

**NEW CITY COURT**

**Fire Statement**

CBDSP

New City Court  
Fire Statement

Revision 02  
April 2021

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Quality assurance

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01	Draft	26 <sup>th</sup> March 2021	Ben Green	Michael Stitt	Paul McLaughlin
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Consultant qualifications	MEng (Hons)	BEng (Hons), AIFireE	MEng (Hons)
Position within chapmanbdsp	Associate Director	Senior Fire Engineer	Associate Director
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Revision Table

Rev	Date	Section	Amendment(s)
01	26 <sup>th</sup> March 2021	-	-
02	16 <sup>th</sup> April 2021	1, 2, 3 & 7	Update based on feedback received by DP9.
02	16 <sup>th</sup> April 2021	Diagrams	Update based on feedback received by AHMM.

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1 Introduction

Chapmanbdsp have been commissioned to produce a Fire Statement for the proposed New City Court project. This report has been developed using the framework set-out within ‘The London Plan’ that has been prepared in accordance with the Greater London Authority Act 1999 (as amended) and associated regulations.

The redevelopment is to include demolition of the 1980s office buildings and erection of a 26-storey building (plus mezzanine and two basement levels), restoration and refurbishment of the listed terrace (nos. 4-16 St Thomas Street), and redevelopment of Keats House (nos. 24-26 St Thomas Street) with removal, relocation and reinstatement of the historic façade on a proposed building, to provide office floorspace, flexible office/retail floorspace, restaurant/café floorspace and a public rooftop garden, associated public realm and highways improvements, provision for a new access to the Borough High Street entrance to the Underground Station, cycling parking, car parking, service, refuse and plant areas, and all ancillary or associated works.

This Fire Statement will form part of the planning submission and include reference to ‘London Plan Policy D12 Fire Safety’ which sets out specific requirements to address fire risk. Under this policy, all major developments should be submitted with a ‘Fire Statement’ which is essentially an independent fire strategy defined as; an overriding document setting out the fundamental requirements that provide the focus for subsequent, more detailed specifications.

The building fire strategy will provide building owners, occupiers, and managers with relevant information from which to develop and implement effective prevention and protection solutions. This report should be read in conjunction with the wider project design documentation.

Overall, it is considered that the life safety standards required for compliance with the UK Building Regulations can be achieved within the New City Court project through the fire safety provisions outlined in this report. The key fire safety components for the scheme are summarised in Table 1.

1.1 Summary of fire protection features

The table below provides a summary of the fire protection features proposed for the scheme.

Table 1 – Summary of fire protection features

Item	Description		
	New City Court	Keats House	Georgian Terrace
Occupancy factors	Office - 6m <sup>2</sup> /person Building Management – 6m <sup>2</sup> /person Plant – 30m <sup>2</sup> /person Retail – 2m <sup>2</sup> /person Restaurant – 1 per cover Cycle storage – 4m <sup>2</sup> /person	Affordable workspace - 6m <sup>2</sup> /person	Building management suite - 6m <sup>2</sup> /person
Evacuation strategy	Typical office levels – 2 floor phased  Restaurant – Simultaneous  Basement + ground + 00Mezz – Simultaneous	Simultaneous on confirmed fire within Keats House	Simultaneous. Albeit each Georgian Terrace will evacuate independently
Escape widths	Stairs – 1200mm	Stairs – 1100mm	Stairs (existing) – 855mm minimum

Item	Description		
	New City Court	Keats House	Georgian Terrace
	Storey exits – 1050mm	Storey exits – 1050mm	Storey exits (existing) – assumed 850mm minimum
Fire detection and alarm	BS 5839-1: 2017 Category L1	BS 5839-1: 2017 Category L1	BS 5839-1: 2017 Category L1
Sprinkler protection	BS EN 12845: 2015 Ordinary Hazard 3	BS EN 12845: 2015 Ordinary Hazard 3	None
Structural fire protection	120 minutes	120 minutes	60 minutes
Compartmentation	Floor by floor	Protected escape stair	Protected escape stair
Access and provisions for the fire and rescue service	2no fire fighting shafts serving all levels including: <ul style="list-style-type: none"><li>• Firefighting lift</li><li>• Ventilated Firefighting lobby</li><li>• Fire fighting stair</li></ul>	1no ventilated stair	1no ventilated stair
Smoke ventilation	Mechanical extract from basement plant/storage based upon 10 ac/hr Ventilated fire fighting lobbies	1no ventilated stair	1no ventilated stair
Management	Level M1 as defined by BS 9999	M1 as defined by BS 9999	M1 as defined by BS 9999

1.2 Statement from Author

Ben Green is an Associate Director Fire Engineer with 8 years direct experience in the field of Fire Safety Engineering.

Ben Green is currently working towards his Chartered Status application with the Institute of Fire Engineers.

Ben has direct applicable experience in mid to high rise commercial schemes in London for the duration of his professional career within the field of fire safety engineering.

1.3 Statutory consultation

In due course, the scheme will move through the statutory consultation process which will also fall within the framework of the emerging Building Safety Bill and associated scheme development and construction ‘Gateways’

The planning application, which this Fire Statement supports, would form part of the emerging Gateway 1, the ‘planning application stage’.

The purpose of statutory consultation is to allow for the fire authority to make observations in regard to the proposals for the scheme with respect to the functional requirements of the Building Regulations and provide for an opportunity to make the applicant aware of actions that may need to be taken to meet the subsequent requirements of the Regulatory Reform (Fire Safety) Order 2005 (FSO).

The consultation period should allow for it to be agreed that the ultimate functional requirements of the Building Regulations are indeed achieved via a collaborative process. Throughout this process it should be recognised that often, only through adopting a combination of established guidance, and fire engineering techniques that a satisfactory and comprehensive standard of fire safety may be achieved.

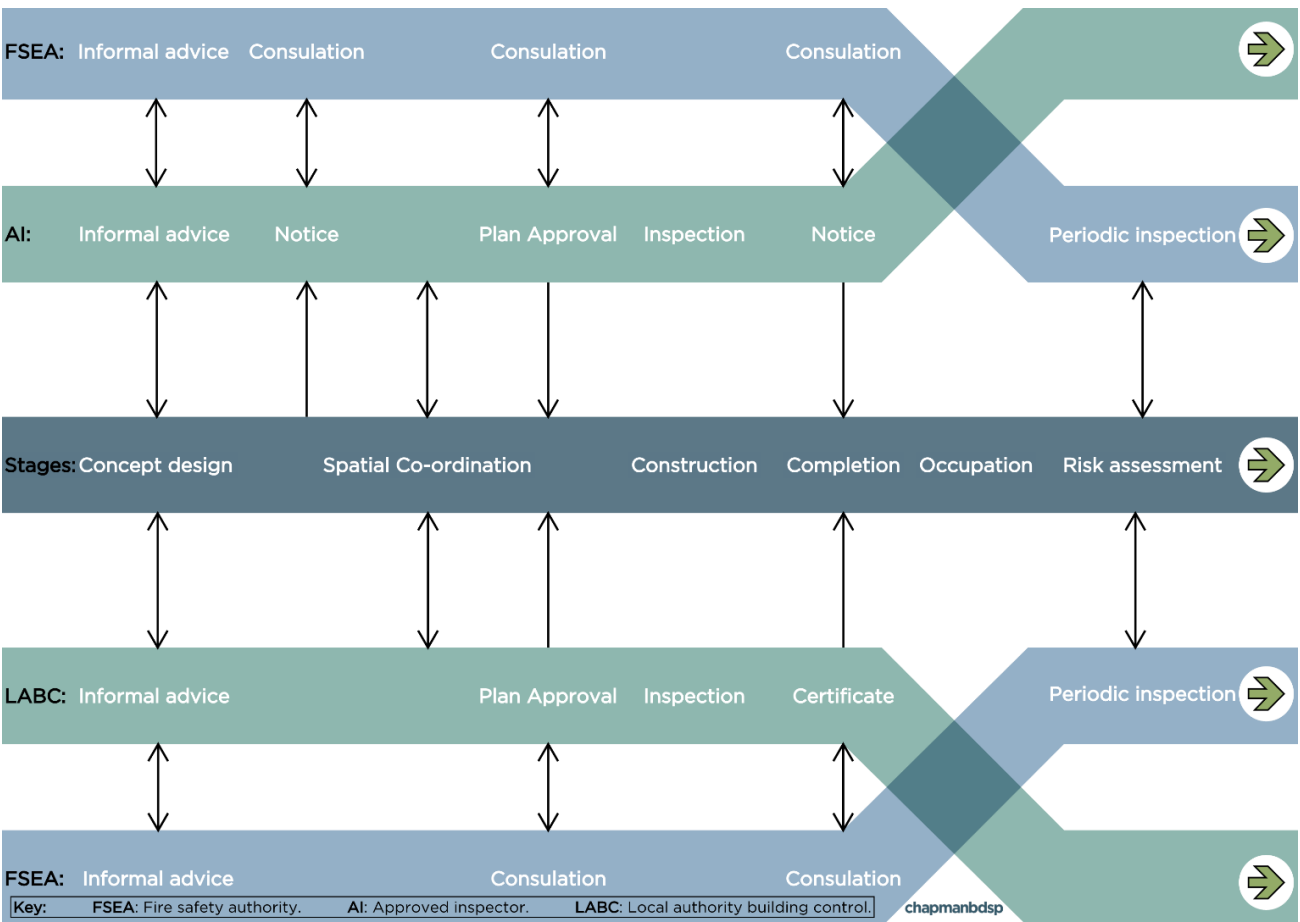


Figure 1 - Illustration of statutory consultation process

1.4 Future Modification

The proposed planning drawings have been reviewed by chapmanbdsp at the time of writing.

Future modifications, as part of design development, to the internal or external scheme design will require a full review by a qualified fire engineer and statutory approval by the local authority. Any material changes, or alterations to the fire protection systems is to be reviewed in line with the building

fire strategy to ensure the modifications do not compromise the principles of any base build fire strategy design as the scheme progresses.

Any deviation from the principles or ethos within said fire safety strategy could have major impacts on the effectiveness of its implementation post construction and should be factored into an updated document accordingly. The fire strategy may contain bespoke solutions independent from prescriptive guidance and should therefore be shared with building management and fire risk assessors, or any other relevant person.

1.5 Purpose

This Fire Statement is to be submitted to the planning authority with the objective of clearly transmitting the project design principles incorporated with regards to life safety; ensuring that the future development of the project gives confidence in the overall outcomes of the design in terms of fire safety.

This statement aims to demonstrate a clear understanding of the matters described in ‘London Plan Policy D12’ listed below:

- the building’s construction: methods, products and materials used, including manufacturers’ details (where available).
- 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.
- features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans.
- 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.
- how provision will be made within the curtilage of the site to enable fire appliances to gain access to the building.
- ensuring that any potential future modifications to the building will consider and not compromise the base build fire safety/protection measures.

1.6 Legislation Requirements

The building work will be subject to control under the following legislation:

- Building Regulations 2010 (as amended).

The project design and construction will satisfy the functional requirements of the Building Regulations Schedule 1; Part B: Fire Safety.

1.6.1 Building Regulations

The Building Regulations 2010 (as amended) are concerned with the health and safety of persons in and around a building. The development will be designed and constructed to satisfy the functional requirements of Part B Fire Safety to Schedule 1 of the Building Regulations 2010 as follows:

- B1 – Provision of adequate means of warning and escape.
- B2 – Control of internal fire spread; (internal).
- B3 – Control of internal fire spread; (structure).
- B4 – Control of external fire spread.
- B5 – Provision of access and facilities for the fire service.

1.6.2 Prescriptive Guidance

Guidance such as the following below will be considered:

- BS 9999:2017, ‘Code of practice for fire safety in the design, management and use of buildings.
- BS 9990:2015, ‘Code of practice for non-automatic fire-fighting systems in buildings.

1.6.3 Performance Based Design

Where a proposed aspect of the scheme lies outside of the recommendations of prescriptive guidance, alternative fire engineering techniques will be adopted in order to demonstrate at the very least a comparable level of fire safety is being provided within the scheme.

With respect to addressing the functional requirements of Parts B1-B5, the scheme design may draw on the framework from BS 7974 to establish a disciplined approach to the fire safety design. BS 7974 provides the framework for a flexible but formalised approach to fire safety design, which can also be readily assessed by statutory authorities. In doing so, it provides a means to establishing acceptable levels of fire safety without imposing unnecessary constraints on other aspects of building design and recognises that a range of alternative and complimentary fire protection strategies can achieve the design brief.

The scheme will provide for a total fire safety package, accommodating a functional and practical solution to fire safety.

The scheme will draw upon prescriptive standards as a basis for design; however, it is only through utilising a combination of established guidance, fire engineering and technical experience that a satisfactory standard of fire safety may be achieved from a Building Regulations standpoint.

1.7 Project Stakeholders

The design coordination has been progressed with the following design team:

Table 2 – Project Stakeholders

Discipline	Company
Client (Applicant)	GPE (St Thomas Street) Limited
Architects	AHMM
Structural Engineering	AKT II
MEP	cbdsp
Fire Safety Engineering	cbdsp
Approving Authorities	TBC

1.8 Drawing information for planning

This Fire Statement is based on the following pack of architectural drawings which should be referred to when reading this report.

Table 3 – Drawing information for planning

Drawing title	Drawing number	REV
GA Plans Level B2	20065 – X – A – (00) – P118	P01
GA Plans Level B1	20065 – X – A – (00) – P119	P01
GA Plans Level 00 Ground	20065 – X – A – (00) – P120	P01
GA Plans Level 00 (M)	20065 – X – A – (00) – P120M	P01
GA Plans Level 01	20065 – X – A – (00) – P121	P01
GA Plans Level 02	20065 – X – A – (00) – P122	P01
GA Plans Level 03	20065 – X – A – (00) – P123	P01
GA Plans Level 04 – 09 Typical Lower Floor	20065 – X – A – (00) – P124	P01
GA Plans Level 10 - 13 Typical Mid Floor	20065 – X – A – (00) – P130	P01
GA Plans Level 14 – Transfer Floor	20065 – X – A – (00) – P134	P01
GA Plans Level 15	20065 – X – A – (00) – P135	P01
GA Plans Level 16 – 22 Typical Upper Floors	20065 – X – A – (00) – P136	P01
GA Plans Level 23	20065 – X – A – (00) – P143	P01
GA Plans Level 24 - Terrace	20065 – X – A – (00) – P144	P01
GA Plans Level 25 – Upper Plant	20065 – X – A – (00) – P145	P01
GA Plans Level 26 – Roof	20065 – X – A – (00) – P146	P01
North Elevation – Proposed	20065 – X – A – (00) – P201	P01
South Elevation – Proposed	20065 – X – A – (00) – P202	P01
East Elevation – Proposed	20065 – X – A – (00) – P203	P01
West Elevation – Proposed	20065 – X – A – (00) – P204	P01
Section_AA – Proposed	20065 – X – A – (00) – P301	P01
Section_BB – Proposed	20065 – X – A – (00) – P302	P01
LUL Tube Station Proposed Plan and Elevation	20065 – X – A – (00) – P250	P01



1.9 Regulation 38

Regulation 38 of The Building Regulations (formerly Regulation 16B) states that, where building work involves the erection or extension of a relevant building or relevant change of use of a building which affects fire safety, it is necessary that the fire safety information for the building shall be given to the responsible person at the completion of the project or when the building or extension is first occupied. This information will facilitate the production of the fire risk assessment which is a requirement of the Regulatory Reform (Fire Safety) Order, outlined below. The fire safety information for the scheme may be used to supplement the information required to be given to the responsible person. As a minimum it will be necessary for the occupier of the building to be provided with a final as built fire safety strategy and all as built fire strategy plans produced by the architect in due course.

1.10 Regulatory reform (Fire Safety) Order 2005

The operation of the building will be subject to The Regulatory Reform (Fire Safety) Order 2005, (FSO)

Responsibility for complying with the FSO rests with a “responsible person”. This is normally the employer or any other person who may have control of any part of the premises e.g. the occupier or owner. If there is more than one responsible person in any type of premises, all must take reasonable steps to work with each other. It should be noted that the word “person” in the judicial sense can refer to a corporation as well as to an individual.

Under the FSO, the Responsible Person must carry out an assessment of the risks stemming from the possibility of fire in the premises and must implement fire precautions where necessary and to the extent that is reasonable and practicable to control those risks.

On occupation of the building, the ‘responsible person’ as defined in the FSO is required by law to undertake a fire risk assessment. The final as built fire safety strategy should be used as a basis for any risk assessment.

1.11 Fire Safety Management

The eventual fire safety management strategy of the scheme should incorporate the recommendations of this Fire Statement which are discussed in more detail within Section 6 herein. Areas where recommendations and assumptions regarding management have been made are highlighted in this report. Failure to implement these recommendations may compromise the fire safety package for the scheme and its intended function towards life safety, and compliance with the functional requirements of the Building Regulations 2010 (as amended).

1.12 Scheme Description

The New City Court development is described as a new build commercial office project, located adjacent to St. Thomas Street and within walking distance from London Bridge Station.

The proposed mixed-use redevelopment of the Site will include the following:

Demolition of the existing 1980s buildings and alterations, sympathetic restoration of listed Georgian terrace buildings along St Thomas Street, and reconstruction of Keats House with retention of existing façade;

- Delivery of a highly sustainable 26-storey building (plus mezzanine and two basement levels) extending to 108 m AOD, providing 44,312 sqm (GIA) of high-quality office floorspace (Class E);
- Introduction of 340 sqm (GIA) of flexible office/retail floorspace (Class E) at ground floor level of proposed office building, activating the proposed public realm;
- Provision of 5,017 sqm (GIA) of affordable workspace (Class E) within the Georgian terrace buildings, Keats House and levels 1 and 2 of the proposed office building, representing 10% of the overall office provision;
- Delivery of publicly accessible rooftop garden with high-quality landscaping and a complementary café and restaurant providing 421 sqm (GIA) food/drink floorspace (Class E);
- Delivery of high quality and fully accessible public realm, providing enhanced connectivity through new public routes and a new covered public arcade;
- Creation of a new entrance to London Bridge Underground Station; and
- Improved onsite servicing strategy to maximise servicing options and minimise impact on the local highway.

Figure 2 illustrates the scheme.

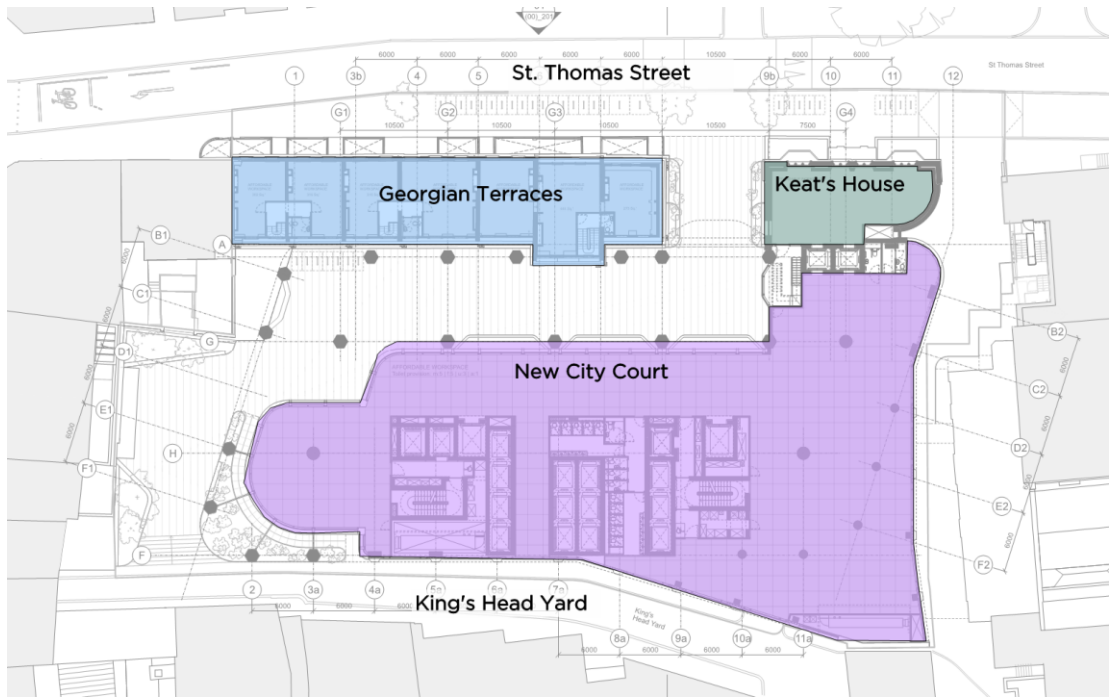


Figure 2 - Scheme overview



1.12.1 Building Heights

The illustration below depicts the height of each aspect of the scheme when measured from the lowest adjacent ground floor to the finished floor level of the uppermost occupied storey.

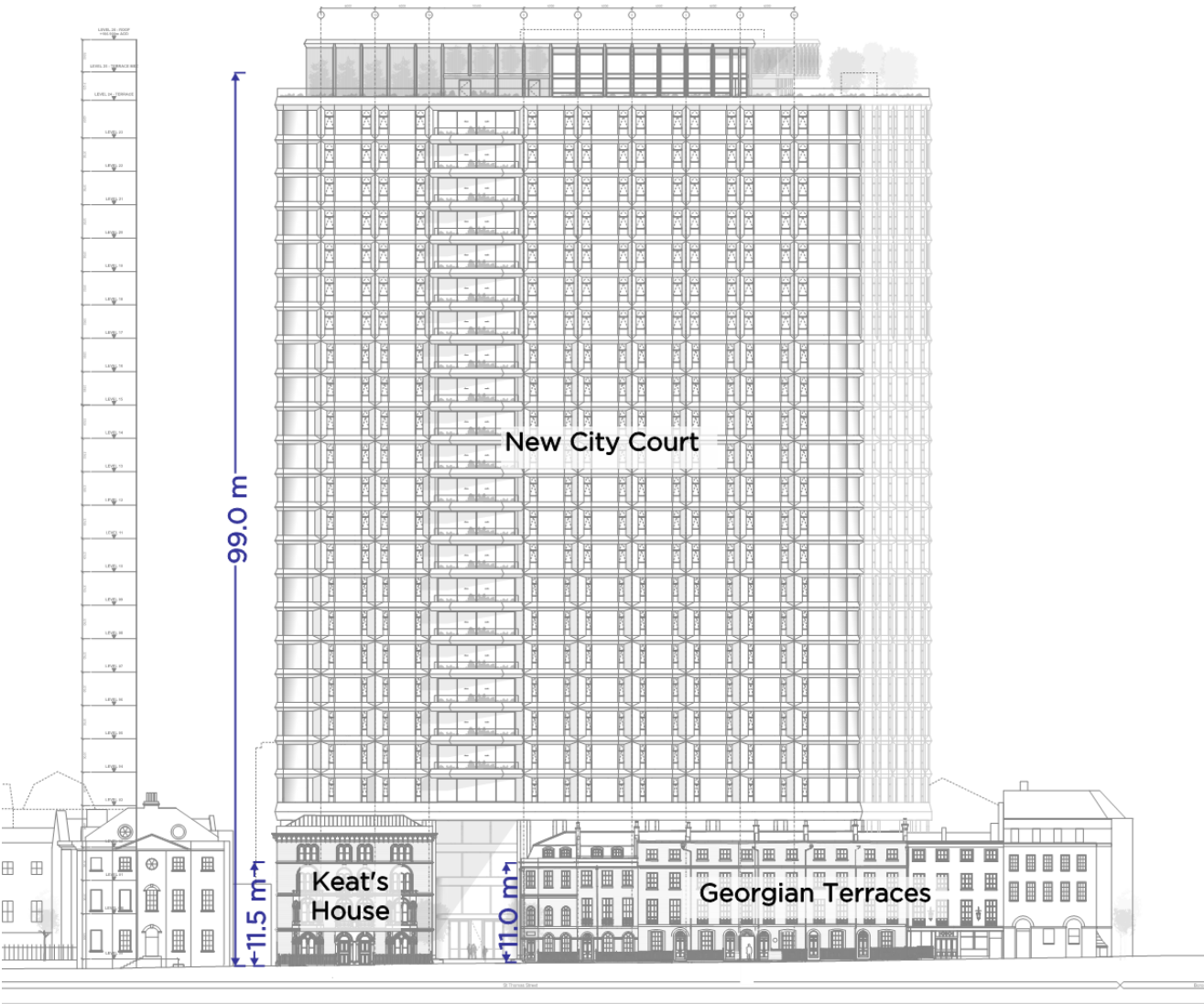


Figure 3 – Building heights

1.13 Building Construction: Methods, Products and Materials

The applicable building regulations require all elements of structure to the New City Court building to provide a minimum fire resisting performance of 120 minutes. All floors will provide a fire resistance of 120 (REI) minutes from the underside.

Keats House, given its connection to New City Court will also be provided with a 120-minute standard of structure.

The standard of structure defined for the Georgian Terrace will be 60 minutes in accordance with guidance.

All materials will be reviewed and developed throughout the design process, in accordance with the recommendations set down within Section 4 herein.

1.14 Design occupancy

The table below sets down the occupant design density and risk profiles for the scheme.

The following risk profiles have been established using BS 9999 based on an assessment of the occupancy characteristics and the potential fire growth rate. In accordance with BS 9999, the latter may be reduced given the provision of suitable fire suppression in accordance with BS EN 12845.

- A – Denotes occupants that are awake and familiar with the building.
- B – Denotes occupants that are awake and unfamiliar with the building.

- 1 – Denoted ‘slow’ fire growth.
- 2 – Denotes ‘medium’ fire growth.

Table 4 – Design Occupancy

Area	Design Density (m <sup>2</sup> /person)	Risk Profile
Office	6	Sprinklered – A1 Non sprinklered – A2
Retail	2	Sprinklered - B1
Plant/storage	30	Sprinklered – A2
Cycle Storage	4	Sprinklered – A2
Cycle changing facilities	3	Sprinklered – A2
Affordable workspace	6	Sprinklered – A1
Public terrace	2	Non sprinklered - B1
Restaurant	1 per cover	Sprinklered - B1

## 1.15 Population breakdown

The table below sets down the population breakdown of the scheme in accordance with the design freeze area schedule dated 09/03/2021.

Table 5 – Population breakdown

Level	Description					
	New City Court		Keats House		Georgian Terrace	
	NIA (m²)	Occupancy	NIA (m²)	Occupancy	NIA (m²)	Occupancy
26 Roof			-	-	-	-
25	Restaurant - 77	31	-	-	-	-
24	Restaurant - 345	62	-	-	-	-
23	Office - 1527	254	-	-	-	-
22	Office - 1523	253	-	-	-	-
21	Office - 1523	253	-	-	-	-
20	Office - 1523	253	-	-	-	-
19	Office - 1523	253	-	-	-	-
18	Office - 1523	253	-	-	-	-
17	Office - 1523	253	-	-	-	-
16	Office - 1523	253	-	-	-	-
15	Office - 1494	249	-	-	-	-
14	Office - 1419	236	-	-	-	-
13	Office - 1458	243	-	-	-	-
12	Office - 1458	243	-	-	-	-
11	Office - 1458	243	-	-	-	-
10	Office - 1458	243	-	-	-	-
9	Office - 1458	243	-	-	-	-
8	Office - 1458	243	-	-	-	-
7	Office - 1458	243	-	-	-	-
6	Office - 1458	243	-	-	-	-
5	Office - 1458	243	-	-	-	-
4	Office - 1458	243	-	-	-	-
3	Office - 1458	243	-	-	-	-
2	Affordable WS - 999	166	AWS - 99	16	Office - 246	41
1	Affordable WS - 999	166	AWS - 99	16	Office - 239	39
Mezz	Office - 626 Retail - 188	104 94	AWS - 52	8	Office - 241	40
Ground	Retail - 151	75	AWS Reception  Fire Control Centre	4  4	Office - 193	32
B1	Cycle Storage - 1068 [1] Cycle changing - 286 [1] Building Management Suite - 190	267 95 31	-	-	Office - 209	34
B2	Plant - 1607 [1]	53	-	-	-	-

Note [1] Circa area from architect level B2 & B1 plan

## 2 Package of fire protection measures

### 2.1 Automatic Fire Detection and Alarm System

An automatic fire detection (AFD) and alarm system will be provided generally in accordance with BS 5839: Part 1 2017 category L1 throughout the scheme. A category L1 system is designed to offer the earliest possible warning of fire and may be seen as an enhanced grade of system to that recommended within standard guidance (Table 7 BS 9999).

A voice alarm system will be provided in accordance with BS 5839-8: 2013. It will have the ability to be manually operated as an emergency public address system and be integrated with the fire detection system to facilitate the phased evacuation of New City Court and simultaneous evacuation of Keats House and the Georgian Terrace.

A proprietary alert system for people with hearing impairments will be incorporated into the fire alarm design as a means of assisting in the managed notification and evacuation of less able-bodied occupants using PEEPs, for example personal pagers.

The audibility of any alarm will be carefully considered to limit issues associated with cross contamination between areas open to each other, which may cause occupants to unnecessarily evacuate. The audibility and response to alarms should be coordinated with the fire safety management team. Ambient noise sensors could be considered to help offset alarm audibility “cross contamination” between floors.

AFD will not be provided within WC accommodation. Beacons will be provided in disabled WC accommodation. Beacons will also be provided in any super loos, and plant rooms where the ambient noise level exceeds 90 dB.

Roof top plant areas open to the outside will not be provided with automatic fire detection.

Packaged plant rooms will be provided with AFD which will, when activated, send an alert signal to management.

A confirmed fire on rooftop plant levels will only result in evacuation of that level. The provision and location of adequate sounders / beacons from the plant areas should be carefully considered by the specialist contractor to ensure good distribution and audibility.

Repeater panels for the alarm system will be provided at the entrance to all firefighting shafts at access level, entrances to stairs within Keats House and the Georgian Terrace and within the reception areas.

A combined fire telephone and disabled refuge call point will be installed in firefighting cores. This will be in accordance with BS 5839-9 and consist of Type A and B outstations.

A link will be provided between New City Court, Keats House & the Georgian Terrace that will provide notification of a fire alarm. This will be a two-way notification system that will send a notification to the unaffected aspect of the scheme.

Building Management or London Fire Brigade will be responsible for further evacuation, if considered necessary.

Any ceiling/floor voids greater than 800mm in depth will be provided with detection. Any proposal to omit detection should be subject to a risk assessment carried out by the trade contractor and should not adversely impact on certification of the fire alarm and detection system.

Detection will be provided within all service risers.

### 2.1.1 Double Knock

The evacuation strategy for the New City Court building is phased. The Georgian Terrace and Keats House will evacuate simultaneously on confirmed alarm.

To prevent against the nuisance of false alarms, the alarm system will be double knock, as follows:

- Activation of a single point detector within the building will result in an alert signal being sent to management. The alert must be acknowledged within 60 seconds (tbc), or the alarm system will sound.
- Following acknowledgement of an alert, building management will implement a ‘seek and search’ period to investigate whether the alarm has been falsely activated. The investigation period will need to be established using trial runs within the building and agreed with the relevant approving authority. However, the period is typically set at 4 minutes in the design stages.
- If the investigation period passes, then the alarm system will sound, and evacuation will begin. If, at any point, a second point detector activates, a manual call point is activated, or a sprinkler flow switch is triggered, then this will result in a double knock situation and the alarm will sound and full evacuation will occur.
- If the investigation period identifies the detection as being false, then the alarm system may be reset (manually) at the fire alarm panel.

Note: A confirmed alarm is a Break Glass Unit, a Heat Detector, a Sprinkler Flow Switch, a Second Detector. Completion of Seek & Search Timer or Failure to Acknowledge a Fire Event.

### 2.2 Automatic Fire Suppression

An ordinary hazard 3 (OHIII) system will be installed within New City Court and Keats House generally in accordance with the LPC rules on sprinkler protection incorporating BS EN 12845: 2015. Coverage will extend throughout the office, commercial, plant and ancillary accommodation where appropriate. All cleaners’ cupboards will be provided with sprinkler protection.

The water supply will comprise superior twin arrangement with twin compartment full holding capacity tank of 185m<sup>3</sup>. The tank will have mains connection capable of refilling the tank within 36 hours.

### 2.2.1 Sprinkler Certification

Sprinklers will be designed and installed in accordance with the Loss Prevention Council (LPC) rules, incorporating BS EN 12845: 2015. The installation will meet the functional requirements of the building regulations and will, in due course, be approved under the building regulations.

The benefit of installing sprinklers in accordance with the LPC rules is the provision of the LPS (Loss Prevention Standard) 1048 Certificate of Conformity. A Certificate of Conformity is written confirmation that the installation complies with the appropriate rules. Minor non-compliances (or ‘deviations’) are noted on the certificate and these should be agreed with the relevant parties. Major non-compliances will prevent the issue of a certificate.

The LPC rules require sprinklers to be incorporated in almost every area of the building, which is generally not required to gain approval under the building regulations. As such a number of areas where the installation of sprinkler protection is either unwarranted (e.g. in protected staircases) or deemed unsuitable (e.g. oil storage rooms) may be assessed in due course.

The LPC will make a judgment whether departures are technically justified and/or major ‘non-compliances’ and as such determine whether or not to allow a certificate to be issued.

The sprinkler contractor must therefore be made aware of the strategy and resolve the issues with the LPC accordingly. The sprinkler contractor should agree that the sprinkler installation will be LPS accredited, considering any areas of non-compliance.

## 2.3 Firefighting Lifts

Firefighting lifts where provided shall be designed and installed in accordance with BS EN 81-72. A firefighting lift is to be provided within all dedicated firefighting cores, accessed directly from the ventilated firefighting lobby, and located no more than 7.5m to the firefighting stair core.

## 2.4 Wet Rising Mains

Wet rising mains will be provided to the New City Court Building in accordance with BS 9990: 2015.

## 2.5 Smoke Control Systems

### 2.5.1 Fire Fighting Stair Ventilation

A 1.0m<sup>2</sup> automatic opening vent will be provided at the head of each firefighting stair. Override controls will be provided at ground/access level, and at the top storey within the stair.

### 2.5.2 Georgian Terrace & Keats House

Ventilation will be provided to the single means of escape stairs serving the Georgian Terrace & Keats House in accordance with the recommendations discussed herein within 3.4 & 3.5

### 2.5.3 Firefighting lobbies

#### 2.5.3.1 New City Court

Smoke control for the firefighting lobbies will be provided by a proprietary mechanical smoke extraction system typically in the form of a 0.6m<sup>2</sup> smoke extract shaft. Extract fans will be located at the head of the shaft(s). Make up air for the system may be drawn in through the stairs, via a 1.0m<sup>2</sup> automatically opening vent at the head of the stairs. The ultimate design, specification and installation of these systems will be by specialist contractor, in consultation with Building Control. Additional CFD modelling may be required to be undertaken by the specialist sub-contractor to validate their design.

This will be an enhanced system designed to achieve an extract velocity of 2.0m/s through the door. This system is intended to offer a standard of protection commensurate to a class B pressurisation system designed in accordance with BS EN 12101-6.

### 2.5.4 Basement Smoke Clearance

The basement will be provided with a dedicated smoke extraction system provided with automatic (low) and manual (high) speed operability. This will be capable of a minimum of 10 air changes per hour in high-speed mode (via FOCP manual switches) from the largest compartment served.

Smoke control supply and extract ductwork will be designed in accordance with BS EN 12101-7.

The smoke Clearance system is to meet the following recommendations in accordance with BS9999:2017:

- Provide 10 air changes per hour.
- Be capable of handling gas temperatures of not less than 300°C for a period of 60 minutes.
- Come into operation automatically upon activation of a sprinkler head or detection and alarm system confirming to BS 5839-1.
- Replacement air should be provided automatically.
- The system should have an independent power supply which would operate in the event of failure of the primary power supply.

## 2.5.5 Refuse Store Smoke Ventilation

In accordance with BS9999:2017, refuse stores are required to be accessed either direct from external or via a protected lobby which is provided with at least 0.2m<sup>2</sup> permanent ventilation (or a suitable mechanical equivalent).

## 2.6 Emergency Signage

Fire safety signs will be installed where necessary to provide clear identification of fire precautions, fire equipment and means of escape in the event of fire. All parts of the development will be fitted with appropriate fire safety signage to comply with The Health and Safety (Signs and Signals) Regulations 1996 i.e. signage to be specified in accordance with BS 5499-4, BS 5499-10, and BS ISO 3864-1.

The purpose of fire signs is to direct persons towards fire exits, or to provide specific information or warning about particular equipment, doors, rooms, or procedures. They should be recognisable, readable, and informative, as they convey essential information to regular and infrequent users of the premises, and the Fire and Rescue Service.

Escape signage consists of and should meet the following:

- Clearly and easily understood.
- Must include a pictogram.
- Text may be used alongside a pictogram.
- Signs above doors or open spaces should be mounted between 2m and 2.5m from floor level (allowing the sign to remain readily seen).
- Signs mounted on walls should be mounted between 1.7m and 2.0m from floor level.

## 2.7 Emergency Lighting

Emergency lighting will be installed to provide temporary illumination in the event of failure of the primary power supplies to the normal lighting system. As part of the emergency lighting system, escape lighting will be provided to ensure the escape routes are illuminated at all material times. Adequate artificial lighting will be provided in all common escape routes and will be of a sufficient standard to enable persons to see to escape.

Emergency lighting will be installed in accordance with the recommendations of BS 5266 (parts 1-2 and 4-6), BS EN 1838, and BS EN 60598-2-22.

Emergency lighting will illuminate all occupied areas, common evacuation routes (internal and external as necessary) and essential areas including plant areas. It will also illuminate a safe exit route including fire exits, fire alarm call points, changes in level or direction and firefighting equipment.

Emergency lighting will be provided with 3-hour integral batteries.

Primary and emergency lighting will be required for any external escape routes that will not be lit by surrounding street lighting.

In open plan areas, the horizontal illuminance should be at least 0.5 lux at floor level, with a ratio of maximum to minimum illuminance of no greater than 40:1.

2.8 First Aid Fire Fighting

First-aid fire-fighting provisions should be assessed and provided as part of the fire risk assessment for the building, including consideration for the day-to-day management of the provisions.

The type and size of extinguisher(s) at each fire point should be chosen in accordance with the guidance given in BS 5306.

2.9 Emergency Power Supplies

Alternative supplies to critical life safety plant should be provided from a separate life safety supply. The services connected to the life safety system will include the following:

- Emergency lighting.
- Emergency voice communication systems.
- Fire-fighting lift.
- Evacuation lift.
- Fire and smoke dampers.
- Smoke control systems including extract fans, automatic opening vents and dampers.
- Sprinkler system pumps.
- Wet riser pumps

Automatic Transfer Switches (ATS) shall be provided in accordance with BS EN 60947 and be secured against tampering, not subject to water ingress and enclosed in fire resisting construction (120 minutes integrity and insulation).

All lifts should be provided with emergency power supplies for sequential homing (except firefighting lifts which will home immediately following a confirmed fire alarm).

2.10 Provisions for disabled occupants

It is assumed that disabled occupants will be able to escape to a place away from danger without assistance from trained fire marshals and/or the fire service. However, there will be a certain proportion of building occupants, such as those who are non-ambulant disabled, i.e. wheelchair users, who will not be able to negotiate stairs unaided; therefore, a disabled evacuation management procedure will be incorporated into the fire safety management strategy for the building, to be undertaken by the end user of the building.

Disabled refuge areas are to be provided of no less than 1400mm x 900mm within all means of escape cores at every level.

A system of two-way communication between each refuge area is to be linked with the reception and fire control centre to be designed, installed and commissioned in accordance with BS 5839-9:2011. A disabled evacuation management procedure will be required to be incorporated into the Fire Safety Management Strategy for the scheme.

2.10.1 Evacuation Lifts

In the spirit of the London Plan 2021-part D5, consideration should be given to the provision of evacuation lifts within the scheme. Figure 4 below is courtesy of the Greater London Authority London Plan Guidance Sheet Policy D5 (B5)

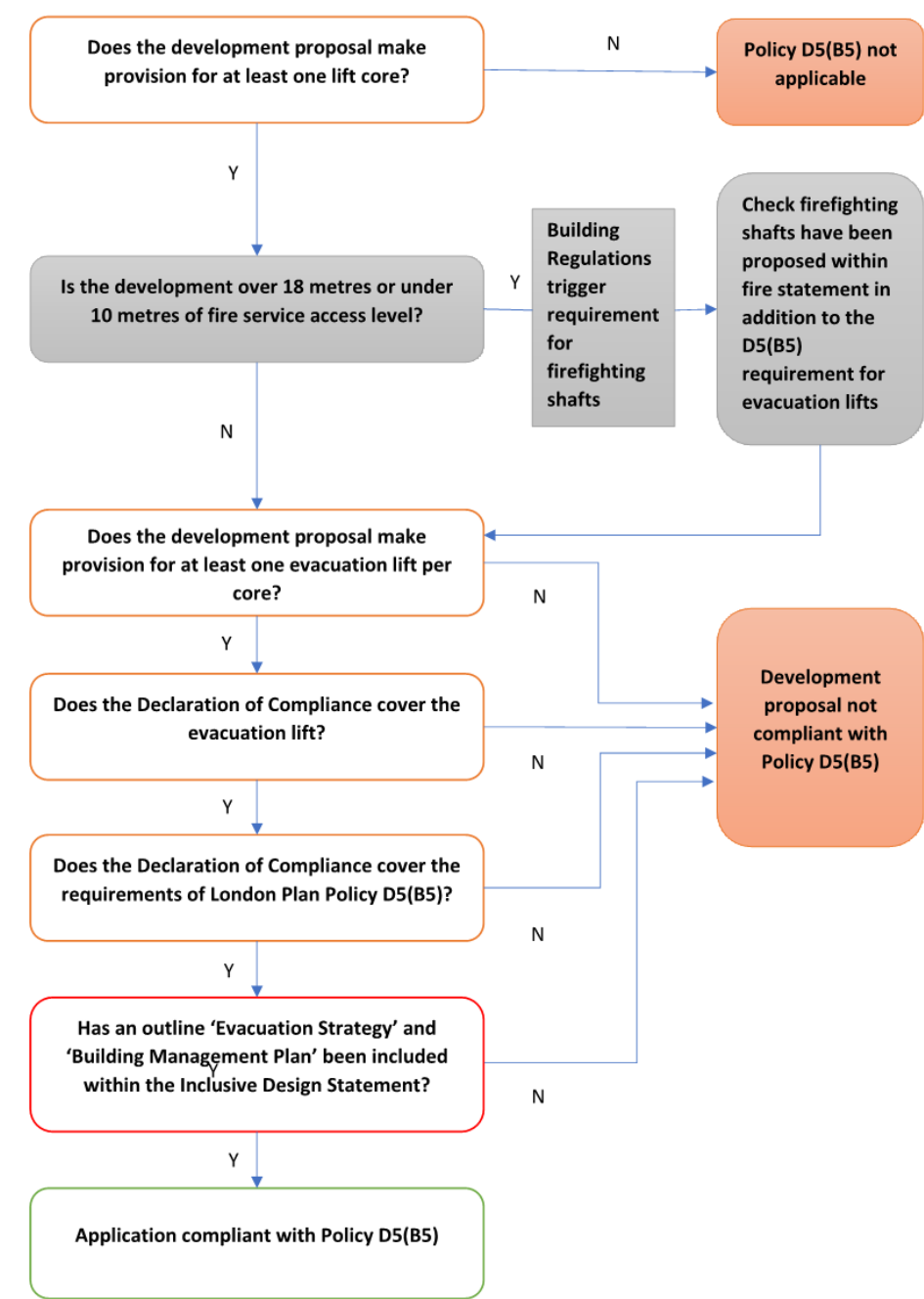


Figure 4 – Evacuation lift checklist – London Plan Policy D5 (B5)

The illustrations provided within Figure 5 & Figure 6 set down the provision of evacuation lifts for the scheme. All evacuation lifts provided will be designed in accordance with BS EN 81-76, with suitable protection for an associated refuge point and communications, and provided with level egress direct to outside at the final discharge level.

Note, that the Georgian Terrace is an existing listed structure with no lift provision proposed within the cores.



2.10.1.1 New City Court Evacuation and Fire Fighting lifts

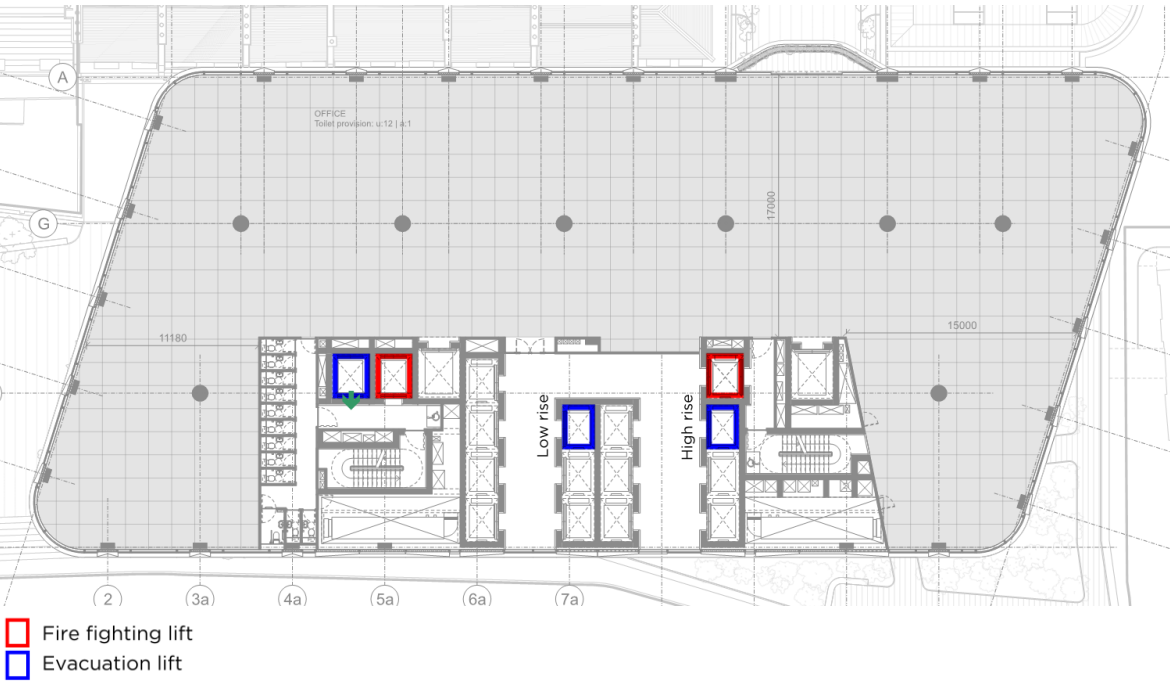


Figure 5 – Evacuation & Fire Fighting lift provision for New City Court

2.10.1.2 Keats House Evacuation Lift

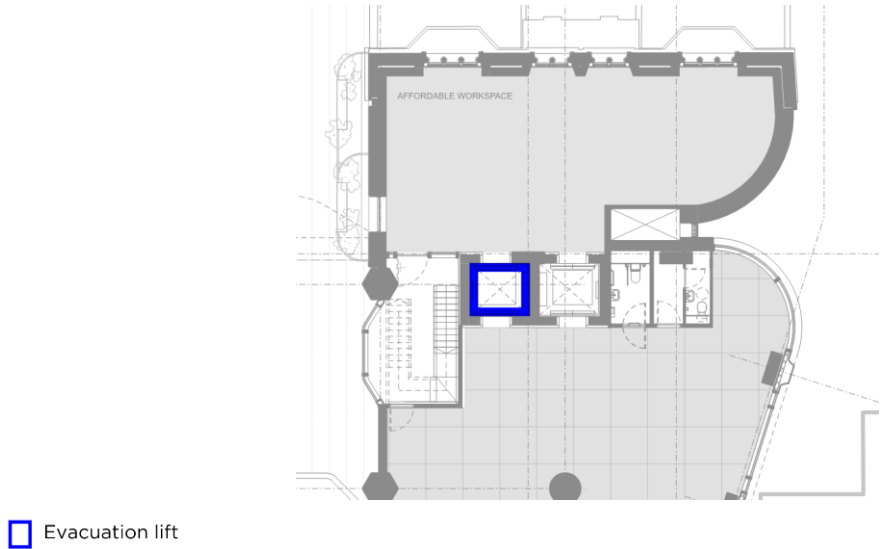


Figure 6 – Keats House Evacuation lift provision

2.11 Compartmentation

The table below sets down typical compartmentation provisions for the scheme which should be conveyed within the associated architectural fire safety plan drawings in due course

Table 6 - Compartmentation

Area	Minutes
Substation	240
Separation of retail units from commercial	120
Firefighting shaft/access routes	120
Life safety risers	120
Compartment floors (New City Court)	120
Protected stairs (Georgian Terrace)	60

Figure 7 provides an illustration of the proposed fire rated construction on a typical floor, to be developed in due course.



Figure 7 – Illustration of proposed fire rated construction on a typical floor

2.12 Public Roof Garden

It is proposed to incorporate a public garden within the upper levels of New City Court. The feature will span over two compartments forming a double height space with a restaurant area adjacent.

The use of grasses and mosses should also be avoided, instead fire-resistant plants should be used, for example those with a high moisture/low resin content as exhibited by plants with supple leaves and watery sap. Relatable recommendations are given in the *Department for Communities and Local Government - Fire Performance of Green Roofs and Walls*. Further analysis for this bespoke arrangement will be undertaken at a later stage.

3 Principles of Means of Warning & Escape

Appropriate means of warning & escape is to be provided to facilitate occupancy escape from the scheme to a place of safety. The scheme is to be designed to meet the following recommendations detailed below.

3.1 General recommendations

3.1.1 Travel Distances

The scheme will be designed to meet the following maximum travel distance recommendations as outlined in Table 7. The travel distances have been based on the relevant risk profile, accounting for sprinkler protection and the provision of enhanced automatic fire detection throughout the scheme where applicable.

It is proposed to provide an L1 fire detection & alarm system which is to be designed, installed, and commissioned in accordance with BS5839-1:2017. This proposed fire detection & alarm system is therefore considered to provide a clear benefit to occupant escape based on the reduction in alarm activation time and allows for enhancements to the maximum permitted travel distances.

Table 7 – Travel distances

Area	Risk profile as per section 1.14 herein	Maximum Permitted Travel Distance	
		In one direction only (m)	In more than one direction (m)
Office (sprinklered)	A1	29.90 (19.55)	74.75 (50.60)
Office (non-sprinklered) i.e. Georgian Terrace	A2	25.30 (17.25)	63.25 (42.55)
Retail	B1	27.60 (18.40)	69.00 (46.00)
Plant	A2	25.30 (17.25)	63.25 (42.44)
Restaurant	B1	27.60 (18.40)	69.00 (46.00)
Cycle storage	A1	29.90 (19.55)	74.75 (50.60)

Notes:

- In accordance with BS9999:2017, where the internal layout is unknown the maximum permitted travel distance is reduced as shown by figures in brackets.
- Travel distance limitations have taken the benefit of an allowable increase of 15% based on the provision of enhanced detection as set down in section 2.1 herein



### 3.1.2 Width of doors, corridors & escape routes

#### Minimum exit widths

- The absolute minimum width of the exits must be no less than 800mm.
- The absolute minimum width of the exits must be no less than 850mm for unassisted wheelchair access.
- Where double doors are provided the width of one of the leaves should be not less than 800mm.
- All doors should open in the direction of escape. Alternatively, the room is limited to 60 occupants.
- Full height (floor to ceiling) doors are not recommended for the door between the stair and lobby.
- The number of occupants in which a storey exit may serve must be restricted further in accordance with equation (1) of BS 9999:2017, where the free width is less than 1050mm. This limitation reflects the number of occupants which can safely pass through the door during an evacuation.

#### Minimum corridors widths

- All corridors used for means of escape are to achieve a clear width no less than 1200mm. Note: The width of a door in a corridor should be not less than the corridor width minus 150mm.
- Where the corridor is not accessible to wheelchair users, the width may be reduced to 1000mm
- Where corridors are to be used for means of escape as well as for the transit of goods, the corridor should be a minimum width of 2.0m and no more than 3.0m.
- Where a corridor is greater than 12m in length, it is required to be sub-divided to prevent both means of escape routes becoming blocked simultaneously. Any fire door that subdivides a corridor must have vision panels. Where mechanical smoke ventilation is provided, cross-corridor fire doors may be omitted.

#### Minimum stair widths

- Fire-fighting stairs should be designed in accordance with BS 5395-1, with a width between the walls or balustrades of not less than 1100mm.
- The minimum width of a means of escape should be:
  - not less than the width(s) of any exits(s) affording access to them;
  - should not be reduced at any point on the way to a final exit; and
  - should be not less than 1000mm for downward travel and 1200mm for upward travel.
- Note: Handrails may be ignored from the measurement of the width of the stairs providing they protrude less than 100mm into the clear width of the stair.

#### Minimum final exit widths

- In accordance with Section 17.2.7 of BS 9999:2017, every protected stairway should discharge by way of a protected exit passageway to a final exit. Any such protected exit passageway should have the same standard of fire resistance and lobby protection as the stairway it serves.
- The protected exit passageway is considered to be an extension of the protected stairway compartment. Therefore, the passageway must be at least as wide as the stair and maintained until the final exit.
- Where the protected exit passageway also provides access for the fire service, an additional 500mm must be accounted for to allow evacuating occupants to bypass the fire service upon entry.
- All locked security doors in the building must failsafe unlocked upon fire alarm activation and must be provided with the relevant override switch (i.e. emergency green break-glass),

designed in accordance with BS 7273-4. Hold-open devices that automatically release should also align with BS 7273-4.

The above minimum widths may be increased to meet the occupancy capacity requirements. The Evacuation Analysis is contained with the appendix of this fire safety strategy. This analysis will be reviewed, updated, and developed throughout the design process.

### 3.2 External Assembly Point

The following sets down guidelines on safe assembly following an evacuation. On completion of evacuation, all occupants will be instructed to proceed to a pre-defined evacuation zone which will be located a minimum of 10m away from the premises to avoid interference with the Fire Service or danger from falling debris, fire and smoke.

Notwithstanding the above, the assembly point(s) will adhere to the following guidelines:

- Escape routes will allow for possible egress in cold weather as well as day and night-time conditions. I.e., emergency lighting on escape routes and suitable illumination of the assembly point.
- Final exits do not present an obstacle to wheelchair users and other people with disabilities. Where a final exit is accessed without the need to first traverse steps, then a level threshold and, where necessary, a ramp will be provided.
- Final exits will be apparent to persons who may need to use them. This is particularly important where the exit opens off a stair that may continue down, or up, beyond the level of the final exit.
- Final exits will be sited so that they are clear of any risk from fire or smoke in a basement (such as the outlets to basement smoke vents), or from openings to transformer chambers, refuse chambers, boiler rooms and similar risks.
- A back up assembly will be established for use in the event that the primary location cannot be used.

#### 3.2.1 Occupant density

The assembly zones will be designed to accommodate a maximum occupant density of 0.3m<sup>2</sup>/person.

### 3.3 New City Court Means of Escape

#### 3.3.1 Upper Levels

The evacuation strategy for the upper levels (i.e. Levels 01 to 25) of New City Court shall be based on a phased evacuation strategy. The occupants to be evacuated initially are occupants on the floor (or compartment) of fire origin and those in the compartment directly above, and occupants with disabilities or reduced mobility.

#### 3.3.2 Lower Levels

The evacuation strategy for the lower levels of New City Court (i.e. both Basement levels, Ground and Mezzanine) is based on simultaneous evacuation strategy. All occupants will evacuate from the lower levels upon fire alarm activation. All other areas within the building, will remain in place, as the lower levels operate independently.

3.3.3 Retail

The retail units are based on a simultaneous evacuation strategy. All occupants will evacuate from retail units upon fire alarm activation within the unit. All other areas within the building, including adjacent retail units, will remain in place (with the exception of the public roof garden) as each retail unit operates independently.

To facilitate a phased evacuation strategy, New City Court shall meet the necessary requirements, as follows:

- Each stair shall be approached by means of a protected lobby or corridor.
- Every floor shall be a compartment floor.
- The building is over 30m tall and shall be protected by a sprinkler system conforming to BS EN 12845:2015.
- The building shall be fitted with an L1 fire warning system conforming to BS 5839-1:2017.
- An emergency voice communication system will be provided conforming to BS5839-9:2011 and can allow communication from each floor to the fire command centre located at the ground floor within Keats House.

3.3.4 Typical floors

The figure below illustrates means of escape from the typical office floors.

It should be noted that any proposed tenant splits should maintain access to both means of escape stairs from each tenant by virtue of a sterile common corridor wrapping around the core to connect each storey exits.



Figure 8 – Typical office floor plate (level 03)

At levels 00 mezz, 01 and 02 an alternative route into the East firefighting core has been proposed in order to off-set an otherwise extended travel distance as illustrated below.

Smoke control will be extended to both lobbies as illustrated within Figure 9 below

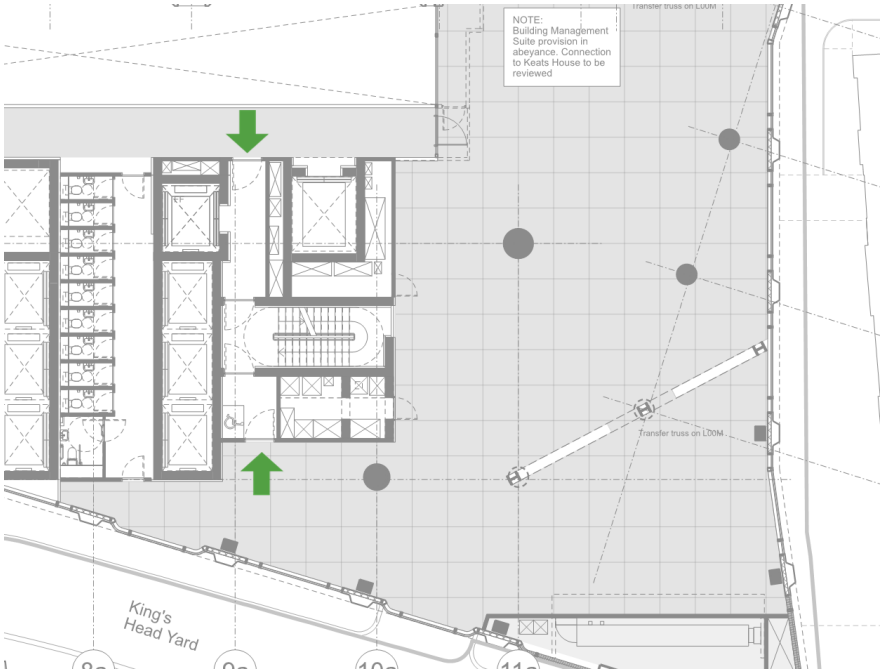


Figure 9 – Alternative route into East Core at levels 00mezz, 01 and 02

3.3.5 New City Court - Escape capacity Summary

3.3.5.1 Vertical means of escape above ground

Typical office floors above ground will adopt a 2-floor phased evacuation strategy.

The table below sets down the vertical means of escape assessment for worse case floors above ground.

Table 8 - Vertical means of escape capacity, above ground

Floors evacuated <sup>[1]</sup>	Risk profile	Minimum recommended stair width per person <sup>[2]</sup>	No of stairs serving	Total available stair width <sup>[3]</sup>	Stair capacity <sup>[4]</sup>	Population (as per Table 5)	Check
Level 22 & 23	A1	2.89	2	2 x 1200	830	507	✓

[1] largest combination of floor plates considered.

[2] Minimum stair width per person based on the risk profile defined and an enhanced fire alarm and detection system serving the building for evacuation over 2no floors in accordance with BS 9999 table 13.

[3] Both stairs considered available in the event of fire as lobby protection is provided.

[4] 2400mm / 2.89 = 830 people across the 2no floors with an even distribution assumed

3.3.5.2 Horizontal means of escape above ground

The table below sets down the horizontal means of escape assessment for worse case floors above ground.

Table 9 - Horizontal means of escape capacity, above ground

Level <sup>[1]</sup>	Risk Profile	Minimum Exit Width Per Person (Mm) <sup>[2]</sup>	Storey Exit Width Provided (Mm)	Storey Exit Width Available (Mm) <sup>[3]</sup>	Storey exit capacity <sup>[4]</sup>	Population (as per Table 5)	Check
23	A1	2.805	2 x 1050	1 x 1050	374	254	✓

[1] Most densely occupied floor considered

[2] Minimum storey exit width per person based on the risk profile defined and an enhanced fire alarm and detection system in accordance with BS 9999 table 12

[3] 1no storey exit discounted to the effects of fire

3.3.6 New City Court – Ground floor discharge

The figures below illustrate considerations for the ground floor discharge routes from the main East and West cores.

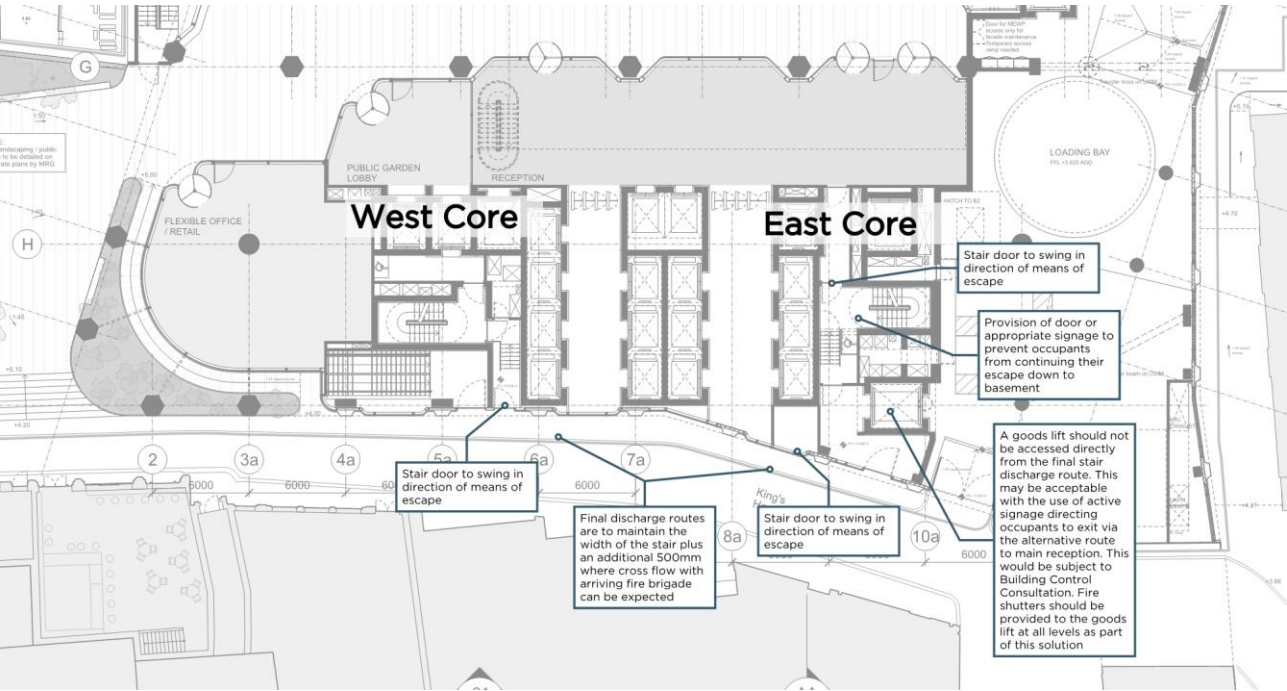


Figure 10 - Ground floor final discharge route

3.4 Georgian Terrace – Means of escape

The Georgian Terrace are each served by a single stair. Each single stair serves ground floor + 3 storeys + basement.

As illustrated in Figure 3, the height of each block is circa 11m. It is therefore considered appropriate to adopt the principle of small single stair design as set down within BS 9999 and summarised within the following sections.

The illustration below shows a typical upper level of the Georgian Terrace. Occupancy per floor will be modest, circa 4-12, with no more than 60 people within each terrace served by a single stair.

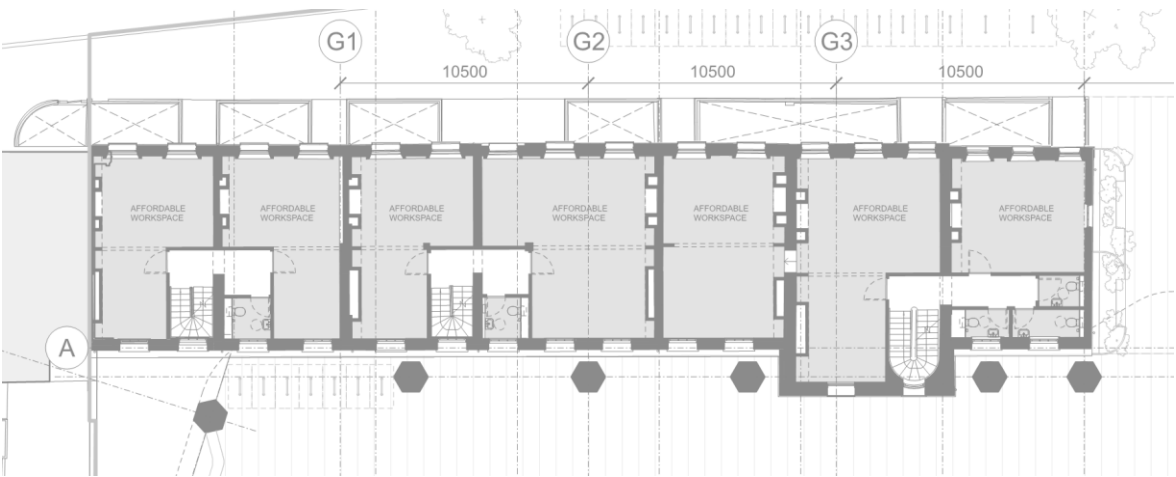


Figure 11 – Georgian Terrace – Typical upper levels

Given the existing and listed nature of the Georgian Terrace, the introduction of lobby protection to the single stair in accordance with the recommendation of BS 9999 17.2.4 part a) is difficult to achieve. As such a ventilation provision to the single staircases is proposed. This will take the form of the recommendations set down for firefighting stair ventilation within BS 9999 Table 21 set down below within Table 10

Table 10 – Ventilation provision to single staircases in Georgian Terrace and Keats House

Location	Position	Minimum free area	Aerodynamic free area	Vent control
Stair	External wall at each storey	1.0	0.7	Manual [1]
Stair	Head of stair, open to roof	N/A	0.7	Remote [2]

Note [1]  
All manually openable vents provided for smoke control should:

- a) be outward opening;
- b) not be top hung;
- c) open a minimum of 30°;
- d) be clearly identifiable and accessible;
- e) be fitted with:
  - 1) simple lever handles; or

- 2) rotary drives to simple rack or gear operated devices; or
- 3) locks that can be readily and easily operated by the fire service.

Openings should be guarded to a height of not less than 1.1 m from floor level.

Permanently open vents are not permitted.

Note [2]

Openable vents situated above a stair should be provided with a remote control located adjacent to the fire service access doorway and clearly marked as to its function and means of operation. The remote control should be capable of opening and closing the vent. All connections between the remote control and actuator mechanism should be within the fire-fighting shaft. Where any part of the remote-control mechanism is powered by electricity, a secondary supply in accordance with BS EN 12101-10 should be provided.

3.4.1.1 Basement stairs

In accordance with BS 9999 clause 17.5, In small buildings where the top floor is no more than 11 m 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 fire-resisting ventilated lobby in accordance with 27.5 therein is provided at basement level between the accommodation and the staircase and any associated lift well.
- 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.

B1 level and associated stair connection is illustrated below.

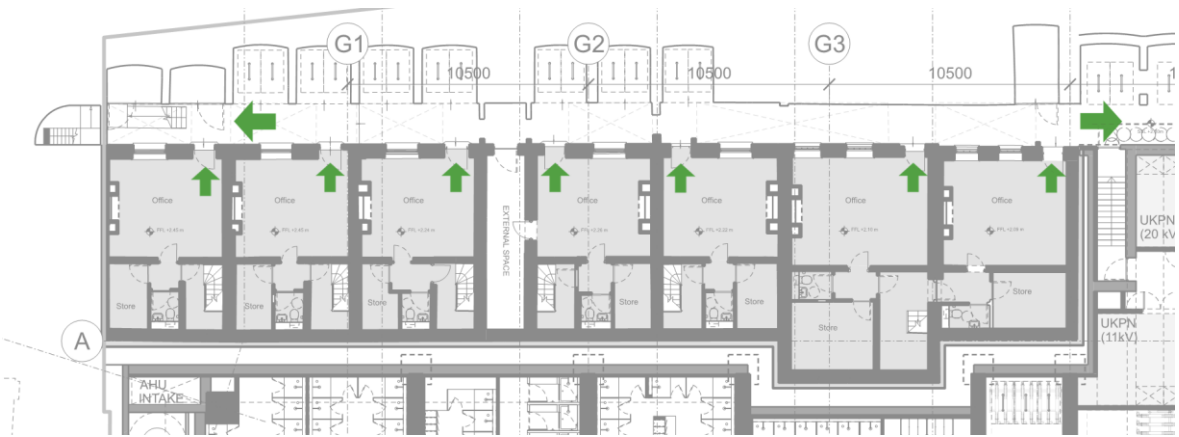


Figure 12 – Georgian Terrace, B1 level

Lobby protection is provided to the single stair at B1 level. In order to protect the occupants above from the spread of fire and smoke via the stair, it is proposed that signed means of escape is provided via the alternative access to the lightwell as illustrated in Figure 12.



In the event of a fire at ground floor office, occupants from the levels above will have the option to continue through ground floor to B1 level and escape via the B1 office in to the lightwell as illustrated below.

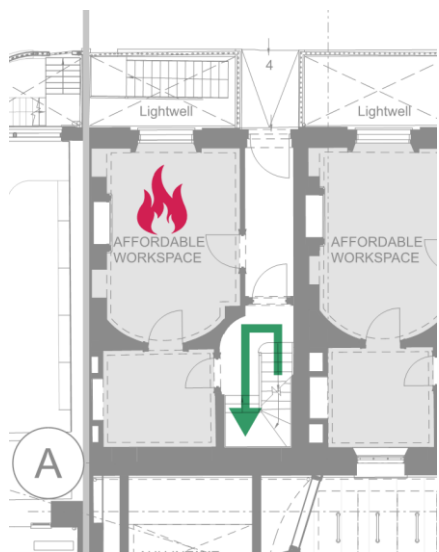


Figure 13 – Escape past ground floor in Georgian Terrace.

This proposal will require discussion with the relevant approving authority in due course.

3.5 Keats House – Means of escape

Keats house is served by a single stair serving ground + 3 storeys.

Figure 14 illustrates a typical floor level at Keats House.

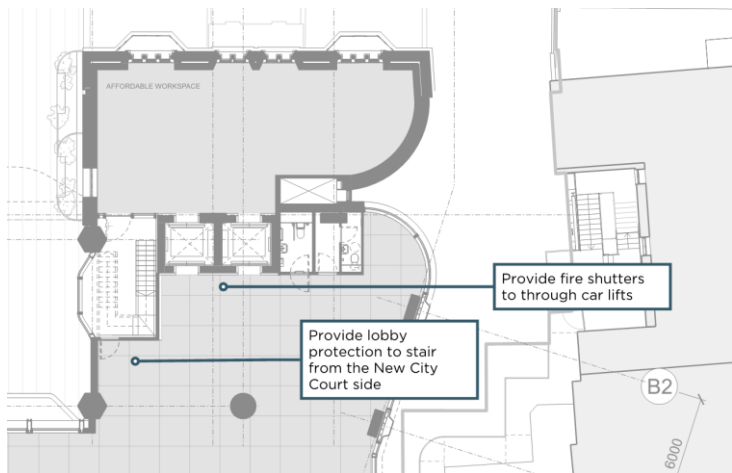


Figure 14 – Keats House typical floor

A connection to New City Court is proposed at level 01 and 02. It is not proposed to utilise this connection as a means of escape from the New City Court side. Suitable protection to the single means of escape stair serving Keats House should nonetheless be provided by way of the provisions recommended within Figure 14.

Lobby protection to the single stair is not proposed on the Keats House side, as such stair ventilation is proposed as per the recommendations of Table 10 herein.

3.5.1.1 Escape past a void

Means of escape from level 00mezz at Keats House is in a single direction past a double height space above the entrance foyer which is likely to contain a fire load.

It is recommended that full height smoke retarding glazed construction is provided in this instance, in combination with sprinkler coverage to safeguard the means of escape route from level 00mezz. This approach will be subject to consultation with the relevant approving authority in due course.

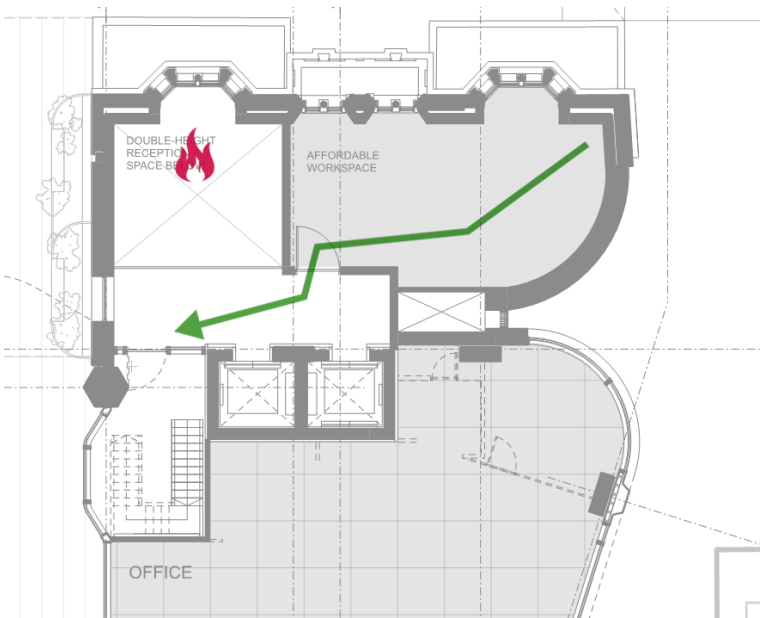


Figure 15 – Protection from void

3.5.1.2 Discharge route

To allow for flexibility of use within the entrance foyer, a route from the single stair straight to outside will be provided as illustrated below.

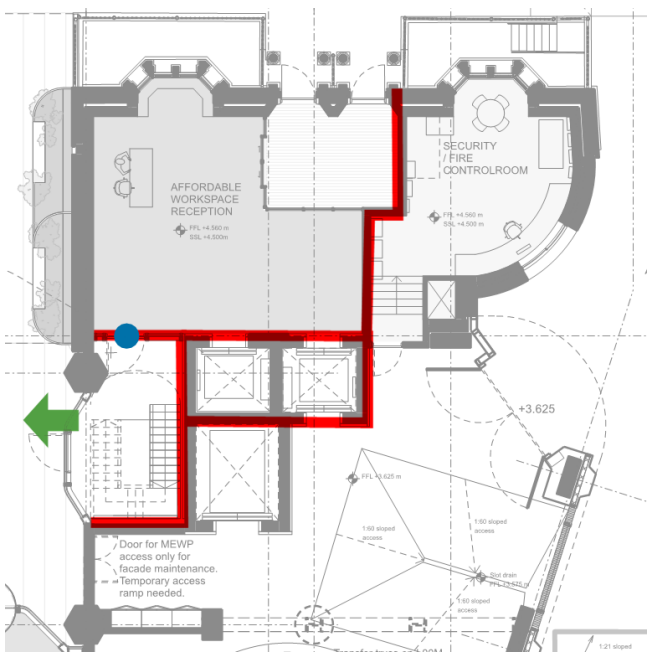


Figure 16 – Final discharge route from Keats House

3.6 Basement – Means of escape

Means of escape from level B1 and B2 is illustrated below.

Travel distances should be maintained in accordance with the recommendations set down within Table 7 herein.

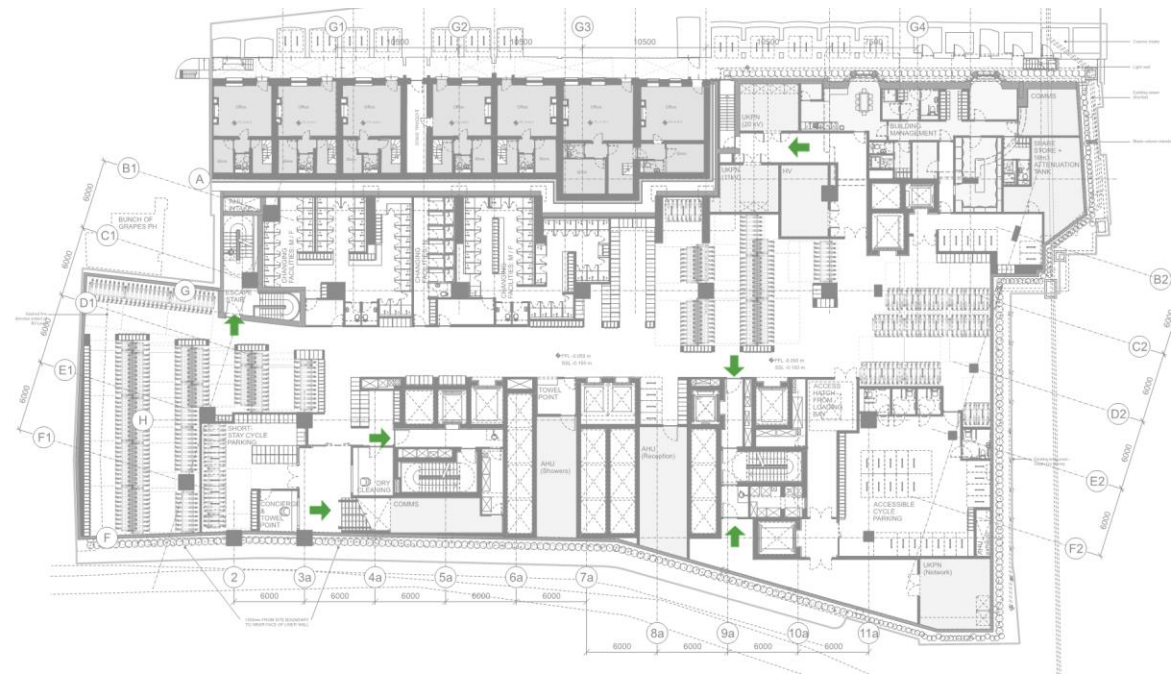


Figure 17 – Level B1 means of escape.

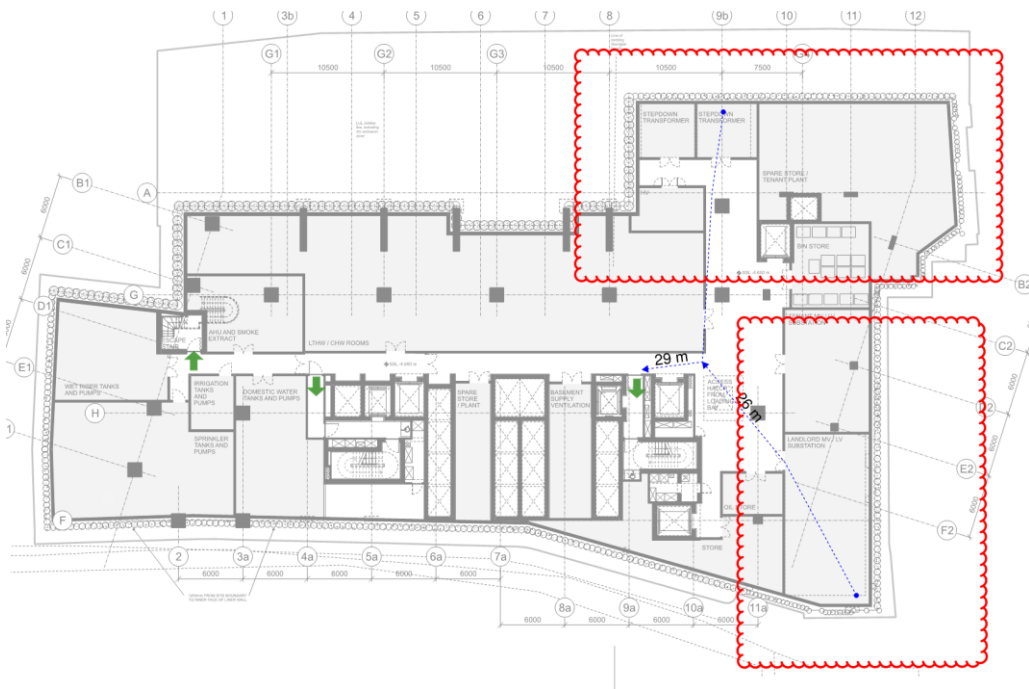


Figure 18 - Level B2 means of escape.

Means of escape from level B2 from the south portion clouded in red within Figure 18 is extended in a single direction. Alternative means of escape should be provided.

The basement level O2 layout will be refined further within RIBA Stage 2 design.

3.6.1 Escape capacity summary

3.6.1.1 Vertical means of escape below ground

The 2no basement levels will evacuate as a single zone which will also include ground floor and level 00mezz of New City Court.

The table below sets down the vertical means of escape assessment for this evacuation zone.

Table 11 - Vertical means of escape capacity, above ground

Floors evacuated <sup>[1]</sup>	Risk profile <sup>[2]</sup>	Minimum recommended stair width per person <sup>[3]</sup>	No of stairs serving	Total available stair width <sup>[4]</sup>	Stair capacity <sup>[5]</sup>	Population (as per Table 5)	Check
3 (B1, B2 & 00Mezz)	A2	2.763	2 <sup>[6]</sup>	2400	868	644	✓

[1] largest combination of floor plates considered.

[2] worse case risk profile considered.

[3] Minimum stair width per person based on the risk profile defined and an enhanced fire alarm and detection system serving the building for evacuation over 3no floors in accordance with BS 9999 table 13

[4] Both stairs considered available in the event of fire as lobby protection is provided.

[5] 2400mm / 2.763 = 868 people across the 3no floors (not including ground) with an even distribution assumed

[6] For simplicity, only the 2no main stair cores have been considered. Basement levels also have additional stair provision to provide for extended travel distances where necessary. As such, additional stair capacity to that illustrated here is provided.

3.6.1.2 Horizontal means of escape below ground

The table below sets down the horizontal means of escape assessment for worse case floors above ground

Table 12 - Horizontal means of escape capacity, above ground

Level	Risk Profile <sup>[1]</sup>	Minimum Exit Width Per Person (Mm) <sup>[2]</sup>	Storey Exit Width Provided <sup>[3]</sup> (Mm)	Storey Exit Width Available (Mm) <sup>[4]</sup>	Storey exit capacity <sup>[5]</sup>	Population (as per Table 5)	Check
B1	A2	3.06	6 x 1050	5 x 1050	1715	393	✓
B2	In abeyance						

[1] Worse case risk profile considered

[2] Minimum storey exit width per person based on the risk profile defined and an enhanced fire alarm and detection system in accordance with BS 9999 table 12

[3] all storey exits considered no less than 1050mm clear width

[4] 1no storey exit discounted to the effects of fire

[5] (5 x 1050) / 3.06

3.7 Restaurant and roof terrace – Means of escape

The figures below illustrate means of escape from the restaurant levels at the top of the building. These levels will evacuate simultaneously on confirmed fire within this evacuation zone.

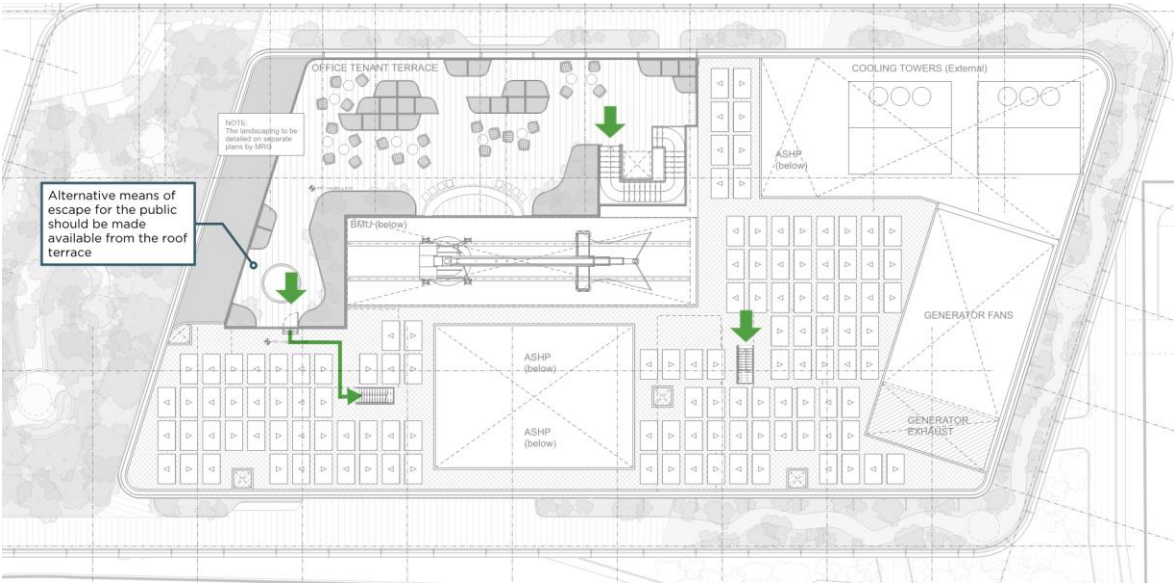


Figure 19 – Level 26 roof means of escape

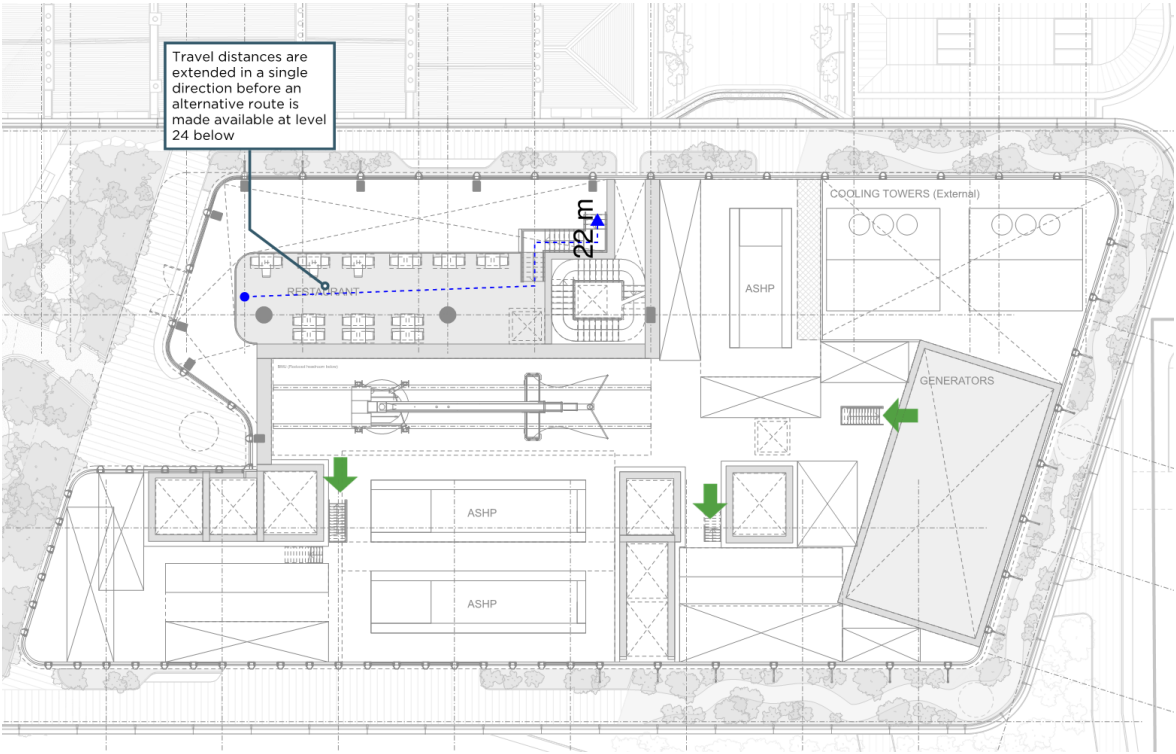


Figure 20 - Level 25 means of escape

It should be noted that the extended travel distances highlighted within Figure 20, will be reviewed in more detail in due course.

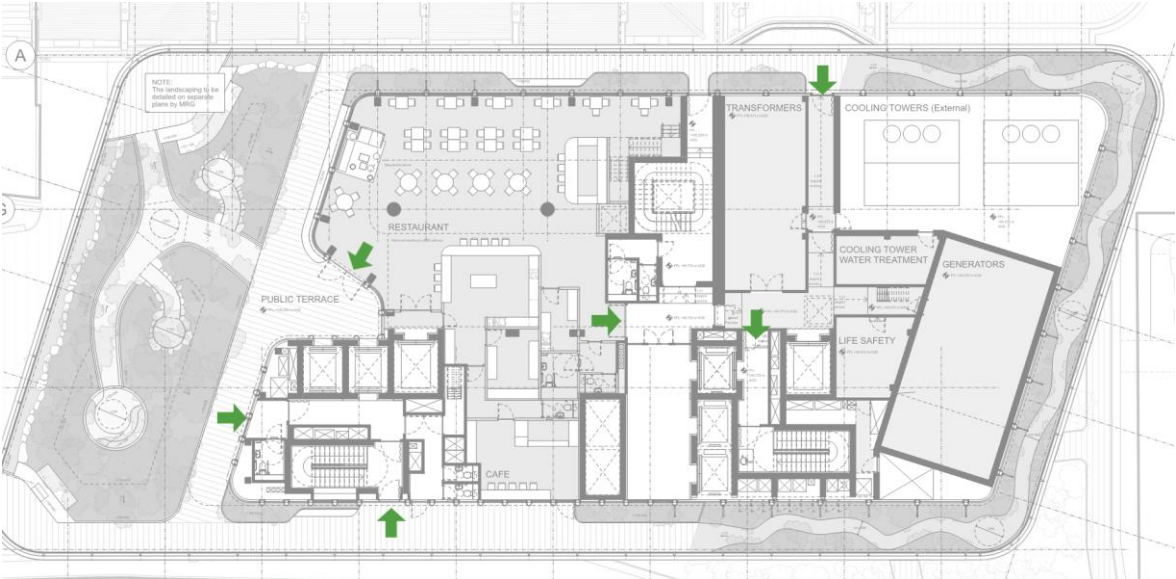


Figure 21 - Level 24 means of escape



## 4 External Fire Spread

The external walls of the building shall adequately resist the spread of fire over the walls and from one building to another.

### Resisting fire spread over external walls

The external envelope of a building should not contribute to undue fire spread from one part of a building to another part. This intention can be met by constructing external walls so that both of the following are satisfied.

- The risk of ignition by an external source to the outside surface of the building and spread of fire over the outside surface is restricted.
- The materials used to construct external walls, and attachments to them, and how they are assembled do not contribute to the rate of fire spread up the outside of the building.

### Resisting fire spread from one building to another

The external envelope of a building should not provide a medium for undue fire spread to adjacent buildings or be readily ignited by fires in adjacent buildings. This intention can be met by constructing external walls so that all of the following are satisfied.

- The risk of ignition by an external source to the outside surface of the building is restricted.
- The amount of thermal radiation that falls on a neighbouring building from window openings and other unprotected areas in the building on fire is not enough to start a fire in the other building.
- Flame spread over the roof and/or fire penetration from external sources through the roof is restricted.

### 4.1 Combustibility of external walls

The external walls of the scheme should be constructed in accordance with ADB 2019 (as amended), consisting of the following fire performance specification based on the height (>18m), use (Office) & position of the building from the relevant boundary.

- All materials along the surface of the façade above 18.00m in height and within 1m of the relevant boundary are to meet a minimum standard of Euro class B-s3, d2.
- All materials along the surface of the façade below 18.00m in height and greater than 1m from the relevant boundary is required to meet a minimum standard of Euro class C-s3, d2.
- Any insulation product, filler material (such as the core materials of metal composite panels, sandwich panels and window spandrel panels but not including gaskets, sealants and similar) etc. used in the construction of an external wall should be class A2-s3, d2 or A1.

These classifications relate to BS EN 13501-1:2007+A1:2009 entitled “*Fire classification of construction products and building elements. Classification using test data from reaction to fire tests*”. This standard requires that products must achieve certain ratings when tested to a range of fire tests.

The external façade must comply with the Building Regulation and should be design & installed in accordance with the specialist façade designer / manufacture’s specifications. In addition, the external wall details must be accepted by the approving authorities and verified by an experienced person upon installation.

## 4.2 Fire resistance of external walls

All external walls must achieve a fire resistance unless it has been demonstrated that the extent of unprotected area is considered acceptable. Depending on the position of the external walls in relation to the relevant boundary the following provisions apply.

### 4.2.1 External walls less than 1m from the relevant boundary

Any external walls in this position should meet the following.

- Achieve 120-minutes fire resistance in terms of integrity and insulation from both sides when tested or classified in accordance with BS 476-22 or BS EN 13501-2.
- Consist of only small, unprotected areas conforming to the limits in BS 9999:2017.
- Resist direct flame impingement and high levels of radiation from the adjoining sites.
- Have non-combustible surfaces.
- Be an effective barrier to a fire either inside or outside the building.

### 4.2.2 External walls greater than 1m from the relevant boundary

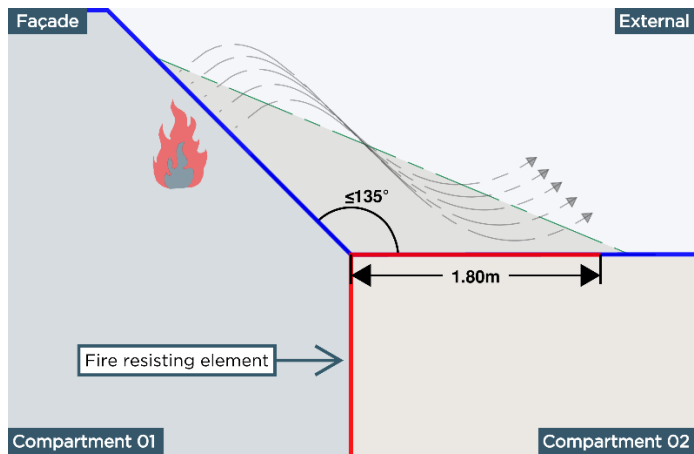
Any external walls in this position should meet the following.

- The extent of unprotected area should not exceed the values calculated using the ‘Enclosing Rectangles’ method in accordance with BR 187 as presented within the Fire Safety Strategy.
- The remainder of the wall (if any) should achieve a fire resistance of 120-minutes in terms of integrity & 15-minutes in terms of insulation.

### 4.2.3 Re-entrant corners

Fire-resisting glazed elements may be used at appropriate locations to minimize the risk of fire spread in the same building from floor to floor, or on the same floor across re-entrant corners, by preventing flame break-out and break-in. BS 9999:2017 and BS 9991:2015 outlines that, where the separation of different fire compartments forms an internal angle not less than 135 degrees, then the façade should be protected up to 1.8m.

The appropriate level of fire resistance in terms of integrity and insulation when tested in accordance with BS 476-22 or BS EN 1634-1 should be provided.



Re-entrant corners (Plan View)

This example is considered a re-entrant corner as the internal angle is equal to, or less than 135 degrees. Subsequently for this arrangement, a fire in one compartment has the potential to break-out and then break-in to the adjacent compartment. Therefore, additional fire protection to the façade is required to prevent this happening as shown above.

4.3 Fire Spread to Adjacent Sites

The following example has been carried out using the enclosed rectangle method outlined in BR187:2014 External fire spread, building separation and boundary distances.

The enclosing rectangle method involves taking the projected area of the unprotected areas of the façade on to a plane of reference as a percentage of the total projected area of the façade to calculate a minimum separation distance from this plane of reference.

The following assumptions have been made in the external fire spread analysis of New City Court:

- The building is provided with sprinkler protection throughout;
- All glazed areas to be classified as unprotected areas;
- The analysis considers the worst-case scenario, for example, the compartment which has the largest extent of unprotected area on the elevation.

4.3.1 Enclosing Rectangle Method

An appropriate plane of reference is selected that touches the elevation at least once but never passes through it. The total projected area of the unprotected areas on the elevation on to the plane of reference is calculated; however, any unprotected areas that face more than 80° to the plane of reference are ignored from the calculation. A rectangle that encloses all unprotected areas in the calculation is formed and the dimensions are rounded up to the nearest dimensions specified in the tables outlined in BR187:2014 to determine the enclosing rectangle to be used in the calculation. The total projected unprotected area is taken as a percentage of the determined enclosing rectangle and used in the tables outlined in BR187:2014 to determine the minimum boundary distance.

4.4 External Fire Spread Example

This analysis will consider the worst-case scenario with regards to external fire spread. New City Court is divided into compartments, separated by fire rated construction. The relevant boundaries are based on the following distances outlined. Where the building elevation is adjacent a road way, a notional boundary is taken to the centre of the roadway.

The table below contains the minimum boundary distances calculated for each elevation.

Table 13 – Building to building external fire spread assessment

Elevation	Area of façade unprotected (m²)	Enclosing rectangle dimensions (w x h) (m)	Available boundary distance (m)	Allowable unprotected area % (m²)	Acceptable Unprotected area	Allowable unprotected area
1	55	30 x 6	1.7 [1]	44% (79.2m²)	Yes	-

[1] mid-point of closest distance to opposing structure

4.4.1 Elevation 1

4.4.1.1 Eastern elevation (level 01)



Figure 22 – Illustration of elevation 1

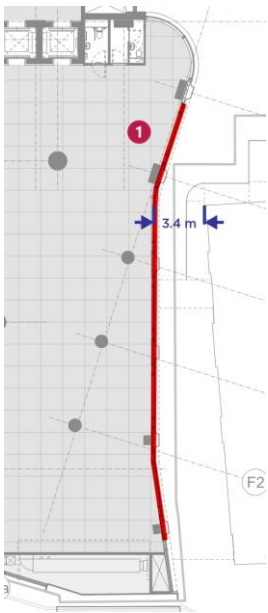


Figure 23 – Elevation 1 on plan with separation distance to opposing building shown

5 Fire service access and provisions

5.1 Site Access for Fire Tender

The following section will define the available access for the fire service personnel, equipment, and water supplies.

Fire tender access to the building is to be provided in accordance with BS 9999:2017. Tender access roadways are to meet the following requirements for a high reach appliance:

Table 14 – Fire service vehicle access route requirements

Min. width of road between kerbs (m)	Min. width of gateways (m)	Min. turning circle between kerbs (m)	Min. turning circle between walls (m)	Min. clearance height (m)	Min. carrying capacity (t)
3.7	3.1	26	29	4	17

Note:  
The size and mass of fire appliances is not standardised, and the local fire service authority should be consulted to ascertain their recommendations relating to access roads.

Figure 24 below illustrates the fire tender parking provision to the scheme and access to the fire fighting shafts.

Distances from practical tender parking locations to and within sight of entrances giving access to the wet fire main serving New City Court is not available, as such access provision will need to be discussed and agreed with the relevant approving authority and London Fire Brigade in due course.

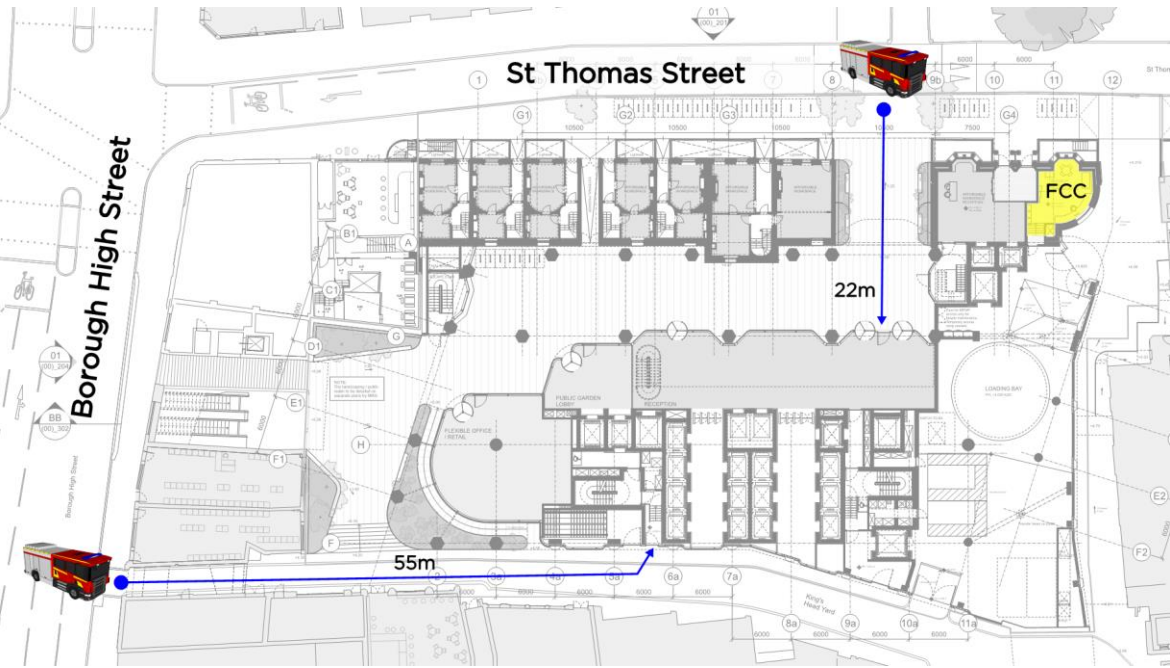


Figure 24 – Fire tender access

5.2 Fire Control Centre

The FCC will be required to operate over an extended period of time. Subsequently, the FCC & protected route has been separated from the remainder of the building by solid robust non-combustible construction achieving 120-minutes fire resistance and therefore incorporates facilities to enable the FCC to function as normal during an emergency. The fire control centre will contain the following equipment:

- a) All control and indicating equipment for the fire detection & alarm system and other fire safety systems for the building. This should include a facility to sound the evacuation signal in each evacuation zone throughout the building, with the ability to signal a total evacuation.
- b) The control systems showing the location of the incident and status of all automatic fire protection installations and facilities.
- c) The provision to override all automatic fire protection installations and facilities (other than those that have to be located either adjacent to their equipment or elsewhere where local control is needed, e.g. overrides for gaseous fire extinguishing systems or sprinkler system main or floor isolating valves).
- d) The provision to override air conditioning systems or ventilation systems involving recirculation.
- e) The communication system, conforming to BS 5839-9:2011, providing a direct link between the control room and all fire-fighting lobbies, fire and rescue service access points and refuges.
- f) An exchange telephone with direct dialling for external calls. The facility to sound the alert signal throughout the building.
- g) The facilities to be able to give information via a public address / voice alarm system in accordance with BS 5839-8 to the occupiers of the building.
- h) Controls and monitor screens for video cameras are provided for the control of evacuation. The use of video cameras can greatly assist in the management of emergency situations.
- i) The fire emergency plan for the building. A clock to time phases of evacuation. a visual indication which can show the status of evacuation in parts of the building where an evacuation signal has been given.
- j) The keys or other devices required to facilitate access throughout the building and to operate any mechanical and electrical systems. a wall-mounted writing board with suitable writing implements for displaying important information
- k) Facilities for the control centre personnel to rest and refresh themselves.

5.3 Firefighting Shafts

Figure 25 illustrates the firefighting shaft provision for the scheme on typical floors. The 2no fire fighting shafts serving New City Court will serve all floors.



Figure 25 – Firefighting shaft provision

Both firefighting shafts within New City Court are to be provided with the following:

- Firefighting stair provided with a 1.0m<sup>2</sup> AOV at the head;
- Firefighting lift provided with a back-up power supply;
- Firefighting lobby ventilated via a 0.6m<sup>2</sup> mechanical smoke extract system;
- Wet rising main outlet accessed from the firefighting lobby.

5.3.1 Protection to East Core Fire Fighting stair at levels 00mezz to level 02

Owing to offsetting extended travel distances at level 00mezz, 01 and 02, a divergent route into the Eastern firefighting core has been provided. As such, firefighting lobby ventilation will be provided to each lobby accessed from the stair to ensure that protection to the stair is maintained. This approach is illustrated below.

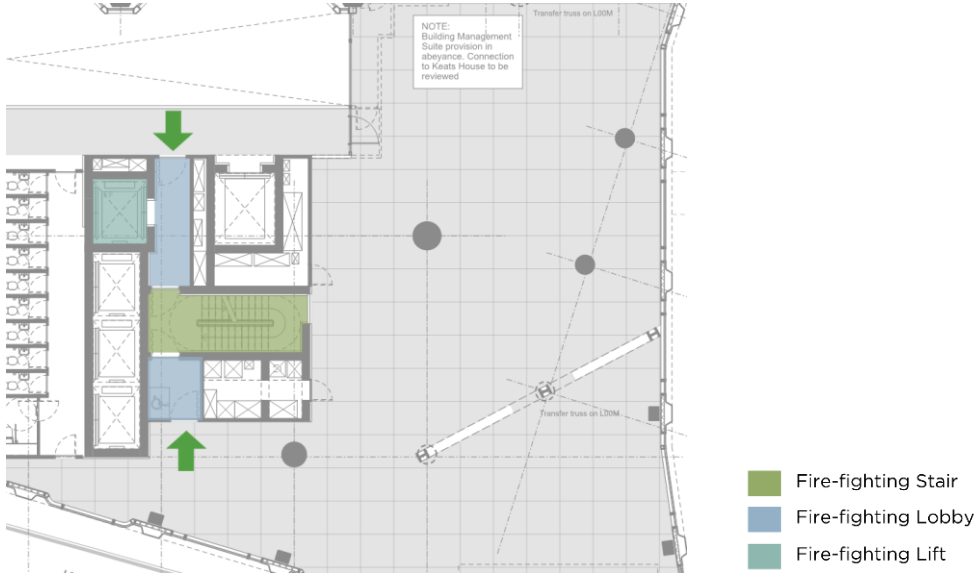


Figure 26 – Divergent access in to fire fighting stair

5.4 Fire Mains

New City Court will be provided with a wet riser system in accordance with BS9990:2015. Outlets will be provided within the fire fighting lobbies associated with both the East and West core with coverage provided to within 60m to any point on the floor plate when measured along a route suitable for laying hose.

Hose coverage for Keats House and the Georgian Terrace is provided to within 45m of the fire tender parking provision along St Thomas Street, as such a dry riser is not proposed for these aspects of the scheme.

5.5 Hydrants

Water supplies for firefighting operations will be via existing hydrants.

Fire hydrants will be located within 90m of the building entrances and provide sufficient water supply for the fire service in the event of a fire.



## 6 Fire Safety Management Requirements

Management procedures have a pivotal role to play in fire prevention, control and evacuation of occupants should a fire incident occur.

Inherent in both BS 9999 and the approach adopted for this scheme is the assumption that there will be appropriate fire safety management of the premises when in use.

This section is intended to introduce the FSO, its obligations and provide initial guidance in fulfilling these duties. It is the responsibility of the landlords/building management to ensure that all fire safety systems are tested and maintained to ensure their continuous effectiveness. The landlords/building management need to be aware of all fire safety features provided and their purpose.

It is important that management are aware of their responsibilities detailed in this document and agree that they are sufficiently capable of adequately performing them. Effective arrangements should be put in place to manage all aspects of fire safety in the premises and the details of those arrangements need to be recorded, e.g. within a fire safety management plan.

Any deviation from the principles or ethos of the fire safety strategy could have major impacts on the effectiveness of its implementation post construction and should be factored into an updated document accordingly. The final fire strategy may contain bespoke solutions independent from prescriptive guidance and should therefore be shared with building management and fire risk assessors, or any other relevant person.

This section outlines some high-level recommendations to be incorporated into the management plan for the building. It is the recommendation of this report that the guidance of BS 9999 is followed with regards to developing an appropriate management strategy for the building. It is envisaged that management of the building will be akin to level M1 throughout, as defined in BS 9999. During the life of a building, any changes to the standard or quality of management, use of the building, or alterations proposed will need to be assessed to identify their effect upon the overall fire safety strategy and fire safety management strategy. Likewise, changes to the building layout might require similar changes to fire safety documentation.

Providing an accessible means of escape solution shall be an integral part of any fire safety management process. Fire safety management should consider the full range of people who might use the premises, paying particular attention to the needs of disabled people. It is important to note that it is the responsibility of the premises management to ensure that all people can make a safe evacuation. The evacuation plan shall not rely on the assistance of the fire and rescue service. This is an important factor that needs to be considered in management design.

### 6.1.1 Personal Evacuation Plans

Personal emergency evacuation plans (PEEPs) are recommended for all people<sup>[1]</sup> requiring assistance to leave the building. Through the recording of PEEP, the management team shall be made aware of the amount of staff support required for each evacuation. There are three types of PEEP that might need to be developed:

- Individual PEEP for disabled people who are regularly in the premises, for example staff and regular visitors:

Following discussions with an individual, a plan can be developed for their specific needs, which should contain details of how they will evacuate the premises. By taking into account the individual needs of a person when preparing a PEEP, management will be able to make any reasonable adjustments to the premises or procedures that are necessary.
- PEEP for visitors to the premises who will make themselves known to staff.

Visitors who are likely to require assistance in the event of an evacuation shall be encouraged to make themselves known to staff on arrival. Management shall be encouraged to have staff available (especially at reception locations), who are trained in disability awareness. This will make this process more comfortable for disabled people and more effective for management:

PEEPs for visitors who make themselves known to staff should provide a wide range of guidance for differing disabilities. They need to include what the visitor should do in an evacuation, and what the management response will be. They should also reflect what specific fire safety provisions are provided for disabled persons on the premises. It is important that the generic PEEP is discussed with each visitor and his or her particular needs taken into account where possible.
- PEEP for visitors not previously identified to staff. The standard evacuation plan shall include measures to make evacuations suitable for all persons on the premises.

Information for disabled people shall be noted in fire action notices and in the fire management plan. It is vitally important that staff are trained so that they are aware of the facilities and their responsibility to evacuate disabled people.

### 6.1.2 Maintenance & Inspection of Fire Safety Installations

It is essential that in the event of fire, all fire safety provisions function as intended. The fire safety manager must ensure that all of the built-in passive and active systems operate as required on demand.

It is essential for the safety of the occupants of a building that fire safety equipment (including passive fire protection provisions) is inspected frequently. Although much of the inspection may be undertaken by suitably trained personnel, a formal agreement shall be made with the installer or the installer's representative to provide the regular inspection and testing described in the relevant British Standards for individual fire safety installations. Any agreement should be recorded in the fire safety manual.

### 6.1.3 Fire Safety Manual

The fire safety manual shall contain design information and operational records. The design information taken from the fire safety strategy forms the basis of an ongoing history document to which additional material is added when the building is occupied. It shall be recorded in the fire safety manual where the design of the occupied building does not reflect the design outlined in the fire safety strategy.

The fire safety manager is responsible for those parts of the fire safety manual that contain operational records, the fire safety policy statement and the fire safety documentation.

#### 6.1.4 Fire Safety Training

Fire safety training shall form part of the planning, training and monitoring activity defined in the fire safety manual. A person who is competent both in the subject and in training shall give all training. Fire safety training shall be continuous, commencing with induction training on the first day of appointment of new staff and continuing in the form of regular refresher training. Thereafter, staff will receive sufficient training at regular intervals (at least once a year) to make sure that they remain familiar with the fire precautions for the workplace and are reminded of the action to be taken in an emergency.

## 7 Summary

The fire safety statement for the New City Court scheme has identified the following considerations for the planning authority, with regards to the holistic fire safety strategy:

- The means of escape provisions provided are deemed acceptable and meets the requirements of the building regulations. Suitable provisions are provided for disabled occupants through the use of proposed refuge points and evacuation lifts;
- The building will be provided with suitable active systems such as sprinklers, emergency lighting and passive systems such as compartmentation, fire stopping, fire dampers/ motorised fire and smoke dampers, fire doors. This will adequately control the spread of fire and contain the fire growth to the area of fire origin for a sufficient period;
- The fire service access provisions with suitable fire mains and water supplies via external hydrants meet the requirements of the building regulations.
- Overall compliance has been demonstrated with the relevant aspects of the London Plan pertaining to fire safety, that being Part D12 and D5 therein.