical cameras*) P3B (non-critical cameras)
	Remote Positive Train ID (RPTI) and Dwell Time CCTV	P3B
PAVA	PAVA	P1A
Intruder Alarms	Alarm Systems, Bostwick, Secure Room, Panic Alarm, GLAP & LFEPA.  Door entry locking systems (contacts, controllers, combination code, exit button etc.)  Access Control System/Door Intercom Units	P3A
Public Help Points (PHP)	Station Platforms & Booking Halls	P3A
	All other locations	P3B
	Refuge Systems (Comms boxes at MIP refuge points)	P1A
Depot Access	Depot Access	P3A
Clock Systems	All Clocks (ex. battery operated clocks)	P3B
VID	VID's & THID's	P3A
Equipment Cabinets	Fans and Power Supplies	P3A
Telephones	Tunnel Telephones (CROMOS)	P3A
SMS	SMS (Previously referred to as SIMS)	P3A
Remote Systems	RFI and Alert Gateway	P1A

Priority	Description	Commitments	Response Time
P1A	Emergency	Attend Site	2 hours
P1A	Emergency	Permanent Fix	4 hours
P1B	Emergency	Permanent Fix	8 hours
P2A	Urgent	Permanent Fix	12 hours
P2B	Urgent	Permanent Fix	24 hours
P3A	Non-Urgent	Permanent Fix	48 hours
P3B	Non-Urgent	Permanent Fix	168 hours (7 days)

\* Critical Cameras are detailed within the Appendices of this document.

**Table 4.0 – Communications Discipline**

## 6 Interim Maintenance Arrangements

### 6.1 Maintenance Accountabilities and General Requirements

The principal requirements regarding maintenance responsibility, at the point of RS are that, where CRL are handing over maintenance responsibility they will have fully assured the assets/systems in accordance with the certification levels stated within Section 2.2, which is agreed to meet the requirements of London Underground for Revenue Service. All documentation will have been accepted by LUCT through document review procedures and Verification Activities, then LU APCD will take on maintenance responsibility for those assets.

Where assets have not been fully assured at the point of RS then, in the Interim Maintenance Period until SC3 ROGS, maintenance responsibility for an asset/system will be retained by C440, RfLi or C660.

Additionally, where CRL/RfLi remain responsible for maintenance of specific assets/systems then the responsibility to undertake any required preventative maintenance/inspection in the Interim Maintenance Period shall also be the responsibility of CRL. This will include the requirement to undertake all planned/preventative maintenance and periodic inspections stipulated by the relevant asset/equipment manufacturers; the operation and maintenance requirements for the assets/equipment in question; statute; and industry best practice. The maintenance and inspection tasks carried out by CRL will be evidenced in the Care & Custody records submitted to LUCT. All maintenance to be undertaken by CRL will be undertaken by certified competent persons working to LU Rulebooks and requirements.

The configuration of the station must always be sustained, to ensure it remains as required to support RS. It is therefore important that maintenance activities carried out within the station including LU APCD Familiarisation, Fault Response, Planned Preventative Maintenance or Inspections etc. do not change the configuration of any system or the overall configuration of the station without agreement at the relevant forums, such as the Access and Configuration Control meetings held weekly.

To this end the LU APCD Maintenance Managers will be briefed to this effect such that they can cascade briefings to the LU APCD organisation in support of maintaining the station and systems configuration.

In addition to this LU APCD staff/contractors attending the Elizabeth Line Stations transferred to LU as part of Revenue Service will be assisted by the CRL Asset 'Buddies' who will help ensure no changes are made that could impact station configuration.

## 6.2 LU Maintenance Information Requirements ('ROTA')

Assurance Documentation (commonly referred to as ROTA) will be required by LU APCD to enable the performance of maintenance activities. For full maintenance responsibility then LU will require the full ROTA set of assurance documentation for the asset/system or discipline in question. Where LU is only responsible for reactive maintenance then in some disciplines lesser ROTA information may suffice. The level of information required for each discipline, and for each category of maintenance responsibility is set out in Section 4. This will need to be provided in line with the RS T-minus requirements.

## 6.3 Fault Response Process

All faults will be raised by station staff for the new CRL assets will initially be reported through to the Access Control Centre (ACC) in the normal manner.

In accordance with the fault reporting process flow chart (see next page) the ACC will either call-out LU APCD's maintenance contractors (One FM contractors or DLO) or will refer the fault to CRL as appropriate. See Section 6.4 for CRL's proposal to support the fault response process by the establishment of a team of 'Maintenance Buddies'.

The ACC will have a "contractor" on the drop list known as "Crossrail Bond Street" (*Exact name used to be clarified*). For all faults which CRL are responsible for reactive maintenance they will receive the fault from the ACC via a phone call. CRL will need to update/report back progress to the ACC for fault closeout.

CRL agree to respond to the SLA's outlined in the document per asset area. CRL will need to provide a duty mobile number for the ACC to call, there will also need to be an escalation route available to the ACC.

ACC staff will be briefed on the contents of this agreement and in particular the contents of Section 3 which will assist them in the correct attribution of faults to the responsible party.

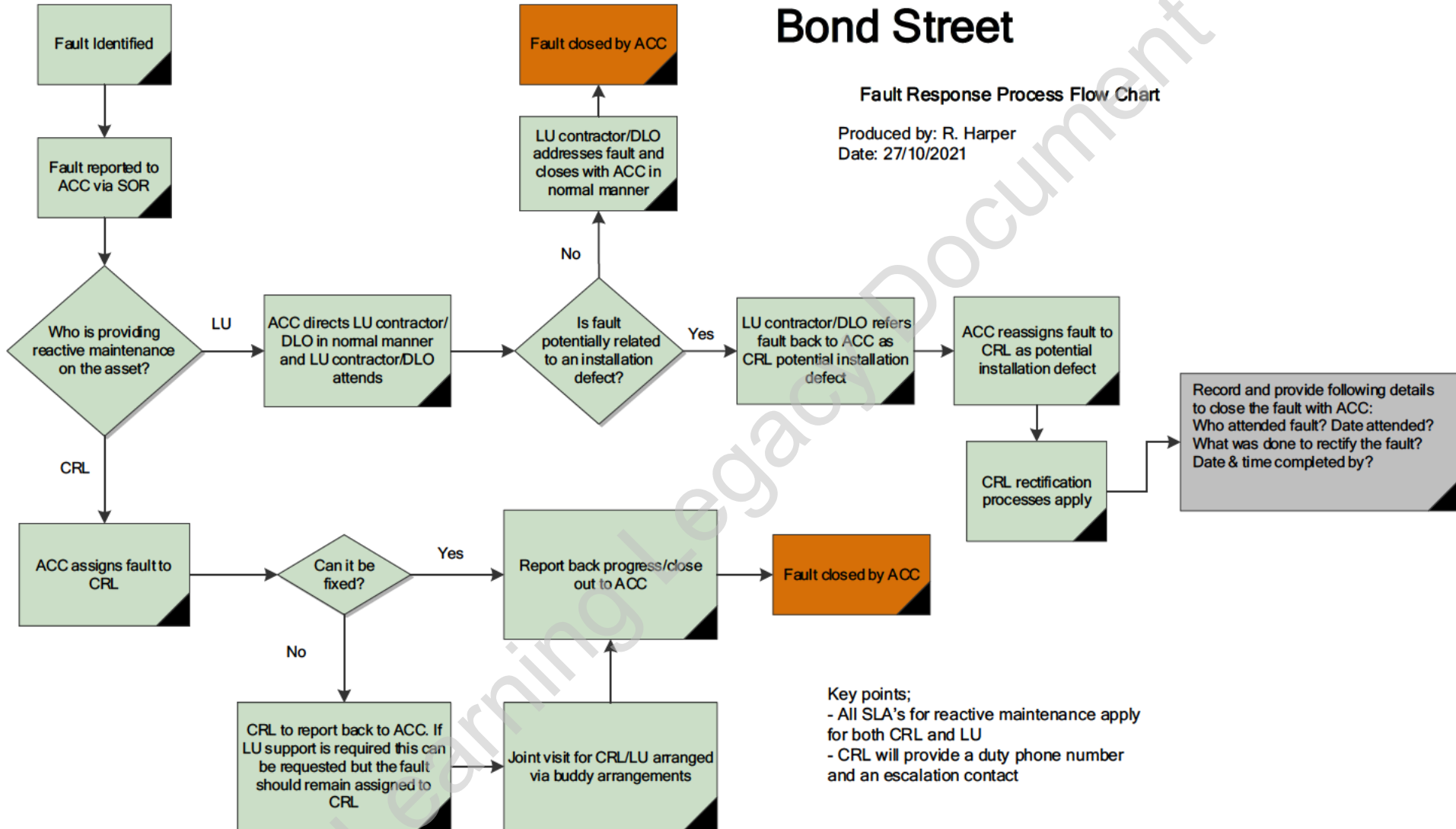
All operatives working under CRL control who are deployed to respond to faults will be suitably trained and/or licenced for the task and location in which they are working.

CRL to retain records of any remedial works undertaken to rectify a fault. These records are to be added to the asset history prior to Handover.

# Bond Street

## Fault Response Process Flow Chart

Produced by: R. Harper  
Date: 27/10/2021



Key points;  
 - All SLA's for reactive maintenance apply for both CRL and LU  
 - CRL will provide a duty phone number and an escalation contact

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## 6.4 Crossrail Maintenance Tasks Following Revenue Service

### 6.4.1 Summary

The basic proposal is that CRL will put in place an on-site team of 3 or 4 engineers/technicians (Maintenance Buddies) on a duty roster under their care and custody regime to support LU in both the familiarisation of its maintenance contractors and the response to arising faults.

This arrangement will start at RS with a prudent taper up a few weeks before RS and a taper down a few weeks after all assets/systems are with the relevant IM.SC3 ROGS.

CRL will provide this service via an instruction to the Care and Custody contractor with the intent of providing 'enhanced care and custody'. The individuals in the team need to be hand-picked and will most likely be very experienced and knowledgeable in the station systems having worked on site for some time.

### 6.4.2 Detail

At RS, a number of systems will not be ready for full Handover due to either some incomplete physical works and/or an incomplete assurance case. These systems spread across mechanical, electrical and comms along with physical premises assets. The concept of RS is that LU becomes responsible for the management and control of the whole station.

To step up to this responsibility, LU will encompass the scope of the new CRL assets within the existing ACC processes to trigger the appropriate response should a fault arise.

This will be provided in the form of a small on-site multi-discipline support team. This team will comprise experienced station operatives with in-depth knowledge of the station systems and local station knowledge (both technical and procedural ways of working) along with good contacts with the broader station technical community. The individuals within the team will typically be well known and regarded by the LU station teams. A roster on-call system will ensure that support is always at hand. It is expected that the team will have both mechanical and electrical expertise, a C660 Comms engineer (Siemens) and possibly one T&C generalist.

## 6.5 Access Arrangements

To gain access to the areas of the station under LU IM control CRL and RFLI shall follow the relevant LU rules and procedures. The interface between RFLI and London Underground is provided within LUCT-CR00-ENG-RPT-00003.

### 6.5.1 LU Access Requirements

The following process is required to comply with and gain access to London Underground (LU) for testing, inspection and surveys on assets transferred to LU as part of the staged completion for revenue service to LU the Infrastructure Manager (IM).

For rooms marked as CDM worksites on the compliance plans. The following will apply.

- All rooms will all have safety critical live assets (PAVA, fire detection and radio) in case of a Station evacuation.
- Will be suited to the station in case of emergencies.
- Will have clear signage on the door as no entry CDM Worksite, please contact xxxxxx to arrange access.
- Where access is required for maintenance, this will be pre-planned between LU and the project team, and the maintenance will be escorted to the work area.
- Everything else complies with the items below

Please note – Worksite rooms have not yet been confirmed at time of writing and will be updated on completion of the fire strategy.

All works to comply with LUL S1552 standard QUENSH (Quality, Environment, Safety & Health) and LU Rule Book 10 which outlines the processes for Access on LU Stations. The interface between RFLI and London Underground is provided within LUCT-CR00-ENG-RPT-00003.

The below process will be followed to gain access and work on LU station on the handover date onward to access and complete any outstanding works:

### 6.5.2 Signing in at LU Station:

- For all planned works the Access Number RailSys (SABRE) and authorised Operational Assurance Notification (OAN) will be in place.
- Any party attending the station managed by LU will need to sign in with LU customer Service Manager/Supervisor (CSM/CSS) and possess the correct certification i.e. LU Sentinel / LU access card, Access Number RailSys (SABRE), approved method statement, first aid, competency, small plant & tools certification, etc.. as required.
- Signing in at the station enables both access on to LU infrastructure and means that people can be located in the event of station evacuation.
- Only the Site Person in Charge (SPC) needs to present him or herself at the station office with all the appropriate documentation in order to sign the whole workgroup in.
- The SPC can complete a PiCER (Person in Charge of Evacuation Register) with Access Number RailSys (SABRE) in advance in which he/she takes accountability for the workgroup. The PiCER declares that the persons named (all those in the workgroup) have



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the necessary LU and other licences and certificates to undertake work in the locations given.

- The SPC will need to present proof of (QAF54/ Equipment Room Awareness ERA) certificate when working in secure rooms, equipment rooms and L&E rooms as defined below.
- The SPC can sign out the required room key from the LU customer Service Manager/Supervisor (CSM/CSS).. The person holding a QAF54/ERA certification can escort up to 4 persons providing he remains in the room for the duration.
- Once the workgroup has been signed in, the LU customer Service Manager/Supervisor (CSM/CSS) will issue the required key for the specific rooms where the activities are planned.
- The SPC will ensure that all personnel receive a Site Safety briefing and are aware of other works in the area and that adequate precautions are taken to ensure a safe working environment.
- The SPC will make sure at the end of the shift to hand back the room keys to the LU customer Service Manager/Supervisor (CSM/CSS).
- At the end of the shift, the SPC will make sure the worksite is left clean, safe and handed back to the station office for inspection.
- The SPC is responsible for the workgroup and their fitness to work to ensure the workgroup is briefed on the limits and scope of the works and the emergency procedures for that location including where the C502 site Muster Point is located.
- Using Lifts or Escalators (L&E) around the station for construction works can be managed by CRL/LU approved procedure under application for Movement of Materials (MoM) license with L&E certified operator in place.
- Any Hot works on station will require LUL Hot works permit which can only be carried out in engineering hours with fire point and fire watchman controls in place.
- Storage of materials on LU station controlled by application for LU Storage License and to comply with LU QUENSH requirements.
- No storage of flammable materials on station. All materials to comply with LUL S1085 for the fire safety performance of materials, installed on the London Underground (LU) Stations and Tunnel Infrastructure with regards to: Combustibility; Smoke emission; Toxic fume emission.
- Full orange mandatory PPE to be used at all times, agreement will be sought after to use PPE free access and the use of min LU mandatory PPE requirements.
- All operatives to receive a Site Induction prior to commencement of the works.
- All works to be carried out by agreement with LUCT (London Underground Crossrail Team) in traffic hours, engineering hours, weekends and possessions as required.

- All station assets and services to be protected by using LUL approved fire rated material.
- All required consents, approvals, licenses and method statements to be approved.
- Work site barriers with signage to be in place as required.
- All means of escape, access and egress must be kept clear at all times.
- The First Aid and Fire Points to be in place free from obstructions and compliant with LU QUENSH requirements.
- Any works required within existing LU station tracks environment will require LUL track protection booking and SPC track certified person in place.

### **6.5.3 Secure Room Access (QAF54/ Equipment Room Awareness ERA):**

A secure room is defined as any room that has equipment of a sensitive nature that if impacted would cause an impact to the integrity of the train service or normal station operations.

QAF54/ERA training is required to gain access/ work in secure room.

Secure room includes, but is not limited to the following.

- Signalling Equipment Rooms (SERs)
- Relay Rooms
- Interlocking Machine Rooms (IMRs)
- Floodgate Relay Rooms
- Train Descriptor, Dot Matrix or Positive Train Indicator Rooms
- Signal and Control & Information Computer Rooms
- Tunnel Telephone Equipment Rooms
- Telephone Exchanges
- Communications Equipment Rooms (CERs)
- Station Computer Rooms (SCRs)

### **6.5.4 Lift & Escalators (L&E) Switch Rooms Access:**

In addition to QAF54/ERA certification, access to L&E switch rooms (LEER & EER) will require Machine Room Awareness training for general access and work inside the switch rooms but excluding any working on equipment which require specific L&E competency level.

### **6.5.5 Access for Non-intrusive works**

The definition of non – intrusive works are activities that require nothing more than the use of a camera, mobile phone, pen or laptop. Works of this nature have no operational impact to normal station operations and as such parties undertaking activities such as these can sign in / out of the station as visitors and do not need an LU Access number or an authorised OAN.

Non-intrusive works should be discussed with the LUCT Access Manager. Information of who, where, when and what activities are planned should be provided to the LUCT Access Manager 2+ weeks in advance of planned on site date.

The Access manager will confirm that an OAN is not required and will inform the station(s) of the planned activities Parties must be in possession of a valid TFL staff pass. If you do not possess a Tfl Staff pass then you will be required to be accompanied or possess a Sentinel LU ICI Card or LU Access Card.

Note: As an isolation of the TVS fan is required to access the TVS exclusion zones, all works are deemed intrusive and full access request via RFLI and LU is required. At this point in time, an access request must be submitted to RFLI for all works, including non-intrusive, for HV rooms – see section below.

## 6.6 RFLI Controlled Areas

Access to RFLI equipment rooms including TVS and associated trace related areas shall be gained by local agreement with the RCC but follow the signing on processes detailed above.

Keys to all RFLI areas shall be held by the projects 'Access Controller'.

For those working on any RFLI assets on LU stations, there is a requirement to follow the access process through RFLI as described in Rail for London (Infrastructure) Ltd Planning and Access process for Stations, Shafts and Portals.

RFLI Access Authority request must be submitted to [rflaccessplanning@tfl.gov.uk](mailto:rflaccessplanning@tfl.gov.uk). Once the RFLI process is completed, this will support the OAN as part of the subsequent access request to LU.

Parties working on LU assets that require isolations of RfL equipment, will also need to seek agreement to undertake the work and/or associated isolations and follow the access process through RFLI. This will support the OAN as part of the Access Request to LU.

As previously noted, the submission of the OAN will be supported by the Method Statement, which will need to be approved by the appointed accredited person.

### 6.6.1 Elizabeth Line HV Rooms

Rooms that fall under the category of HV rooms:

- HV Transformer room
- HV switch room
- OHLE switch room

RFLI Access Authority request must be submitted to [rflaccessplanning@tfl.gov.uk](mailto:rflaccessplanning@tfl.gov.uk).

Once RFLI have authorised access and provided an RFLI Access Number, an access request must be to be submitted to LU. RFLI will assign an RFLI HV Authorised Person (HV AP) to escort the party on site.

The keys to the HV rooms will only be issued to the HV Authorised Person (HVAP). The HVAP will need to contact the RCC prior to accessing the room and on exiting the room. All personnel will be required to have the RFLI Secure Room Access training.

### 6.6.2 Elizabeth Line TVS Exclusion Zones

The Tunnel Ventilation System (TVS) within the station and shafts that are in the air path are subject to noise, air pressure and air velocity during the operation of the Tunnel Ventilation Fans, these areas will be subjected to exclusion zones.

The specific areas are detailed below:

- Forced Vent Openings
- Fan Room
- Damper Room
- Attenuator Room
- Transition Room
- Under Platform Areas
- Tunnel Adit Areas
- Ventilation Plenum
- Draught Relief Shaft

In order to access these areas an RFLI Access Authority request must be submitted to [rflaccessplanning@tfl.gov.uk](mailto:rflaccessplanning@tfl.gov.uk) including TVS Access Permit Request.

Once RFLI have authorised access and provided an RFLI Access Number, an access request must be submitted to LU. RFLI will assign an RFLI LV Authorised Person (LV AP) to escort the party on site.

All personnel will be required to have the RFLI Secure Room Access training.

It should be noted that there are two key areas which are not within the airpaths however still contain tunnel ventilation equipment and these are:

- TVS Fan Control Room
- TVS Motor Control Centre Room

Anyone entering these areas does not require a TVS access permit however all personnel will be required to have the RFLI Secure Room Access training.

Once on site, the Access Controller will issue the LV AP with the specified room keys.

The LV AP will contact the RCC and ensure the fans are removed from service and that the room is safe to enter.

Once work is complete, the LV AP will contact RCC, confirm the work party has vacated the area and request the fans return to service.

The keys must be returned to the SOR via the Access Controller and the work party signed out.

### **6.6.3 Access to RFL Track via the LU Station**

All access requests to the RFL track, protection staff and engineering trains must be submitted through the RFLI Access Team. When access to the RFLI track is required via an LU station, the RTIM from RCC will contact the LU Station SOR approximately 30 minutes prior to the track operatives attending the station.

The RTIM will advise the LU CSM/CSS that access is required to the RFL track for the operatives working in the track possession or for fault rectification. The RTIM should advise how many operatives will be in attendance and the name of the Person in Charge/Site Team Leader (PiC/STL). The PiC/STL is responsible for the whole team.

On arrival at entry point LU Station, the operatives who need to gain access to the RFLI track will report to the CSS/CSM and this will be recorded in the Station Log Book.

If exiting at the same location, the PiC/STL will sign out the party and provide confirmation to the CSM/CSS that all parties are present when departing the station.

Should the track operatives be exiting the track at an alternative location then the PiC/STL will advise the CSM/CSS at the entry point station as to how and when they will provide confirmation that all operatives are clear of the track and accounted for.

All the above details will be recorded in the station log books at the affected LU stations. Once on the station, the parties accessing the track will be accountable to ring the RCC to confirm when they are about to access the track area. Note: If the working party require to move materials through the LU Elizabeth Line station for track works then they will have to apply for a LU Movement of Materials permit in advance.

### 6.7 LU/C440 Emergency Fault Rectification in RFLI Rooms on LU Station

In order to gain access to the RFLI designated rooms on LU stations including SERs, Tunnel Ventilation and HV rooms in the event of an emergency the following process must be followed.

- All parties requiring emergency access will sign in with the CSM/CSS on the station, present their relevant certification and the associated fault reporting number.
- The Romford Control Centre (RCC) must be contacted. The RCC Traffic Manager must be provided with the relevant details including the specific room(s) which needs to be accessed, the specific asset(s) within the room that requires maintained. If an asset isolation is required, then an estimate of the time for which an isolation is likely to be needed must be provided.
- The RCC will inform the party whether they may proceed and when required, instruct the party to wait for the Authorised Person to attend site and enable safe entry in to the room. The RCC TM will arrange attendance of the appointed person on site.
- Upon completion of the works, RCC must be informed that the works are complete.
- All parties are then to sign out with the CSM/CSS and return any keys which were issued to them.

### 6.8 Technical Partnering (Buddies)

Several systems are being handed over into maintenance in accordance with Section 3.0 (Interim Maintenance Arrangements). Due to the criticality of those systems, unrestricted access will be granted by the project 'Access Controller'. A technical partnering buddy scheme will be introduced by the C440, ensuring discipline qualified engineers are provided for each shift (24/7) to escort London Underground Maintainers to the specific asset/system and provide site and system familiarisation as appropriate to assist in their undertakings.

Where London Underground maintainers require access to rooms in which the Principal Contractor are undertaking works, they will be escorted upon entry by the Principal Contractor for the duration of the works. London Underground will not be required to have a site induction but will be briefed by the Principal Contractors representative of the works being undertaken within the area.

This route will be cleansed and segregated from the works within the Ticket Hall, at all times maintaining separation and continued functionality of associated assets.

## 6.9 Existing Access Arrangements between C440 and RFLI within CDM Areas

Under the current project agreement between RFLI and C440, access will be provided for maintenance to Bond Street (C440) with the agreement that RFLI maintenance staff have completed the full C231 (the C440 Principal Contractor) induction process and they enter site in PPE.

In the event of emergency access being required, RFLI will make every effort to send inducted operatives, however, should this not be possible this will be made clear by RMC/Control (RCC) when they contact the Access Controller, after which C231 will provide the following:

- An emergency access briefing to the personnel
- An escort to the worksite
- Supervision of the works from CDM perspective

Planned project and associated interfacing works shall continue to follow the parameters and guidelines set out within the RFLI Access Plan reference C231-COF-K1-STP-C125-50002. RFLI will have an element of control over the access to areas containing their equipment.

- Applications to work in RFLI routeway rooms / spaces will be through the C440 WAD process and approved by C231 Engie and RfLI (where applicable)
- LV Electrical safety permits / limitation of access will be administered by C231 Engie Electrical Team. A joint Lock Out Tag Out process will be agreed and implemented between the teams based on the principles of double locking.
- HV Electrical safety permits / limitation of access will be administered by RFL
- Engineering Hours to be in place from 01:00-05:00 7 days a week. Access will be provided at exactly 01:00 to C231 and the released at exactly 05:00 in a state which is fit for railway operations. C231 will provide a confirmation to RMC/Control (RCC) that the areas having been left in a suitable state.
- RfLI will conduct surveillances and verification to ensure the processes are being followed BOS RfLI Access Plan Document No - C231-COF-K1-STP-C125-50002 16
- C231 and Crossrail will have designated approved individuals whom are responsible for safeguarding the interests and protecting the assets of RfLI

### 6.9.1 C440 Controlled Areas

The C440 project will continue to work under London Underground working rules to complete the remainder of the Outstanding Works between the commencement of Revenue Service and Completion. The stages of completion and outstanding works by system are detailed within the project Migration Plan.

Due to the nature of the remaining works post Revenue Service, there are a small number of areas which will remain under the control of C440 and its principal contractor (Engie).

Except for the Fire Protected Route (Green Route), the extent of the areas still interfacing with construction activities are limited to individual rooms not areas. In achieving the Revenue Service milestone, the physical works required to complete the station will be deemed substantially complete with the remainder of the C440 activities comprising of interface testing and integration works. The larger proportion of remaining work activities will be planned in accordance the Configuration Management process, partitioning impactive works on to Engineering Hours to restrict any operational risks to the station.

of associated assets.

## 7 Declaration of Maintenance Responsibilities

The following signatories accept the maintenance responsibilities outlined in this document.

Name	Title	Signature	Date
Neil Young	CRL C440 Project Manager		
Liam Brown	C231 Engie Project Manager		
John Thomas	C660 CRL Project Manager		
James Marshall	C660 Siemens Project Manager		
Ross Harper	LUCT Senior Readiness Manager – Ross Harper		
Lee Richards	LU APCD Senior Manager – Lee Richards		
Gerry Tighe? Matt McCarthy?	LU BOS Lead Engineer		
Gerry Tighe	LU/RFLI Representative		

Note: The LU APCD Senior Readiness Manager is responsible for ensuring that the necessary arrangements are in place for maintenance of the following assets:

- Lift & Escalators maintained under the Pan TfL contract by Kone & Otis respectively.
- Connect Radio maintained by LUCT



## Appendix 1 - Revenue Service Boundary

Learning Legacy Document





# Bond Street

## Western Ticket Hall Level +2 (C)

Produced on behalf of the  
Fire Compliance Manager  
London Underground

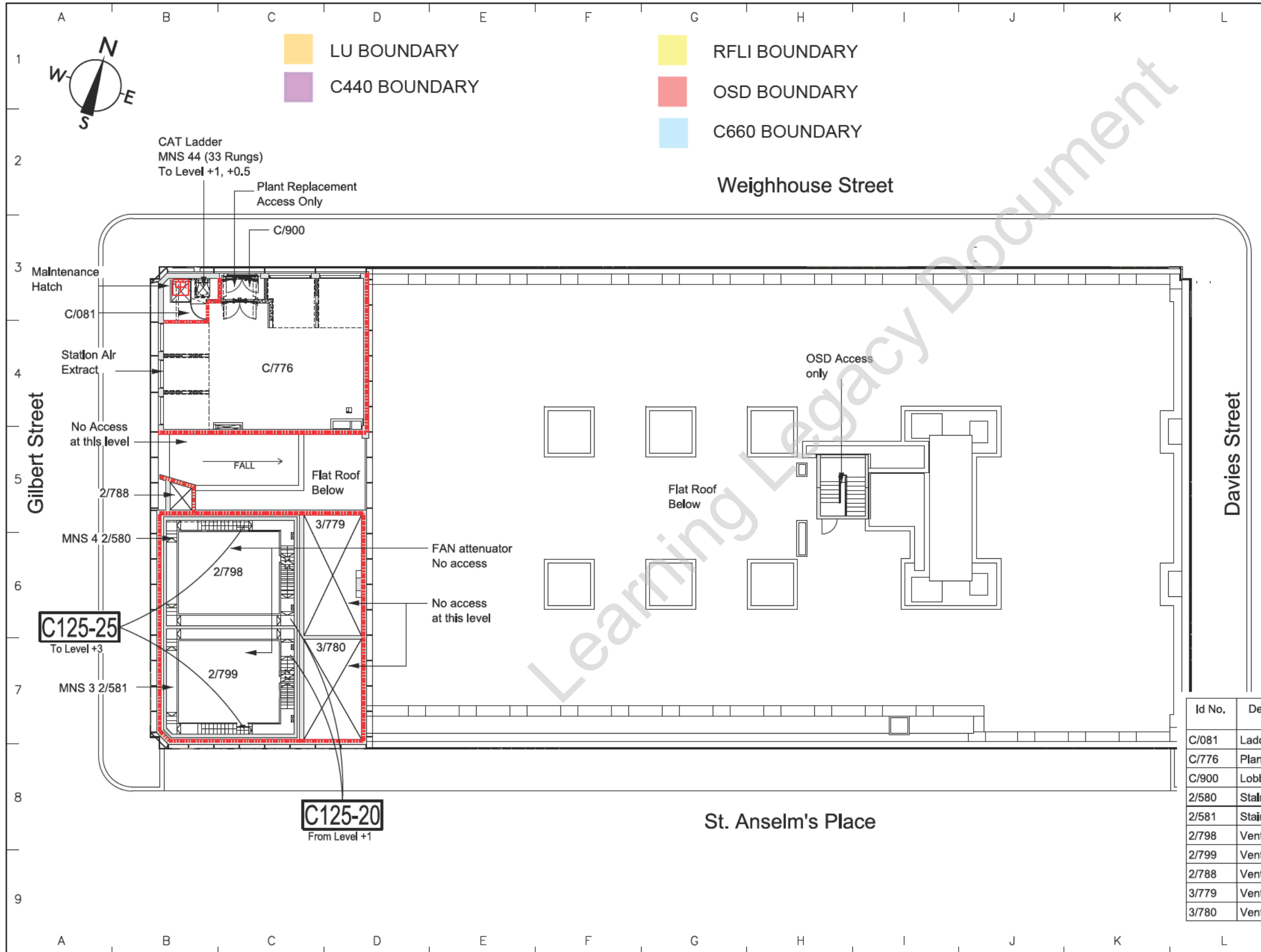
If any alteration is needed to these plans or  
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# DESIGN FIRE PLAN

Sheet 3 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50020	Sheet No: RAH	Revision: P02
Drawn: RW	Checked: LF	Approved: TK

Fire Safety measures shown in the description  
of works, additional to legislative requirements,  
are for the purpose of gaining exemptions.



Id No.	Description	Notes	Code	Grid Ref	Fire Precautions			
					D	C	SEP	SUP
C/081	Ladder	MNS 44	900	B3	✓	-	✓	-
C/776	Plant Room	Chiller Room	900	C3	✓	-	✓	-
C/900	Lobby	Plant Access	780	C4	-	-	✓	-
2/580	Stairs	Vent Shaft	510	C6	-	-	-	-
2/581	Stairs	Vent Shaft	510	C7	-	-	-	-
2/798	Vent Shaft	-	880	B6	-	-	✓	-
2/799	Vent Shaft	-	880	B7	-	-	✓	-
2/788	Vent Shaft	-	880	B7	-	-	✓	-
3/779	Vent Shaft	Eastbound	880	D6	-	-	✓	-
3/780	Vent Shaft	Westbound	880	D7	-	-	✓	-



# Bond Street

## Western Ticket Hall Level +1 (B)

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London Underground

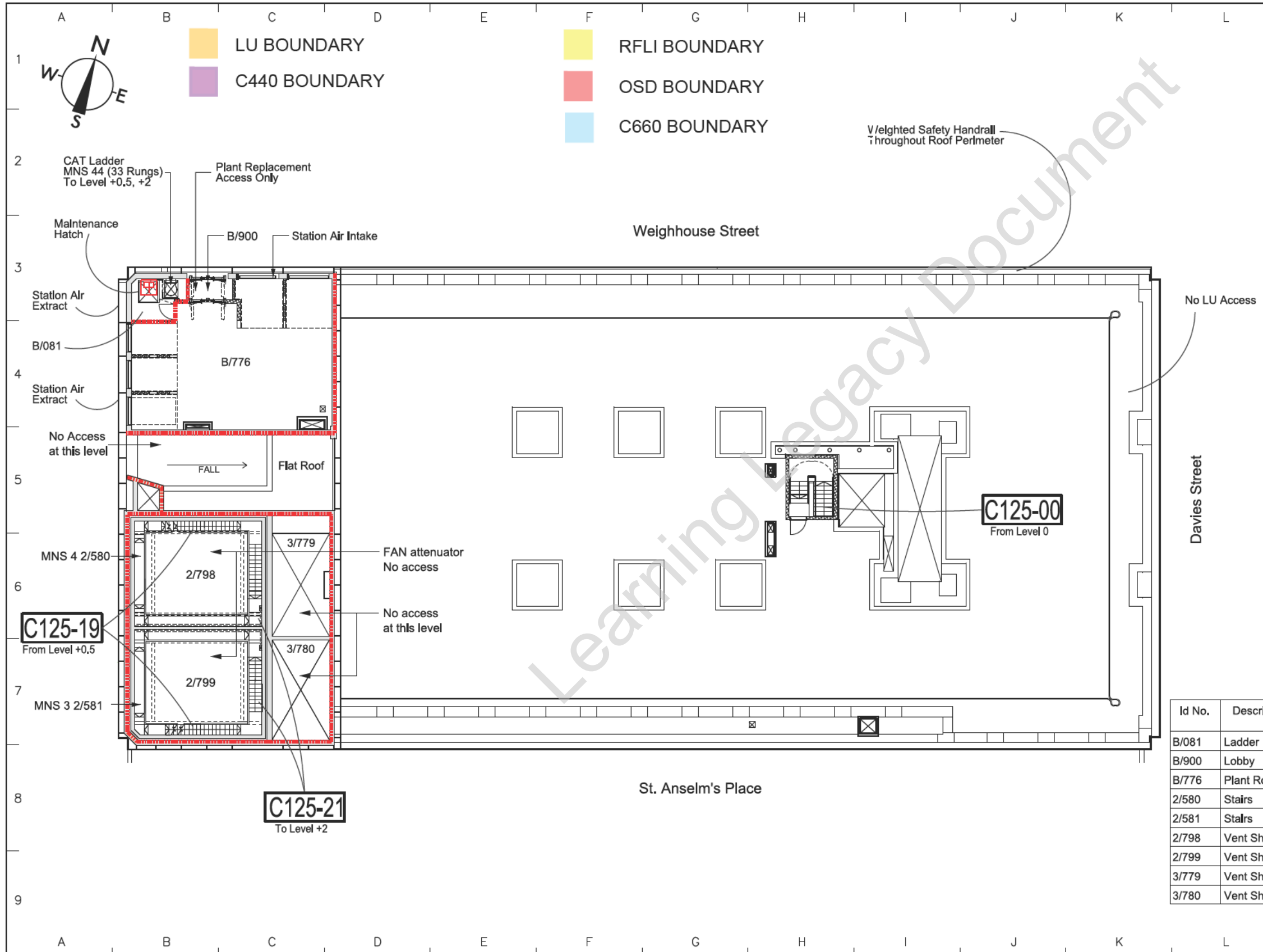
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# DESIGN FIRE PLAN

Sheet 5 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50019	Sheet No:	Revision:
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Fire Safety measures shown in the description  
of works, additional to legislative requirements,  
are for the purpose of gaining exemptions.



Id No.	Description	Notes	Code	Grid Ref	Fire Precautions			
					D	C	SEP	SUP
B/081	Ladder	MNS 44	900	B3	✓	-	✓	-
B/900	Lobby	Plant Access	900	B3	-	-	✓	-
B/776	Plant Room	Chiller Room	780	C4	✓	-	✓	-
2/580	Stairs	MNS 4	510	B6	-	-	-	-
2/581	Stairs	MNS 3	510	C6	-	-	-	-
2/798	Vent Shaft	-	880	B6	-	-	✓	-
2/799	Vent Shaft	-	880	B7	-	-	✓	-
3/779	Vent Shaft	Eastbound	880	C6	-	-	✓	-
3/780	Vent Shaft	Westbound	880	C7	-	-	✓	-



# Bond Street

## Western Ticket Hall

### Mezzanine Level +0.5

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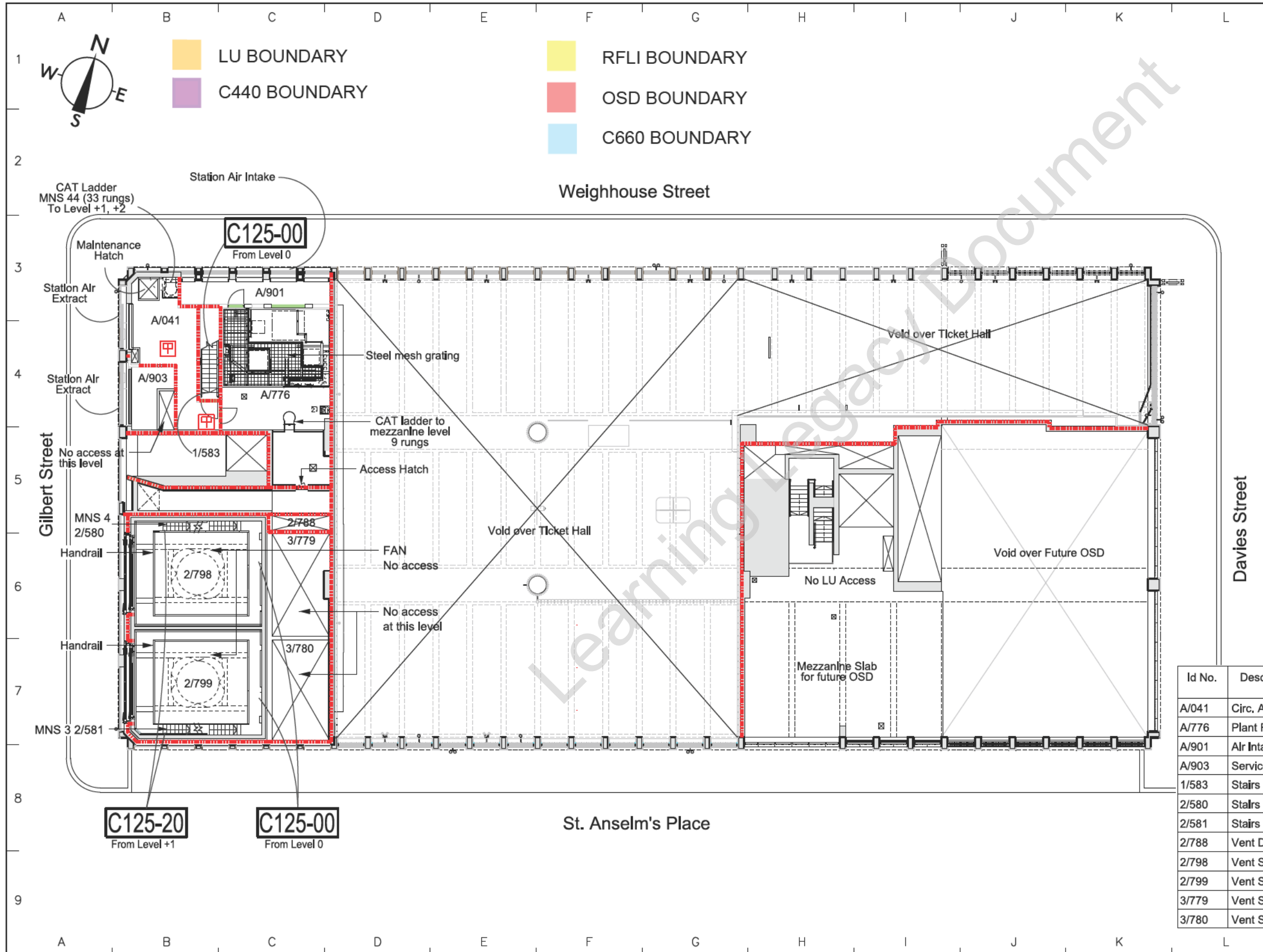
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# DESIGN FIRE PLAN

Sheet 6 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50018	Sheet No:	Revision:
		P02
<i>RAH</i>	Drawn: RW	Checked: GA
		Approved: PP

Fire Safety measures shown in the description  
of works, additional to legislative requirements,  
are for the purpose of gaining exemptions.



Id No.	Description	Notes	Code	Grid Ref	Fire Precautions			
					D	C	SEP	SUP
A/041	Circ. Area	—	041	B3	✓	—	✓	—
A/776	Plant Room	—	780	C4	✓	—	✓	—
A/901	Air Intake Plenum	—	880	C3	—	—	✓	—
A/903	Service Area	—	—	B4	—	—	✓	—
1/583	Stairs	—	510	B4	✓	✓	—	—
2/580	Stairs	Vent Shaft	510	C6	—	—	—	—
2/581	Stairs	Vent Shaft	510	C7	—	—	—	—
2/788	Vent Duct	—	880	C5	—	—	✓	—
2/798	Vent Shaft	—	880	B6	—	—	✓	—
2/799	Vent Shaft	—	880	B7	—	—	✓	—
3/779	Vent Shaft	Eastbound	880	C6	—	—	✓	—
3/780	Vent Shaft	Westbound	880	C7	—	—	✓	—



# Bond Street

## Western Ticket Hall Ground Level

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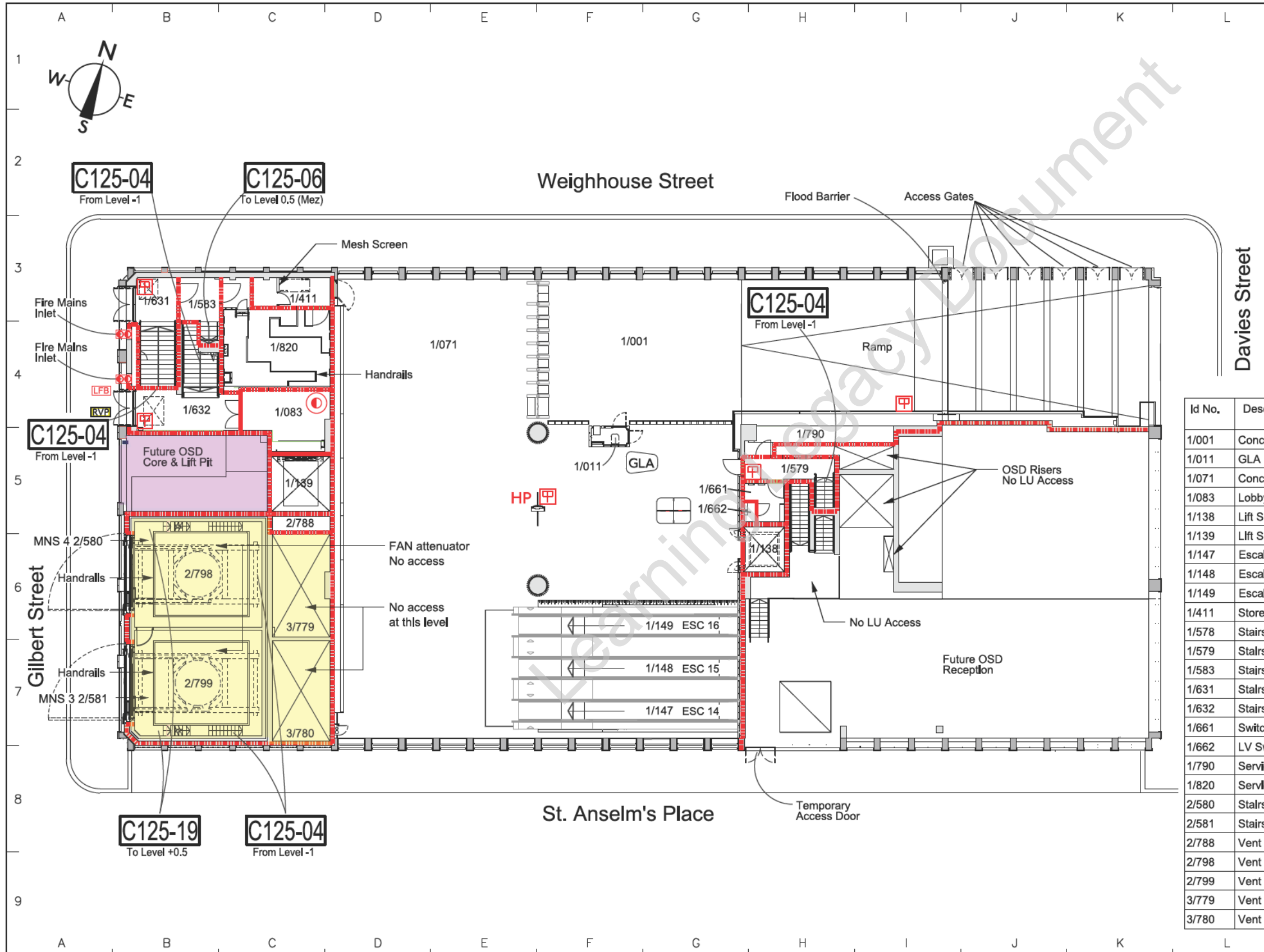
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# DESIGN FIRE PLAN

Sheet 7 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50001	Sheet No:	Revision: P02
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# Bond Street

## Western Ticket Hall

### Level -1

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London Underground

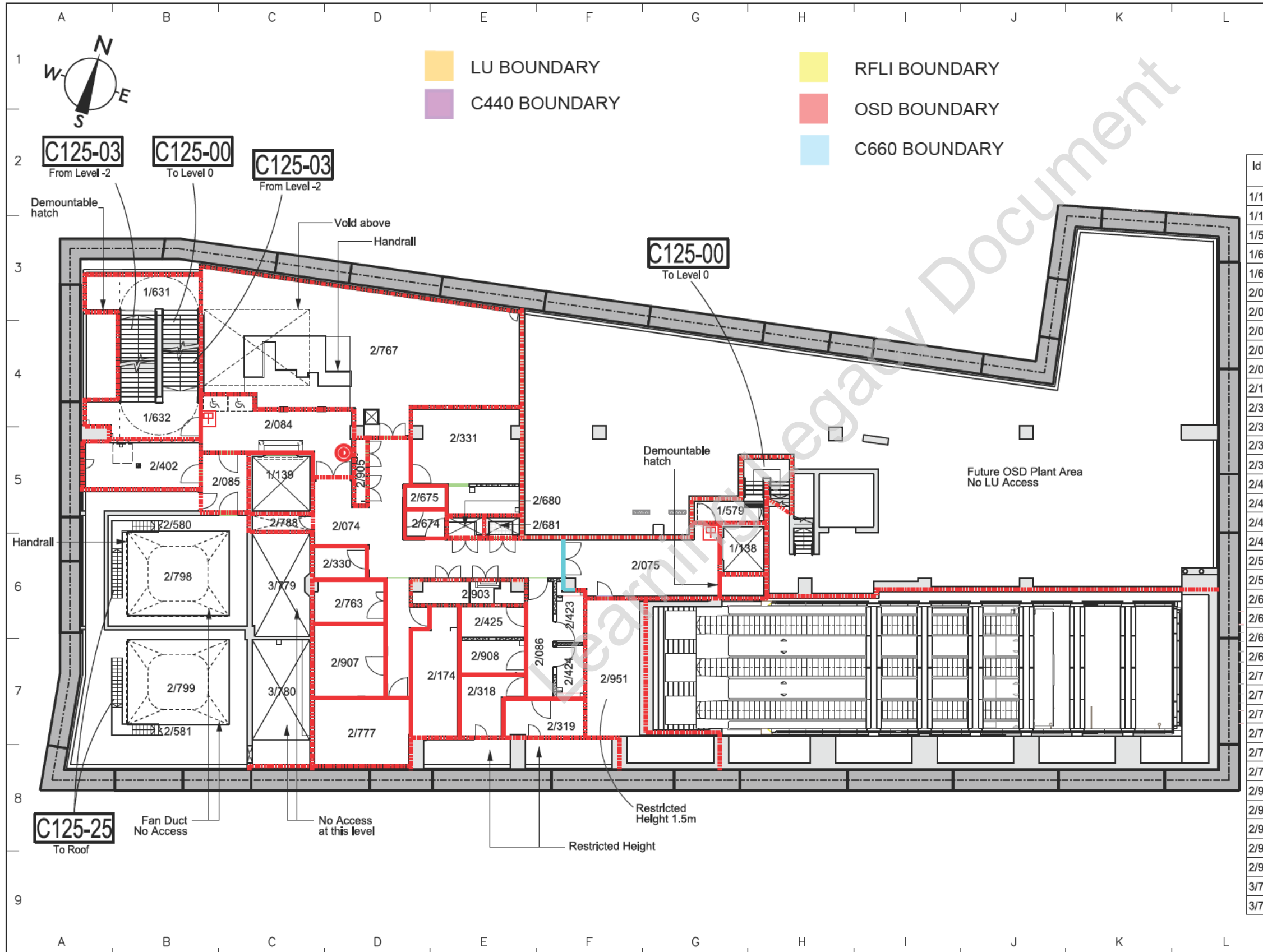
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Sheet 10 of 24

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# Bond Street

## Western Ticket Hall Interchange Level -2

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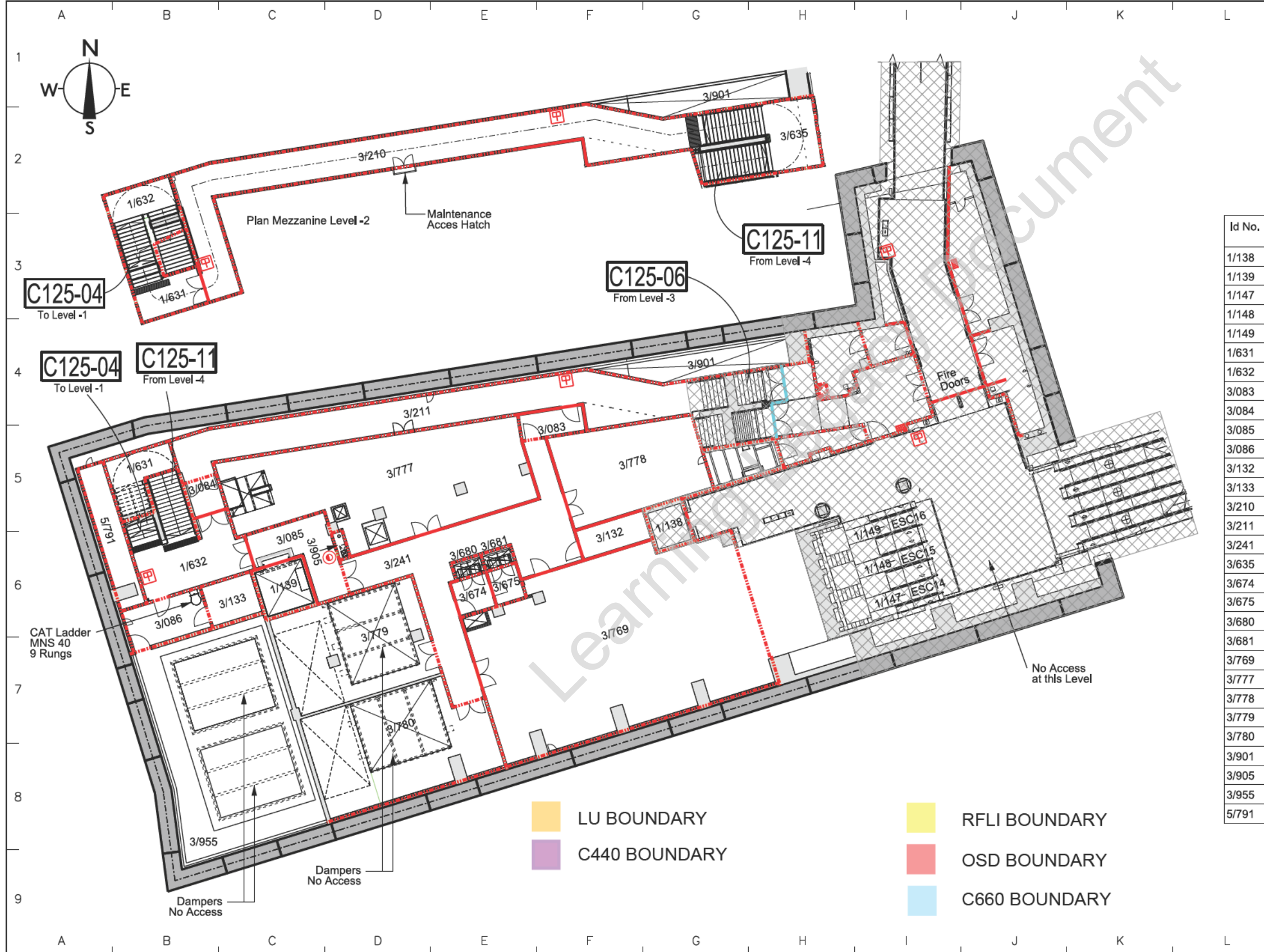
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# DESIGN FIRE PLAN

Sheet 23 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50004	Sheet No:	Revision:
<i>RAH</i>	Drawn: RW	Checked: LF
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Fire Safety measures shown in the description  
of works, additional to legislative requirements,  
are for the purpose of gaining exemptions.



Id No.	Description	Notes	Code	Grid Ref	Fire Precautions			
					D	C	SEP	SUP
1/138	Lift Shaft	L7 / PRM	116	G6	✓	✓	—	—
1/139	Lift Shaft	L8 FF	116	C6	✓	✓	—	—
1/147	Escalator	Esc14	131	K5	✓	—	✓	—
1/148	Escalator	Esc15	131	K5	✓	—	✓	—
1/149	Escalator	Esc16	131	K5	✓	—	✓	—
1/631	Stairs	Escape Stairs 1	590	B5	✓	✓	—	—
1/632	Stairs	Fire Fighting	590	B6	✓	✓	—	—
3/083	Lobby	Escape	066	F4	✓	✓	—	—
3/084	Lobby	—	066	B5	✓	✓	—	—
3/085	Lobby	L4/Fire	066	C6	✓	✓	—	—
3/086	Lobby	—	066	B6	✓	✓	—	—
3/132	LEER	L7	101	F6	✓	✓	—	—
3/133	LCC (LER)	L8	101	C6	✓	✓	—	—
3/210	Corridor	Escape 5	—	E2	✓	✓	—	—
3/211	Corridor	Escape 4	—	E5	✓	✓	—	—
3/241	Corridor	—	190	D6	✓	✓	—	—
3/635	Stairs	ESS5	590	H2				
3/674	Switch Room	LV3	610	E6	✓	✓	—	E
3/675	LV Switchroom	—	610	E6	✓	✓	—	E
3/680	Riser	Lv Cables	820	E6	✓	✓	—	—
3/681	Riser	Lv Cables	820	E6	✓	✓	—	—
3/769	Fan Room	—	780	F7	✓	✓	—	—
3/777	Plant Room	Pressure	780	E5	✓	✓	—	—
3/778	Plant Room	Pressure	780	F5	✓	✓	—	—
3/779	Vent Shaft	Eastbound	880	D7	—	—	✓	—
3/780	Vent Shaft	Westbound	880	D7	—	—	✓	—
3/901	Service Void	—	820	G4	✓	✓	—	—
3/905	Riser	—	820	D6	✓	✓	—	—
3/955	Forced Ventilation	Westbound	780	C8	✓	—	✓	—
5/791				A5				

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# Bond Street

## Western Ticket Hall Interchange Level -3

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London Underground

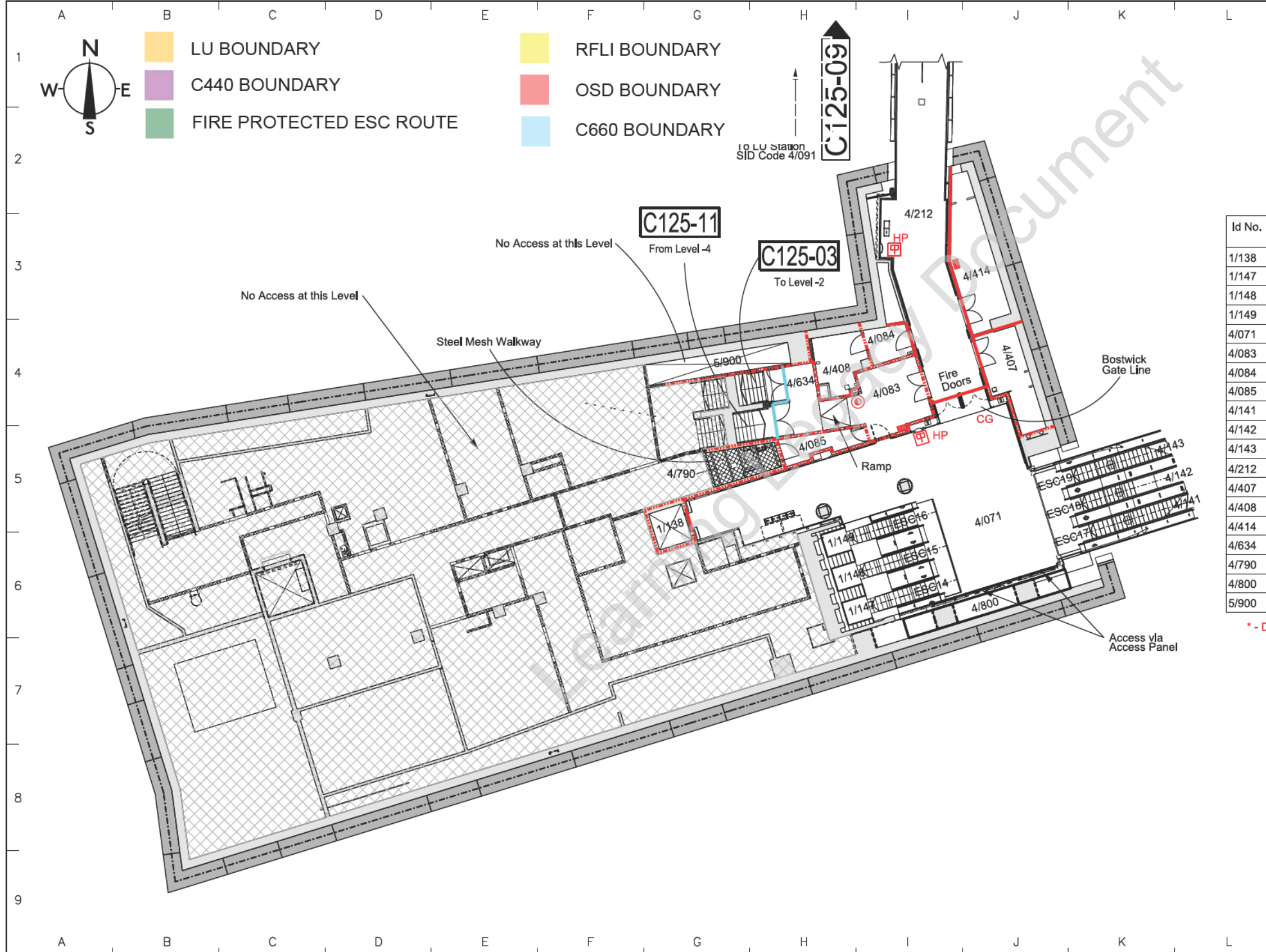
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# DESIGN FIRE PLAN

Sheet 12 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50007	Sheet No:	Revision:
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	Approved: TK	P02

Fire Safety measures shown in the description  
of works, additional to legislative requirements,  
are for the purpose of gaining exemptions.



\* - Detection close to automatic door at ends of passage only.





# Bond Street

## LU / Crossrail link Passageway

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London Underground

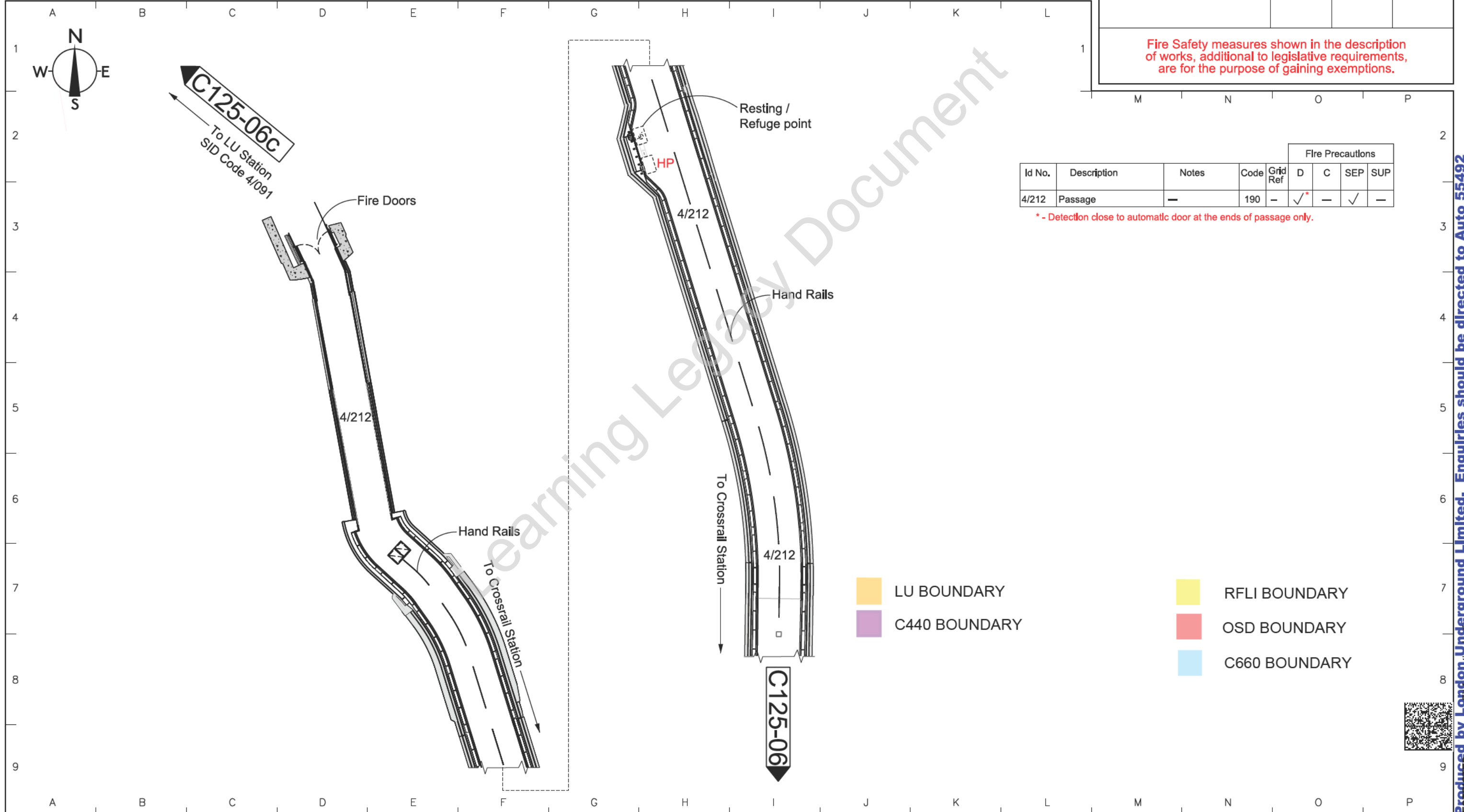
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# DESIGN FIRE PLAN

Sheet 14 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50008	Sheet No:	Revision:
		P02
<i>RAT</i>	Drawn: RW	Checked: LF
		Approved: TK

Fire Safety measures shown in the description  
of works, additional to legislative requirements,  
are for the purpose of gaining exemptions.



Id No.	Description	Notes	Code	Grid Ref	Fire Precautions			
					D	C	SEP	SUP
4/212	Passage	-	190	-	✓*	-	✓	-

\* - Detection close to automatic door at the ends of passage only.

- LU BOUNDARY
- RFLI BOUNDARY
- C440 BOUNDARY
- OSD BOUNDARY
- C660 BOUNDARY







# Bond Street

## Western Ticket Hall

### Basement Level -4

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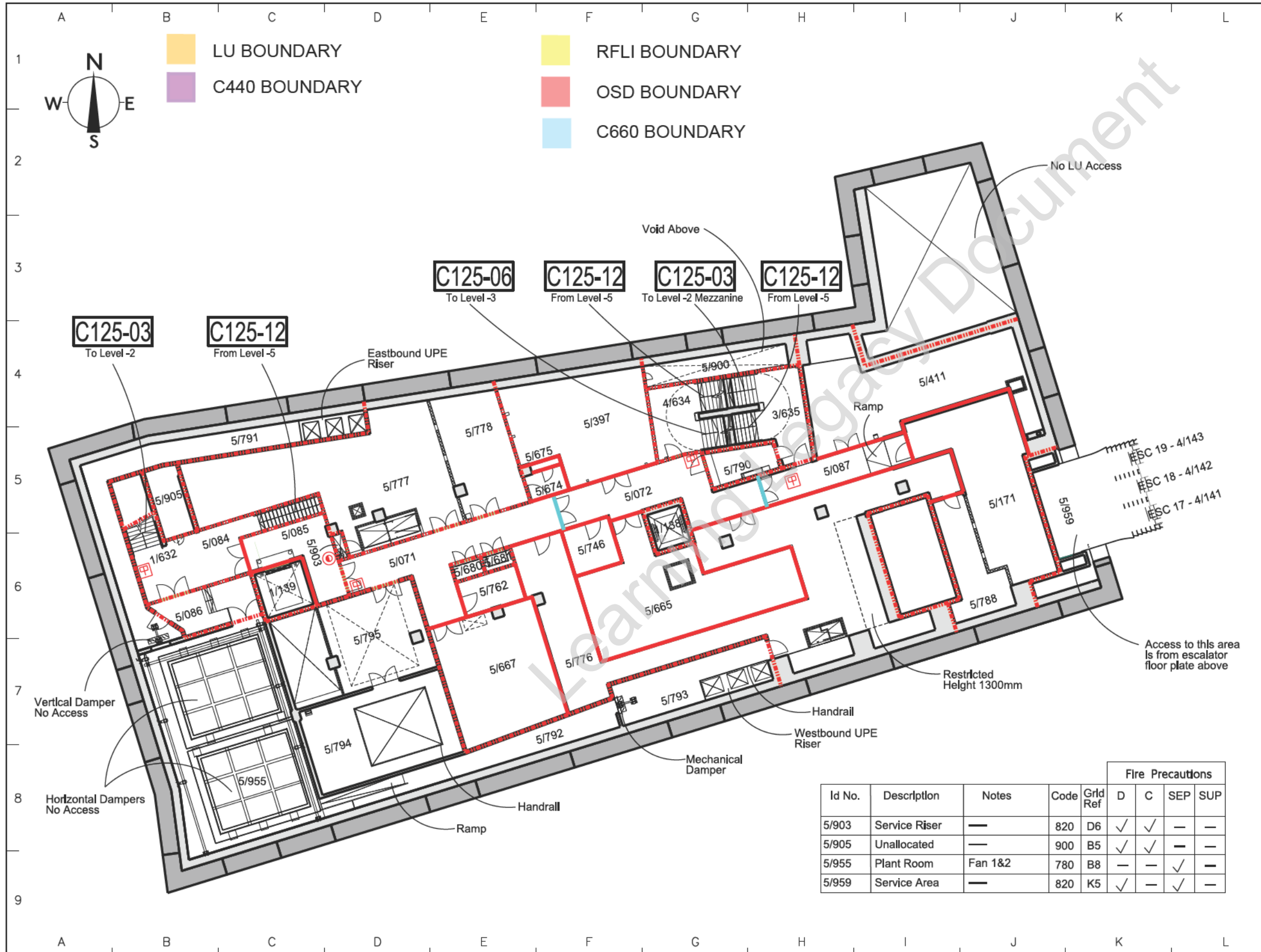
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Sheet 16 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50010	Sheet No:	Revision: P02
RAH	Drawn: RW	Checked: LF
		Approved: TK

Fire Safety measures shown in the description  
of works, additional to legislative requirements,  
are for the purpose of gaining exemptions.



Id No.	Description	Notes	Code	Grd Ref	Fire Precautions			
					D	C	SEP	SUP
1/138	Lift Shaft	L7 / PRM	116	G5	✓	✓	—	—
1/139	Lift Shaft	L8 FF/M	116	C6	✓	✓	—	—
1/632	Stairs	—	510	B6	✓	✓	—	—
3/635	Stairs	—	510	H4	✓	✓	—	—
4/141	ESC 17	—	131	C8	✓	—	✓	—
4/142	ESC 18	—	131	C8	✓	—	✓	—
4/143	ESC 19	—	131	C8	✓	—	✓	—
4/634	Stairs	Ess4	510	G4	✓	✓	—	—
5/071	Circ. Area	—	041	D6	✓	✓	—	—
5/072	Circ. Area	—	041	G5	✓	✓	—	—
5/084	Lobby	—	066	B6	✓	✓	—	—
5/085	Lobby	—	066	C6	✓	✓	—	—
5/086	Lobby	—	066	B6	✓	✓	—	—
5/087	Lobby	—	066	H5	✓	✓	—	—
5/171	EER	ESC 4, 5, 6	170	J5	✓	✓	—	—
5/397	Plant Room	Water Mist	780	F4	✓	✓	—	WF
5/411	Store	Esc Step	410	I4	✓	✓	—	E
5/602	Lobby	MNS 25	066	C6	✓	✓	—	—
5/665	Battery Room	—	610	G6	✓	✓	—	—
5/667	Switch Room	Emergency	610	E7	✓	✓	—	—
5/674	LV Switchroom	—	610	E5	✓	✓	—	E
5/675	Switch Cupboard	—	610	E5	✓	✓	—	E
5/680	Riser	LV Cables	820	E6	✓	✓	—	—
5/681	Riser	LV Cables	820	E6	✓	✓	—	—
5/746	SCR	—	770	F6	✓	✓	—	—
5/762	Equipment Room	Advert	780	E6	✓	✓	—	—
5/776	Plant Room	Cooling	780	F7	✓	—	✓	—
5/777	Fan Room	1	780	D5	✓	—	✓	—
5/778	Fan Room	2	780	E5	✓	—	✓	—
5/788	Service Area	—	820	I6	✓	—	✓	—
5/790	Service Riser	—	820	G5	✓	✓	—	—
5/791	Plenum	UPE1	880	C5	—	—	✓	—
5/792	Plenum	UPE2	880	F7	—	—	✓	—
5/793	Plenum	UPE3	880	G7	—	—	✓	—
5/794	Vent Shaft	Westbound	880	D8	—	—	✓	—
5/795	Vent Shaft	Eastbound	880	D7	—	—	✓	—
5/900	Void	—	820	G4	—	—	✓	—

Id No.	Description	Notes	Code	Grd Ref	Fire Precautions			
					D	C	SEP	SUP
5/903	Service Riser	—	820	D6	✓	✓	—	—
5/905	Unallocated	—	900	B5	✓	✓	—	—
5/955	Plant Room	Fan 1&2	780	B8	—	—	✓	—
5/959	Service Area	—	820	K5	✓	—	✓	—



# Bond Street

## Western Ticket Hall

### Platform Level -5

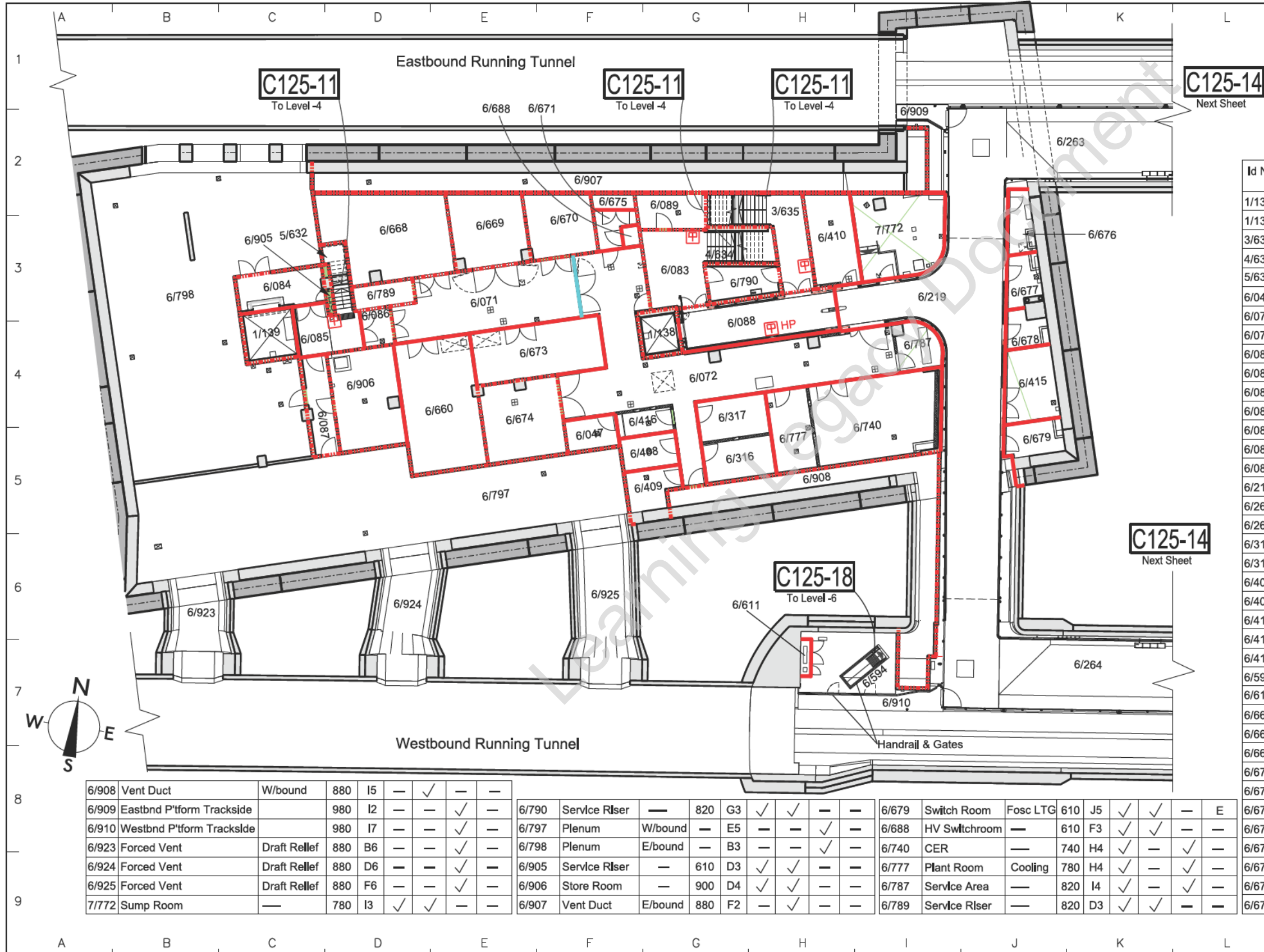
- LU BOUNDARY
- RFLI BOUNDARY
- C440 BOUNDARY
- C660 BOUNDARY

# DESIGN FIRE PLAN

Sheet 17 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50011	Sheet No: P02	Revision: P02
<i>RAH</i>	Drawn: RW	Checked: LF
	Approved: TK	

Fire Safety measures shown in the description of works, additional to legislative requirements, are for the purpose of gaining exemptions.



Id No.	Description	Notes	Code	Grid Ref	Fire Precautions			
					D	C	SEP	SUP
1/138	Lift Shaft	L7 / PRM	116	G4	✓	✓	—	—
1/139	Lift Shaft	L8 FF	116	C4	✓	✓	—	—
3/635	Stairs	Escape Stairs 5	590	H2	✓	✓	—	—
4/634	Stairs	Escape Stairs 4	510	G3	✓	✓	—	—
5/632	Stairs	Emergency	590	D3	✓	✓	—	—
6/047	Kitchen	Tea Point	360	F5	✓	✓	—	—
6/071	Clrc. Area	—	041	E3	✓	✓	—	—
6/072	Clrc. Area	—	041	G4	✓	✓	—	—
6/083	Lobby	—	066	G3	✓	✓	—	—
6/084	Lobby	—	066	C3	✓	✓	—	—
6/085	Lobby	—	066	D4	✓	✓	—	—
6/086	Lobby	—	066	D4	✓	✓	—	—
6/087	Lobby	—	066	C4	✓	✓	—	—
6/088	Lobby	Escape	066	H3	✓	✓	—	—
6/089	Lobby	—	066	G2	✓	✓	—	—
6/219	Passage	—	190	J3	✓	—	✓	—
6/263	Platform	E - Platform 1	261	J2	✓	—	—	—
6/264	Platform	W - Platform 2	261	K7	✓	—	—	—
6/316	Locker Room	Male	330	G5	✓	—	✓	WM
6/317	Locker Room	Female	330	G4	✓	—	✓	WM
6/408	Store	Cleaners	410	G5	✓	✓	—	WM
6/409	Store	Cleaners	410	G5	✓	✓	—	WM
6/410	Store	Cleaners	410	H3	✓	✓	—	WM
6/415	Store	Cleaners	410	J4	✓	✓	—	WM
6/416	Tollet	Unisex	440	G4	✓	—	—	—
6/594	Stairs	—	510	I7	—	—	—	—
6/611	Switch Cupboard	TLPP	610	H7	✓	✓	—	—
6/660	Switch Room	LV1	610	E4	✓	✓	—	E
6/668	Switch Room	HV1	610	D3	✓	✓	—	E
6/669	Transformer Rm	HV1	810	E3	✓	✓	—	IG
6/670	Switch Room	Overhead	610	F3	✓	✓	—	E
6/671	Switch Room	LV3	610	F3	✓	✓	—	E
6/673	Switch Room	LV2	610	E4	✓	✓	—	E
6/674	Transformer Rm	HV2	810	F4	✓	✓	—	—
6/675	Switch Cupb'd	Tunnel LTG/PW	610	F2	✓	✓	—	—
6/676	Switch Room	LV3	610	J3	✓	✓	—	—
6/677	Switch Room	Tunnel LTG	610	J3	✓	✓	—	E
6/678	Switch Room	Fosc LTG	610	J4	✓	✓	—	E

6/908	Vent Duct	W/bound	880	I5	—	✓	—	—																			
6/909	Eastbnd P'tform Tracks		980	I2	—	—	✓	—		6/790	Service Rlser	—	820	G3	✓	✓	—	—	6/679	Switch Room	Fosc LTG	610	J5	✓	✓	—	E
6/910	Westbnd P'tform Tracks		980	I7	—	—	✓	—		6/797	Plenum	W/bound	—	E5	—	—	✓	—	6/688	HV Switchroom	—	610	F3	✓	✓	—	—
6/923	Forced Vent	Draft Relief	880	B6	—	—	✓	—		6/798	Plenum	E/bound	—	B3	—	—	✓	—	6/740	CER	—	740	H4	✓	—	✓	—
6/924	Forced Vent	Draft Relief	880	D6	—	—	✓	—		6/905	Service Rlser	—	610	D3	✓	✓	—	—	6/777	Plant Room	Cooling	780	H4	✓	—	✓	—
6/925	Forced Vent	Draft Relief	880	F6	—	—	✓	—		6/906	Store Room	—	900	D4	✓	✓	—	—	6/787	Service Area	—	820	I4	✓	—	✓	—
7/772	Sump Room	—	780	I3	✓	✓	—	—		6/907	Vent Duct	E/bound	880	F2	—	✓	—	—	6/789	Service Rlser	—	820	D3	✓	✓	—	—

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# Bond Street

Western Ticket Hall  
Levels +3, +4, +5, Roof

Produced on behalf of the  
Fire Compliance Manager  
London Underground

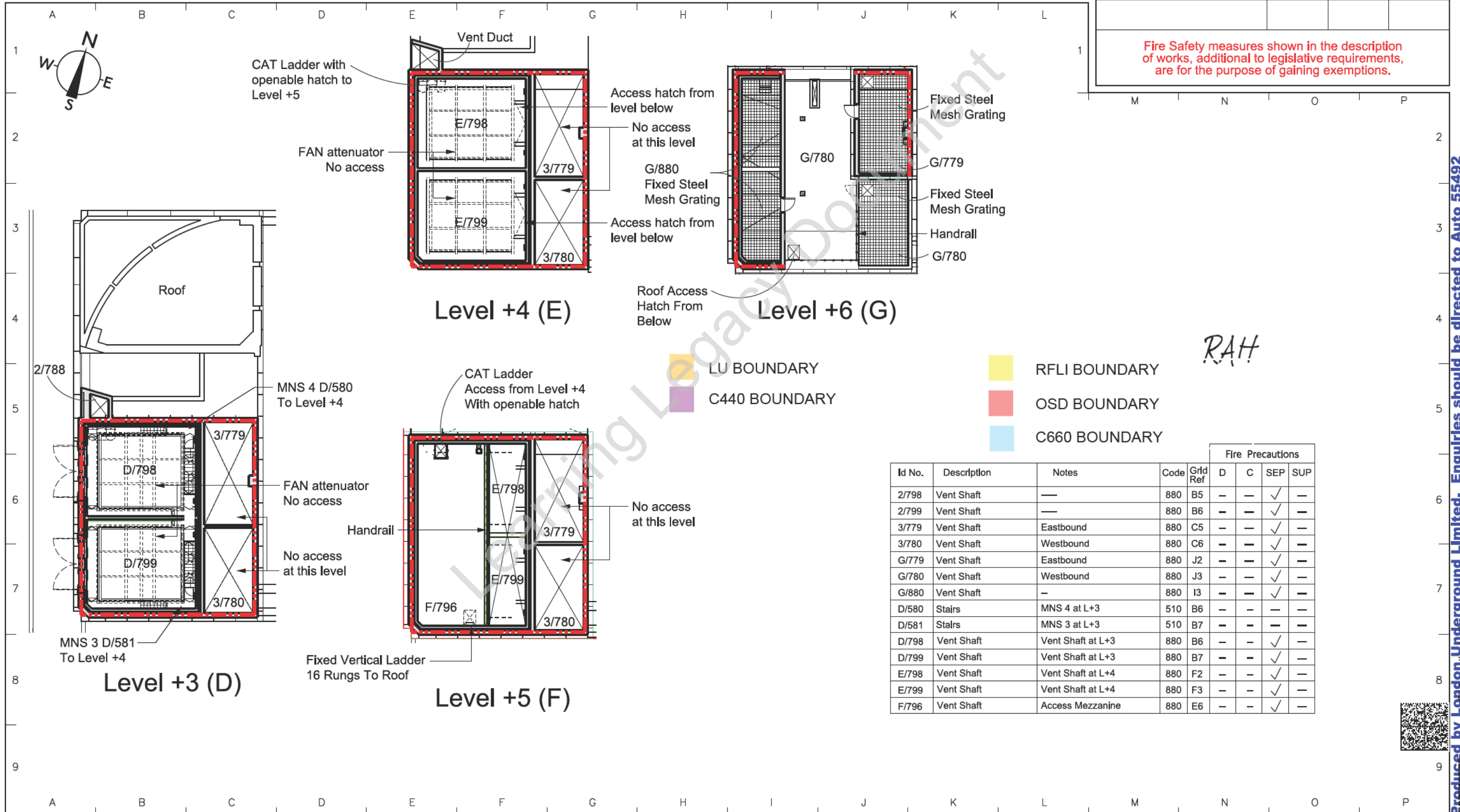
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# DESIGN FIRE PLAN

Sheet 1 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50024	Sheet No:	Revision: P02
	Drawn: RW	Checked: LF
		Approved: TK

Fire Safety measures shown in the description  
of works, additional to legislative requirements,  
are for the purpose of gaining exemptions.



RAH



# Bond Street

## Eastern Ticket Hall LU Level C,D & E Ventilation Shaft Levels

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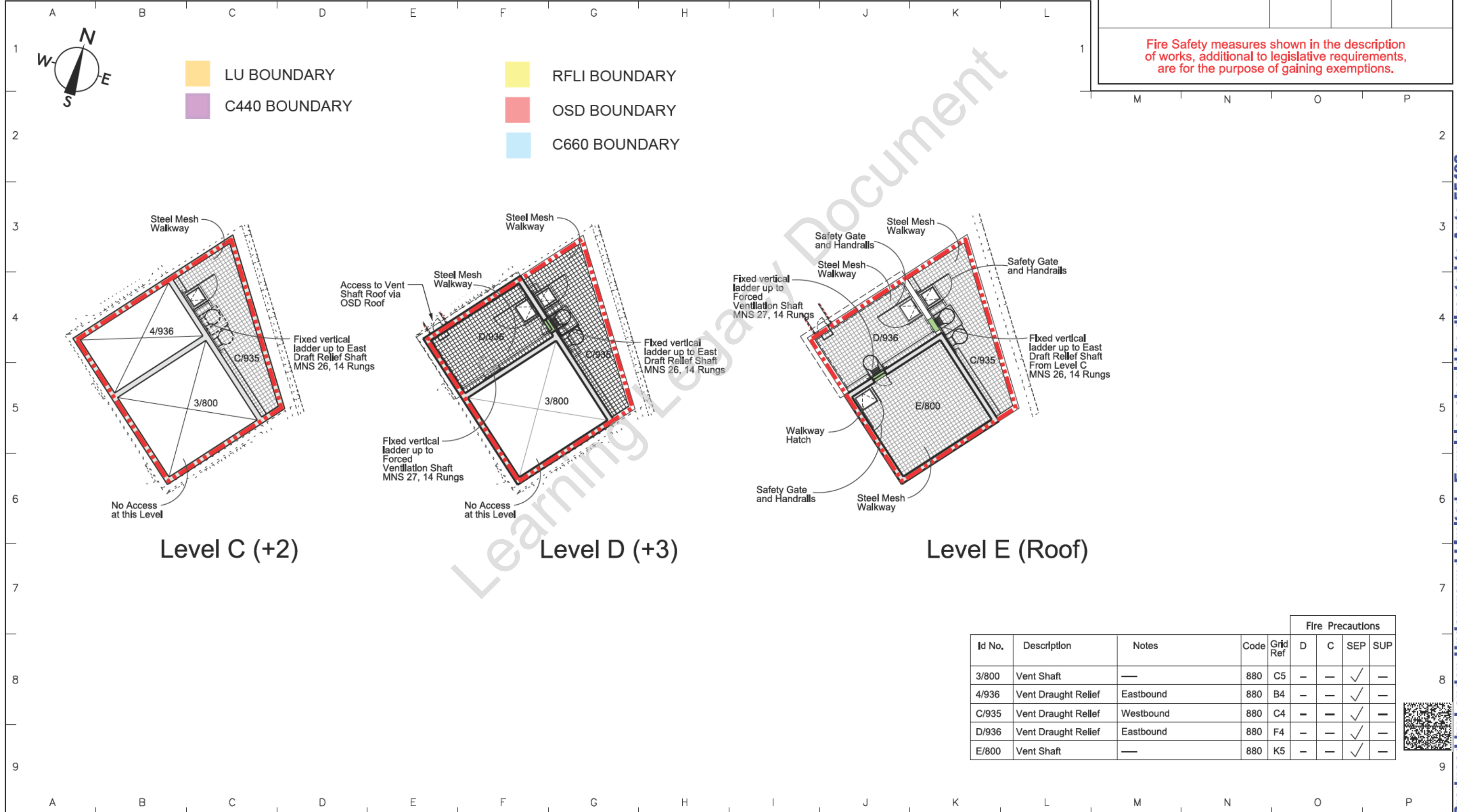
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# DESIGN FIRE PLAN

Sheet 2 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50022	Sheet No:	Revision:
<i>RAH</i>	Drawn: RW	Checked: RG
	Approved: AD	P03

Fire Safety measures shown in the description  
of works, additional to legislative requirements,  
are for the purpose of gaining exemptions.



Id No.	Description	Notes	Code	Grid Ref	Fire Precautions			
					D	C	SEP	SUP
3/800	Vent Shaft	—	880	C5	—	—	✓	—
4/936	Vent Draught Relief	Eastbound	880	B4	—	—	✓	—
C/935	Vent Draught Relief	Westbound	880	C4	—	—	✓	—
D/936	Vent Draught Relief	Eastbound	880	F4	—	—	✓	—
E/800	Vent Shaft	—	880	K5	—	—	✓	—

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# Bond Street

Eastern Ticket Hall  
Roof / OSD Basement  
Level +1

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London Underground

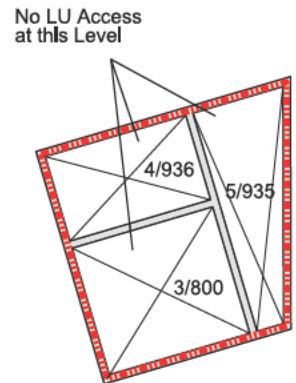
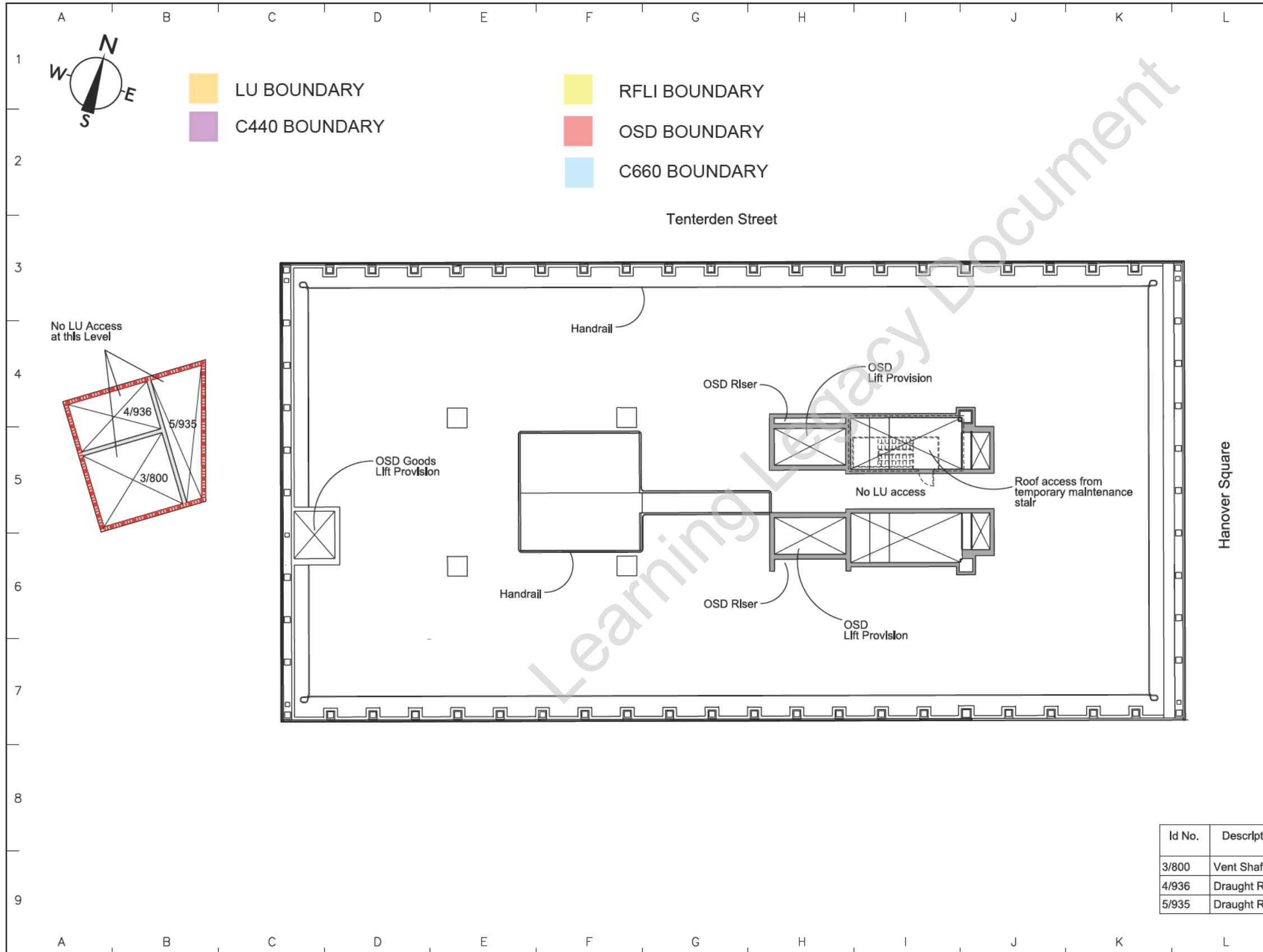
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# DESIGN FIRE PLAN

Sheet 4 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50021	Sheet No: RAT	Revision: P02
Drawn: MS	Checked: RG	Approved: AD

Fire Safety measures shown in the description  
of works, additional to legislative requirements,  
are for the purpose of gaining exemptions.



Id No.	Description	Notes	Code	Grid Ref	Fire Precautions			
					D	C	SEP	SI
3/800	Vent Shaft	Forced Ventilation	880	B5	-	-	✓	-
4/936	Draught Relief	Eastbound	880	B4	-	-	✓	-
5/935	Draught Relief	Westbound	880	A4	-	-	✓	-

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# Bond Street

## Eastern Ticket Hall

### Level +0.5

### Mezzanine Level

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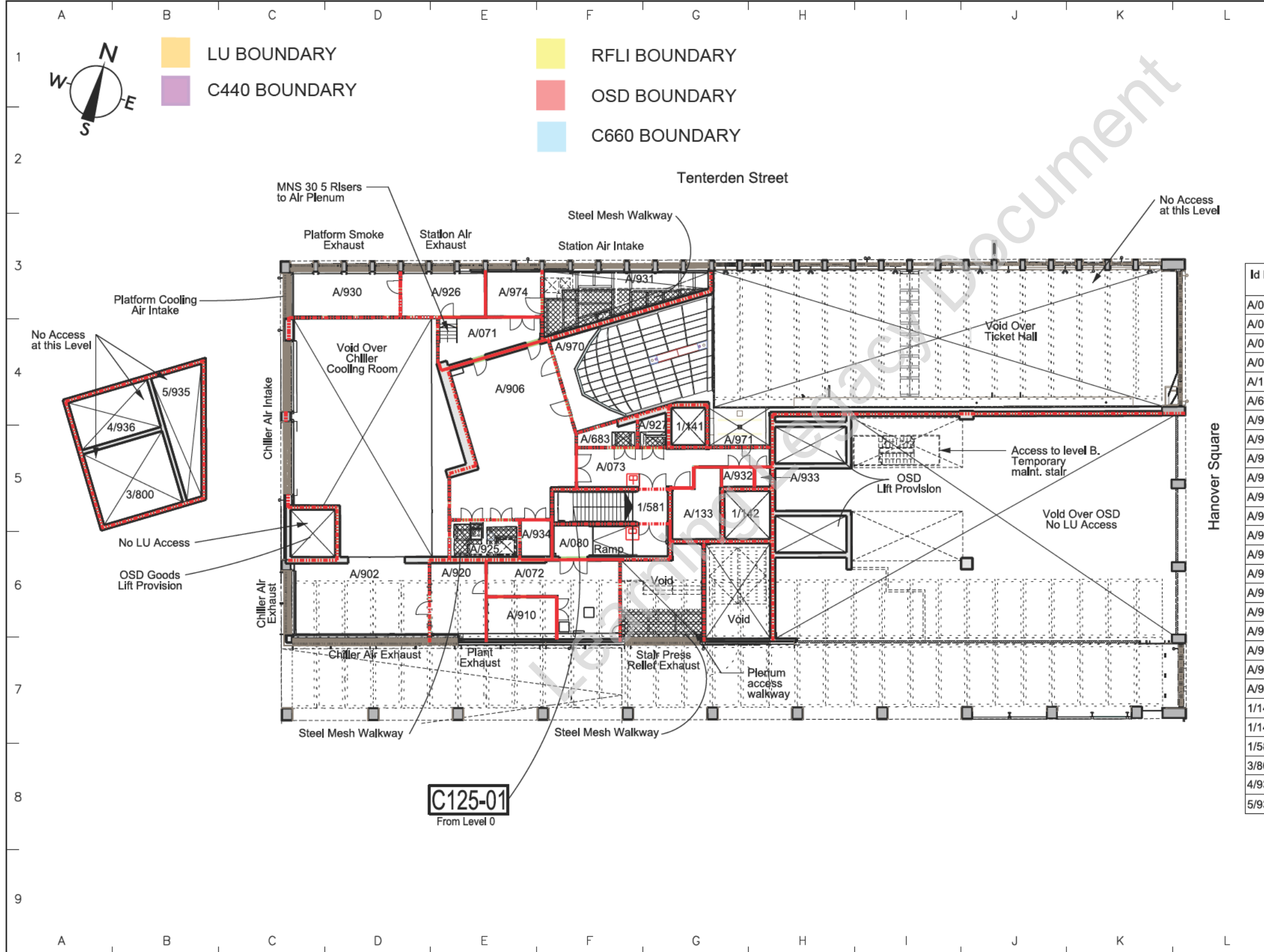
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# DESIGN FIRE PLAN

Sheet 9 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50003	Sheet No:	Revision: P02
RAH	Drawn: MS	Checked: GA
		Approved: PP

Fire Safety measures shown in the description  
of works, additional to legislative requirements,  
are for the purpose of gaining exemptions.



Id No.	Description	Notes	Code	Grid Ref	Fire Precautions			
					D	C	SEP	SUP
A/071	Circ. Area	---	---	E4	✓	✓	✓	---
A/072	Circ. Area	---	---	F6	✓	---	✓	---
A/073	Circ. Area	---	---	F5	✓	✓	---	---
A/080	Lobby	---	---	F6	✓	✓	---	---
A/133	LEER	---	---	G5	✓	✓	---	---
A/683	Service Riser	---	---	F5	✓	✓	---	---
A/902	Air Plenum	Chiller Exhaust	---	D6	---	---	✓	---
A/906	Fan Room	---	---	E5	✓	✓	---	---
A/910	Local Cooling Rm	---	---	E6	✓	✓	---	---
A/920	Air Plenum	Plant Exhaust	---	E6	✓	---	✓	---
A/925	Service Riser	---	---	E6	✓	---	✓	---
A/926	Air Plenum	---	---	E3	---	---	✓	---
A/927	Service Riser	Cables	---	G5	✓	✓	---	---
A/930	Air Plenum	---	---	D3	---	---	✓	---
A/931	Service Riser	---	---	F3	✓	---	✓	---
A/932	Switch Cupboard	LV 3	---	G5	✓	✓	---	---
A/933	Switch Cupboard	---	---	H5	✓	✓	---	---
A/934	Service Cupboard	---	---	E6	✓	✓	---	---
A/970	Service Area	---	---	F4	---	---	✓	---
A/971	Service Area	---	---	G5	✓	---	✓	---
A/974	Service Area	---	---	E3	✓	---	✓	---
1/141	Lift Shaft 1	PRM	---	G5	✓	✓	---	---
1/142	Lift Shaft 2	Fire Fighting	---	G5	✓	✓	---	---
1/581	Stairs	Fire Fighting	---	F5	✓	✓	---	---
3/800	Vent Shaft	---	---	B5	---	---	✓	---
4/936	Draught Relief	Eastbound	---	A4	---	---	✓	---
5/935	Draught Relief	Westbound	---	B4	---	---	✓	---

C125-01  
From Level 0

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# Bond Street

## Eastern Ticket Hall

### Level 0

### Ground Level

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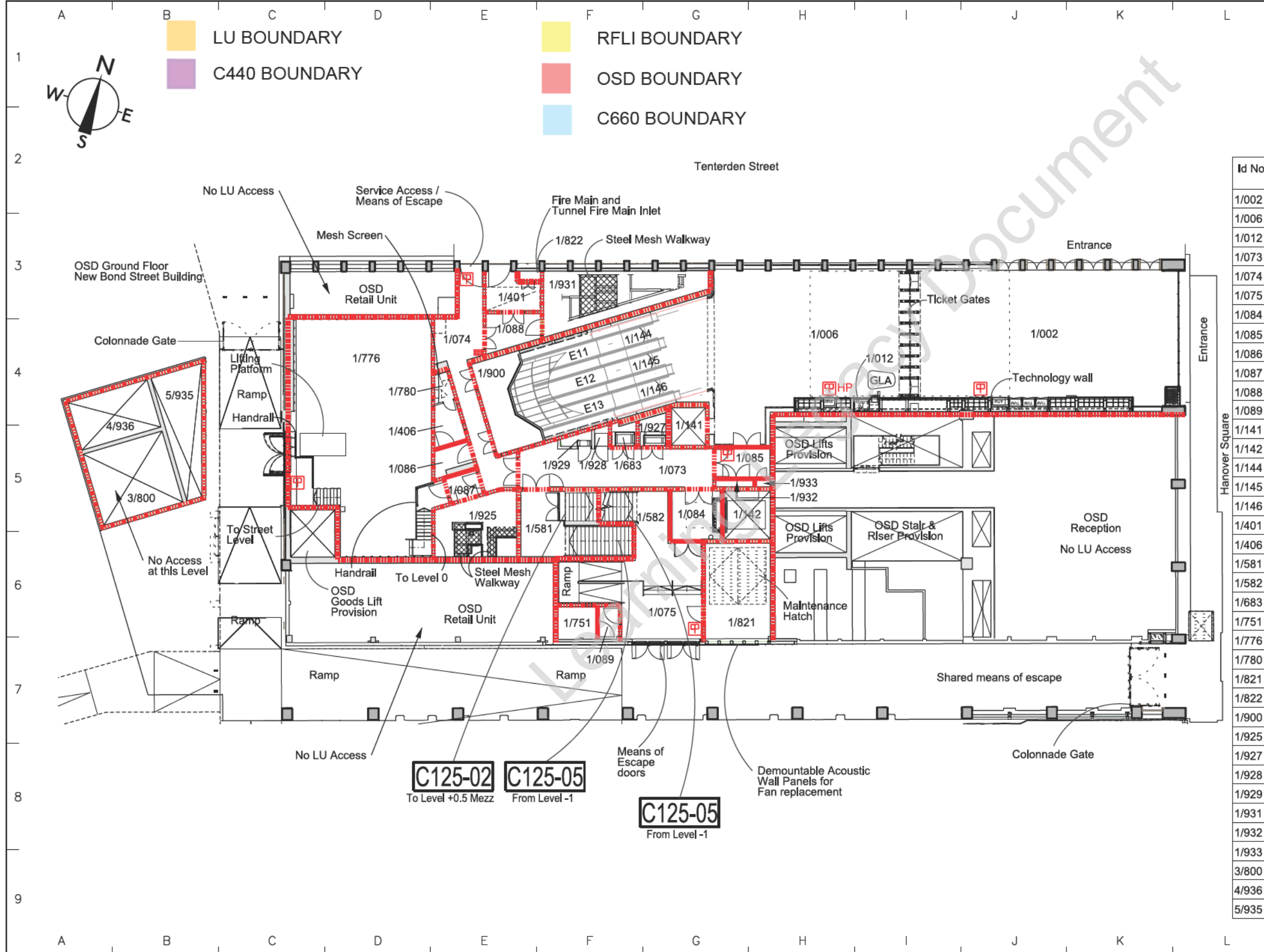
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# DESIGN FIRE PLAN

Sheet 8 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50002	Sheet No: P02	Revision: P02
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Fire Safety measures shown in the description  
of works, additional to legislative requirements,  
are for the purpose of gaining exemptions.



Id No.	Description	Notes	Code	Grid Ref	Fire Precautions			
					D	C	SEP	SUP
1/002	Concourse	Unpaid	001	J4	-	-	✓	-
1/006	Concourse	Paid	011	H4	-	-	✓	-
1/012	GLAP	-	011	I4	-	-	✓	-
1/073	Circ. Area	-	041	G5	✓	✓	-	-
1/074	Circ. Area	-	041	E4	✓	-	✓	-
1/075	Circ. Area	-	041	G6	✓	-	✓	-
1/084	Lobby	-	066	G5	✓	✓	-	-
1/085	Lobby	-	066	G5	✓	✓	-	-
1/086	Lobby	-	066	E5	✓	✓	-	-
1/087	Lobby	-	066	E5	✓	✓	-	-
1/088	Lobby	-	066	E4	✓	✓	-	-
1/089	Lobby	-	066	F6	✓	✓	-	-
1/141	Lift Shaft 1	PRM	116	G4	✓	✓	-	-
1/142	Lift Shaft 2	Fire Fighting	116	G5	✓	✓	-	-
1/144	ESC 11	-	131	F4	✓	-	✓	-
1/145	ESC 12	-	131	F4	✓	-	✓	-
1/146	ESC 13	-	131	F4	✓	-	✓	-
1/401	Bin Store	-	400	E3	✓	-	✓	WM
1/406	Store	-	410	E4	✓	-	✓	WM
1/581	Stairs	FF/ESS 8	590	F5	✓	✓	-	-
1/582	Stairs	ESS 7	590	G5	✓	-	✓	-
1/683	Service Riser	-	820	F5	✓	✓	-	-
1/751	Station Computer Room	-	770	F6	✓	✓	-	E
1/776	Plant Room	Cooling	780	D4	✓	✓	-	-
1/780	Equipment Room	-	780	E4	✓	-	✓	WM
1/821	Service Area	-	041	G6	✓	-	✓	-
1/822	Fire Mains Dropper	LFB Inlets	041	E3	-	✓	-	-
1/900	Service Area	Escalator	820	E4	✓	✓	-	-
1/925	Service Riser	-	820	E5	✓	✓	-	-
1/927	Service Riser	Cables	820	G5	✓	✓	-	-
1/928	Service Riser	-	820	F5	✓	✓	-	-
1/929	Service Riser	-	820	F5	✓	✓	-	-
1/931	Service Riser	-	820	F3	✓	✓	-	-
1/932	Switch Cupboard	LV 3	820	G5	✓	✓	-	-
1/933	Switch Cupboard	-	820	H5	✓	✓	-	-
3/800	Vent Shaft	-	820	B5	-	-	✓	-
4/936	Draught Relief	Eastbound	820	A4	-	-	✓	-
5/935	Draught Relief	Westbound	820	B4	-	-	✓	-

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# Bond Street

## Eastern Ticket Hall

### Level -1

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London Underground

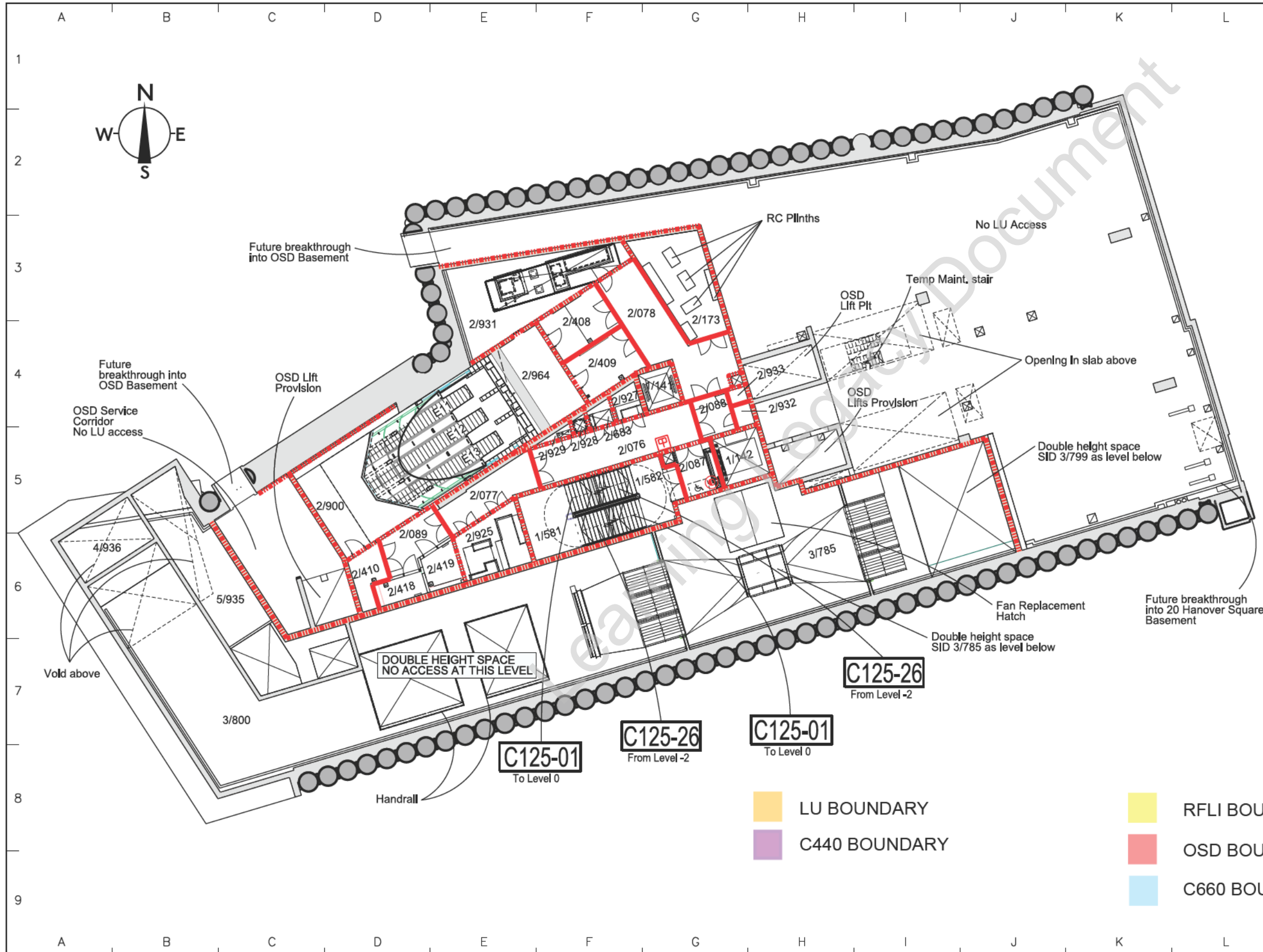
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# DESIGN FIRE PLAN

Sheet 11 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50006	Sheet No: RAH	Revision: P02
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Fire Safety measures shown in the description  
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# Bond Street

## Eastern Ticket Hall

### Level -2 + Intermediate -2

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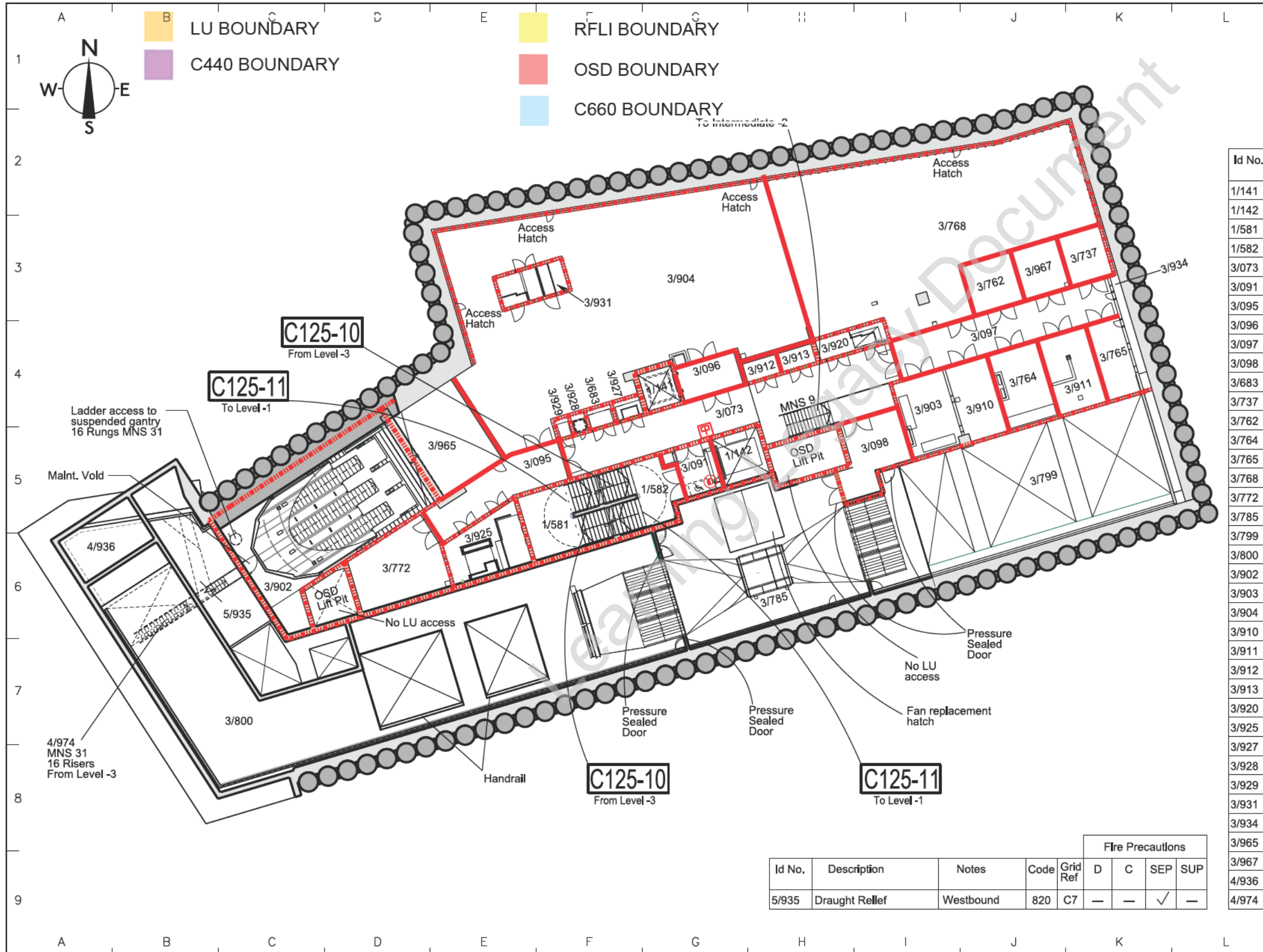
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# DESIGN FIRE PLAN

Sheet 13 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50025	Sheet No:	Revision:
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	Approved: PP	P02

Fire Safety measures shown in the description  
of works, additional to legislative requirements,  
are for the purpose of gaining exemptions.



Id No.	Description	Notes	Code	Grd Ref	Fire Precautions			
					D	C	SEP	SUP
1/141	Lift Shaft 1	PRM	116	G4	✓	✓	—	—
1/142	Lift Shaft 2	Fire Fighting	116	G5	✓	✓	—	—
1/581	Stairs	ESS 7	590	F5	✓	—	✓	—
1/582	Stairs	ESS 8	590	G5	✓	—	✓	—
3/073	Circ. Area	—	041	H4	✓	✓	—	—
3/091	Lobby	Fire Fighting	066	G5	✓	✓	—	—
3/095	Lobby	—	066	E5	✓	✓	—	—
3/096	Lobby	—	066	G4	✓	✓	—	—
3/097	Lobby	—	066	I4	✓	✓	—	—
3/098	Lobby	—	066	I5	✓	✓	—	—
3/683	Service Riser	—	820	F4	✓	✓	—	—
3/737	CER	Third Party	740	K3	✓	✓	—	—
3/762	Equipment Rm	Advertising	780	J3	✓	✓	—	—
3/764	Equipment Rm	Motor Control	780	J4	✓	✓	—	—
3/765	Equipment Rm	Ticket IM	780	K4	✓	✓	—	—
3/768	Equipment Rm	Fan 2	780	I2	✓	✓	—	—
3/772	Pump Room	Washing / Foul	780	D6	✓	✓	—	—
3/785	Fan Room	Fan 2	780	H6	✓	—	✓	—
3/799	Vent Shaft	Chamber	880	J5	—	—	✓	—
3/800	Vent Shaft	—	880	C7	—	—	✓	—
3/902	Service Void	Escalator	820	C6	✓	✓	—	—
3/903	Fan Room	Control	780	I4	✓	—	✓	—
3/904	Fan Room	Pressurisation	780	G3	✓	✓	—	—
3/910	Plant Room	Cooling	780	J4	✓	—	✓	—
3/911	Plant Room	Cooling	780	K4	✓	✓	—	—
3/912	Switch Cupboard	Cables	820	H4	✓	✓	—	—
3/913	Switch Cupboard	LV Cables	820	H4	✓	✓	—	—
3/920	Riser	LV Cables	820	I4	✓	✓	—	—
3/925	Service Riser	—	820	E6	✓	✓	—	—
3/927	Service Riser	Cables	820	F4	✓	✓	—	—
3/928	Service Riser	—	820	F4	✓	✓	—	—
3/929	Service Riser	—	820	F5	✓	✓	—	—
3/931	Service Riser	—	—	E3	✓	✓	—	—
3/934	Service Area	—	—	K4	—	—	✓	—
3/965	Unallocated	—	900	E5	✓	✓	—	—
3/967	Plant Room	Cooling	780	J3	✓	✓	—	—
4/936	Draught Relief	Eastbound	880	B6	—	—	✓	—
4/974	Stairs	MNS 31	590	B6	—	—	—	—

Id No.	Description	Notes	Code	Grd Ref	Fire Precautions			
					D	C	SEP	SUP
5/935	Draught Relief	Westbound	820	C7	—	—	✓	—

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\$\$\$\$\$YTIME\$\$\$\$\$



# Bond Street

## Eastern Ticket Hall

### Level -3

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London Underground

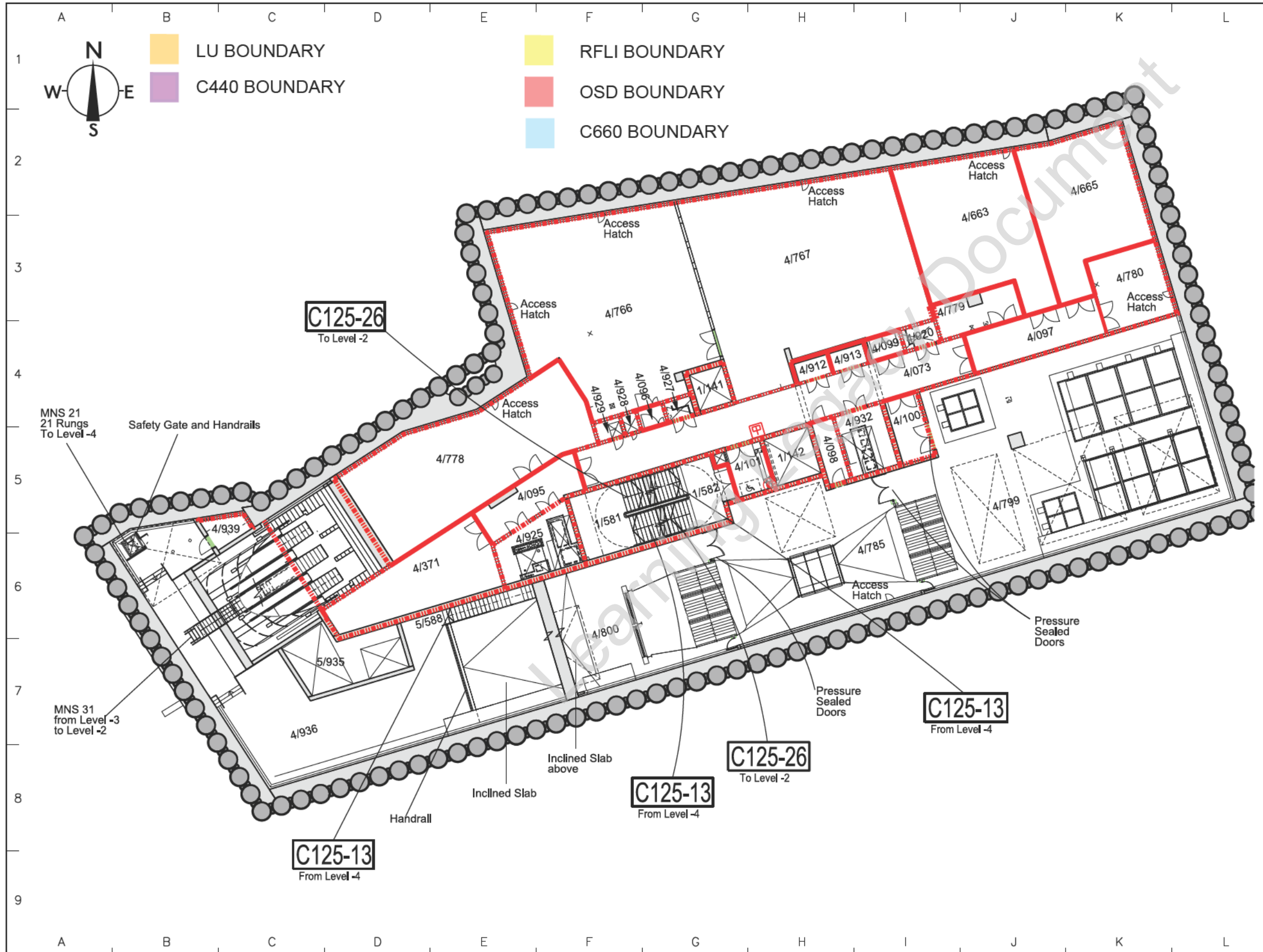
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# DESIGN FIRE PLAN

Sheet 15 of 24

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MS	GA	PP

Fire Safety measures shown in the description  
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# Bond Street

## Eastern Ticket Hall

### Level -4

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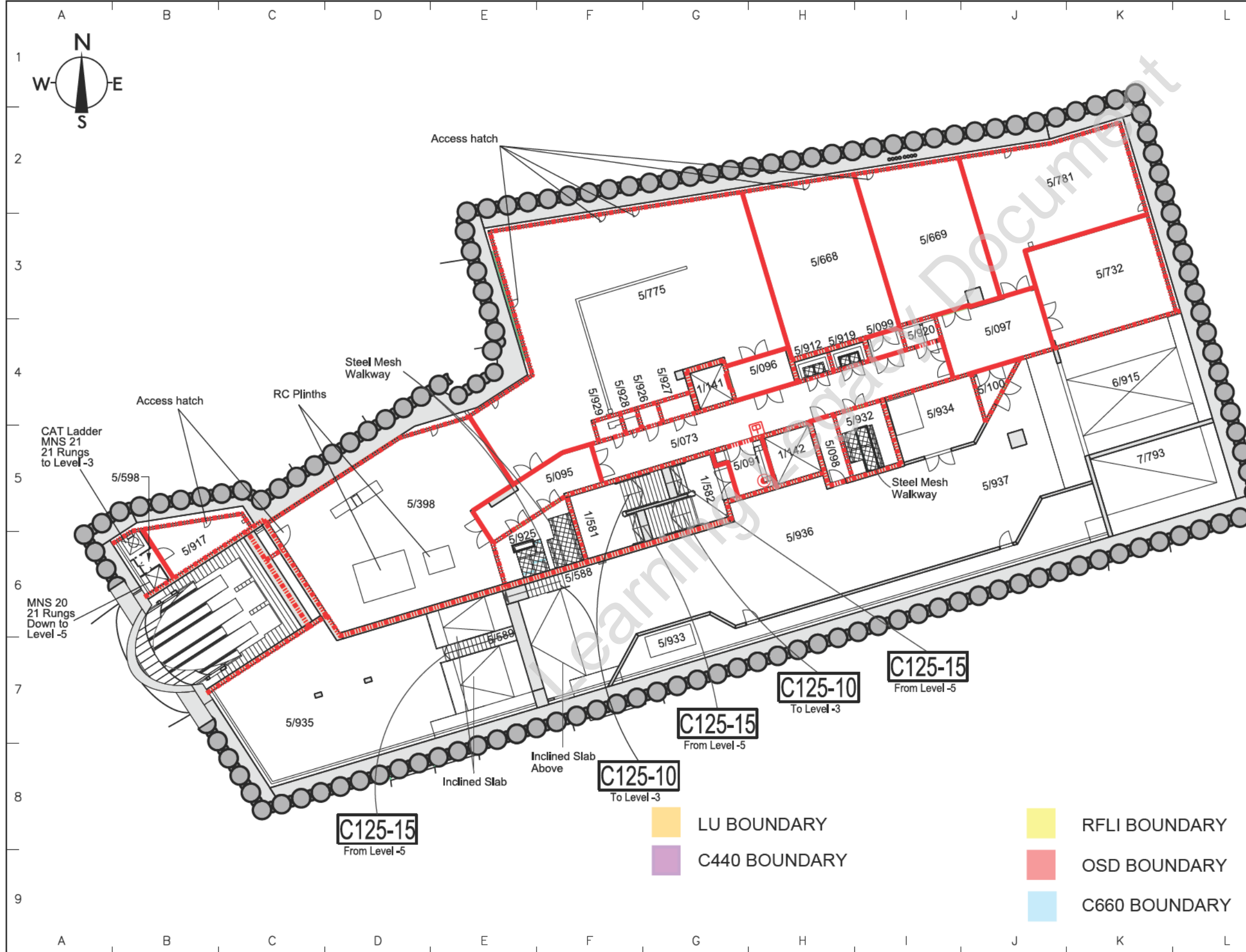
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# DESIGN FIRE PLAN

Sheet 18 of 24

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		P02
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		Approved: PP

Fire Safety measures shown in the description  
of works, additional to legislative requirements,  
are for the purpose of gaining exemptions.



Id No.	Description	Notes	Code	Grid Ref	Fire Precautions			
					D	C	SEP	SUP
1/141	Lift shaft 1	PRM	116	G4	✓	✓	—	—
1/142	Lift Shaft 2	Fire Fight.	116	H5	✓	✓	—	—
1/581	Stairs	Fire Fight.	590	F5	✓	✓	—	—
1/582	Stairs	Fire Fight.	590	G5	✓	✓	—	—
5/073	Circ. Area	—	041	G5	✓	✓	—	—
5/091	Lobby	—	066	G5	✓	✓	—	—
5/095	Lobby	—	066	F5	✓	✓	—	—
5/096	Lobby	—	066	H4	✓	✓	—	—
5/097	Lobby	—	066	J4	✓	✓	—	—
5/098	Lobby	—	066	H5	✓	✓	—	—
5/099	Lobby	—	066	I4	✓	✓	—	—
5/100	Lobby	—	066	J5	✓	✓	—	—
5/398	Plant Room	Water Mlst	780	D6	✓	✓	—	WM
5/588	Stairs	—	510	F6	—	—	—	—
5/589	Stairs	—	510	E7	—	—	—	—
5/598	Stairs	Access Ladder	510	B6	✓	✓	—	—
5/668	Switch Room	LV	610	H3	✓	✓	—	E
5/669	Switch Room	LV	610	I3	✓	✓	—	E
5/732	CER	2	740	K3	✓	✓	—	—
5/781	Plant Room	Cooling	780	J2	✓	✓	—	—
5/775	Fan Room	—	780	F3	✓	✓	—	—
5/912	Riser	LV Cables	820	H4	✓	✓	—	—
5/917	Unallocated	—	900	B6	✓	✓	—	—
5/919	Riser	LV Cables	820	H4	✓	✓	—	—
5/920	Riser	LV Cables	820	I4	✓	✓	—	—
5/925	Service Riser	—	820	E6	✓	✓	—	—
5/926	Switch Cupboard	—	820	G4	✓	✓	—	—
5/927	Service Riser	Cables	820	G4	✓	✓	—	—
5/928	Service Riser	—	820	F4	✓	✓	—	—
5/929	Service Riser	—	820	F5	✓	✓	—	—
5/932	Riser Room	—	820	I5	✓	✓	—	—
5/933	Vent Duct	Westbound	880	G7	—	—	✓	—
5/934	Vent Duct	Eastbound	880	I5	—	—	✓	—
5/935	Draught Relief	Westbound	880	C7	—	—	✓	—
5/936	Draught Relief	Eastbound	880	H6	—	—	✓	—
5/937	Draught Relief	Eastbound	880	J5	—	—	✓	—
6/915	Draught Relief	Eastbound	880	K4	—	—	✓	—
7/793	Vent Shaft	—	880	K5	—	—	✓	—

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# Bond Street

## Eastern Ticket Hall

### Level -5

### Platform Level

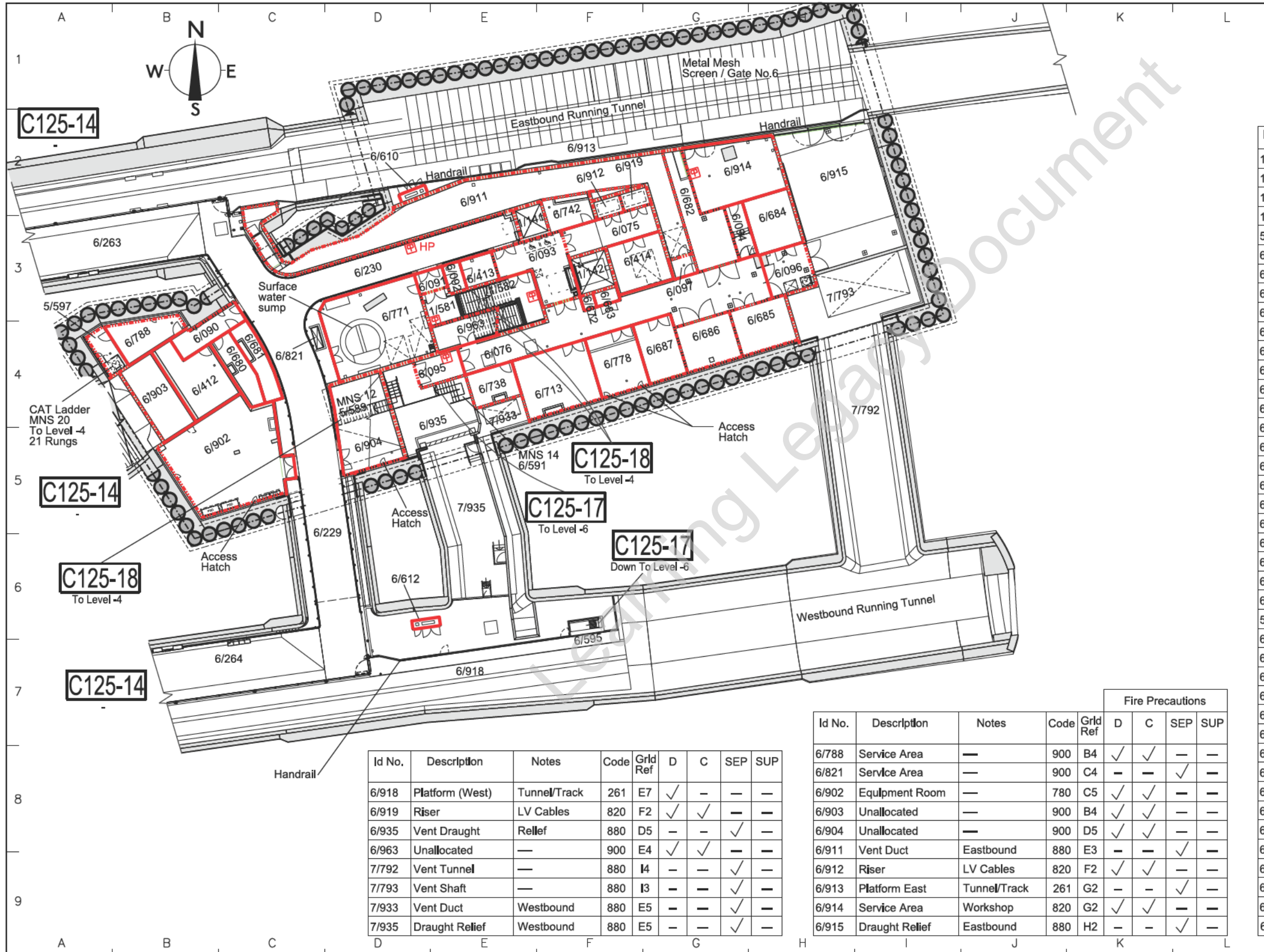
- LU BOUNDARY
- RFLI BOUNDARY
- C440 BOUNDARY
- C660 BOUNDARY

# DESIGN FIRE PLAN

Sheet 20 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50014	Sheet No: P02	Revision: P02
RAH	Drawn: MS	Checked: GA
	Approved: PP	

Fire Safety measures shown in the description of works, additional to legislative requirements, are for the purpose of gaining exemptions.



Id No.	Description	Notes	Code	Grid Ref	Fire Precautions				SEP	SUP
					D	C	SEP	SUP		
1/141	Lift shaft 1	PRM	116	E3	✓	✓	—	—	—	2
1/142	Lift Shaft 2	Fire Flight.	116	F3	✓	✓	—	—	—	2
1/581	Stairs Ess7	Fire Flight.	590	E3	✓	—	✓	—	—	3
1/582	Stairs Ess8	Fire Flight.	590	E3	✓	—	✓	—	—	3
5/589	Stairs	MNS 12	510	D4	✓	✓	—	—	—	3
6/075	Circ. Area	—	041	F3	✓	✓	—	—	—	3
6/076	Circ. Area	—	041	F4	✓	✓	—	—	—	3
6/090	Lobby	—	066	B4	✓	✓	—	—	—	3
6/091	Lobby	—	066	D3	✓	✓	—	—	—	3
6/092	Lobby	—	066	E3	✓	✓	—	—	—	3
6/093	FF Lobby	—	066	F3	✓	✓	—	—	—	3
6/094	Lobby	—	066	G3	✓	✓	—	—	—	3
6/095	Lobby	—	066	E4	✓	✓	—	—	—	3
6/096	Lobby	—	066	H3	✓	✓	—	—	—	3
6/097	Lobby	—	066	G3	✓	✓	—	—	—	3
6/229	Passage	—	190	C5	—	—	✓	—	—	3
6/230	Passage	—	190	D3	—	✓	✓	—	—	3
6/263	Platform	E - Platform 1	261	B3	✓	—	—	—	—	3
6/264	Platform	W - Platform 2	261	C7	✓	—	—	—	—	3
6/412	Store	—	410	B4	✓	✓	—	—	WM	3
6/413	Store	Cleaners	410	E3	✓	✓	—	—	WM	3
6/414	Store	—	410	F3	✓	✓	—	—	WM	3
6/591	Stairs Vent Draught	MNS 14	510	E4	—	—	—	—	—	3
6/595	Stairs	MNS 18	510	F6	—	—	—	—	—	3
5/597	Service Area	Access Ladder	820	A4	✓	✓	—	—	—	3
6/610	Switch Cupb'd	TLPP	610	D2	✓	✓	—	—	—	3
6/612	Switch Cupb'd	—	610	D6	✓	✓	—	—	—	3
6/672	Switch Cupb'd	—	610	F3	✓	✓	—	—	—	3
6/680	Switch Room	LV 5	610	C4	✓	✓	—	—	E	3
6/681	Switch Room	LV 6	610	C4	✓	✓	—	—	E	3
6/682	Transformer Rm	HV 2	810	G3	✓	✓	—	—	IG	3
6/683	Switch Cupb'd	Tunnel LTG/PWR	610	F3	✓	✓	—	—	—	3
6/684	Switch Room	Overhead PW	610	H3	✓	✓	—	—	E	3
6/685	Switch Room	SR HV 1	610	H4	✓	✓	—	—	E	3
6/686	Transformer Rm	HV 1	810	G4	✓	✓	—	—	IG	3
6/687	Switch Room	Signal	610	G4	✓	✓	—	—	—	3
6/713	SER	—	710	F4	✓	✓	—	—	—	3
6/738	CEC Room	—	740	E4	✓	✓	—	—	—	3
6/742	Equipment Room	—	740	F2	✓	✓	—	—	—	3
6/771	Sump Room	—	780	D4	✓	✓	—	—	—	3
6/778	Service Area	Cooling	780	F4	✓	✓	—	—	—	3

Id No.	Description	Notes	Code	Grid Ref	Fire Precautions			
					D	C	SEP	SUP
6/918	Platform (West)	Tunnel/Track	261	E7	✓	—	—	—
6/919	Riser	LV Cables	820	F2	✓	✓	—	—
6/935	Vent Draught	Relief	880	D5	—	—	✓	—
6/963	Unallocated	—	900	E4	✓	✓	—	—
7/792	Vent Tunnel	—	880	I4	—	—	✓	—
7/793	Vent Shaft	—	880	I3	—	—	✓	—
7/933	Vent Duct	Westbound	880	E5	—	—	✓	—
7/935	Draught Relief	Westbound	880	E5	—	—	✓	—

Id No.	Description	Notes	Code	Grid Ref	Fire Precautions			
					D	C	SEP	SUP
6/788	Service Area	—	900	B4	✓	✓	—	—
6/821	Service Area	—	900	C4	—	—	✓	—
6/902	Equipment Room	—	780	C5	✓	✓	—	—
6/903	Unallocated	—	900	B4	✓	✓	—	—
6/904	Unallocated	—	900	D5	✓	✓	—	—
6/911	Vent Duct	Eastbound	880	E3	—	—	✓	—
6/912	Riser	LV Cables	820	F2	✓	✓	—	—
6/913	Platform East	Tunnel/Track	261	G2	—	—	✓	—
6/914	Service Area	Workshop	820	G2	✓	✓	—	—
6/915	Draught Relief	Eastbound	880	H2	—	—	✓	—

RESTRICTED BY LONDON UNDERGROUND LIMITED. ENQUIRIES SHOULD BE DIRECTED TO AUTO 55492

\$\$\$\$\$YTIME\$\$\$\$\$



# Bond Street Platform Concourse & Passageways Level -5

Produced on behalf of the  
Fire Compliance Manager  
London Underground

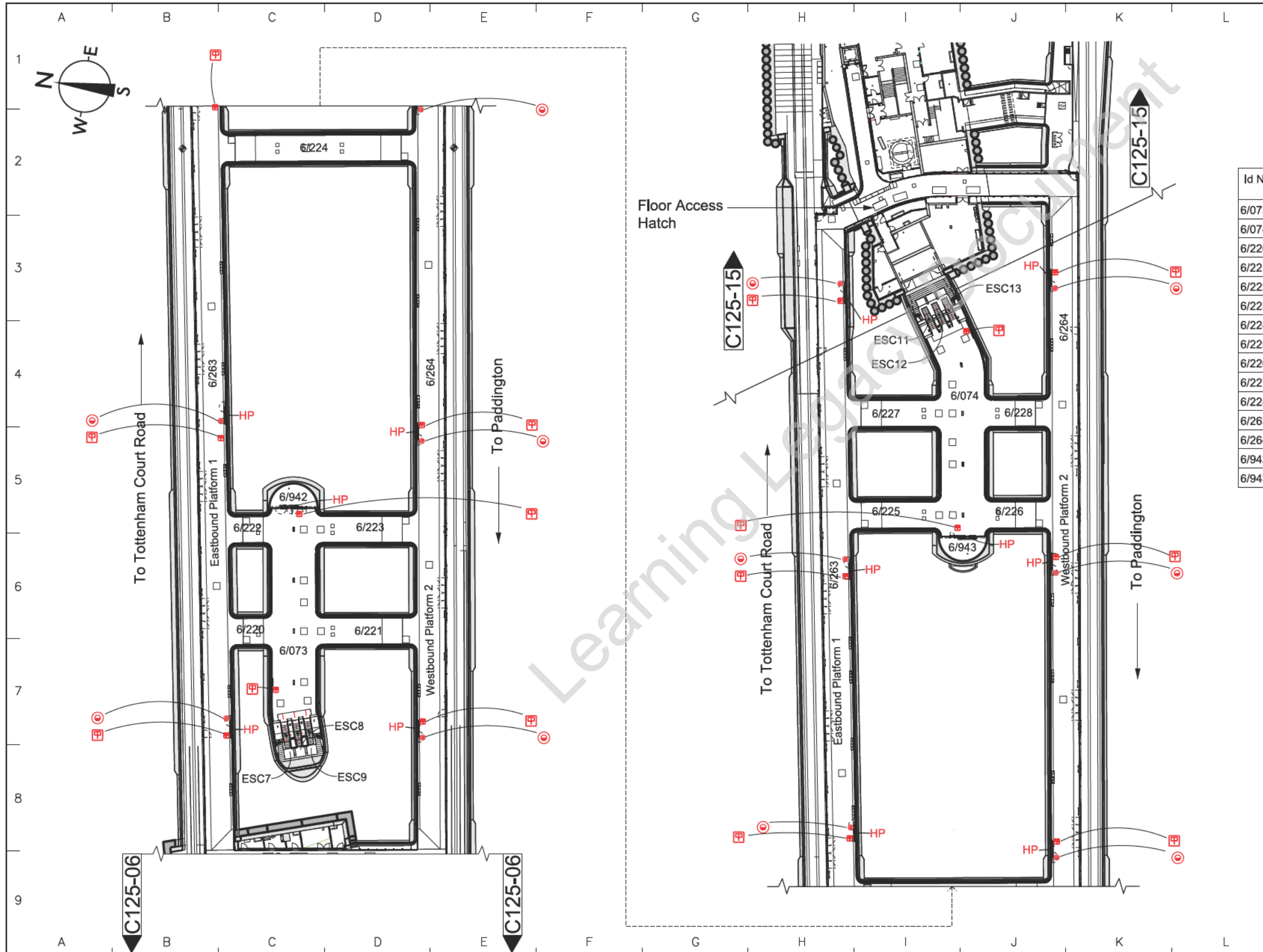
If any alteration is needed to these plans or  
Plans Box contact the Fire Compliance Team  
or make an application for change via S1088

# DESIGN FIRE PLAN

Sheet 19 of 24

Drawing & CAD file Number: C231-COF-E2-DWG-C125-50013	Sheet No:	Revision:
RAH	Drawn: RW	Checked: LF
	Approved: TK	

Fire Safety measures shown in the description  
of works, additional to legislative requirements,  
are for the purpose of gaining exemptions.



Id No.	Description	Notes	Code	Grid Ref	Fire Precautions			
					D	C	SEP	SUP
6/073	Circ. Area	Esc 17, 18, 19	041	C7	-	-	-	-
6/074	Circ. Area	Esc 11, 12, 13	041	I4	-	-	-	-
6/220	Passage	-	190	C6	-	-	-	-
6/221	Passage	-	190	D6	-	-	-	-
6/222	Passage	-	190	C5	-	-	-	-
6/223	Passage	-	190	D5	-	-	-	-
6/224	Passage	-	190	C2	-	-	-	-
6/225	Passage	-	190	I5	-	-	-	-
6/226	Passage	-	190	J5	-	-	-	-
6/227	Passage	-	190	I4	-	-	-	-
6/228	Passage	-	190	J4	-	-	-	-
6/263	Platform	E - Platform 1	261	B4	✓	-	-	-
6/264	Platform	W - Platform 2	261	E4	✓	-	-	-
6/942	Void	-	900	C5	-	-	-	-
6/943	Void	-	900	J6	-	-	-	-

- LU BOUNDARY
- C440 BOUNDARY
- RFLI BOUNDARY
- C660 BOUNDARY





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## Appendix 2 – Critical CCTV Provisions

Awaiting Consultation feedback from London Underground Operations and Security.

Learning Legacy Document