



Hampton Waterworks

London Plan Fire Statement

For Waterfall Hampton Investment Ltd

Revision 03

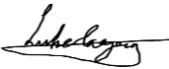


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Prepared By		
Luke Lagaay – Fire Engineer		
Checked By		
Katie Rodaway – Senior Fire Engineer		
Approved By		
Rob Bray MSc, BSc (Hons) – Principal Fire Engineer		

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This report update includes only an updated date reference to reflect the new planning application submission. No technical revisions have been made to the Rev.02 report.	n/a

Additional Background Information of Authors

Luke Lagaay – Luke is a Fire Engineer and is in his second year of working in a fire safety consultancy role. Luke has a BEng in Civil Engineering, an MSc in Environmental Engineering, and is currently enrolled in the MSc of Fire Safety Engineering at the University of Central Lancashire. Luke has experience consulting on the fire safety design of structures across various sectors, including preparing Fire Safety Strategies, Fire Statements and External Wall Assessments. His experience extends into various sectors, including residential.

Katie Rodaway – Katie is a Fire Engineer with over four years' experience. Katie holds a Masters (MEng) degree in Civil and Structural Engineering from the University of Leeds. Katie has experience in developing fire strategy reports for commercial and residential developments. Katie is also is an Associate member (AIFireE) of the Institution of Fire Engineers (IFE).

Rob Bray – Rob is a fire engineer with over seven years of fire engineering experience. Rob has an undergraduate degree in fire from the University of Central Lancashire. Rob is an Erasmus Mundus alumnus with a joint master's degree in fire safety engineering from the Universities of Edinburgh, Ghent and Lund. Rob is the former recipient of the SFPE UK Chapter's 'Up and coming' fire engineer of the year award as well as the IMFSE Margaret Law award. Having previously worked as a firefighter in Lancashire, Rob understands the value that early-stage fire strategy implementation can have on key stakeholders upon project handover. Rob is a member of the Institution of Fire Engineers (MIFireE).

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1. INTRODUCTION

Hydrock has been commissioned by the Waterfall Hampton Investment Ltd to provide a Fire Statement document to support the planning application for the conversion of two existing, Grade II Listed industrial buildings into residential units. The blocks, named Karslake and Ruston & Ward are located of Upper Sunbury Road and Lower Sunbury Road in the London Borough of Richmond Upon Thames.

1.1 Fire Safety Guidance

This Fire Statement has been developed to satisfy the requirements of the London Plan [March 2021] Policy D12 (A and B). BS9991:2015 will be used to demonstrate compliance with the Part B (Fire Safety) functional requirements of the Building Regulations 2010 (as amended).

It is noted that this guidance document does not set out statutory requirements; they are intended to provide guidance only for generic building designs. An alternative approach can be applied to achieve an acceptable level of safety commensurate with the functional requirements of the Building Regulations 2010 (as amended). Whilst alternative methods have been based on accepted codes of practice, they will be subject to the agreement of the approving authorities.

The Fire Statement demonstrates that the development will provide a sufficient level of fire safety in regard to the life safety of occupants and firefighters. The document demonstrates areas which exceed the minimum levels of fire safety provisions required by prescriptive fire safety guidance.

1.2 Fire Statement

The purpose of this Fire Statement is to outline the fire safety design of the development and to demonstrate that all structures, systems, and components related to the Hampton Waterworks conversion are to be designed to reduce the risk to life and the risk of serious injury in the event of a fire. Additionally, the Fire Statement will demonstrate that the fire safety design of the development will enable duty holders to consider and manage the risk of fire, as well as enabling suitable provisions for the Fire and Rescue Service and firefighting operations.

This Fire Statement sets out the following objectives:

- Demonstrate that the development will satisfy Part B (Fire Safety) functional requirements of the Building Regulations 2010 (as amended);
- Demonstrate that the fire safety of the development has been considered from the outset and satisfies the requirements of the London Plan Policy D12(A) and D12(B);
- Identify any fire safety risks of the development and to outline mitigatory measures in place;

- Identify any risks to Fire Service access and provisions for firefighting and to outline mitigatory measures in place;
- Present a clear, concise overview of the fire safety design of the development which provides sufficient information to the relevant authorities and duty holders.

Policy D12(B) of the London Plan states that “all major development proposals should be submitted with a Fire Statement, which is an independent fire strategy, produced by a third party, suitably qualified assessor”. Policy D12(B) further specifies that the Fire Statement should detail how the development proposal will function in terms of:

1. The building’s construction: methods, products, and materials used, including manufacturers details;
2. The means of escape for all building users: suitably designed stair cores, escape for building users who are disabled or require level access, and associated evacuation strategy approach;
3. Features which reduce the risk to life: fire alarm systems, passive and active fire safety measures, and associated management and maintenance plans;
4. Access for fire service personnel and equipment: how this will be achieved in an evacuation situation, water supplies, provision and positioning of equipment, firefighting lifts, stairs and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these;
5. How provision will be made within the curtilage of the site to enable fire appliances to gain access to the building; and
6. Ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures.

1.3 Basis of Report

This Fire Statement was developed based on architectural information and drawings provided by LOM Architects. The information used in the development of this Fire Statement is outlined in Table 1.

Table 1 Information on which the Fire Statement is based

Description	Drawings No.	Revision	Date
Proposed GA Plan – Karslake L00 and L01	1685-A-P110	C	25.07.2022
Proposed GA Plan – Karslake L02, L03 and L04	1685-A-P111	D	25.07.2022
Proposed GA Plan – Ruston & Ward L00 and L01	1685-A-P112	C	25.07.2022
Proposed GA Plan – Ruston & Ward L02 and L013	1685-A-P113	D	25.07.2022
Proposed GA Basement Plan	1685-A-P114	C	25.07.2022
Proposed Site Plan	1685-A-P100	G	04.11.2022
Proposed Elevations: Karslake Sheet 01	1685-A-P201	C	25.07.2022
Proposed Elevations: Ruston & Ward Sheet 01	1685-A-P203	D	25.07.2022
Proposed Elevations: Karslake Sheet 02	1685-A-P202	C	25.07.2022
Proposed Elevations: Ruston & Ward Sheet 02	1685-A-P203	D	25.07.2022
Topographical & Buried Services Survey Karslake and Ruston & Wards Buildings Hampton Waterworks.	N/a	A	Oct 2014

2. PROJECT OVERVIEW

2.1 Site Description

The Hampton Waterworks scheme consists of the conversion of an existing industrial site into residential buildings supporting a variety of different accommodation types. The site, consisting of two blocks named Karlslake and Ruston & Ward, is accessed from both Lower Sunbury Road and Upper Sunbury Road as indicated in Figure 1. The site also contains the storehouse and cottages in between Karlslake and Ruston & Ward which are being converted into three residential units. It is noted that the storehouse and cottages are not included as part of this Fire Statement.



Figure 1 Site location

2.2 Karlslake Building

The Karlslake building is provided with residential units on the ground floor with independent access from external. All other flats are accessed from internal single stairs. For the 20 units proposed in this block, there is a variety of different unit types including open-plan units, gallery units and split-level units.

For the purposes of the fire strategy, the building height for this block is measured from the finished floor level of the uppermost habitable level to the lowest point on the adjacent external ground level. Based on this methodology, the building measures approximately 12.0m in height. This is indicated on the elevation mark-up of the block included as Figure 2.

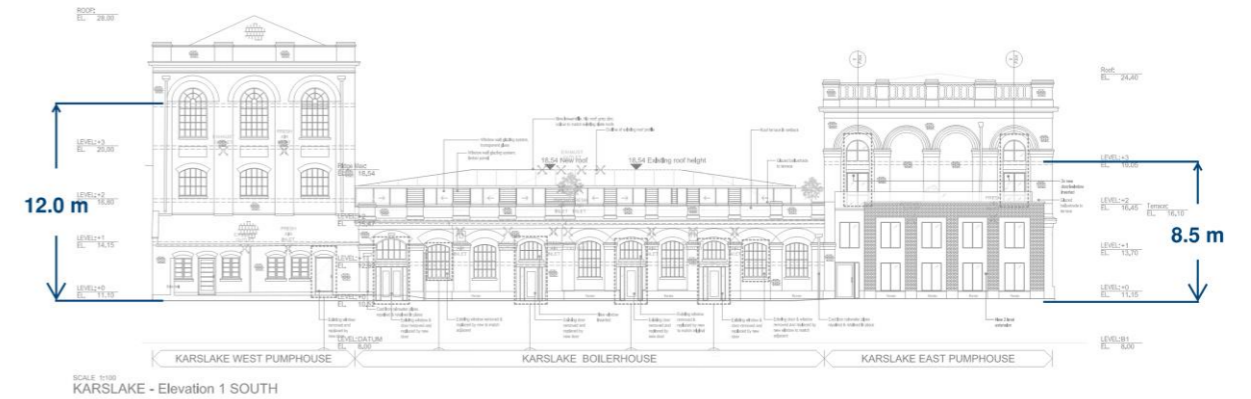


Figure 2 Karlslake Building Height

2.3 Ruston & Ward Building

Similar to the Karlslake building, the Ruston & Ward building is provided with residential units on the ground floor with independent access from the external. All other flats are accessed from internal single stairs. For the 13 units proposed in this block, there is a variety of different unit types including open-plan units, gallery units and split-level units.

For the purposes of the fire strategy, the building height for this block is measured from the finished floor level of the uppermost habitable level to the lowest point on the adjacent external ground level. Based on this methodology, the building measures approximately 8.7m in height. This is indicated on the elevation mark-up of the block included as Figure 3.

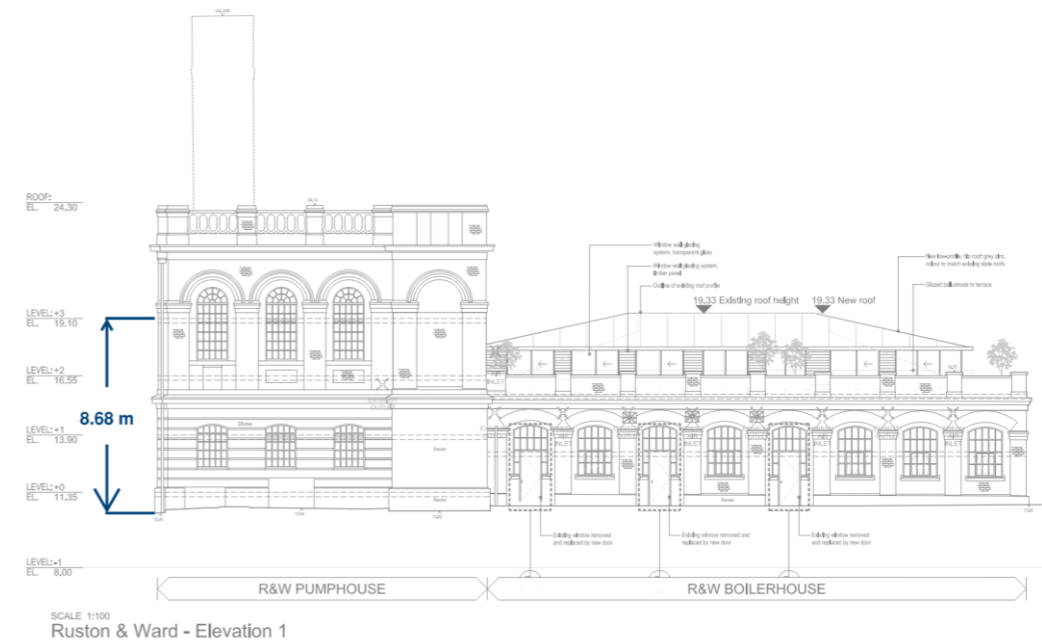


Figure 3 Ruston & Ward Building Height

2.4 Fire Safety Considerations

In support of this Fire Statement, respective 'Indicative Fire Compartmentation Drawings', prepared by Hydrock, can be found in Appendix A. Further details of the general arrangements can also be seen on these drawings.

3. MEANS OF ESCAPE

This section of the Fire Statement is aimed at providing information in regard to the means of escape for occupants. In accordance with the London Plan, the proposed means of escape satisfies the policy requirements as indicated in Table 2.

Table 2 Means of escape London Plan policy references

Policy Reference	Policy Requirement
Policy D12 – Clause A1	<p><i>[Development proposals must ensure that they] identify suitably positioned and unobstructed outside space:</i></p> <ul style="list-style-type: none"> • <i>For fire appliances to be positioned on; and</i> • <i>Appropriate for use as an evacuation assembly point.</i>
Policy D12 – Clause A4	<i>[Development proposals must ensure that they] provide suitable and convenient means of escape, and associated evacuation strategy for all building users.</i>
Policy D12 – Clause A5	<i>[Development proposals must ensure that they] develop a robust strategy for evacuation which can be periodically updated and published, and which all building users can have confidence.</i>
Policy D12 – Clause B2	<i>[The Fire Statement should detail how the development proposal will function in terms of] the means of escape for all building users: suitably designed stair cores, escape for building users who are disabled or require level access, and associated evacuation strategy approach.</i>
Policy D12 – Clause 3.12.5	<i>Developments, their floor layouts and cores need to be planned around issues of fire safety and a robust strategy for evacuation from the outset, embedding and integrating a suitable strategy and relevant design features at the earliest possible stage, rather than features or products being applied to pre-determined developments which could result in less successful schemes which fail to achieve the highest standards of fire safety.</i>
Policy D12 – Clause 3.12.7	<i>The provision of stair cores which are suitably sized, provided in sufficient numbers and designed with appropriate features to allow simultaneous evacuation should also be explored at an early stage and provided wherever possible.</i>
Policy D5 – Clause B5	<i>[Development proposals should] be designed to incorporate safe and dignified emergency evacuation for all building users. In all developments where lifts are installed, as a minimum at least one lift per core (or more subject to capacity assessments) should be a suitably sized fire evacuation lift suitable to be used to evacuate people who require level access from the building.</i>

3.1 Evacuation Strategy

The evacuation strategy for the residential units is based on a ‘stay-put’ evacuation strategy where only the occupants within the unit of fire origin are to be alerted/evacuate and all other occupants within the building are to remain in place, unless they are directly affected by fire or smoke. This does not preclude the event that

occupants may wish to self-evacuate at any time. Any additional evacuation is at the discretion and direction of the Fire Service where they feel it is necessary to do so during operational procedures.

Non-residential areas will be based on a simultaneous evacuation approach where all occupants in the alarm zone will evacuate.

3.1.1 Provisions for Disabled Occupants

Lifts for Evacuation

All common stair cores within both buildings (i.e both Karlake and Ruston & Ward) are provided with one lift serving each floor. Each of these lifts will be a ‘passenger lift used for evacuation’. In accordance with BS 9991:2015, evacuation lifts are to follow the guidance of Annex G of BS 9999:2017, and be designed and installed in accordance with BS EN 81-76: 2019.

The passenger lift used for evacuation in each core is to be designed to meet the following requirements:

- The lift is to remain operational during a fire and can be operated independently by an occupant. Therefore, it is not to be provided with an automatic recall to the ground floor linked to the fire detection system;
- A secondary power supply is to be provided to the lift to ensure the lift remains available for use in the event of loss of power.

The lifts are to allow for the independent evacuation by occupants (i.e. does not rely on external assistance). The lifts are to be designed and installed in accordance with BS EN 81-20 and BS EN 81-70, with a manual recall (firefighters) switch provided.

The lift is to be provided with a means of water ingress protection via a raised ramp floor to the lift landing entrance on all storeys.

The provision of a passenger lift with a secondary power supply, which remains operational during a fire and can be operated by residents, satisfies the intent of Policy D5(B5) and allows for those with mobility issues to self-evacuate from the upper levels if required.

Current arrangements show that the lift shaft at stair 01 in Karlake currently opens directly into the apartments. This is a non-compliant arrangement and will not be agreed upon with the authority if the lift is to be used for evacuation.

In order to maintain compartmentation, a fire curtain would be necessary within the apartment to remove this connection and ensure that the lift is available for evacuation in a fire incident. However, as this is an evacuation

lift, a fire curtain would remove the availability of the lift in the event of a fire in this apartment. A fire curtain would also need to be maintained and would not be a viable option. Therefore, one of the following two options are to be implemented:

- A lobby is to be provided between the apartment and the lift access. This lobby needs to be outside of the occupation of the flat owner as the lobby needs to be treated as a fire sterile space with no potential for stored items. This is generally only achieved by means of building management enforcement;
- The internal access to the lift is removed.

3.2 Horizontal Means of Escape

Horizontal means of escape for each development can be summarised as follows:

Karslake Block

- Basement floor: The cinema room is provided with access via a protected lobby to the single stair core. The lobby provided between the stair and the Cinema room is to be ventilated and the basement and upper storeys are to be separated within the staircase at ground level.
- Ground Floor Independent Units: The ground floor maisonettes and gallery flats have independent escape direct to the external except for Unit 10 and Unit 12 which are accessed via a lobby and stair.
- Upper-Level Floors: All upper-level units are provided with access via a single stair and common corridor approach in the respective cores. Both stair cores discharge via a protected route that is lobby protected from all accommodation and which leads to a final exit.

Ruston & Ward Block

- Basement floor: The Plant room is provided with access directly to the single stair core. A ventilated lobby is to be provided between the Plant room and stair or the basement and upper storeys are to be separated within the staircase at ground level.
- Ground Floor Independent Units: The ground floor maisonettes and gallery flats have independent escape direct to the external except for Unit 6, 8 and 9 which are accessed via a lobby and stair.
- Upper-Level Floors: All upper-level units are provided with access via a single stair and common corridor approach. The stair core discharges via a protected route that should be lobby protected from the ancillary plant area and all residential accommodation. The current proposals indicate that the final discharge route is not lobby protected from the bicycle stores on the ground level. It is proposed to limit the number of bikes being stored or provide ventilation ducts serving the room directly as an alternative to providing an additional lobby given this may be difficult as the building is grade two listed.

Further information is required as the design progresses and this would need to be discussed and agreed with the approving authority.

The fire detection and alarm system (covered in Section 4) will have interfaces and links as necessary to operate equipment/devices so as to not impede on the safe escape of occupants (e.g. automatic release of electrically powered doors, etc.).

3.2.1 *Internal Escape within Residential Units*

There are five different residential unit types provided across the two different buildings. These can be summarised as follows:

- Gallery units;
- Single level open-plan units;
- Two-level open-plan units (with no storey above 4.5m above ground level);
- Two-level houses (with only one storey more than 4.5m above ground level);
- Two-level houses (with more than two storeys more than 4.5m above ground level);
- Single level (traditional) units.

All units will be designed in accordance with the relevant requirements as specified within BS9991:2015. Where any deviations from prescriptive guidance are proposed, this will be developed in discussion with the Approving Authorities and will be subject to their agreement.

Unit 10 within Karslake and Unit 8 within Ruston & Ward are to be provided with a partitioning screen at the upper level which will block early warning signs of fire development from the level below and therefore the units are no longer classed as gallery flats but as two-level open-plan units. Unit 10 and Unit 8 should now either be provided with a protected entrance lobby or if a lobby is not implemented a justification provided as follows:

- Category LD1 fire detection and alarm system designed, installed, and commissioned in accordance with BS5839-6:2019.
- Apartments are to be provided with a sprinkler system, designed as a Category 2 system in accordance with BS9251:2014.
- Hob detection is to be provided to both units.

Flats will need to be discussed and agreed with the approving authorities as the design progresses.

3.2.2 Internal Escape within Ancillary Areas

The travel distances within the ancillary areas are in accordance with the requirements set out in BS9991:2015. Travel distance requirements are also met for the cinema room within the basement of Karlake.

3.3 Vertical Means of Escape

3.3.1 Stair Discharge

All stairs are to be designed as protected stairways. Each stairway is to discharge either direct to the external, or via a protected route leading to a final exit which itself is lobby protected from all accommodation.

The provision of lifts, which are suitable for use during a fire incident, requires consideration to be given to the discharge from the lift shafts. It is considered necessary to provide an equivalent level of fire safety to all occupants, irrespective of whether they utilise the protected stairway or the lift shafts. Therefore, the final discharge from the lifts is to be either direct to the external or via a protected route leading to a final exit which itself is lobby protected from all accommodation.

The current proposals indicate that the final discharge route is not lobby protected from the bicycle stores (i.e. there is no lobby provided between the protected escape route and the wall hung bicycle storage rooms) on the ground level within the Ruston & Ward Block. It is proposed to discuss and agree with the approving authorities that the fuel load of the bikes being stored is not great enough to cause smoke logging of the escape route or provide ventilation ducts serving the room directly as an alternative to providing an additional lobby given this may be difficult as the building is grade two listed. Further information is required as the design progresses and this would need to be discussed and agreed with the approving authority.

3.3.2 Stair Construction

Each of the stair cores provided to both Karlake and Ruston and Ward act as independent staircases and form part of the only escape routes from residential accommodation on the upper storeys. Therefore, each stair is treated as a single stair.

All stairs are to be constructed in accordance with BS5385-1:2010 and have flights and landings constructed of limited combustibility (European Class A2-s3, d2 or better). In the case of the one staircase in the Karlake section which is 3-storeys, there is no requirement for the construction of the stair to utilise materials of limited combustibility. It is noted that fire resistance would be required where the stair provides any support to the lift shaft it encircles and the linings of the stair are still required to meet the surface spread of flame requirements.

All protected stairs are to achieve a minimum width of 750mm. From the current GA's provided, the widths appear to have been met.

3.3.3 Use of Protected Stairs

A protected stairway needs to be relatively free of potential sources of fire. In accordance with Clause 21.1 of BS9991:2015, access hatches should not be situated within a means of escape stair unless providing smoke control or pressurisation for that staircase. It is noted from the general arrangements that there are to be no service risers accessed directly from the stair. All service risers are to be accessed from the common corridors or ancillary accommodation.

3.4 Evacuation Assembly Points

There are a number of available assembly points for both the Karlake and Ruston and Ward blocks. As illustrated in Figure 4, indicative assembly points are available which avoids the introduction of unnecessary life safety risks (i.e. crossing active roadways) ensuring that occupants can assemble a safe distance away from the building in an evacuation incident without impeding Fire Service access to the site.

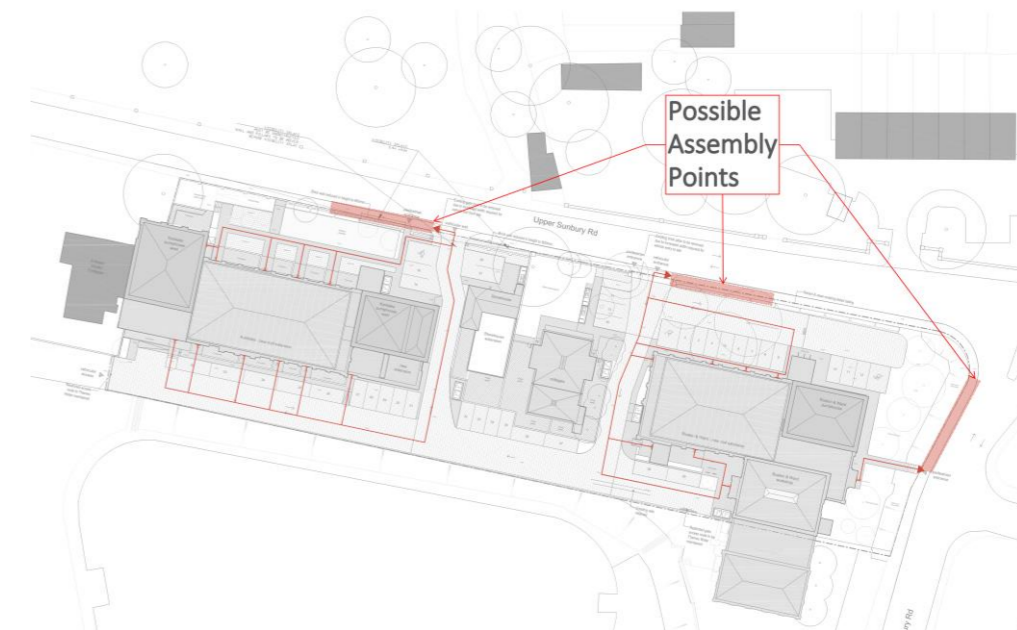


Figure 4 Indicative assembly points

However, as the buildings are primarily residential buildings that operate a 'stay-put' strategy, there is to be no formal management strategy where any on-site staff will initiate a full simultaneous evacuation of the building; therefore, the assembly point is not a managed location. Where residents do self-evacuate, there are numerous surrounding areas where they are able to safely move away from the building.

4. ACTIVE FIRE SAFETY MEASURES

This section of the Fire Statement is aimed at providing information in regard to the active fire safety measures recommended for the development. In accordance with the London Plan, the proposed active fire safety measures satisfy the policy references as indicated in Table 3.

Table 3 Active fire safety measures London Plan policy references

Policy Reference	Policy Requirement
Policy D12 – Clause A2	<i>[Development proposals must ensure that they] are designed to incorporate appropriate features which reduce the risk to life and the risk of serious injury in the event of a fire; including appropriate fire alarm systems and passive and active fire safety measures.</i>
Policy D12 – Clause B3	<i>[The Fire Statement should detail how the development proposal will function in terms of] features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans.</i>

4.1 Fire Detection and Alarm Systems

All units are to be provided with a Category LD1 fire detection and alarm system designed, installed, and commissioned in accordance with BS5839-6:2019. The Category LD1 system is specified to provide detection coverage in all areas of the apartment, except for bathrooms.

In accordance with Clause C.6 of BS5839-6:2019, Grade D1 systems consist of one or more mains-powered smoke and/or heat alarms, each with a sealed-in standby supply consisting of a battery or batteries. All apartments will require a Category LD1 system regardless of whether they are to be provided for rental usage.

It is proposed to provide an L5 fire detection system within the common residential areas (i.e. residential common corridors, stairs, etc.). The purpose of this system is only to activate the relevant smoke ventilation systems in a fire scenario; therefore, no sounders are to be provided in these areas. The fire detection and alarm system is to be designed and installed in accordance with BS5839-1:2017.

It is proposed to provide Category L2 fire detection and alarm coverage to the ancillary accommodation areas. However, this is subject to further design review to be developed as part of the Fire Safety Strategy for the buildings.

4.2 Smoke Ventilation

Ancillary Areas

Where ancillary accommodation is separated from the single means of escape route (i.e. single stair or discharge route), it is generally proposed to provide the following ventilation to the lobby space. In these instances, a 0.4m² permanent natural ventilation is to be provided.

Residential Common Corridors

In accordance with Figure 6 of BS9991:2015, in a single stair building (that is above 11m or is provided with more than 3 levels above ground), a ventilated lobby is to be provided as means of protection to the stair from smoke ingress. Therefore, a ventilated protected lobby is to be provided to stair 01 of Karslake.

The residential common corridors within Karslake do not exceed the prescriptive travel distance limits of BS9991:2015; therefore, it is generally proposed to provide one of the following means of ventilation to the space (subject to further design review and coordination with specialists at a later design stage):

- AOV's to the exterior of the building with a minimum free area of 1.5m².
- A natural smoke shaft in accordance with Clause 14.2.3 of BS9991.
- A mechanical smoke ventilation system in accordance with Clause 14.2.4 of BS9991:2015.
- A pressure differential system.

In accordance with Figure 8 of BS9991:2015, in a single-stair building (that is classified as a small building), a ventilated lobby is not required as means of protection to the stair from smoke ingress. Therefore, a ventilated lobby is not to be provided to stair 03 of Ruston & Ward.

The residential common corridors within Ruston & Ward do not exceed the prescriptive travel distance limits of BS9991:2015.

Stairs

A 1.0m² free area automatic opening vent (AOV) is to be provided at the head of each stair.

Basement

If the basement of the Workshop is existing and has not changed use based on the proposals then no additional provisions are necessary. This is to be clarified as the design progresses and updated as necessary.

4.3 Emergency Signage

Escape signage is to be provided throughout the building designed and installed in accordance with BS5499:2013. Signage utilised throughout the building is to be consistent and in accordance with BS ISO 3864-1:2011.

4.4 Emergency Lighting

Emergency lighting is to be provided throughout the development designed, installed, and commissioned in accordance with BS5266-1:2016.

4.5 Automatic Water Fire Suppression Systems (AWFSS)

The Karlake building measures above 11m in height. Therefore, the entire Karlake block is to be provided with sprinkler protection. In this block, sprinkler protection is generally to be provided throughout the development on the following basis (subject to further design review and discussion with the approving authority, which may lead to the implementation of BS9251:2021 – *see note*):

- Apartments and ancillary accommodation are to be provided with a sprinkler system, designed as a Category 2 system in accordance with BS9251:2014.

NOTE: BS9251:2014 is referenced as the British Standard to be followed. At the time of this report, BS9251:2021 has been published (30 June 2021). BS9991:2015 and Approved Document B – Volume 1:2020 reference BS9251:2014 (dated reference), which is the guidance used for the fire safety design of the building.

The Ruston & Ward building measures below 11m in height. Therefore, the Ruston & Ward building is not required to be provided with sprinkler protection. However, open-plan apartments, including gallery flats are required to be provided with sprinkler protection in accordance with BS9251:2014.

5. PASSIVE FIRE SAFETY MEASURES AND CONSTRUCTION DETAILS

This section of the Fire Statement is aimed at providing information in regard to the passive fire safety measures recommended for the development. In accordance with the London Plan, the proposed passive fire safety measures satisfy the policy references as indicated in Table 4.

Table 4 Passive fire safety measures London Plan policy references

Policy Reference	Policy Requirement
Policy D12 – Clause A2	<i>[Development proposals must ensure that they] are designed to incorporate appropriate features which reduce the risk to life and the risk of serious injury in the event of a fire; including appropriate fire alarm systems and passive and active fire safety measures.</i>
Policy D12 – Clause A3	<i>[Development proposals must ensure that they] are constructed in an appropriate way to minimise the risk of fire spread.</i>
Policy D12 – Clause B1	<i>[The Fire Statement should detail how the development proposal will function in terms of] the building’s construction: methods, products and materials used, including manufacturers’ details.</i>
Policy D12 – Clause B3	<i>[The Fire Statement should detail how the development proposal will function in terms of] features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans.</i>

5.1 Elements of Structure

The height of the top storey above ground level for the Karslake building is 12m and for the Ruston & Ward building is 8.7m. Therefore, in accordance with Table 4 of BS 9991:2015, elements of structure for both buildings is to achieve 60 minutes with regard to load-bearing capacity.

5.2 Compartmentation

An overview of the key fire resistance provisions within the development can be summarised as follows:

- All floors within the development are to be designed as compartment floors achieving the same level of fire resistance as required for the elements of structure.
- All protected shafts which pass through compartment floors are to achieve the same level of fire resistance as required for the elements of structure.
- All residential units are to be separated from all other areas of the building by at least 60-minute fire rated construction (FD30S fire doors onto internal common corridors).

Ancillary accommodation is to be enclosed in fire rated construction, in accordance with the requirements of Table 15 of BS9991:2015.

5.2.1 Fire Doors

Fire doors are to meet the requirements outlined within BS9991:2015.

5.3 Internal Linings

The surface linings are to be in accordance with Table 5 throughout the development.

Table 5 Internal lining requirements

Location	British Standard Performance Class ^[1]	European Performance Class ^[2]
Non-residential rooms having an area not more than 30m ²	3	D-s3, d2
Residential rooms having an area not more than 4m ²	3	D-s3, d2
All other rooms	1	C-s3, d2
Circulation spaces within dwellings	1	C-s3, d2
Other circulation spaces	0	B-s3, d2

Notes

1. Relates to performance measures in BS476 Parts 6 & 7 criteria
1. Relates to performance determined in accordance with BSEN13501-1:2018

The surface linings of the walls and ceilings should generally conform to the classifications outlined in Table 5. Parts of walls in rooms may be of a lower class but not lower than Class 3 (national class) or Class D-s3, d2 (European class) provided that the total of those parts in any one room does not exceed 50% of the floor area of the room (subject to a maximum of 60m²).

5.4 Fire-Stopping Elements

Fire-stopping elements are to be implemented in order to maintain the level of fire-resisting construction in all walls and ceilings. In every joint, imperfection of fit, and opening to allow services to pass through the walls, fire-stopping elements should the same level of fire-resisting construction as required for the floor/wall it replaces.

5.5 External Wall Construction

Where the top storey of a residential building is not more than 18m above ground level there are no explicit restrictions on the combustibility of the external wall construction noted within BS9991:2015. However, Requirement B4 of Schedule 1 to the Building Regulations 2010 (as amended) requires that “...the external walls of the building shall adequately resist the spread of fire over the walls and from one building to another, having regard to the height, use and location of the building.”

In accordance with Clause 10.1 of ADB1:2020, the external wall of a building should not provide a medium for fire spread if that is likely to be a risk to health and safety. Additionally, Clause 10.4 of ADB1:2020 states that in relation to buildings of any height or use, consideration should be given to the choice of materials (including their extent and arrangement) used for the external wall, or attachments to the wall, to reduce the risk of fire spread over the wall.

Therefore, even where prescriptive guidance for the combustibility of external wall construction on residential buildings is less specific for buildings with no storey more than 18m above ground level, consideration should be given to whether the provision of any combustible material within the external wall construction presents a risk to health and safety and satisfies the functional requirement B4 of Schedule 1 to the Building Regulations.

The existing façade is to be retained as part of the proposed works for the scheme. To date, investigations of the existing façade are limited and the primary materials making up the composition of the external wall is not confirmed.

5.6 Space Separation and Unprotected Façade Areas

The Karlake and Ruston & Ward blocks that form part of the Hampton Waterwork scheme are Grade II listed buildings which restricts the works being undertaken to the external façade. Therefore, the existing façade is to be retained. A detailed external fire spread analysis for the both blocks may not be necessary given that the fire resistance of the residential apartments will break the building up into compartments that is bound to be more conservative than it is currently. This will be confirmed at a later stage.

5.7 Roof Coverings

The build-up of the roof above the roof structure is to achieve a classification of BROOF(t4). It has been confirmed that roof extension works will take place.

5.8 Cavity Barriers

Cavity barriers are to be installed throughout the development in accordance with BS9991:2015. Cavity barriers are to be provided in the cavity of:

- an external wall at all cavity edges and around all openings in the external wall (i.e. windows);
- an external wall in line with a compartment floor/wall where it meets the external wall;
- an internal cavity wall at the junction with a fire rated wall/floor.

Cavity barriers should also be provided in cavities to prevent the excessive spread of unseen fire and smoke. Cavity barriers are to be provided to ensure the maximum dimensions of undivided concealed spaces do not exceed the requirements outlined in Table 6.

Table 6 Extensive cavity division requirements

Location of Cavity	Class of Surface/Product Exposed in Cavity		Maximum Distance in Any Direction
	National Class ^[1]	European Class ^[2]	
Between Roof and Ceiling	Any	Any	20m
Any Other Cavity	Class 0 or Class 1	Class A1, Class A2, Class B, or Class C	20m
	Any Other Class	Any Other Class	10m

Notes

1. Relates to performance measures in BS 476 Parts 6 & 7 criteria
2. Relates to performance determined in accordance with BS EN 13501-1:2018

Where provided, cavity barriers are to achieve at least 30 minutes fire resistance for integrity and 15 minutes fire resistance for insulation (E30 I15).

6. ACCESS AND FACILITIES FOR THE FIRE AND RESCUE SERVICE

This section of the Fire Statement is aimed at providing information in regard to firefighting accessibility and facilities provided for fire services. In accordance with the London Plan, the proposed access and facilities for the Fire Service satisfies the policy references as indicated in Table 7.

Table 7 Firefighting provisions London Plan policy references

Policy Reference	Policy Requirement
Policy D12 – Clause A6	<i>[Development proposals must ensure that they] provide suitable access and equipment for firefighting which is appropriate for the size and use of the development.</i>
Policy D12 – Clause B4	<i>[The Fire Statement should detail how the development proposal will function in terms of] access for fire service personnel and equipment: how this will be achieved in an evacuation situation, water supplies, provision and positioning of equipment, firefighting lifts, stairs and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these.</i>
Policy D12 – Clause B5	<i>[The Fire Statement should detail how the development proposal will function in terms of] how provision will be made within the curtilage of the site to enable fire appliances to gain access to the building.</i>

6.1 Site Accessibility

The nearest fire station is the Twickenham Fire Station located at 30 South Rd, Twickenham TW2 5NT. The Fire Service are to approach the site via the A308 (also known as High Sunbury Road). Figure 5 is an extract from Google Maps (Date: 20.09.2022) which illustrates a possible route for the Fire Service to access the Hampton Waterworks site. Hydrock are not aware of any specific restrictions to site access for fire appliances, except for the expected traffic on a number of the main roads serving the site.

The Fire Service are to access the single stair in the Ruston & Ward block via Lower Sunbury Road. All other units (ie. all ground floor units in both the Karlake and the Ruston & Ward buildings, and all apartments off the single residential stairs in the Karlake) from the main site access off Upper Sunbury Road.

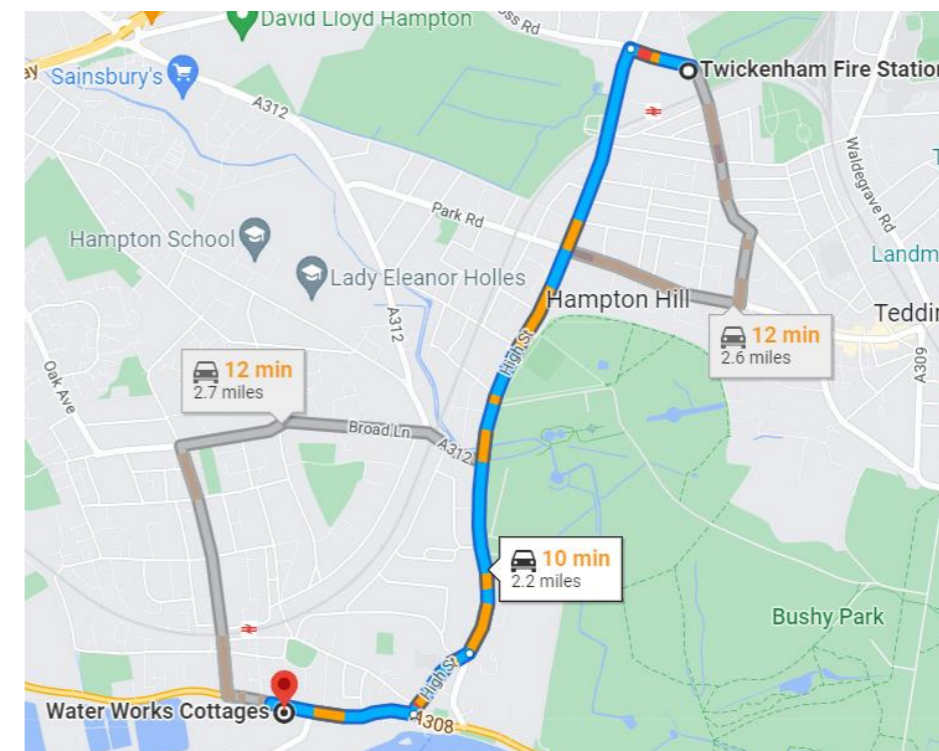


Figure 5 Fire Service site access – closest fire station

6.2 Firefighting Access and Facilities

Both buildings are proposed to have dry risers within the stair cores, with outlets to be provided on the full landings of each floor, including the ground floor. The inlets for the rising mains are to be located on the front elevation in close proximity to the main entrance of the core they serve, within 18m of a fire tender accessible location for pump appliances. Fire tender accessible locations for pump appliances are defined as areas whereby the requirements described in London Fire Brigade Guidance Note 29 are met:

- Minimum width of road between kerbs: 3.7m
- Minimum width of gateways: 3.7m
- Minimum turning circle between kerbs: 16.8m
- Minimum turning circle between walls: 19.2m
- Minimum clearance height: 3.7m
- Minimum carrying capacity: 14tonnes

It should also be noted that where the length of a dead-end fire tender accessible roadway exceeds 20m, the fire service will not be able to continue and the route should be provided with turning facilities.

Included as Figure 6 is a summary of the full site access.

The above firefighting access requirements are met for Ruston & Ward (see Figure 8) however for Karslake (see Figure 7) vehicle access is restricted to the west core. It is therefore proposed that a dry riser inlet is provided adjacent to the access route for the east core and a dry riser inlet for the west core is to be provided within one of the private gardens for one of the ground floor units or alternatively next to the dry riser inlet for the east core. The proposed arrangement provides compliant hose-run distances and reversing distances which are within the prescriptive limits. However, this arrangement, will need to be discussed and agreed with the approving authorities due to the inlet for the west core not being provided adjacent to the access route and the distance between the inlet and the outlet being greater than 18m.

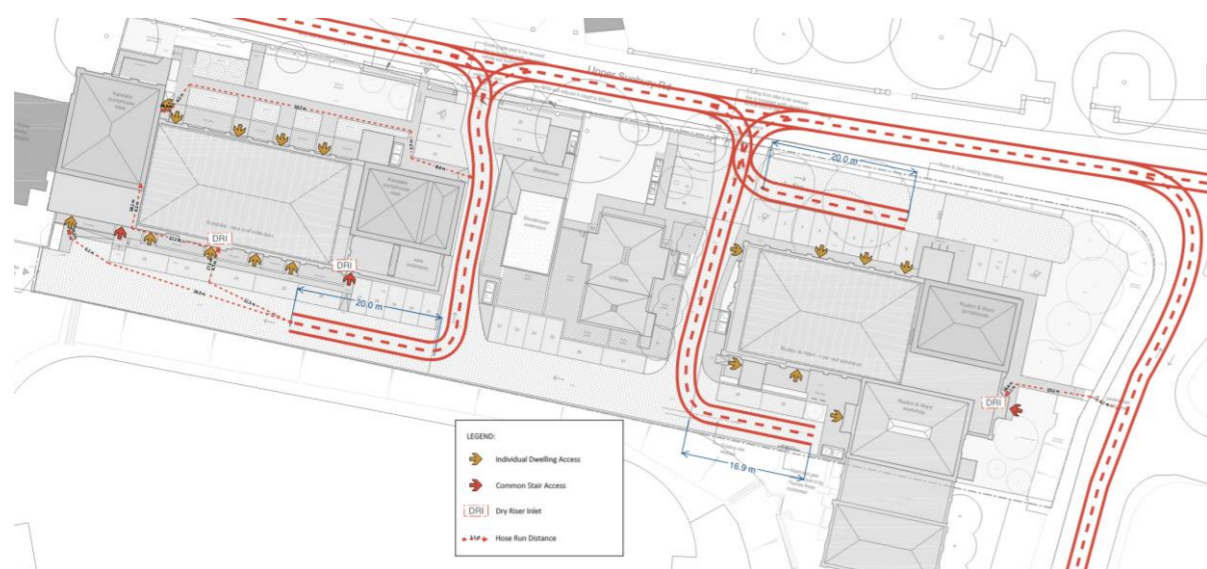


Figure 6 Full Site Fire Service Access Illustration

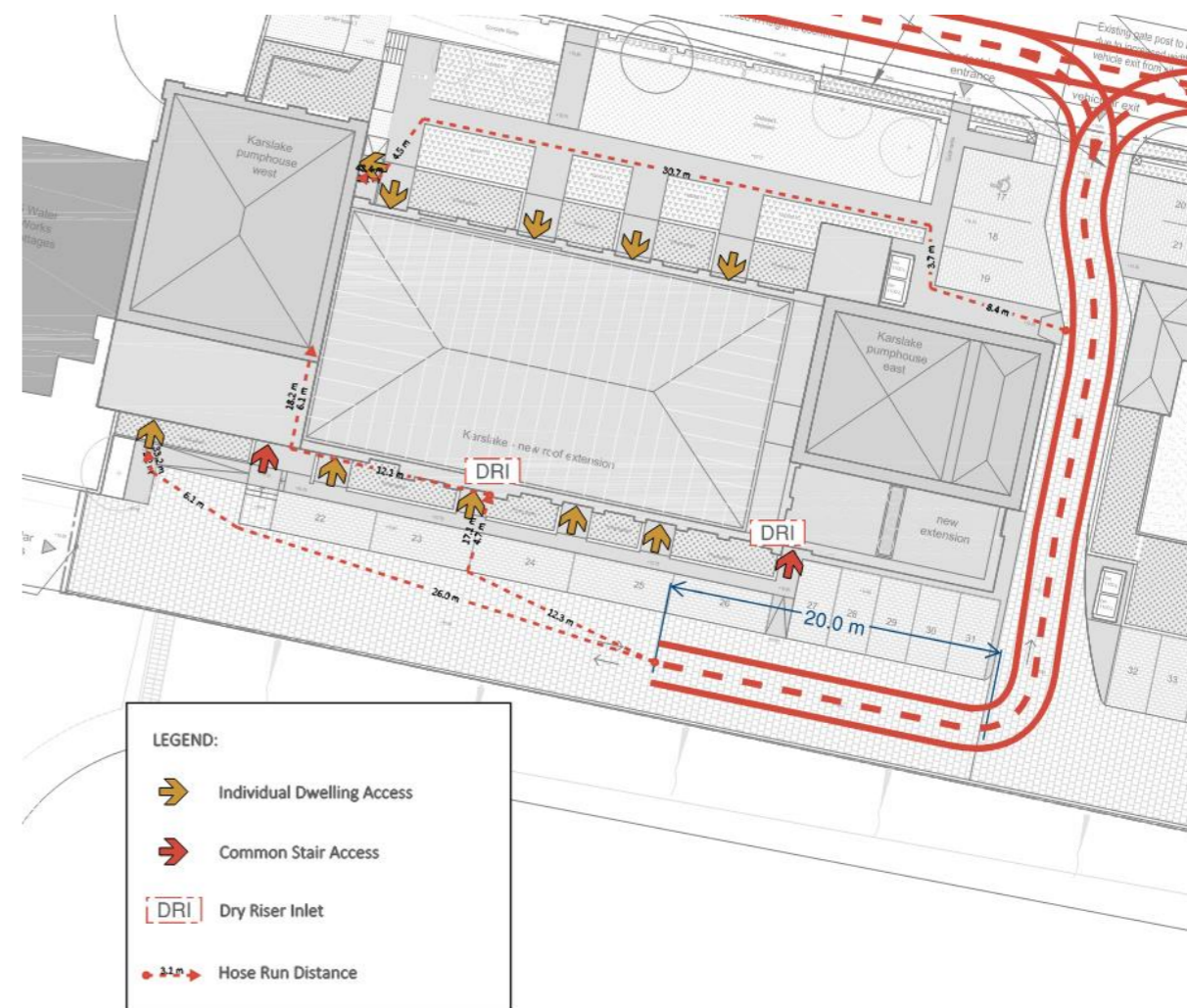


Figure 7 Karslake Building Fire Service Access

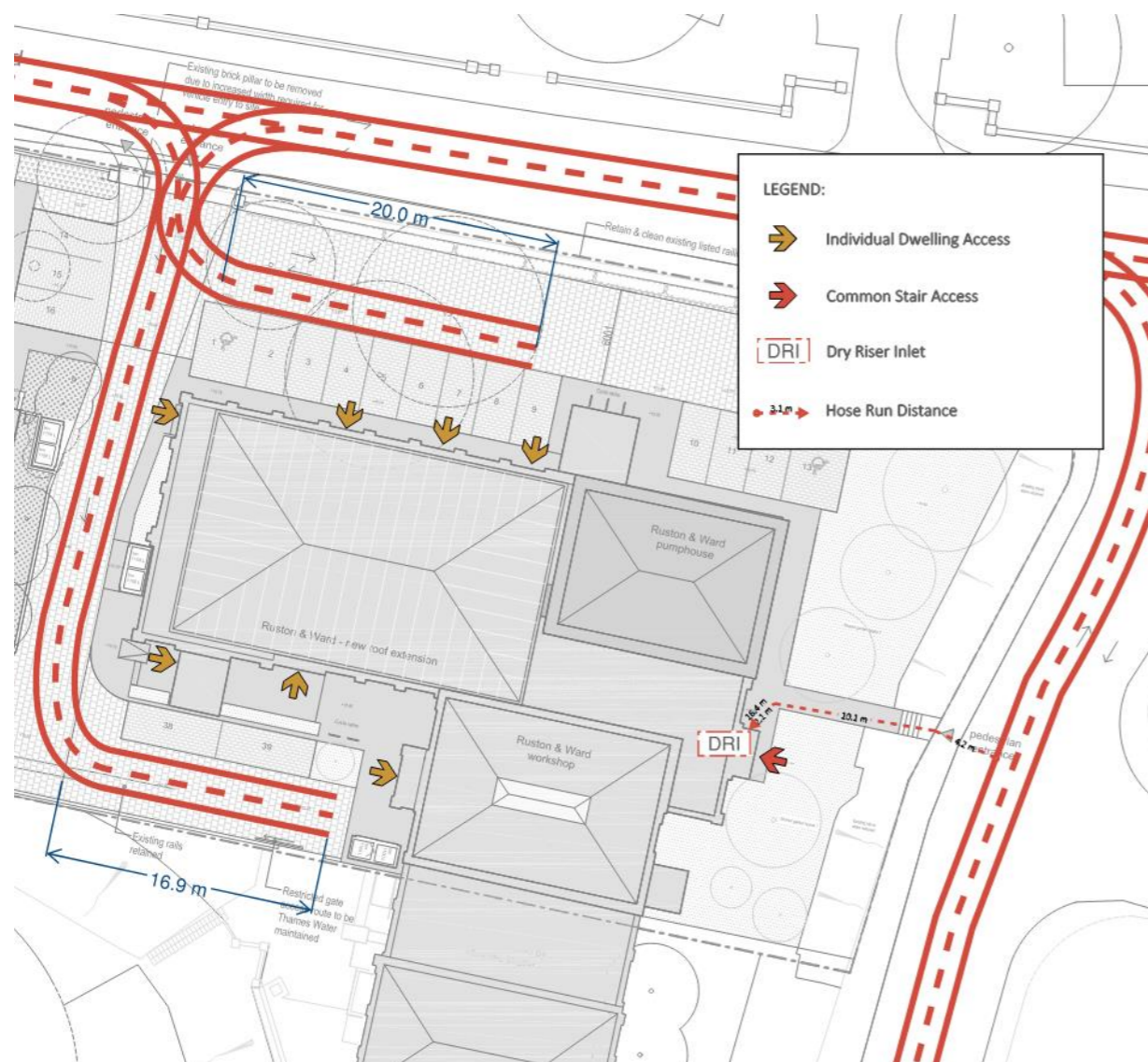


Figure 8 Ruston & Ward Building Fire Service Access

6.3 Fire Hydrants

In accordance with the requirements set out in BS9991:2015, fire hydrants are to be located within 90m of the dry rising main inlet locations (for residential). As per the existing topographical survey sheet provided, the locations of existing hydrants have been confirmed and appear to meet the requirements for Karlake. Fire Hydrants do not appear to be within 90m of the dry rising main inlet for Ruston & Ward. This information is to be collated and reviewed further as part of the development of the Fire Safety Strategy for the building. Where new fire hydrants are to be provided to the site, these are to be designed and installed in accordance with BS9990:2015.

7. FIRE SAFETY MANAGEMENT AND FUTURE DEVELOPMENT

This section of the Fire Statement is aimed at providing information in regard to the management of fire safety within the Hampton Waterworks site. In accordance with the London Plan, the proposed fire safety management plan satisfies the policy references as indicated in Table 8.

Table 8 Fire safety management and 'golden thread' London Plan policy references

Policy Reference	Policy Requirement
Policy D12 – Clause B4	<i>[The Fire Statement should detail how the development proposal will function in terms of] access for fire service personnel and equipment: how this will be achieved in an evacuation situation, water supplies, provision and positioning of equipment, firefighting lifts, stairs and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these.</i>
Policy D12 – Clause B6	<i>[The Fire Statement should detail how the development proposal will function in terms of] ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures.</i>

The ongoing management of the building and its fire safety provisions is vital in ensuring a safe and usable building. Maintenance procedures will be developed to ensure that all equipment and services are able to operate effectively and that the building's systems perform as intended.

Reference can be made to Section 4 of BS9999:2017 for the relevant information on the management of fire risk.

7.1 The Regulatory Reform (Fire Safety) Order 2005

The Regulatory Reform (Fire Safety) Order (RRFSO) regulations shall apply to this development and are the responsibility of the Responsible Person. The RRFSO applies to all workplaces and other non-domestic areas and premises, requiring the 'Responsible Person' to undertake an assessment of the fire risk in their premises and to keep this assessment under review.

7.2 Regulation 38

In conjunction with the RRFSO, Regulation 38 requires that information relating to the fire safety provisions within a building is provided to the 'Responsible Person' so that they (or an appointed 'Competent Person') can undertake the Fire Risk Assessment required under the RRFSO. The Fire Safety Strategy of the building will form part of the information provided to the 'Responsible Person' in order for them to undertake and maintain the Fire Risk Assessment for the development.

7.3 Future Development

The Fire Safety Strategy for the development will outline the proposed design and operation for the building. Where there are any proposed changes in the future, reference is to be made to the Fire Safety Strategy to ensure any changes meet the requirements of the Fire Safety Strategy and do not have an adverse effect on the safety of occupants.

Where there is an alteration to the design of the building, it is strongly recommended that the Responsible Person commissions the update and development of a new Fire Safety Strategy in order to reflect the proposed changes and fire safety design.

APPENDIX A – INDICATIVE FIRE COMPARTMENTATION DRAWINGS

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REVISIONS

REV	DATE	DESCRIPTION	CHECKED DRAWN
-	11.10.2019	INITIAL ISSUE	MC KW
A	04.11.2019	DRAWING NUMBER UPDATE	MC KW
B	04.05.2020	KEYPLAN ADDED	SJ RH
C	25.07.2022	DESIGN REVIEW AMENDMENTS	LW JF

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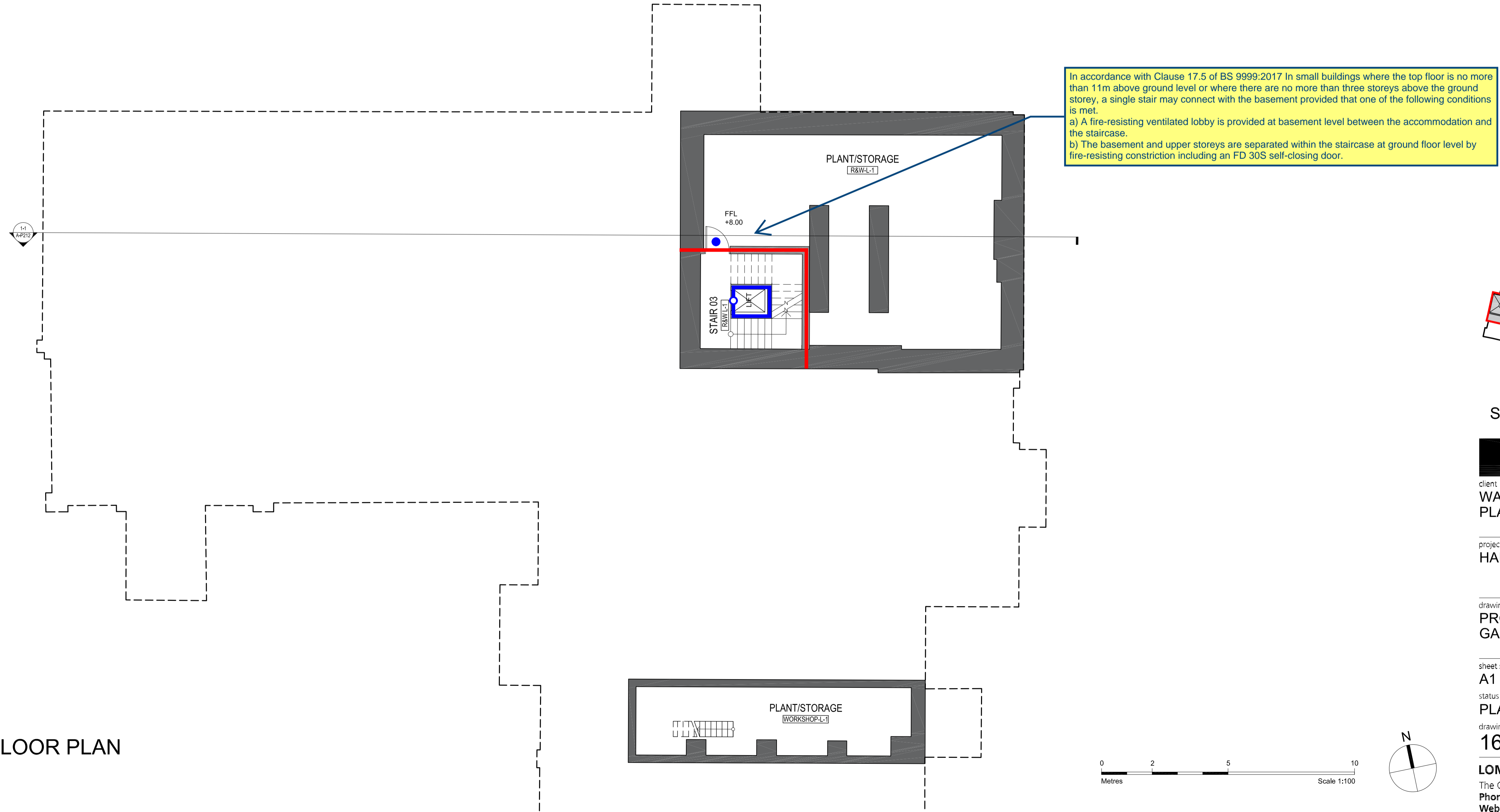


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Karslake - Basement Level FLOOR PLAN

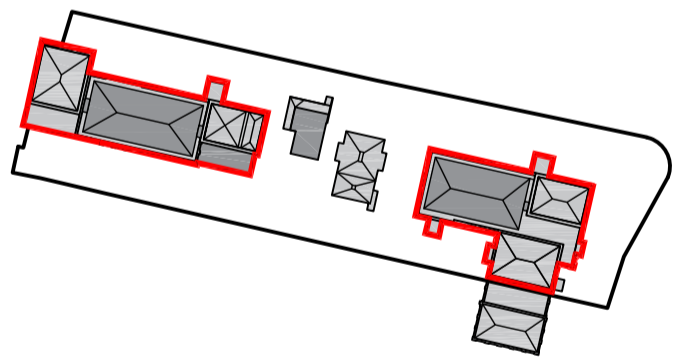
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	FD30 fire door
	FD30S fire door
	FD60S fire door
	30 minute fire rated construction
	60 minute fire rated construction
	0.4m² permanent opening ventilation
	1.0m² Free Area AOV
	See Note 1
	Single travel distance
	Total travel distance
	Hose distance

Hydrock		Hydrock Construction Ltd Market House Ruston Road Ruston E14 3JY T: +44 (0)17 535 5233 E: info@hydrock.com www.hydrock.com
Drawing Title		
London Plan Fire Statement Compartmentation Drawings Karslake and Ruston & Ward		
Project Title		
Basement		
Hampton Waterworks		
Project Number		
C-12193		
Scale @ A1	Date	
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Drawn	Checked	Rev
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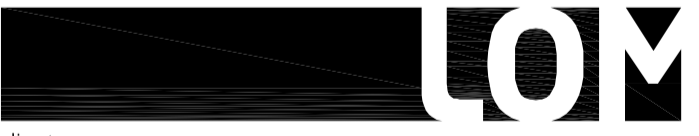
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Ruston & Ward - Basement Level FLOOR PLAN



In accordance with Clause 17.5 of BS 9999:2017 In small buildings where the top floor is no more than 11m above ground level or where there are no more than three storeys above the ground storey, a single stair may connect with the basement provided that one of the following conditions is met:
a) A fire-resisting ventilated lobby is provided at basement level between the accommodation and the staircase.
b) The basement and upper storeys are separated within the staircase at ground floor level by fire-resisting construction including an FD 30S self-closing door.



Site Plan Key



client
**WATERFALL
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project
HAMPTON WATERWORKS

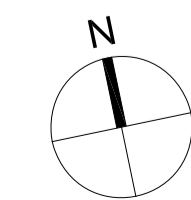
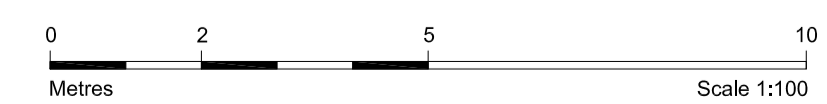
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GA BASEMENT PLAN**

sheet size scale
A1 1:100 @ A1

status
PLANNING

drawing no. revision
1685-A-P114 C

LOM architecture and design
The Glass House 5 Sclater Street London E1 6JY UK
Phone +44(0)20 8444 2999 Email mail@lom-fdp.com
Web www.lom-architecture.com



Lift shafts may not open directly into the apartments.

In order to maintain compartmentation, a fire curtain would be necessary within the apartment to remove this connection and ensure that the lift is available for evacuation in a fire incident. However, as this is an evacuation lift, a fire curtain would remove the availability of the lift in the event of a fire in this apartment. Therefore, one of the following two options are to be implemented:

1. A lobby is to be provided between the apartment and the lift access;
2. The internal access to the lift is removed.

Access between the lift shaft and the stairs is to be provided. This can be an open connection and does not require a door.

This is to provide an equivalent level of safety to both the single stair and the single lift (suitable for use during evacuation).

Note 1
In accordance with Figure 6 of BS9991:2015, in a single stair building (that is above 11m or is provided with more than 3 levels above ground), a ventilated lobby is to be provided as means of protection to the stair from smoke ingress. Therefore, a ventilated protected lobby is to be provided as indicated.

Smoke control is to be provided in accordance with Clause 14.1.3 of BS9991:2015. One of the following measures are to be provided:

1. AOV's to the exterior of the building with a minimum free area of 1.5m².
2. A natural smoke shaft in accordance with Clause 14.2.3 of BS9991.
3. A mechanical smoke ventilation system in accordance with Clause 14.2.4 of BS9991:2015.
4. A pressure differential system.

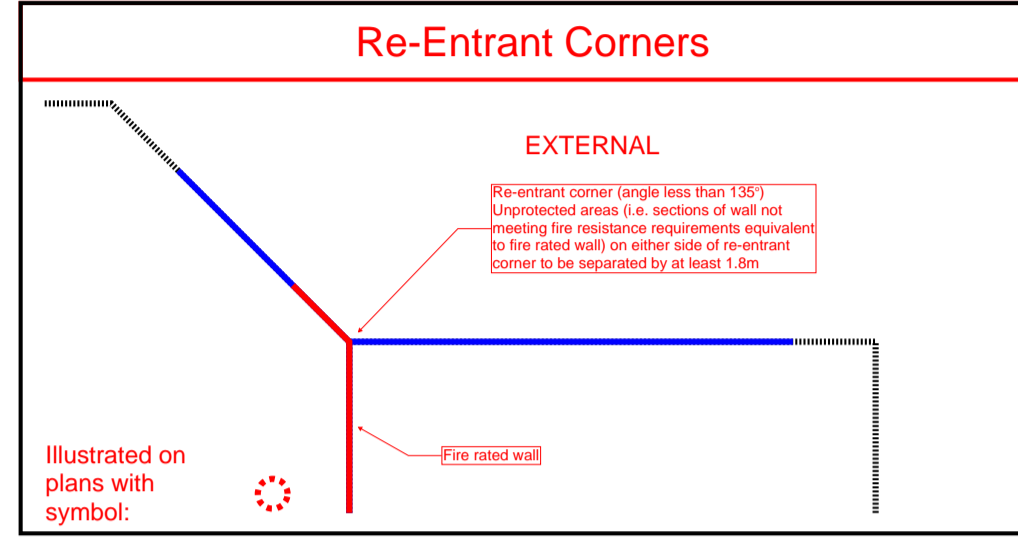
Unit 10 currently to be provided with a partitioning screen and is no longer classed as gallery flats but as a two-level open-plan unit. Unit 10 should now either be provided with a protected entrance lobby or if a lobby is not implemented a justification provided as follows:

- LD1 fire detection and alarm.
- Sprinkler system in accordance with BS 9251:2014.
- Hob detection.

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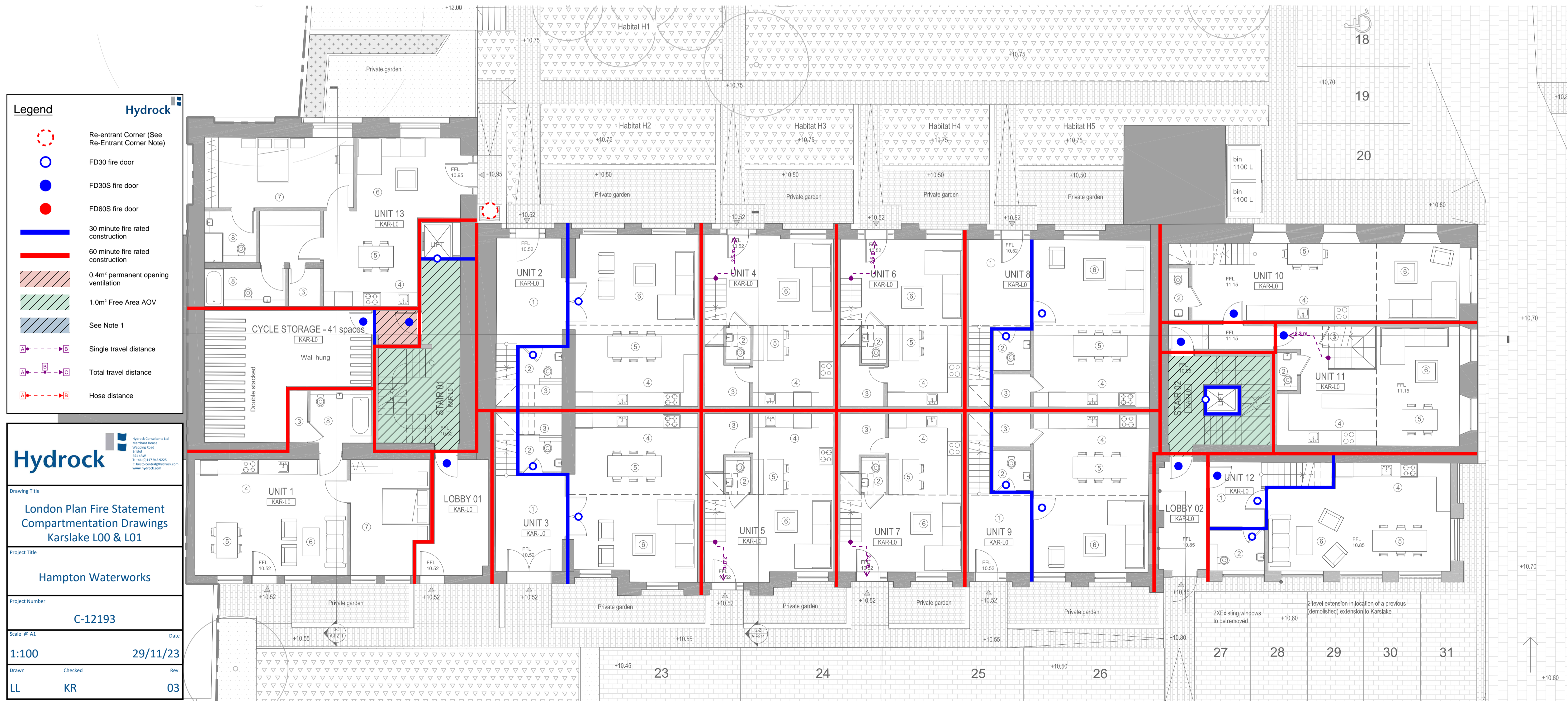
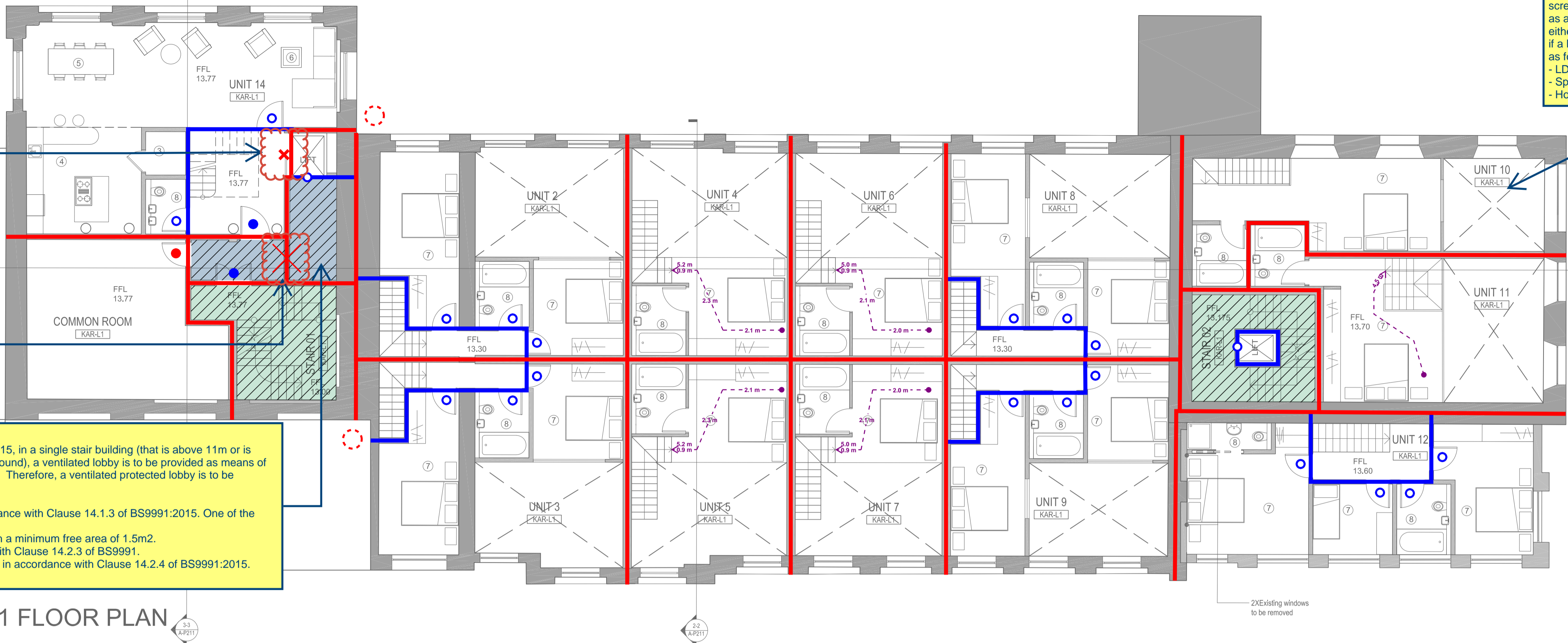
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-	11.10.2019	INITIAL ISSUE	MC KW
A	04.11.2019	MINOR CHANGES	MC KW
B	04.05.2020	CHANGES TO LEVELS	SJ RH
C	25.07.2022	DESIGN REVIEW AMENDMENTS	LW JF



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SCALE 1:100
KARSLAKE - Level 1 FLOOR PLAN



Legend

- Re-entrant Corner (See Re-Entrant Corner Note)
- FD30 fire door
- FD30S fire door
- FD60S fire door
- 30 minute fire rated construction
- 60 minute fire rated construction
- 0.4m² permanent opening ventilation
- 1.0m² Free Area AOV
- See Note 1
- Single travel distance
- Total travel distance
- Hose distance

Hydrock

Drawing Title
**London Plan Fire Statement
Compartmentation Drawings
Karslake L0 & L1**

Project Title
Hampton Waterworks

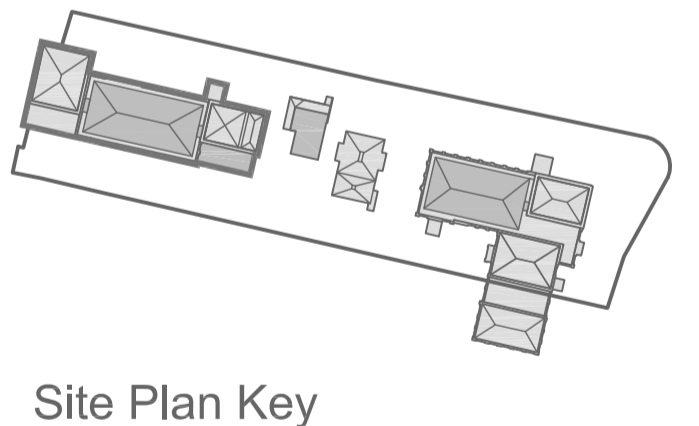
Project Number
C-12193

Scale: @A1
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Date
29/11/23

Drawn: LL
Checked: KR
Rev: 03

- Key rooms:**
- | | |
|------------|-------------|
| 1. Entry | 7. Bedroom |
| 2. WC | 8. Bathroom |
| 3. Storage | 9. Study |
| 4. Kitchen | |
| 5. Dining | |
| 6. Living | |



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project
HAMPTON WATERWORKS

drawing title
**PROPOSED
GA PLAN KARSLAKE L0 & L1**

sheet size
A1

scale
1:100 @ A1

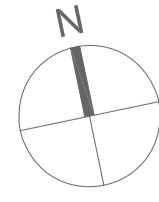
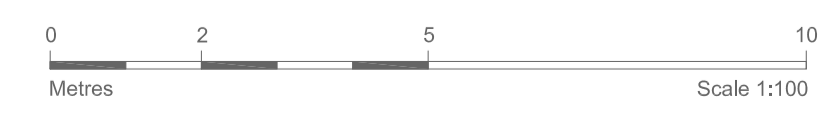
status
PLANNING

drawing no.
1685-A-P110

revision
C

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The Glass House 5 Sclater Street London E1 6JY UK
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Web www.lom-architecture.com

SCALE 1:100
KARSLAKE - Level 0 FLOOR PLAN



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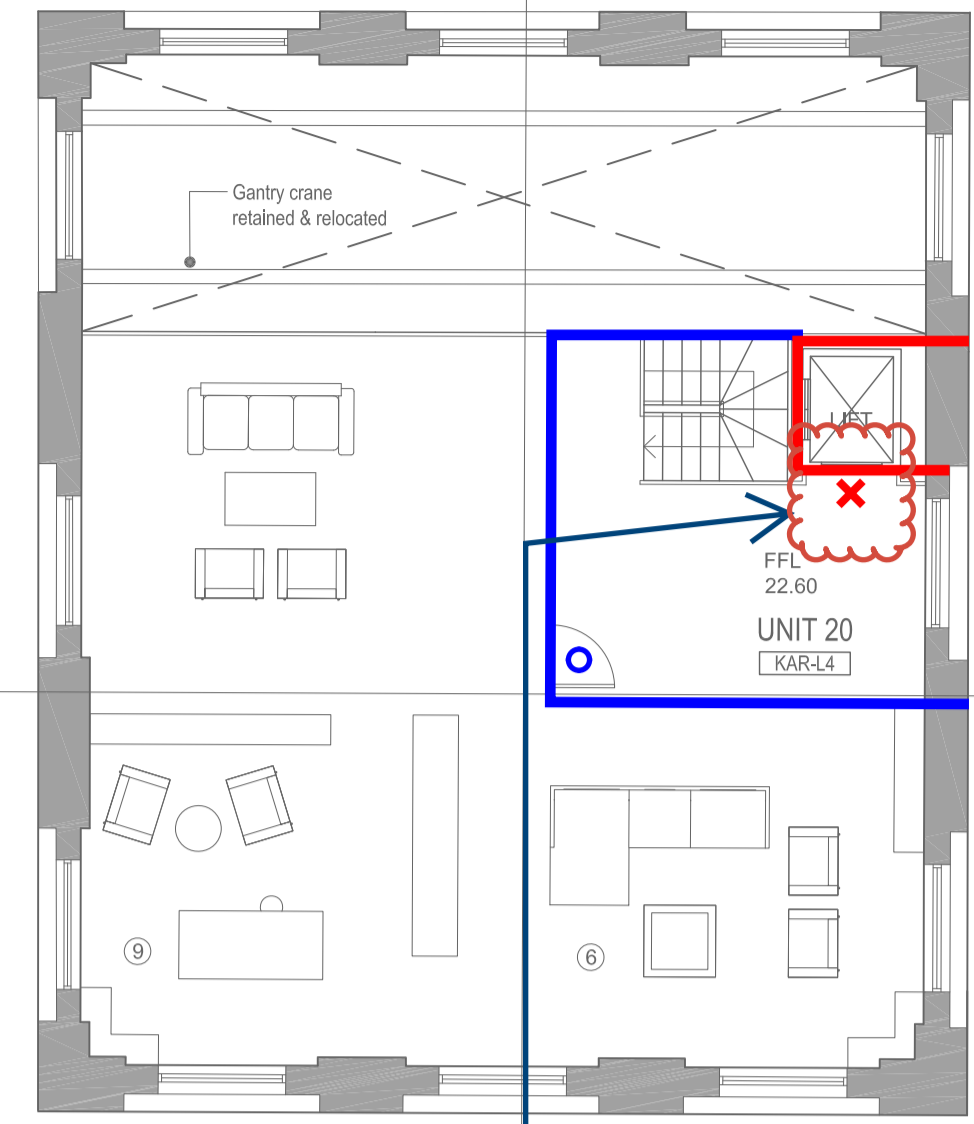
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REV	DATE	DESCRIPTION	CHECKED
-	11.10.2019	INITIAL ISSUE	MC KW
A	04.11.2019	CHANGES TO ROOF EXTENSION	MC KW
B	04.05.2020	CHANGES TO LEVELS, SETBACKS	SJ RH
C	15.05.2020	ROOM NUMBERING AMENDED	SJ RH
D	25.07.2022	DESIGN REVIEW AMENDMENTS	LW JF

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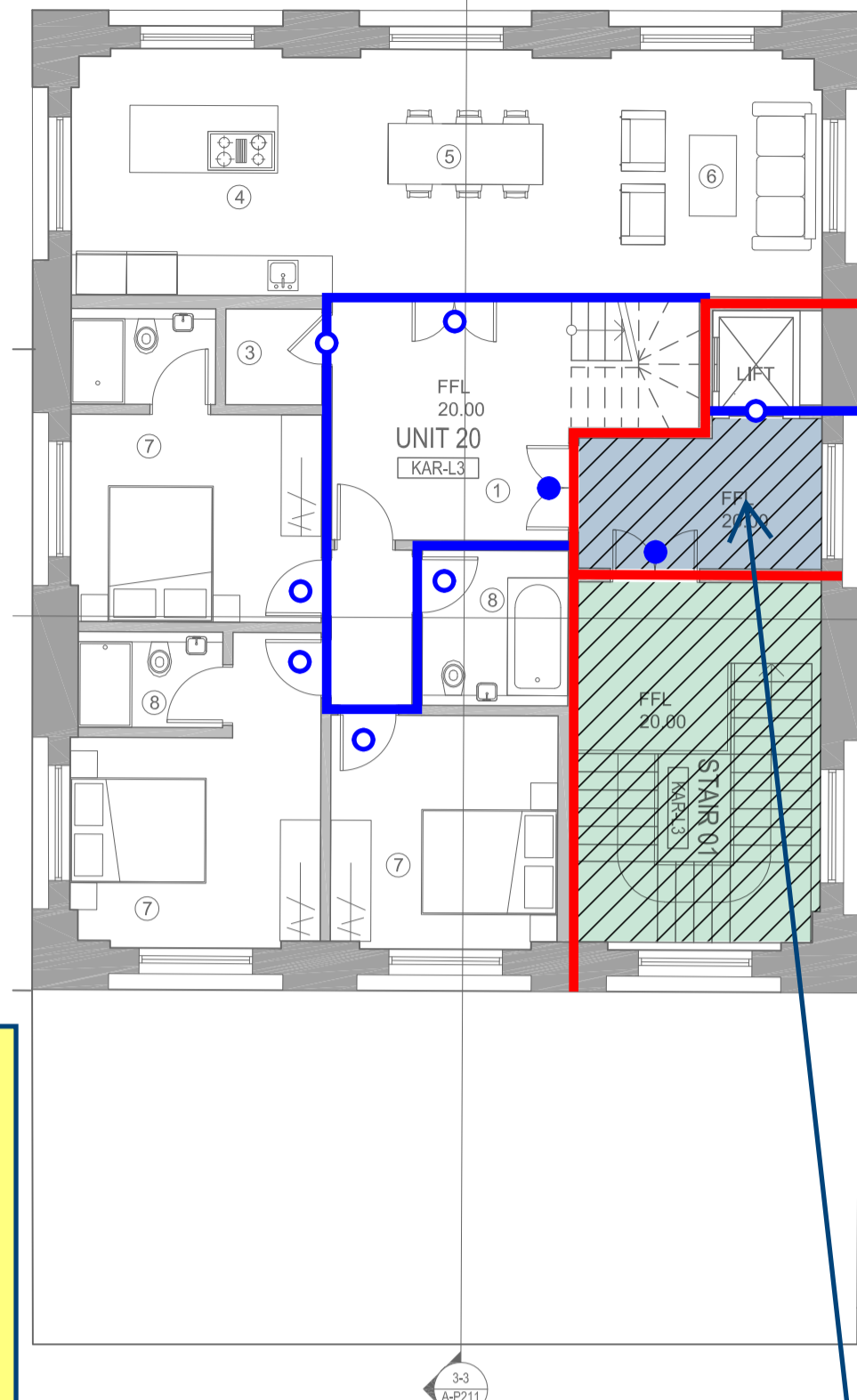


Lift shafts may not open directly into the apartments.

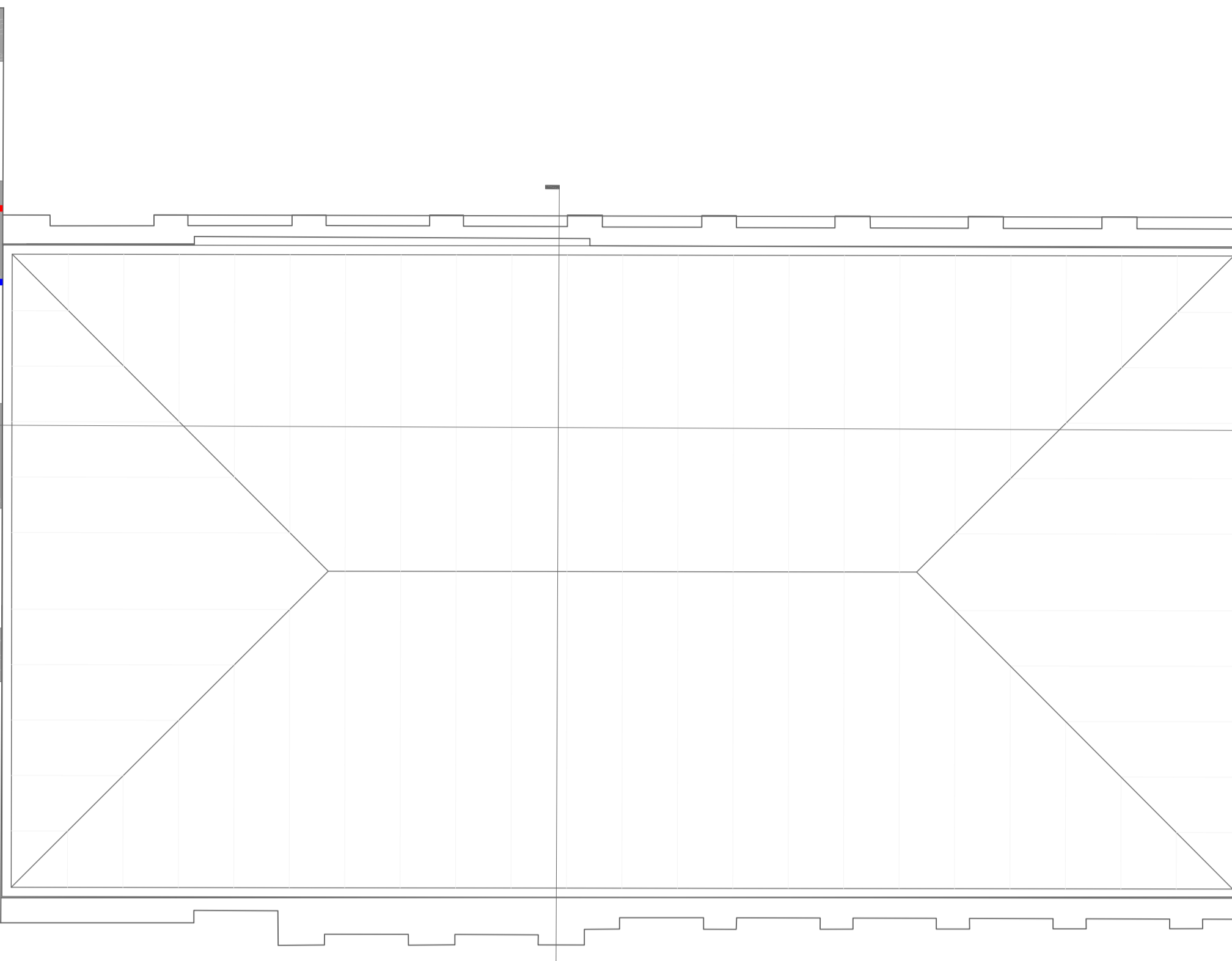
In order to maintain compartmentation, a fire curtain would be necessary within the apartment to remove this connection and ensure that the lift is available for evacuation in a fire incident. However, as this is an evacuation lift, a fire curtain would remove the availability of the lift in the event of a fire in this apartment. Therefore, one of the following two options are to be implemented:

1. A lobby is to be provided between the apartment and the lift access. This lobby needs to be outside of the occupation of the flat owner as the lobby needs to be treated as a fire sterile space with no potential for stored items. This is generally only achieved by means of building management enforcement;
2. The internal access to the lift is removed.

SCALE 1:100
KARSLAKE - Level 4 FLOOR PLAN



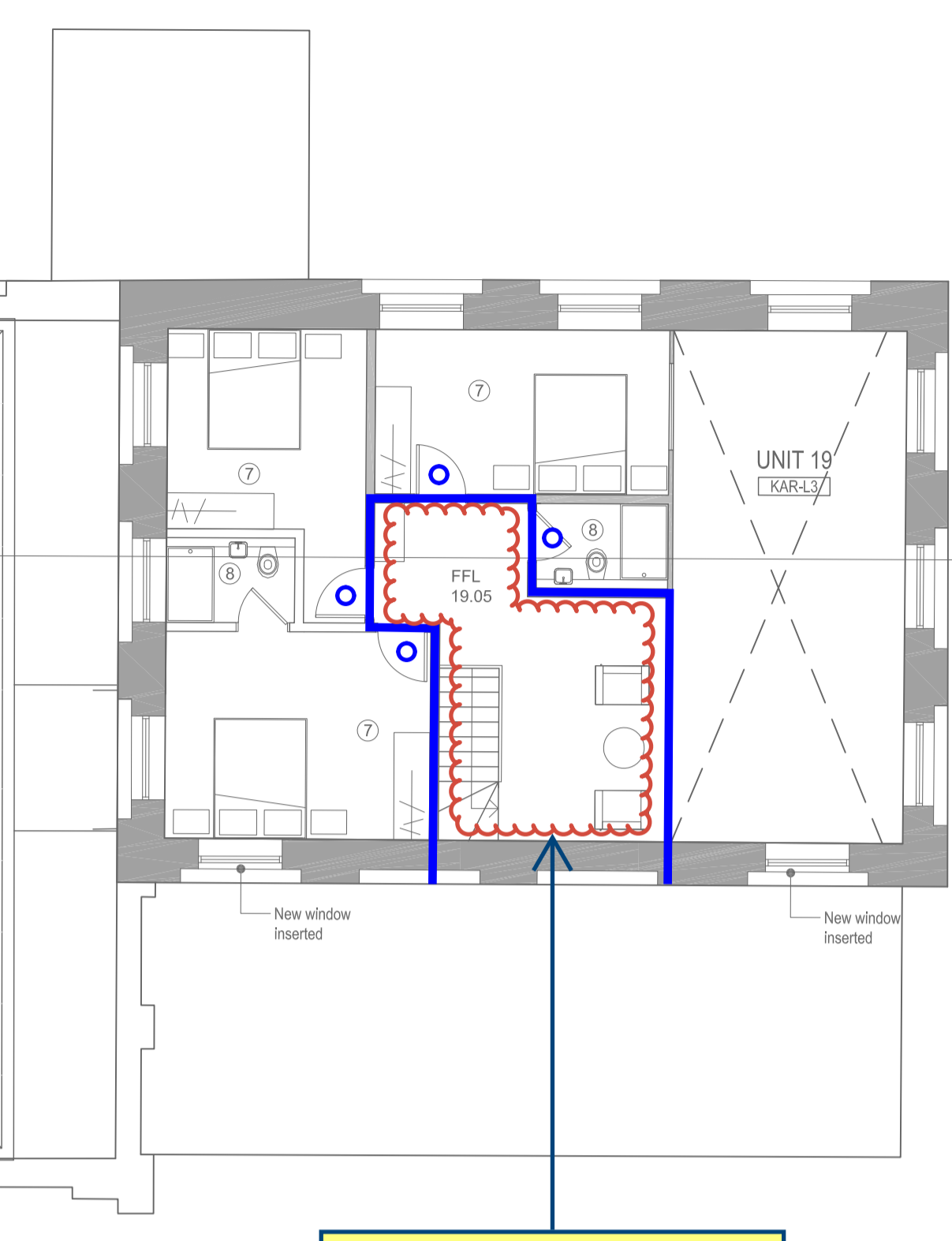
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KARSLAKE - Level 3 FLOOR PLAN



Note 1
In accordance with Figure 6 of BS9991:2015, in a single stair building (that is above 11m or is provided with more than 3 levels above ground), a ventilated lobby is to be provided as means of protection to the stair from smoke ingress. Therefore, a ventilated protected lobby is to be provided as indicated.

Smoke control is to be provided in accordance with Clause 14.1.3 of BS9991:2015. One of the following measures are to be provided:

1. AOV's to the exterior of the building with a minimum free area of 1.5m².
2. A natural smoke shaft in accordance with Clause 14.2.3 of BS9991.
3. A mechanical smoke ventilation system in accordance with Clause 14.2.4 of BS9991:2015.
4. A pressure differential system.



The internal protected hallway is to be designed as a fire-sterile space (i.e. no stored items within this protected area).

Legend

- Re-entrant Corner (See Re-entrant Corner Note)
- FD30 fire door
- FD30S fire door
- FD60S fire door
- 30 minute fire rated construction
- 60 minute fire rated construction
- 0.4m² permanent opening ventilation
- 1.0m² Free Area AOV
- See Note 1
- Single travel distance
- Total travel distance
- Hose distance

Hydrock

Drawing Title
**London Plan Fire Statement
Compartmentation Drawings
Karslake L02, L03 & L04**

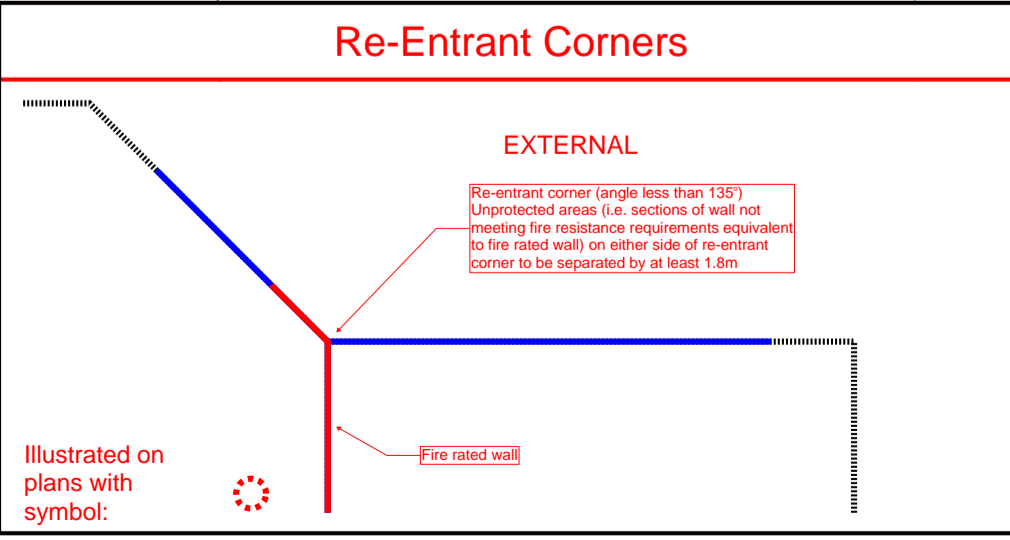
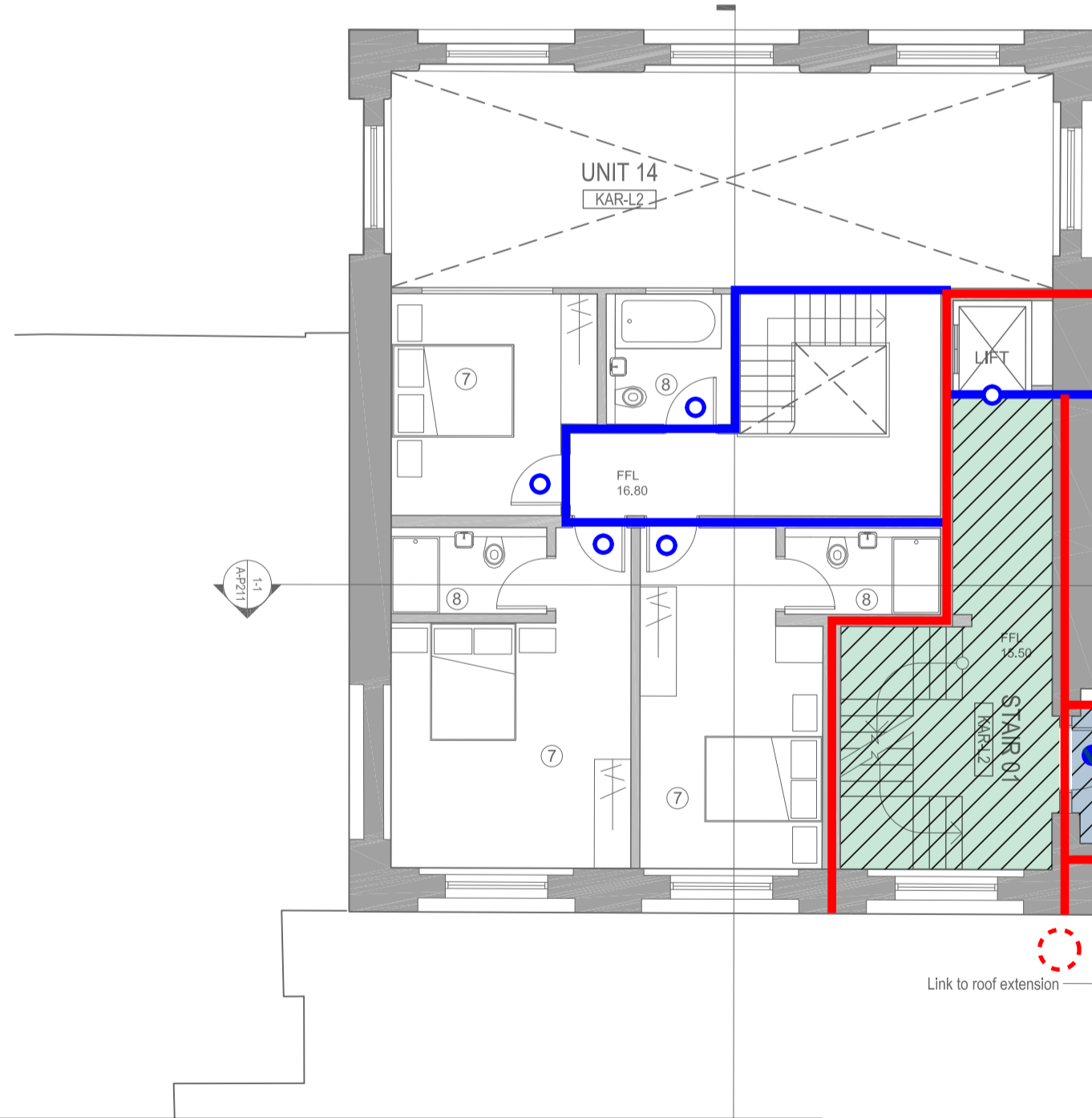
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Project Number
C-12193

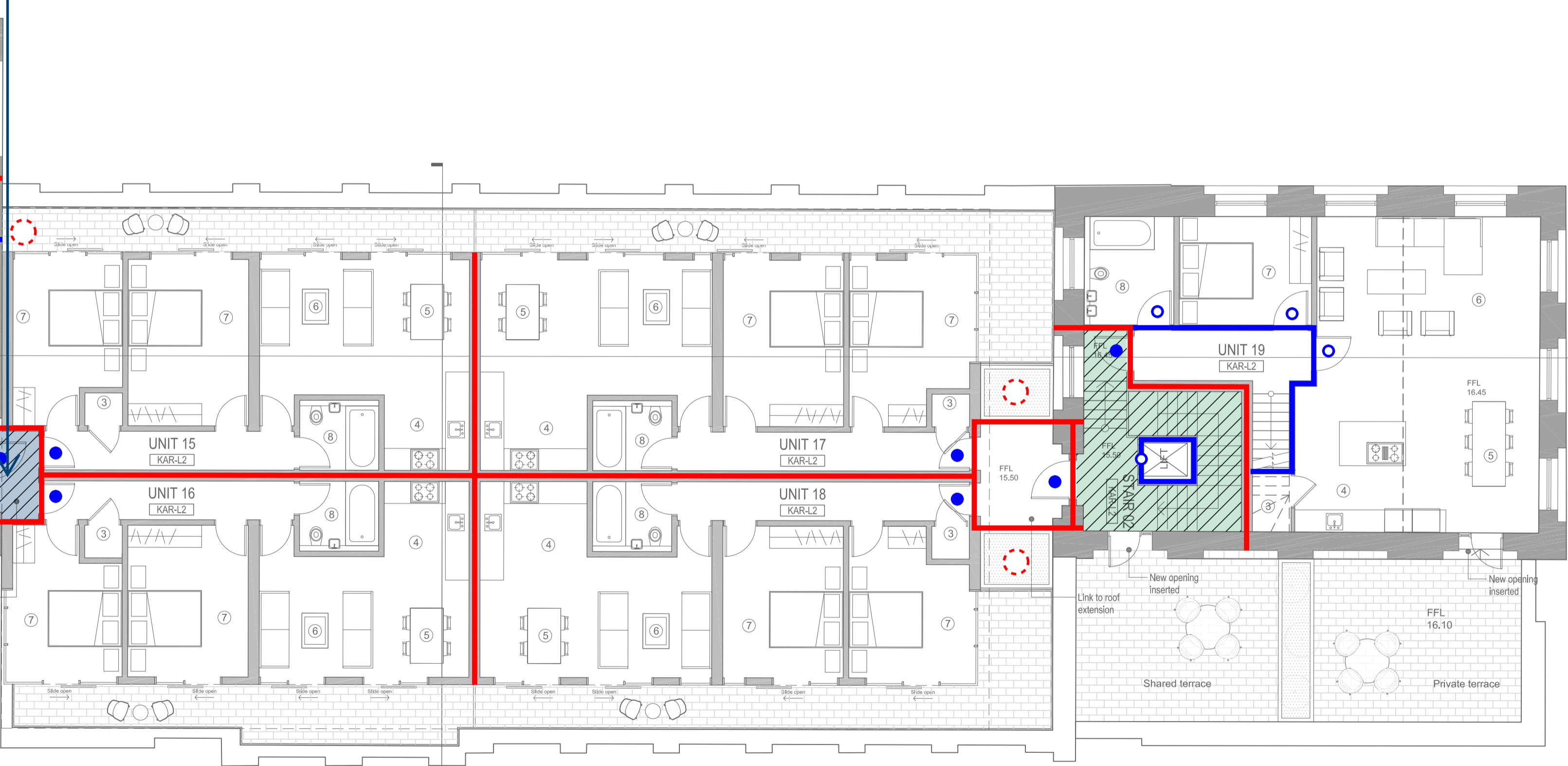
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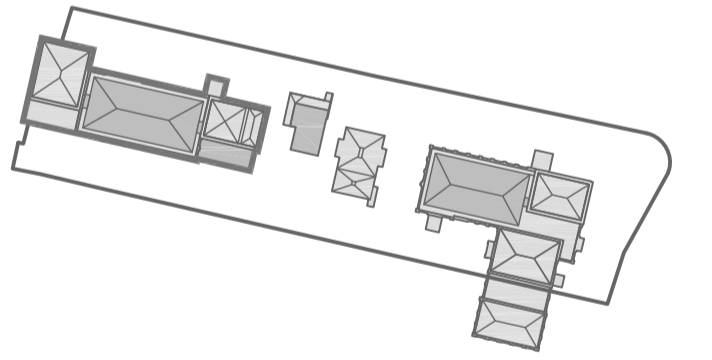
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Rev: 03



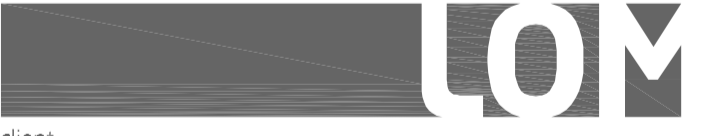
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KARSLAKE - Level 2 FLOOR PLAN



- Key rooms:
- 1. Entry
 - 2. WC
 - 3. Storage
 - 4. Kitchen
 - 5. Dining
 - 6. Living
 - 7. Bedroom
 - 8. Bathroom
 - 9. Study



Site Plan Key



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drawing title
**PROPOSED
GA PLAN KARSLAKE L2,L3 & L4**

sheet size
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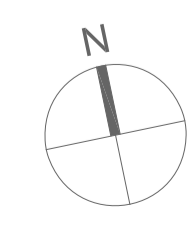
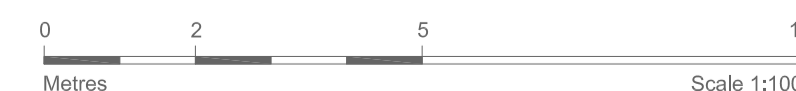
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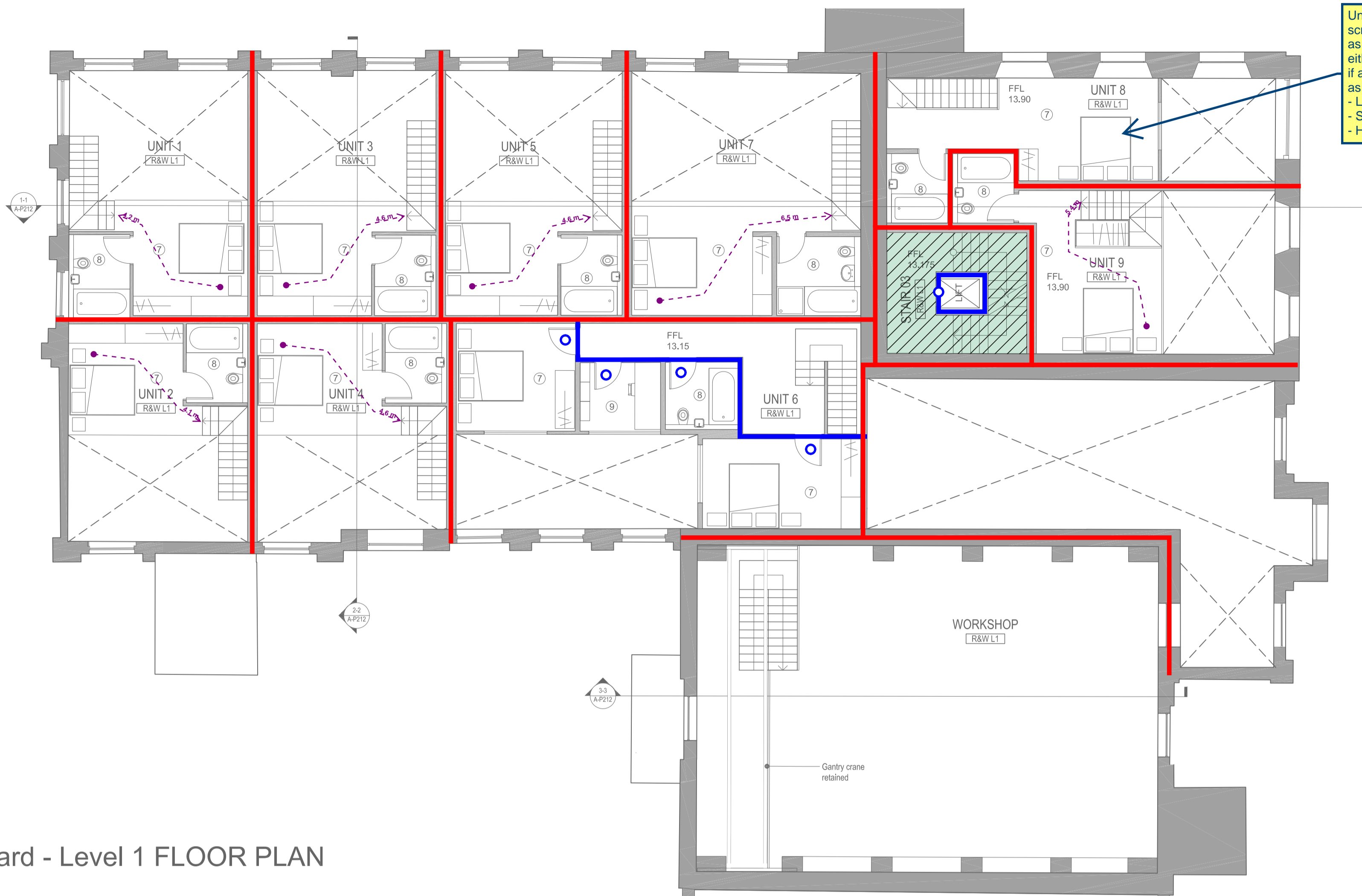
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drawing no.
1685-A-P111

revision
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The Glass House 5 Sclater Street London E1 6JY UK
Phone +44(0)20 8444 2999 Email mail@lom-fdp.com
Web www.lom-architecture.com

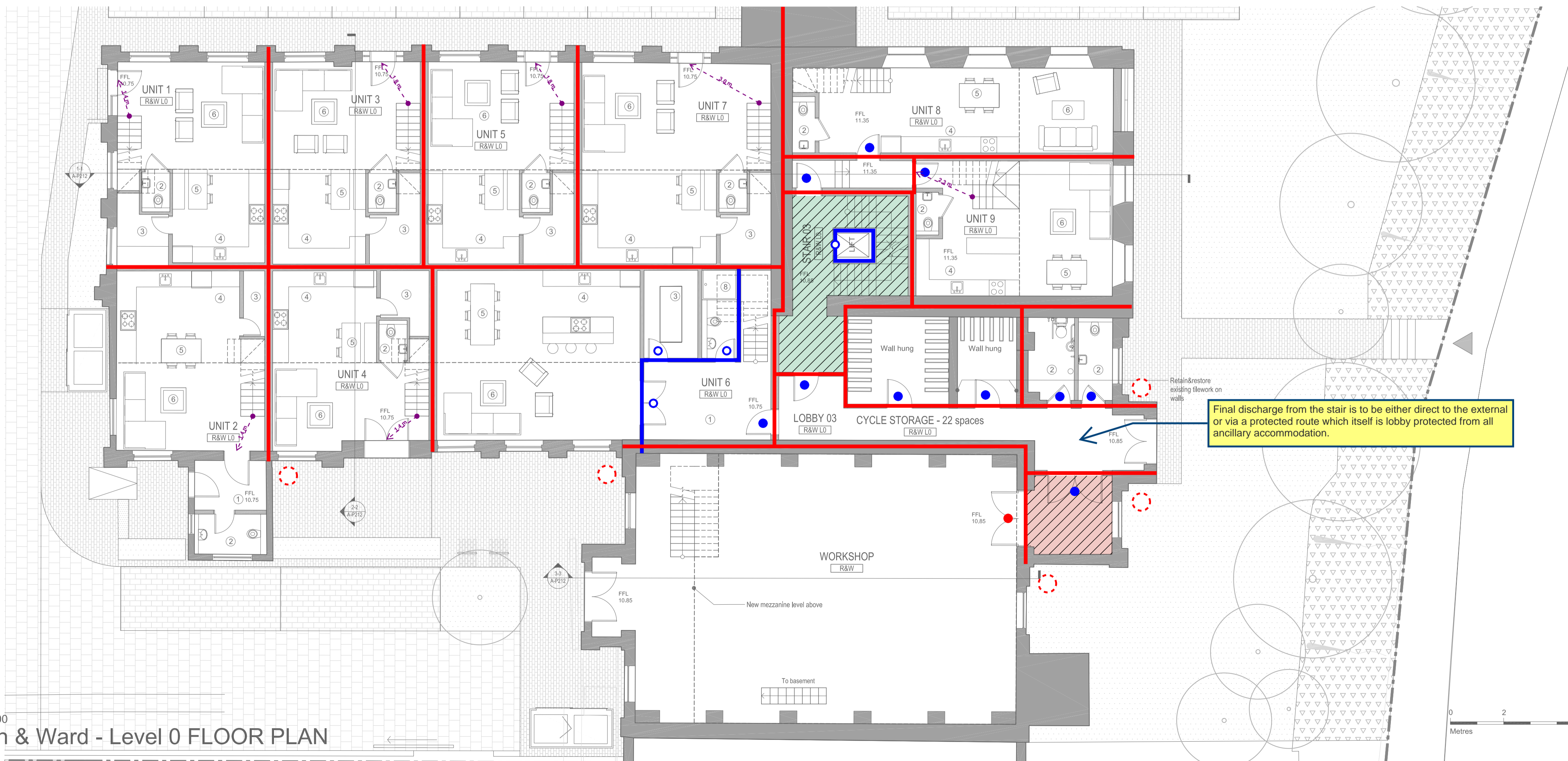




Unit 8 currently to be provided with a partitioning screen and is no longer classed as gallery flats but as a two-level open-plan unit. Unit 8 should now either be provided with a protected entrance lobby or if a lobby is not implemented a justification provided as follows:

- LD1 fire detection and alarm.
- Sprinkler system in accordance with BS 9251:2014.
- Hob detection.

SCALE 1:100
Ruston & Ward - Level 1 FLOOR PLAN



Final discharge from the stair is to be either direct to the external or via a protected route which itself is lobby protected from all ancillary accommodation.

SCALE 1:100
Ruston & Ward - Level 0 FLOOR PLAN

Hydrock
Hydrock Consultants Ltd
Planning & Design
11-13 The Quadrant
London E1 6JY
T: +44 (0)20 8444 2999
E: info@hydrock.com
www.hydrock.com

Drawing Title
**London Plan Fire Statement
Compartmentation Drawings
Ruston & Ward L0 & L1**

Project Title
Hampton Waterworks

Project Number
C-12193

Scale @ A1
1:100

Date
29/11/23

Drawn
LL

Checked
KR

Rev.
03

Legend

- Re-entrant Corner (See Re-entrant Corner Note)
- FD30 fire door
- FD30S fire door
- FD60S fire door
- 30 minute fire rated construction
- 60 minute fire rated construction
- 0.4m² permanent opening ventilation
- 1.0m² Free Area AOV
- See Note 1
- Single travel distance
- Total travel distance
- Hose distance

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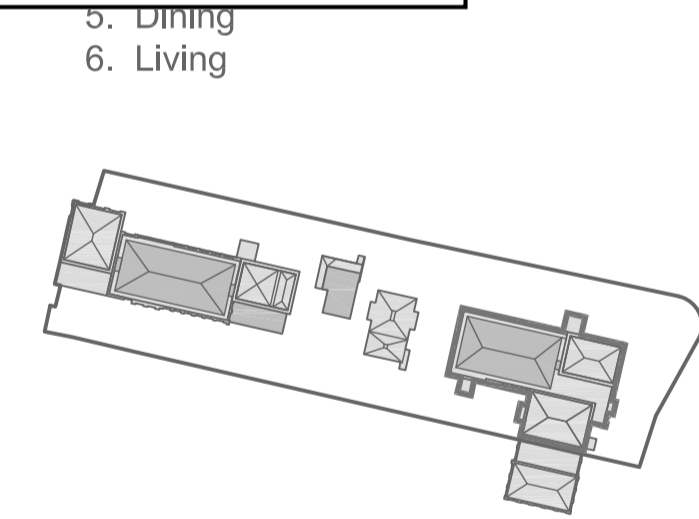
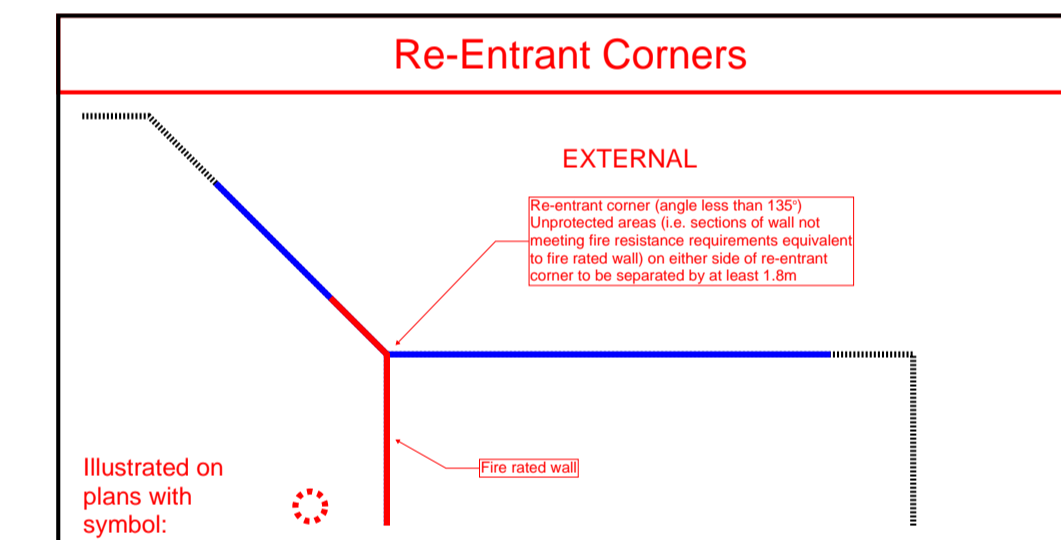
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REVISIONS

REV	DATE	DESCRIPTION	CHECKED
-	11.10.2019	INITIAL ISSUE	MC KW
A	04.11.2019	MINOR CHANGES	MC KW
B	04.05.2020	CHANGES TO LEVELS	SJ RH
C	25.07.2022	DESIGN REVIEW AMENDMENTS	LW JF

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- INTERNAL VOLUMES TO BE STRIPPED OUT, REMOVING 20TH C. WORK AND RESTORING ORIGINAL FABRIC.
- INDUSTRIAL HERITAGE DETAILS - TILES, BRICKS, ELECTRICAL SWITCHES, LIFTING CRANES, ETC. - TO BE CLEANED AND RETAINED.
- ALL EXISTING ORIGINAL WINDOWS TO BE RETAINED AND RESTORED, WITH NEW HIGH-PERFORMANCE SECONDARY GLAZING INSERTED BEHIND.
- ALL EXISTING WINDOWS WHICH ARE NOT ORIGINAL TO THE BUILDING TO BE REPLACED WITH HIGH PERFORMANCE WINDOWS TO MATCH EXISTING DESIGN.



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PLANNING LTD**

project
HAMPTON WATERWORKS

drawing title
**PROPOSED
GA PLAN RUSTON & WARD L0 & L1**

sheet size
A1

scale
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PLANNING

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1685-A-P112

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LOM architecture and design
The Glass House 5 Sclater Street London E1 6JY UK
Phone +44(0)20 8444 2999 Email mail@lom-fdp.com
Web www.lom-architecture.com

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Hydrock Consultants Ltd
Planning & Design
100-102, The Glass House, 5 Sclater Street, London E1 6JY, UK
T: +44 (0)20 8444 2999
E: info@hydrock.com
www.hydrock.com

Drawing Title
**London Plan Fire Statement
Compartmentation Drawings
Ruston & Ward L00 & L01**

Project Title
Hampton Waterworks

Project Number
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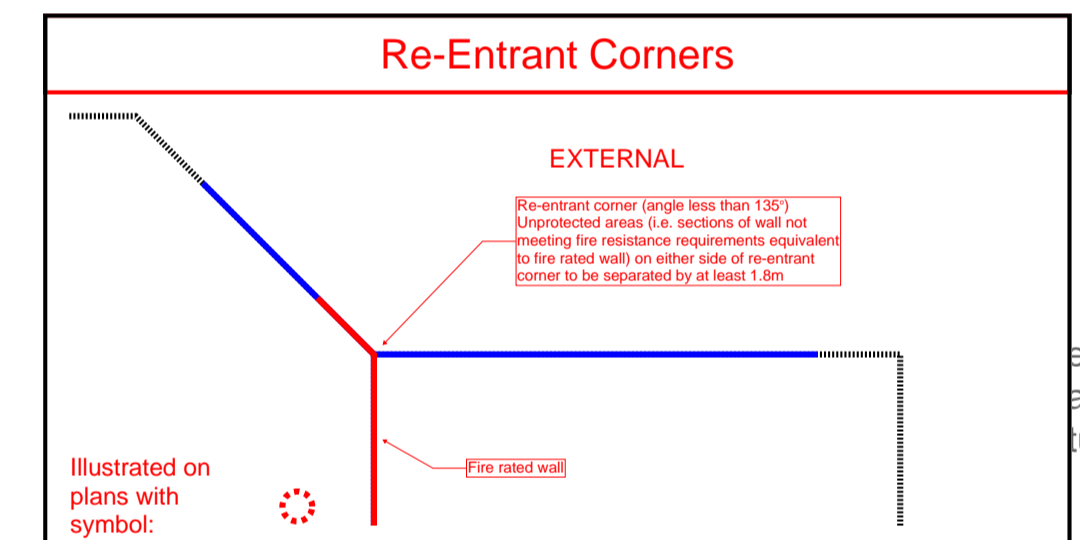
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B	04.05.2020	CHANGES TO LEVELS, SETBACKS	SJ RH
C	15.05.2020	ROOM NUMBERING AMENDED	SJ RH
D	25.07.2022	DESIGN REVIEW AMENDMENTS	LW JF

Legend

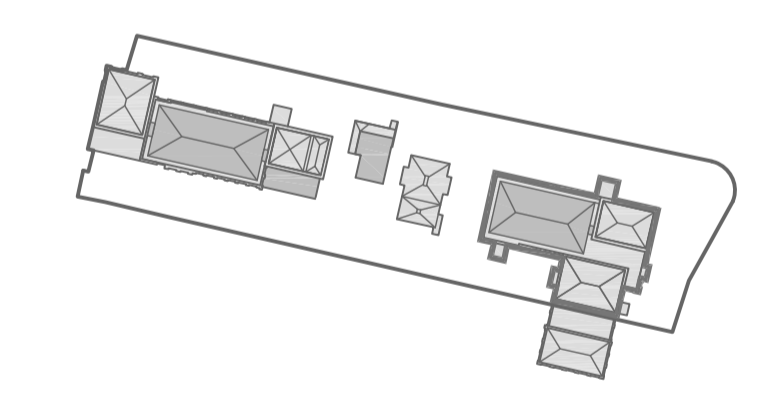
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5. Dining
6. Living



Site Plan Key

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project
HAMPTON WATERWORKS

drawing title
**PROPOSED
GA PLAN RUSTON & WARD L2&L3**

sheet size
A1

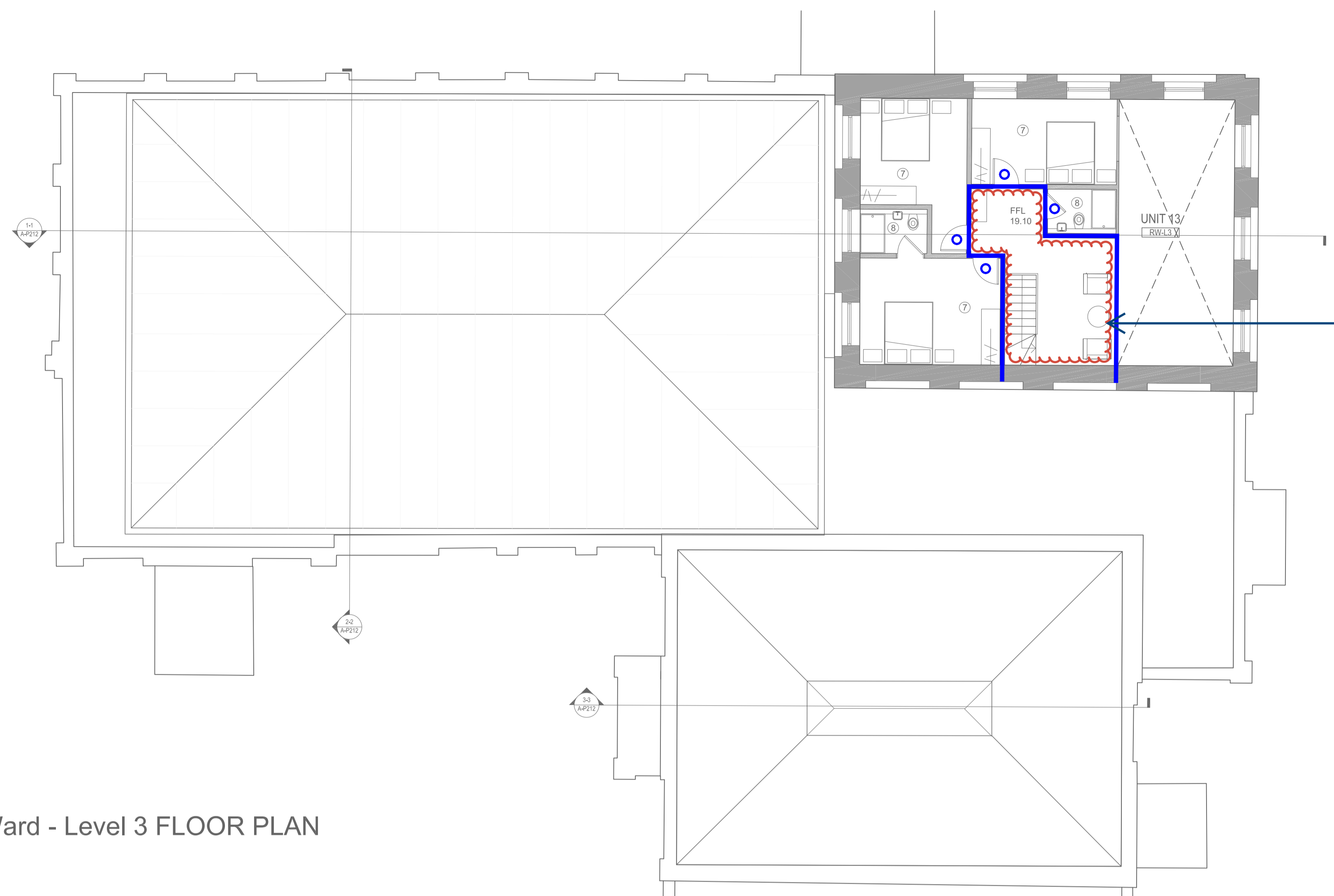
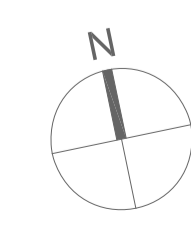
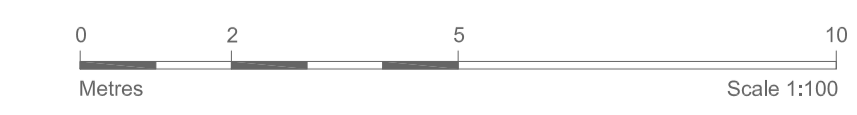
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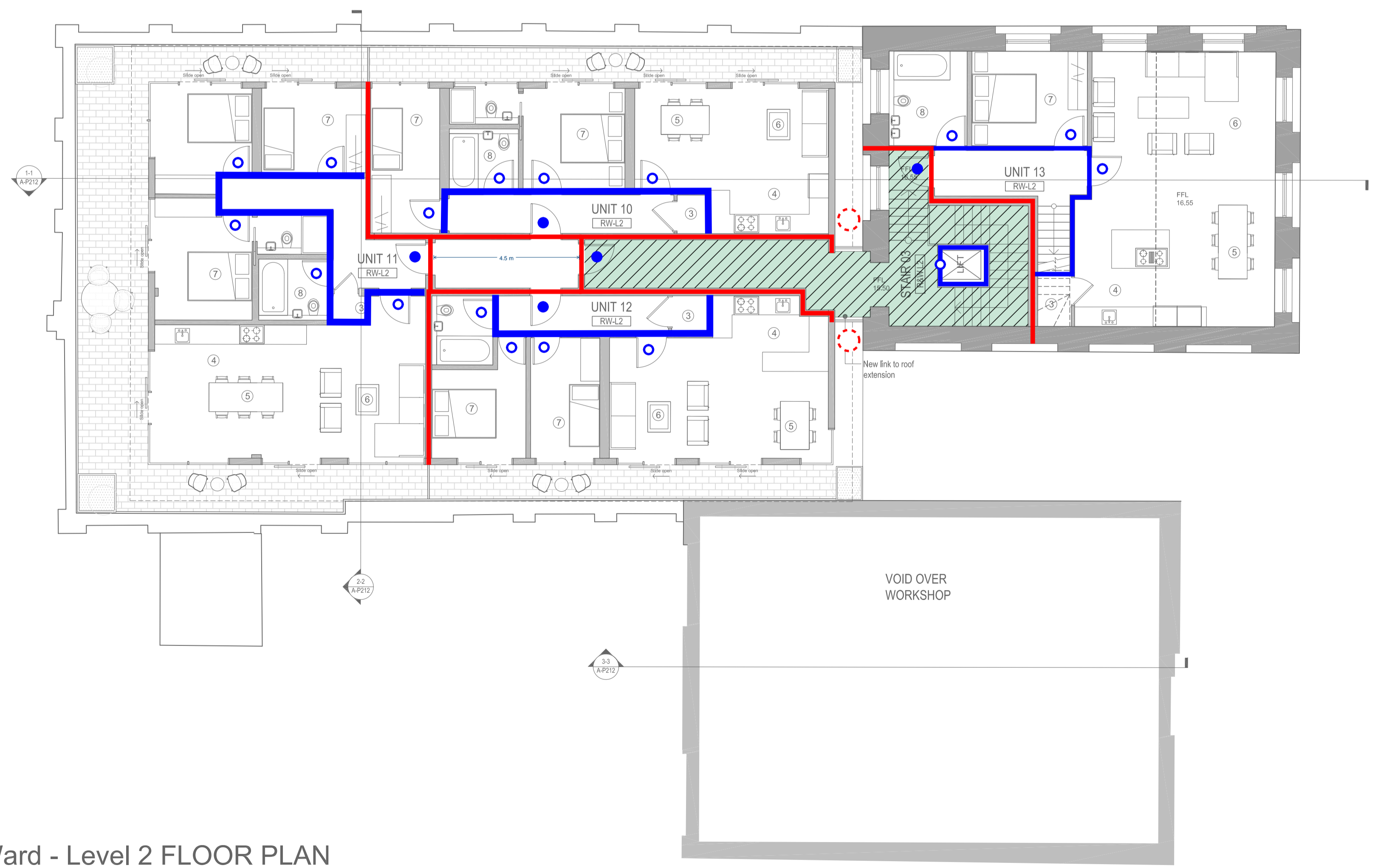
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The Glass House 5 Sclater Street London E1 6JY UK
Phone +44(0)20 8444 2999 Email mail@lom-fdp.com
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SCALE 1:100
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SCALE 1:100
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