chapmanbdsp

New City Court
Fire Statement

Revision 03
September 2021
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55287 – New City Court
Fire Statement

Quality assurance

Rev	Issued for	Date	Author	Reviewer	Approved
01	Draft	26th March 2021	Ben Green	Michael Stitt	Paul McLaughlin
02	Information	16th April 2021	Ben Green	Michael Stitt	Ben Green
03	Information	14th September 2021	Michael Stitt	-	Paul McLaughlin

Consultant qualifications	BEng (Hons), AIFireE	BEng (Hons), AIFireE	MSc, BSc (Hons), MIFireE
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QA review dates	14th September 2021	-	14th September 2021

Revision Table

Rev	Date	Section	Amendment(s)
01	26th March 2021	-	-
02	16th April 2021	1, 2, 3 & 7	Update based on feedback received by DP9.
02	16th April 2021	Diagrams	Update based on feedback received by AHMM.
03	14th September 2021	-	Update based on feedback received by GLA.

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Contents

1 Executive Summary

Chapmanbdsp have been appointed by Great Portland Estates Plc (GPE) to provide fire engineering advise in relation to the New City Court project in London. The Fire Statement has been developed in response to the proposals highlighted within *'The London Plan'* and aims to demonstrate that the information contained within this report satisfies the requirements of Policy D12 (A) & D12 (B). The purpose of the Fire Statement is to define the fire safety objectives that should be considered for the safety of occupants and to facilitate Fire & Rescue Service operations. In having considered fire safety from the outset for the New City Court project, the life safety standards required to satisfy The Building Regulations 2010 - Part B Fire Safety can be achieved should the recommendations outlined in this Fire Statement and subsequent fire strategies be implemented. The key fire safety components are summarised in the following table.

Item	Fire Statement Checklist [Gateway One: Planning]		
Overview	New City Court	Keat's House	Georgian Townhouses
Building Height	Top-most occupied floor = 100.00m above access level.	Top-most occupied floor = 10.80m above access level.	Top-most occupied floor = 11.00m above access level.
Building Uses	Office.	Office.	Office.
Evacuation Strategy	Phased.	Simultaneous.	Simultaneous.
Fire Detection & Alarm	Category L1 (BS 5839-1:2017).	Category L1 (BS 5839-1:2017).	Category L1 (BS 5839-1:2017).
Fire Suppression	Hazard Classification OH3 (BS EN 12845:2015).	Hazard Classification OH3 (BS EN 12845:2015).	Not applicable. Existing building.
Facilities for Firefighting	No. 2 Firefighting shafts.	No. 1 Ventilated means of escape stair w/ perimeter access.	No. 1 Ventilated means of escape stair w/ perimeter access.
1	**The building's construction: methods, products and materials used, including manufacturers' details.**		
Design Intent	The building shall be designed and constructed so that in the event of fire, its stability will be maintained for a reasonable period. The spread of fire internally for the New City Court project will be restricted through appropriate design and specification of the internal linings such that they will adequately resist the spread of flame over their surfaces & restrict the release of heat in the event of fire. The external walls of the building must adequately resist the spread of fire along their surfaces and from one building to another. The combustibility of the external walls is reliant upon the height (>18m), the use (Office) & the position of the building from the relevant boundary (<1.0m) which equates to a fire performance specification of Euro Class B-s3, d2, (Very limited contribution to fire with substantial smoke & burning droplets) or better. The specified period of fire resistance for the external walls must be equal to that required for elements of structure (i.e. 120-minutes) when tested from each side separately for all external walls within (<)1.0m from the relevant boundary. For external walls (>)1.0m from the relevant boundary, External Fire Spread Analysis must be undertaken to demonstrate that the risk of fire spread to adjacent sites can be sufficiently reduced and therefore the extend of unprotected area can be calculated.		
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.**		
Design Intent	Means of escape shall be provided to facilitate escape for people from the building to a place of ultimate safety. The width of doors, corridors & escape routes will align with the minimum requirements and the number of escape routes required will be based on the expected number of occupants & the travel distance limitations. The 'Fire safety management plan' should consider the full range of people who might use the premises, paying attention to the needs of disabled occupants. Evacuation lifts shall be incorporated to satisfy Policy D5 (Inclusive Design) of The London Plan.		
3	**Features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans.**		
Design Intent	The building shall be provided with the appropriate active fire protection systems such as, fire detection & alarm, emergency lighting & signage, automatic water fire suppression and smoke control systems in accordance with the relevant standards. These systems shall work in conjunction with the compartmentation strategy to reduce the risk to life. The primary objective of the smoke control system within the fire-fighting shaft is to maintain smoke-free conditions within the staircase during both means of escape and firefighting operations.		
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.**		
Design Intent	The building will be designed and constructed to provide facilities to assist firefighters with the protection of life. The fire-fighting access routes to the fire-fighting mustering points are directly into the fire-fighting stair core that does not communicate with any other ground level accommodation. The fire alarm panel should be located at an appropriate location for both staff and firefighters. The building shall be provided with two firefighting shafts that consist of a firefighting stair which communicates with a ventilated firefighting lobby containing a fire main, firefighting lift / evacuation lift.		
5	**How provision will be made within the curtilage of the site to enable fire appliances to gain access to the building.**		
Design Intent	Fire tender access to the building is to be provided in accordance with Table 20 of BS 9999:2017. The exiting road ways are constructed to ensure that an unobstructed access route for the appliance is available. The pumping appliance should generally be within 18m of, and within sight of, a suitable entrance giving access to the fire main. The pumping appliance can gain access to the New City Court Building via King's Head Yard.		
6	**Ensuring that any potential future modifications to the building will considered and not compromise the base build fire safety / protection measures.**		
Design Intent	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.		

2 Introduction

Chapmanbdsp have been commissioned to produce a Fire Statement for the proposed New City Court project. In accordance with *'The London Plan – Policy D12 Fire Safety (March 2021 Edition)'*, a Fire Statement should be submitted with all major development proposals. The primary objective is to ensure the safety of all building users and that fire safety is considered from the outset.

This Fire Statement will form part of the planning submission which sets out specific requirements to address fire risk. This Fire Statement is essentially an independent pre-planning fire strategy defined as; an overriding document setting out the fundamental requirements that provide the focus for subsequent, more detailed specifications. This Fire Statement has been developed using the framework set-out within The London Plan, prepared in accordance with the Greater London Authority Act 1999 (as amended) and associated regulations.

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.

2.1 Project stakeholders

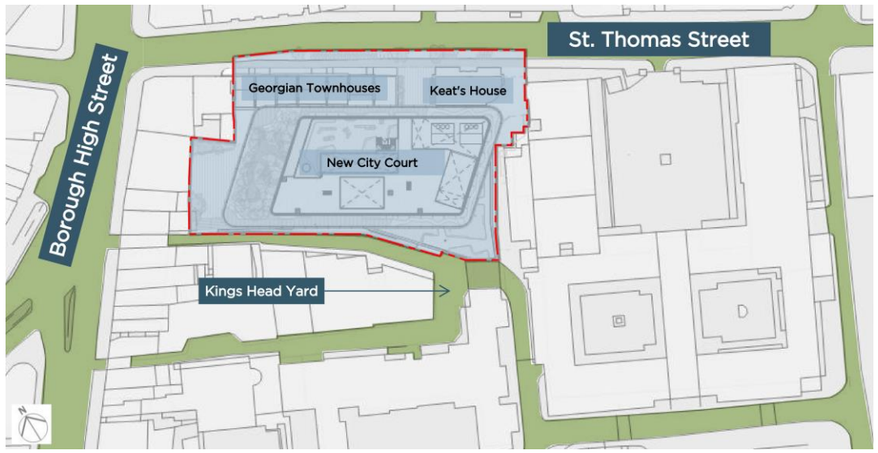
The design coordination has been progressed primarily with the following parties:

Discipline:	Company:
Development Management	Great Portland Estates Plc (GPE)
Principle Designer	Allford Hall Monaghan Morris (AHMM)
Approved Inspector	Sweco (SBC)
Structural Engineering	akt (akt)
MEP + Specialist Services	chapmanbdsp (cbdsp)

2.2 Building Overview

The New City Court development consists of three building blocks. The predominant 'New City Court' building consists of 26 storeys (including a mezzanine & two basement levels). The building is served by 2 primary vertical cores that can be accessed from every level for means of escape & firefighting operations. New City Court is an office development with a potential independent office/retail unit, accessible from the courtyard at level 00.

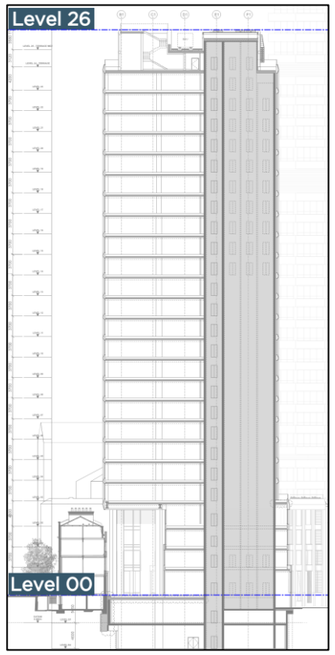
The existing 'Georgian Townhouses' along St. Thomas Street will be redeveloped into office units. Similarly, 'Keat's House' is an existing building to be developed into office accommodation, this demise will also contain the Fire Control Centre for the entire development. Refer to the site map for further information.



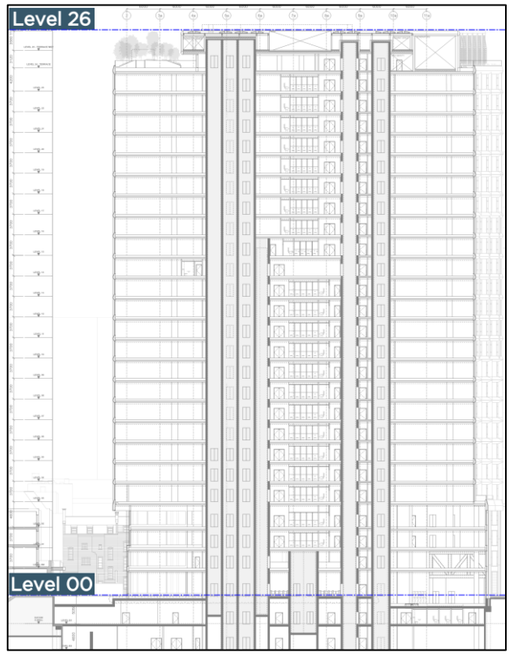
Site Map - New City Court

The primary access point to the New City Court development for the Fire & Rescue Service will be from the existing 'King's Head Yard' laneway which currently serves the existing & adjacent sites. See site map.

The New City Court building is approximately 100.00m in height when measured from access level to the top-most occupied level. Keat's House is approximately 10.80m in height & the Georgian Townhouses are approximately 11.00m in height. The basement levels are no greater than 10m in depth but are served by two firefighting shafts.



South-East Section - New City Court



North-East Section - New City Court

The buildings shall consist of the following uses:

Level	New City Court	Keat's House	Georgian Townhouses
26	Roof	-	-
25	Terrace & Plant	-	-
24	Public Terrace, Restaurant & Plant	-	-
23	Office	-	-
22	Office	-	-
21	Office	-	-
20	Office	-	-
19	Office	-	-
18	Office	-	-
17	Office	-	-
16	Office	-	-
15	Office	-	-
14	Office	-	-
13	Office	-	-
12	Office	-	-
11	Office	-	-
10	Office	-	-
09	Office	-	-
08	Office	-	-
07	Office	-	-
06	Office	-	-
05	Office	-	-
04	Office	-	-
03	Office	Roof	Roof
02	Office	Office	Office
01	Office	Office	Office
00M	Office / Retail	Office	Office
00	Office / Retail, Reception & Loading bay	Reception & Fire Control Room	Office
B1	Management, changing & cycle store	-	Office
B2	Plant	-	-
Building Uses			

3 Legislation requirements

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

- Building Regulations 2010.
- This fire statement has been developed to satisfy the functional requirements of the Building Regulations 2010 Schedule 1; Part B: Fire Safety and referring to Approved Document B: Fire Safety; Volume 2, 2019 edition, incorporating the 2020 amendments as the statutory guidance document to The Building Regulations.

3.1 The Building Regulations 2010

The fire statement has been produced with consideration given to the functional requirements of the Building Regulations 2010. The Building Regulations 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:

- Requirement B1: Means of warning and escape.
- Requirement B2: Internal fire spread (linings).
- Requirement B3: Internal fire spread (structure).
- Requirement B4: External fire spread.
- Requirement B5: Access and facilities for the fire service.

3.2 Prescriptive guidance

Throughout this fire statement, guidance such as the following below will be considered:

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

The fire statement for New City Court has been developed following guidance as described in accordance with BS 9999:2017. The application of these documents allows for a more risk-based approach, allowing for great transparency and flexibility to fire safety design.

3.3 Performance based design

Once the fire strategy has been developed for New City Court, uncommon building situations may occur and therefore the recommendations within prescriptive guidance may not be applicable in certain instances. Subsequently, alternative fire engineering techniques will be adopted in order to demonstrate that at the very least a comparable level of fire safety is being provided within the scheme.

All engineered approaches have been derived using the methodology set out within *'BS 7974-2019 - Application of fire safety engineering principles to the design of buildings - Code of Practice'.* This guidance establishes a disciplined structure to fire safety design by adopting a framework for a flexible but formalised approach, which can also be readily assessed by statutory authorities.

This framework has been implemented to determine acceptable levels of fire safety without imposing unnecessary constraints on other aspects of building design and recognises that a range of alternative & complimentary fire protection strategies can achieve the design brief. The post-planning Fire Safety Strategy considers the total fire safety package within New City Court to provide a functional & practical solution to fire safety.

The post-planning Fire Safety Strategy will draw on prescriptive guidance as a basis for design. However, utilising a combination of prescriptive guidance, fire engineering & technical experience a satisfactory standard of fire safety may be achieved from a Building Regulations standpoint.

3.4 Regulatory Reform (Fire Safety) Order 2005

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

Under the order, anyone who has control of the premises or anyone who has a degree of control over certain areas or systems (i.e. "responsible persons") are required to provide and maintain adequate fire precautions. Note: The word "person" in the judicial sense can refer to a corporation as well as to an individual.

Upon occupation of the building, the responsible person is required by law to undertake a fire risk assessment. The fire risk assessments undertaken should be reviewed regularly and made available to the Fire & Rescue Service upon request.

This post-planning Fire Safety Strategy will not satisfy this obligation; instead, it should be used as a basis for any risk assessment. The Fire Safety Strategy makes no recommendations with regard to property protection or business continuity.

3.5 Regulation 38

Regulation 38 of the Building Regulations 2010 aims to ensure that information critical to the life safety of people within a building is communicated to the building owners, occupiers, and users so that the site operates, and is managed, correctly.

During the design and construction of the building the design team should appreciate the full importance of providing the correct provisions, as specified by the fire strategy.

For complex designs the following should be considered to ensure that the fire safety strategy is fully implemented to an accurate standard:

- The fire safety strategy and any related risk assessments or design specifications for related systems
- Records of assumptions made regarding the management of the building
- Details of the escape routes and muster points required
- Design notes of any required sprinkler systems or detection systems required within the building
- Details of any high-risk areas of concern that may contain an increase potential to lead to a fire scenario
- Specified locations of any fire safety or emergency escape provisions such as signage or lighting.

The occupier of the building should at least be provided with this Fire Safety Strategy & the as built fire plans produced by the architect for information.

3.6 The Building Safety Bill

The primary aim of The Building Safety Bill is to implement a more stringent regulatory regime for higher-risk residential buildings. The Bill identifies legislation in response of The Hackitt Review and incorporates its findings & recommendations. In addition to a number of post-occupancy controls, the Bill includes new regulations for the design & construction of higher-risk residential buildings, including:

- The introduction of duty holders that will have accountability & statutory responsibilities for managing risks across the design, construction, and occupation of the building throughout its lifecycle.
- Gateway points will provide rigorous inspection of regulatory requirements to help ensure building safety risks are considered during planning, design & construction stages.
- The 'Golden Thread' of building information must be developed, stored & updated throughout the Gateway process and throughout the building's lifecycle. In addition, mandatory reporting to the new Building Safety Regulator regarding fire & structural safety occurrences which could cause a significant risk to life safety is required.
- The building must be registered and provided with a certificate that confirms the building is fit for occupation. An assessment at the time of certification should be undertaken for transparency with the findings documented.

3.7 RIBA work stages

The post-planning Fire Safety Strategy should be formulated using the RIBA work-stage methodology. It is important to note that for the successful implementation of the strategy to be realised, the following stages must involve consultation with a qualified person with knowledge of the fire strategy:

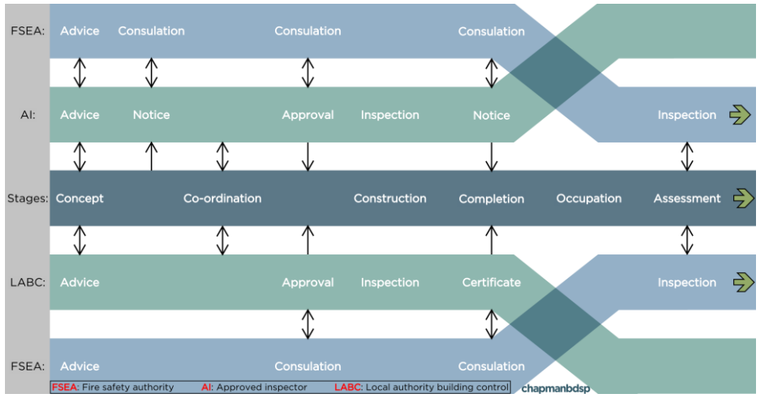
0. Strategic definition
1. Preparation and brief
2. Concept design
3. Spatial Co-ordination
4. Technical design
5. Manufacturing & Construction
6. Handover and closeout
7. In use

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. This document 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.

3.8 Consultation

The primary purpose of statutory consultation is to allow for the fire authority to make observations in regard to the proposals for New City Court with respect to the functional requirements of The Building Regulations. In addition, this provides an opportunity to make the applicant aware of actions that may have to be taken to meet the subsequent requirements of The Regulatory Reform Order.

The consultation period should provide agreement that the ultimate functional requirements of The Building Regulations are indeed achieved via a collaborative process. Throughout this process, it should be recognised that certain aspects are only acceptable through adopting a combination of established guidance & fire safety engineering techniques, so that a satisfactory and comprehensive standard of fire safety may be achieved.



Statutory consultation process

Early consultation with the approving authorities has been undertaken as documented with the Appendix.

3.9 Certification

The materials & products incorporated within the design & construction of the building should be provided with an appropriate certification through a recognized testing house to demonstrate compliance with the relevant British Standards. In addition, the acquired certificates should be deemed as satisfactory by the authorities.

3.10 Fire safety management

In the absence of a robust 'Fire Safety Management Plan', the 'Fire Safety Strategy' will outline the key aspects required to complement the provisions highlighted within the report. The eventual management plan should incorporate the recommendations provided as failure to implement these recommendations may compromise the Fire Strategy and its intended function towards life safety, and compliance with the functional requirements of The Building Regulations 2010 (as amended).

3.11 Document limitations

Important Note: This Fire Statement does not represent a design / specification. The report contains a number of principle recommendations that others may consider and relate to the design of the scheme, as appropriate. The information contained herein is strategic and does not address detailed aspects of design for example, construction details.

The proceeding post-planning Fire Strategy should be updated through each work stage in order to reflect developing / agreed strategies and relate to the design as the scheme progresses.

All diagrams incorporated within this document are illustrative, intended to convey aspects of the fire statement and do not necessarily reflect the latest backgrounds. The diagrams are not a substitute for the architectural general arrangement drawings or the detailed MEPH drawings or specifications, which should be referred to in conjunction with this report.

For clarity, the information herein does not specifically address; insurance requirements, property or business protection, construction / fit-out fire safety and detailed management procedures or duties under the Regulatory Reform (Fire Safety) Order (RRO).

3.12 Purpose of the fire statement

The London Plan aims to safeguard that all building proposals achieve the highest standards of fire safety to ensure the safety of all building users. Subsequently, the following must be established:

- Identify suitably positioned, unobstructed outside space: For fire appliance to be positioned; and Appropriate for use as an evacuation assembly point.
- The building must be designed to incorporate features which reduce the risk to life and the risk of serious injury in the event of fire, including appropriate fire detection & alarm systems, in addition to passive & active fire safety design measures.
- The building must be constructed in an appropriate way to minimise the risk of fire spread.
- The building must be provided with suitable and convenient means of escape, and associated evacuation strategy for all building users.
- Building owners must develop a robust strategy for evacuation or 'Fire Safety Management Plan' which can be periodically updated & published, which all building users can have confidence in.
- The building must be provided with suitable access and equipment for firefighting which is appropriate for the size and use of the development.

3.13 Objectives / Fire statement structure

The objective of the Fire Statement is to detail how the proposed development will function in terms of:

- **The building's construction:** methods, products and materials used, including manufacturers' details.
- **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.
- 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 considered and not compromise the base build fire safety / protection measures.

4 The building's construction:

4.1 Elements of structure

The building shall be designed and constructed so that in the event of fire, its stability will be maintained for a reasonable period. The New City Court development contains occupants who are likely to be asleep. Therefore, in accordance with BS 9999:2017, all elements of structure, including the structural frame, beams, columns, loadbearing walls (internal & external) and floor structures must achieve a fire resistance for a specified period of 120-minutes.

A reinforced concrete structural frame has been proposed. All materials will be reviewed and developed throughout the design process.

4.2 Fire resistance of external walls

All external walls must achieve a fire resistance of 120-minutes 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

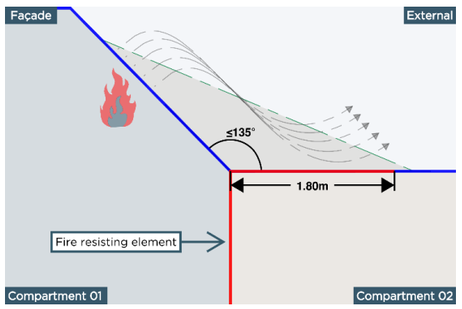
- Achieve 120-minutes fire resistance in terms of integrity and insulation from both sides when tested or classified in accordance with BS 476-22 or BS EN 13501-2.
- Consist of only small, unprotected areas conforming to the limits in BS 9999:2017.
- Resist direct flame impingement and high levels of 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

- The extent of unprotected area should not exceed the values calculated using the 'Enclosing Rectangles' method in accordance with BR 187.
- 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 when tested from the inside only.

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 and extended to 5.0m when protecting firefighting shafts.



Re-entrant corners (Plan View)

4.3 Combustibility of external walls

The external walls of New City Court should be constructed in accordance with ADB 2019, consisting of the following fire performance specification based on the height (>18m), use (Office) & position of the building from the relevant boundary (>1m).

- Euro Class B-s3, d2, (Very limited contribution to fire with substantial smoke & burning droplets) or better.
- 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 Regulation 7 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 instillation.

4.4 Fire performance of internal linings

The spread of fire within the building will be restricted through appropriate design and specification of the internal linings (to partitions, walls, ceilings and internal structures, roof lights and lighting diffusers) such that they will:

- Adequately resist the spread of flame over their surfaces
- Restrict their release of heat in the event of a fire.

In all circumstances, walls and lining will comply with the following for the non-residential areas:

Location	Euro Performance Class [1]
Rooms having an area less than 30m^2	D-s3, d2
All other rooms	C-s3, d2
Circulation spaces, including corridors and stairwells	B-s3, d2
Control of wall and ceiling linings	

[1] Relates to performance determined in accordance with BS EN 13501-1:2018. Thermoplastic lighting diffusers will not be used in the building.

The surface linings of the walls & ceilings should generally conform to the classifications outlined. However, parts of walls in rooms may be of a lower class but not lower than Class D-s3, d2 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 20m^2 in residential & 60m^2 in non-residential).

5 Means of escape for all building users:

Means of escape is to be provided to facilitate occupancy escape from the building to a place of safety. The building is to be designed to meet the requirements BS 9999:2017.

5.1 Evacuation strategy

The New City Court development shall adopt a Phased Evacuation Regime. Upon fire alarm activation this will instigate the evacuation of occupants; on the floor of fire origin, public floors, ground floor, and basement floors. In addition, the building management team should evacuate any occupants with disabilities or reduce mobility during the initial stages. The Phased Evacuation Protocol for New City Court should be in accordance with Annex M of BS 9999:2017.

The evacuation procedure is based on a 'double knock' system. Subsequently, where two detector heads activate simultaneously, the sprinkler system discharges or a manual call point is pressed, this will enact the evacuation of all occupants on the floor of fire origin, and the phasing of levels will commence. The following arrangement will reduce the number of false alarm incidents. The principles of the evacuation strategy are as follows:

1) Acknowledgement

- Upon activation of a single detector head, a signal will be sent to the fire alarm panel and an acknowledgement timer will commence. If the timer expires before a member of staff acknowledges the detector activation, the fire alarm will sound, instigating the phased evacuation protocols.

Note: an appropriate acknowledgement time should be agreed with Building Control and the building operator, (Usually, 2 minutes). If a manual call point is activated at any time throughout the process, the particular level will begin a full evacuation, and this is to override any acknowledgement period.

2) Investigation

- Once the appropriate member of staff acknowledges the alarm on the fire alarm panel, an investigation timer will commence. The management team then have a specified period of time to investigate the location of the activated detector and determine if the alarm is false or legitimate.

Note: an appropriate investigation time should be agreed with Building Control and the building operator, (usually 3 minutes). The minimum acknowledgement & investigation period would be 5-minutes.

Note: the above typical timings can be adjusted by the operator & FM teams appropriately once consideration is given to the management protocols and future fire risk assessments.

3) Evacuation

- If management do not reset the alarm before the investigation timer expires or they activate a manual call point upon confirmation of the legitimate fire, the phasing of levels will commence.
- If preceding this, a second detector activates, the phasing of levels will commence.
- 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.

Note: Trained staff will need to be familiar with the nature of the phased evacuation and their role in facilitating the phased evacuation.

Georgian Townhouses & Keat's House

The Georgian Townhouses & Keat's House will be based on a simultaneous evacuation strategy. The activation of the fire detection & alarm system within these demises will enact the evacuation of all occupants. All other areas within New City Court will remain in place.

Public address / voice alarm systems (PA/VA)

The emergency voice communication systems to be incorporated within the New City Court development should be designed, manufactured, installed, commissioned & maintained in accordance with BS 5839-9:2011.

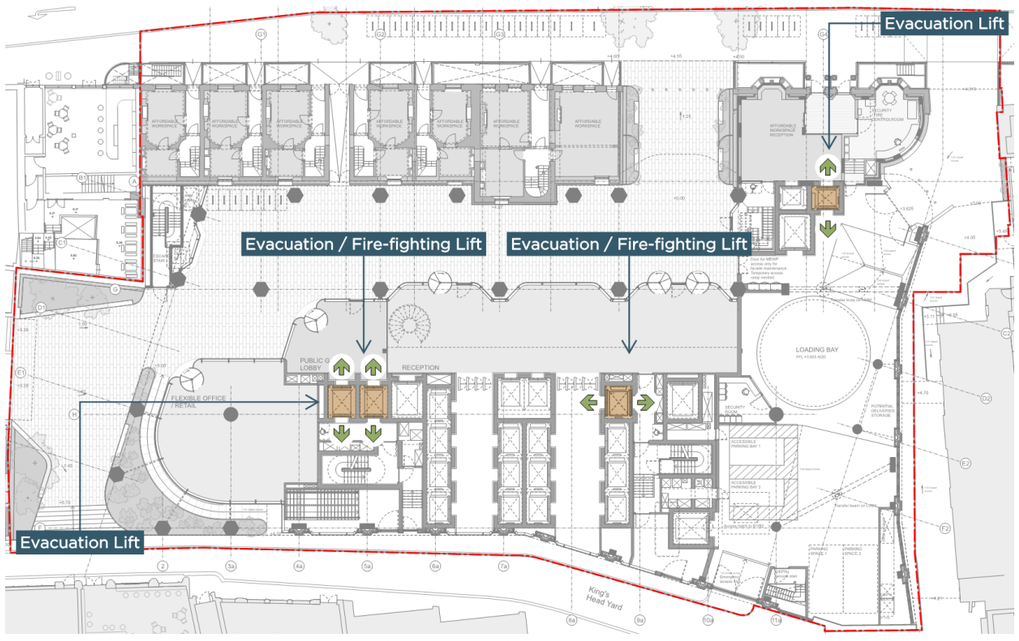
5.2 Inclusive design

The New City Court & Keat's House building shall be provided with evacuation lifts / passenger lifts designed, installed, and commissioned in accordance with BS EN 81-76. The London Plan – Policy D5 (Inclusive Design) requests the highest level of accessibility and recommends that at least one lift should be a suitably sized fire evacuation lift. The purpose of this enhanced provision which is over & above the minimum recommendation within the British Standards is to evacuate people who require level access from the building. the existing Georgian Townhouses do not contain lifts. However, it is recommended that Keat's House align with this inclusive design provision.

The building must align with the recommendations for means of escape for disabled occupants given within Clause 45 of BS 9999:2017. The 'Fire safety management plan' should consider the full range of people who might use the premises, paying attention to the needs of disabled occupants. It is the responsibility of the premises management to ensure that all people can make a safe evacuation; the evacuation plan should not rely on the assistance of the Fire & Rescue Service.

Refuges are places of relative safety. People whose abilities or impairments might result in a delayed evacuation can await assistance from building management or await to make use of the evacuation lift and then begin the next part of their movement to a place of ultimate safety. Disabled refuges should be provided at all storey exits within a protected stair, lobby or adjacent the evacuation lifts.

A system of two-way communication between those waiting in each refuge and the team who are organizing the evacuation of the building must be provided. This system must 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 Plan for the building.



New City Court & Keat's House – Proposed Evacuation Lift Locations

Firefighting lifts (which are provided principally for the use of the Fire & Rescue Services in fighting fires) can be enabled for the evacuation strategy of disabled people. The lifts may be used for the evacuation of those occupants prior to the arrival of the fire and rescue service.

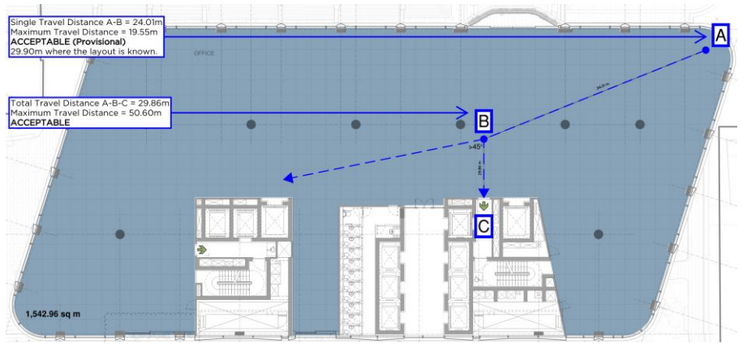
The lifts should be operated under the control of the fire safety manager or a delegated representative, or otherwise by someone trained and authorized in the use of the lift. Evacuation lifts should be provided, constructed, and operated in accordance with Annex G of BS 9999:2017.

5.3 New City Court (Tower Building)

The New City Court building consists of 26 storeys (including a mezzanine & two basement levels). The building is predominantly office use with ancillary accommodation positioned within the basement & roof levels. Provision has been made for an independently accessible retail unit at ground level and a Restaurant with café & terraces on roof levels have been provided which are open to members of the public.

A phased evacuation strategy shall be implemented to evacuate occupants directly impacted by fire, occupants with disabilities or impairments and occupants located on ground level including all basement levels during the initial stage of the process.

During the evacuation process, occupants on typical office levels for example are capable of reaching a relative place of safety for a single direction of travel within 19.55m or where an alternative route is available within 50.60m as shown below.



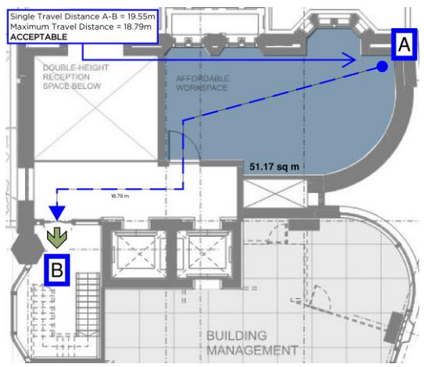
New City Court – Typical Office Floor

5.4 Keat's House

The Keat's House building consists of 4 storeys that range from Level 00 up to Level 03. This single stair building directly communicates with New City Court and therefore is considered to be the same building. Keat's House is office use and contains the Fire Control Centre for the entire development at ground level next to St. Thomas Street.

The evacuation strategy is based on a simultaneous, double knock system. Subsequently, where two detector heads activate simultaneously or a manual call point is activated, this will enact the evacuation of all occupants to a place of ultimate safety, the remainder of New City Court should remain in place initially.

During the evacuation process, occupants on office levels are capable of reaching a relative place of safety for a single direction of travel within 19.55m as shown below.



Keat's House – Level 02

5.5 Georgian Townhouses

The Georgian Townhouses consist of 5 storeys that range from Lower ground floor up to Level 03. The building is office use and provided with 3 independent means of escape stairs one separated from the next serving the upper floors.

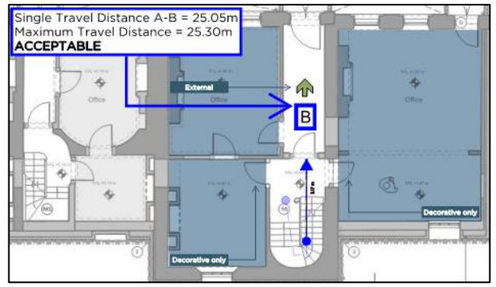
The evacuation strategy is based on a simultaneous, double knock system. Subsequently, where two detector heads activate simultaneously or a manual call point is activated, this will enact the evacuation of all occupants to a place of ultimate safety.

During the evacuation process, occupants are capable of reaching an ultimate place of safety for a single direction of travel within 17.25m or where an alternative route is available within 42.55m as shown below.

Third Floor (Travel +15.22m)

Second Floor (Travel +3.48m)

First Floor (Travel +3.18m)



Ground Floor (Travel +3.17m)

Georgian Townhouses

5.6 Small single stair buildings

In accordance with Section 17.3.3 of BS 9999:2017, the Georgian Townhouses & Keat's House can be served by a single escape stair as the top-most occupied floor is approximately 11.00m above access level. Therefore, the office units that are served by a single stair within the Georgian Townhouses & Keat's House should adopt the following provisions:

a) Unventilated protected lobby provided with a fire main. Note: fire main not considered necessary as all areas of the buildings can achieve the required perimeter access, allowing hose length coverage within 45m.

b) The single escape route should serve an occupant capacity of 60 people.

c) The travel distance limit for travel in a single direction only should not be exceeded.

d) The minimum width of a means of escape stair should be:

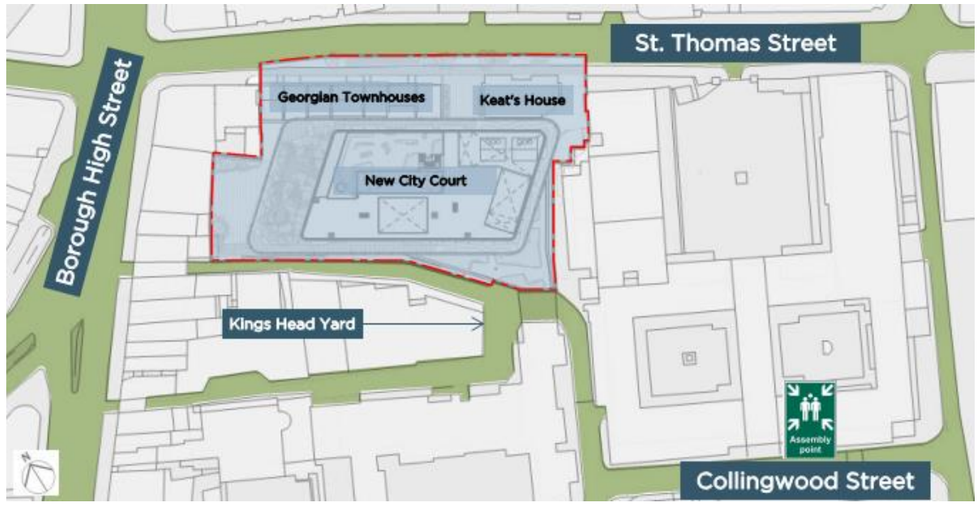
- not less than the width(s) of any exits(s) affording access to them:
- should not be reduced at any point on the way to a final exit; and
- should be not less than 1000mm for downward travel.

The design aligns with the criteria set out within BS 9999:2017 with the exception of part a). The Georgian Townhouses & Keat's House are existing buildings and therefore in this instance it is not feasible to enhance the existing facilities to match the recommendations of contemporary guidance.

5.7 Assembly Points

In principle, assembly points should be located sufficiently far from the premises to minimize interference with the fire and rescue service or danger from falling debris but should be accessible and not so far away as to discourage people from assembling. The assembly points 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.



Notational Assembly Point with visual - New City Court

5.8 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.
- A door that opens towards a corridor or a stairway should be sufficiently recessed to prevent its swing from encroaching on the effective width of the stairway or corridor.
- 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.
- All escape routes should have a clear headroom of not less than 2.0m except in doorways.
- 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 1100mm 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. Stairs should not exceed 1400mm.

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. Evacuation Analysis will be provided at the next stage. This analysis will be reviewed, updated, and developed throughout the design process.

6 Features which reduce the risk to life:

The inclusion of active and passive fire and smoke control systems within the building is intended to ensure that the means of escape provided remains available to occupants throughout the evacuation of the building in fire conditions and maintain tenable conditions for longer periods during fire-fighting operations. The following shall be considered for New City Court.

6.1 Active fire protection

6.1.1 Fire detection & alarm systems

A category L1 fire detection and alarm system, designed, installed & commissioned in accordance with BS 5839-1:2017 shall be provided within New City Court, the Georgian Townhouses & Keat's House throughout all areas. Manual call points are to be located on escape routes and at all storey exits to open air (whether or not the exits are specifically designed as fire exits). This will ensure occupants are provided with an early warning of fire at the early stages of fire development.

A category L5 fire detection system designed, installed & commissioned in accordance with BS 5839-1:2017 shall be provided throughout all common or landlord areas to activate the various smoke control systems etc.

Note: Automatic fire detection should be provided in any area that contain a horizontal void of 800 mm.

Indicating equipment & controls

The fire alarm panel should be located at an appropriate location for both staff and firefighters (i.e. Fire Control Centre). Repeater panels will also be provided at the entrance to each stair core at ground floor within an appropriate location for both staff and firefighters responding to a fire signal, such that the controls can be readily operated, and indications are readily visible.

The passenger lifts should return to ground floor level upon activation of the fire alarm and disable to prevent potential use in a fire situation (excluding evacuation lifts). Note: For all fire detection & alarm systems, a cause-and-effect analysis should be coordinated to ensure that it corresponds with the necessary requirements and aims of the fire safety strategy.

6.1.2 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 requirements for the characteristics of fire safety signs and notices are encompassed within the Health and Safety (Safety Signs and Signals) Regulations 1996.
- Guidance on the application and siting of means of escape signs is given in BS 5499 Part 4: Code of practice for escape route signing.

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, including the Fire & Rescue Service.

6.1.3 Emergency lighting

The emergency lighting system will be installed in accordance with the recommendations of BS 5266 (parts 1-2 & 4-6), BS EN 1838, and BS EN 60598-2-22. The primary purpose of this system is to provide temporary illumination in the event that the primary power supply fails on the normal lighting system. Emergency lighting will be provided with 3-hour integral batteries.

Dedicated escape lighting will ensure escape routes are illuminated at all material times. This system will illuminate a safe exit route including the fire exits, manual call points, changes in level or direction and equipment for the Fire & Rescue Service.

6.1.4 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.

6.1.5 Automatic Water Fire Suppression System (AWFSS)

The New City Court building has an occupied storey over 30m above access level and therefore will be sprinkler-protected throughout. A sprinkler suppression system, designed, installed & commissioned in accordance with BS EN 12845:2015 shall be provided which significantly reduces the severity of a fire.

The primary purpose of the system is to control the spread of flames & hot gases by suppressing or extinguishing the fire completely. Based on the occupancy type a hazard classification of Ordinary Hazard 3 (OH3) is recommended. This system class ensures the sprinkler installation can deliver sufficient quantities of water to control the fire.

The application of sprinkler protection must be considered in the areas identified below but might be omitted after due consideration of the fire load in each case followed by agreement with the approving authorities.

Permitted Exceptions [1]	Necessary Exceptions [2]
Washrooms & toilets (Containing no combustible material, not including cloakrooms or storage areas).	Bins containing substances which expand.
Protected shafts (Enclosed within fire resisting construction, containing no combustible material).	Equipment rooms if the hazard would be increased by the use of water in extinguishing a fire.
Rooms with other automatic fire suppression systems (e.g. Gas, Powder or Watermist).	Areas, rooms, or places where water presents a hazard.
Exceptions	

[1] Permitted exceptions should be sprinkler protected but protection might be omitted after due consideration regarding the fire load and agreement is sought from the approving authorities.

[2] Necessary exceptions are not required to be sprinkler protected. In these cases, other automatic extinguishing systems should be considered (e.g. gas or powder).

[3] The separation between a sprinkler protected area and a non-protected area shall have a fire resistance no less than 120-minutes.

Concealed spaces

If agreement is sought from the approving authorities, dispensation for the removal of sprinkler protection within concealed spaces <800mm in depth can be achieved based on the following:

- Sprinkler protection is not considered necessary within ceiling voids <800mm in depth as long as all construction materials used for the installation of the ceiling and the services are of non-combustible construction.

  For example, Low smoke cable, or traditional PVC insulated wire in screwed metal conduit, will be acceptable (except from ceiling voids used as plenums for ventilation or air-conditioning systems which require to be sprinkler protected in accordance with TB230 of BS EN 12845:2015).

- Sprinklers should be provided in any area that contains a horizontal void of >800mm. Alternatively, a risk assessment must be instructed and produced to demonstrate that the risk of fire is sufficiently low to not warrant sprinkler protection followed by agreement with the approving authorities.

6.1.6 Emergency power supplies

To reduce the risk of the loss of electrical supply to fire protection systems that are required to operate continuously during a fire, a secondary power supply should be provided. The secondary power system should be designed to operate safely in fire conditions and be of sufficient capacity to maintain supplies to all life safety and fire equipment installations. Power supplies should meet the following recommendations:

- The secondary power supply should be independent of the primary power supply to the building and operate for a minimum of 3 hrs, e.g. an automatically started generator or a supply from another substation.
- The secondary power supply should be capable of providing the power supply 15s of the failure of the primary electrical supply.

6.1.7 Smoke & heat control systems

The mechanical smoke control systems recommended within the design intent should demonstrate equivalent or better conditions within the stairway when compared to a natural shaft. Subsequently, these systems are therefore considered to satisfy The Building Regulations and the British Standards for the ventilation of stair cores. The following smoke control systems are provided within the New City Court development:

6.1.8 ColtShaft Variable Systems (i.e. Colt - recommended installer only)

This system comprises of a single extract shaft located within the fire-fighting lobby & supply air taken from the stair. In accordance with Section 27.1.3 of BS 9999:2017; the fire-fighting lobbies within New City Court are to be provided with a ColtShaft Variable system. This arrangement incorporates the following principle components:

a) No. 1; 0.6m^2 mechanical smoke shaft must be provided adjacent the lobby. The vertical smoke shaft must directly communicate with the lobby at each level via No. 1; 0.6m^2 automatic opening vents (AOV) at high level which activates upon detection of smoke within lobby. From here smoke is extracted upwards, towards the roof and discharged from the building appropriately.

b) No. 1; 1.0m^2 automatic opening vent (AOV) must be provided at the head of the stair which opens direct to external and activates upon detection of smoke within the lobby to allow for supply air intake.

c) Duty and standby variable speed extract fans with inverter drive, linked to pressure sensors within the lobby at each level via the control panel should be provided. Stair door may open in either direction.

d) The system shall work in conjunction with the AWFSS.

Note: It is recommended that the system is fully automatic & can function entirely without Fire & Rescue Service intervention i.e. 'boost mode' should take effect when the stair door is fully open rather than a dedicated switch.

The primary objective of this system is to maintain smoke-free conditions in the staircase during both means of escape and firefighting operations. The design processes, system & functions should align with BS 9999:2017.

6.1.9 Powered smoke & heat ventilation systems

The basement levels & loading bay within New City Court are to be provided with a powered smoke & heat ventilation system throughout all rooms. In accordance with Section 27.2.3 of BS 9999:2017, the system is required to meet the following criteria:

a) The system must come into operation automatically either on activation of the AWFSS or by automatic fire detection system conforming to BS 5839-1:2017.

b) The system is to be capable of handling gas temperatures of 300°C for not less than one hour.

c) The system is to be capable of at least 10 air changes per hour.

d) The system must work in conjunction with the AWFSS.

The primary objective of the smoke & heat ventilation system is to allow for the clearance of smoke during the fire and after the fire has been suppressed. This system shall be designed in accordance with BS 7346-7 and capable of removing smoke from basements, car parks, loading bays & service corridors etc.

The Computational Fluid Dynamics (CFD) model that will be produced by the specialist sub-contractor as part of their works should complement the above principles and demonstrate a suitable level of fire safety. The fire strategy is not a specification, the detailed system design & specification including the necessary Indicating equipment & controls should be determined by the specialist installer.

6.1.10 Single stairs

As a compensatory measure, the stair compartment shall be provided with a 1m^2 openable windows at every level, for each stair within The Georgian Townhouses. Similarly, Keat's House will incorporate a 1m^2 automatic opening vent at the head of the stair for smoke control.

6.1.11 Refuse store ventilation

In accordance with BS 9999:2017, refuse stores are required to be accessed either direct from external or via a protected lobby which is provided with at least 0.2m^2 permanent ventilation. The refuse stores at basement levels will be served by the powered smoke & heat ventilation systems outlined above.

6.2 Passive fire protection

6.2.1 Elements of structure

The building shall be designed and constructed so that in the event of fire, its stability will be maintained for a reasonable period. The New City Court development contains an occupied floor greater than 30m in hight. Therefore, in accordance with BS 9999:2017, all elements of structure, including the structural frame, beams, columns, loadbearing walls (internal & external) and floor structures must achieve 120-minutes fire resistance.

6.2.2 Compartmentation

All compartment walls & floors should form a complete barrier against fire spread between the compartment they separate and have the appropriate level fire resistance. Effective compartmentation relies on having; a continuous fire resistance at the join between elements forming a compartment and, any opening between two compartments should not reduce the fire resistance.

6.2.3 Minimum levels of fire resistance

The New City Court development shall be designed & constructed to abide by the minimum levels of fire resistance outlined.

- Fire-fighting shafts are to be enclosed within solid robust non-combustible construction achieving a fire resistance for a specified period of up to 120-minutes with FD60S fire doors.
- Compartment walls to be formed of solid robust non-combustible construction achieving a fire resistance for a specified period of up to 120-minutes.
- Compartment floors to be formed of solid robust non-combustible construction achieving a fire resistance for a specified period of up to 120-minutes.

6.2.4 Building Services

The guidance provided within: *'Firestopping of Service Penetrations – Best Practice in Design and Installation'* should be considered. Firestopping is required to maintain fire compartmentation where services penetrate the compartment walls & floors. To help achieve this, the following 'Golden Rules' should be applied:

1) Ensure an early engagement with firestopping manufacturers and specialist installers.
2) Review the fire strategy documents and fire strategy plans (or architectural fire plans) in conjunction with the M&E specifications.
3) Identify all of the service types passing through the compartment floor or wall including any insulation products. Establish the space required to install and firestop the services.
4) Follow the 'Design process for penetration seals'.
5) Only select firestopping products which are third party certified by a UKAS accredited organisation. Firestopping products should be certified, or CE marked and tested using the relevant standards.
6) Ideally select one firestopping manufacturer throughout the project. Products from different manufacturers should not be mixed in the same opening unless there is clear test evidence to substantiate their use.
7) Request copies of the third-party certification from the manufacturers. These should be reviewed by a suitably qualified person to ensure the certification and field of application is relevant for the situation.
8) Ensure the installers of ALL service penetration seals are third party certified by an organisation such as FIRAS, LPCB, IFC, BM TRADA etc.
9) Implement a structured inspection plan to include photographic evidence as the work proceeds.

6.2.5 Cavity Barriers

Cavity barriers are defined as a construction designed to restrict the movement of smoke or flame. The barriers should be provided in cavities to prevent the excessive spread of unseen fire and smoke. Cavity barriers are to achieve at least 30 minutes fire resistance for integrity and 15 minutes fire resistance for insulation.

7 Access for fire service personnel and equipment:

The building stall be designed & constructed to provide facilities to assist firefighters with the protection of life. New City Court is to be provided with the following fire-fighting provisions:

7.1 Fire Control Centre

The New City Court development has been provided with an approx. 35m^2 fire control centre (FCC) & security room which is accessible from St. Thomas Street via the main entrance of Keat's House as shown. This enables the fire & rescue service to assist the premises management in controlling an incident immediately upon arrival.

Fire Control Centre within Keat's House adjacent St. Thomas Street.

The fire control centre (FCC) is located on Ground Level and is readily accessible via a protected route used to serve the premises management staff residing within the FCC.

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.

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.

e) An exchange telephone with direct dialling for external calls. The facility to sound the alert signal throughout the building.

f) 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.

g) 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.

h) 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.

i) 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

j) Facilities for the control centre personnel to rest and refresh themselves.

7.2 Fire-fighting shafts

In accordance with Section 20 of BS 9999:2017, for a building with a top-most storey greater than 18m above ground / access level, fire-fighting shafts must be provided. New City Court is to be provided with 2 fire-fighting shafts serving all areas of the building. The basement levels are less than 10m in depth but exceed 900m^2 and subsequently both shafts serve these levels. A typical shaft layout has been identified below.

Firefighting Shaft Arrangements – Typical Level

7.2.1 Fire-fighting stairs

The Fire-fighting stairs within New City Court should be designed in accordance with BS 5395-1, the width between the walls or balustrades are not less than 1200mm. The fire-fighting stairs are provided with a 1.0m^2 AOV at the head for supply air. The travel distance between the fire-fighting stair & the fire-fighting lift, are no more than 7.5m.

7.2.2 Fire-fighting lobbies

The size of the fire-fighting lobby must be restricted to prevent the build-up of storage. BS 9999:2017 recommends that the clear floor area should not exceed 20m^2 in anticipation that the temporary storage of goods may occur, which presents a risk.

In summary, no storage of goods etc. on a permanent or temporary basis should occur within the fire-fighting lobbies. This requirement must be outlined within the management plan for the building to complement this fire safety strategy. Refer to the management principles outlined within this report for information only.

7.2.3 Fire-fighting lifts

All of the fire-fighting shafts within New City Court are provided with a fire-fighting lift. The lifts must be constructed & installed in accordance with BS EN 81-20 and BS EN 81-72. A firefighter lift switch should be provided to enable the fire and rescue service to obtain immediate control of the firefighter's lifts. A lift communication system should be provided and should be separate from the fire and rescue service communications system. Back-up power supply must be provided. Refer to the VT package for further information.

7.2.4 Refuges

Refuges are places of relative safety where people whose abilities or impairments might result in delayed evacuation can await assistance from building management with the next part of their movement to a place of ultimate safety. All protected lobbies leading a storey exit should incorporate a disabled refuge.

7.2.5 Smoke & heat control systems

A ColtShaft Variable System (CSVS) system shall be provided which comprises of a single extract shaft located anywhere within the firefighting lobby. This arrangement incorporates the following principle components:

a) No. 1; 0.6m^2 mechanical smoke shaft has been provided adjacent the lobby. The vertical smoke shaft directly communicates with the lobby at each level as required via No. 1; 0.6m^2 automatic opening vents (AOV) at high level which activates upon detection of smoke within lobby.

b) No. 1; 1.0m^2 automatic opening vent (AOV) has been provided at the head of the stair which opens direct to external and activates upon detection of smoke within the corridor to allow for supply air intake.

c) Duty and standby variable speed extract fans with inverter drive, linked to pressure sensors within the lobby at each level via the control panel are provided. Stair door may open in either direction.

d) The system shall work in conjunction with the AWFSS.

The primary objective of the system is to maintain smoke-free conditions in the staircase during both means of escape and firefighting operations.

7.2.6 Fire mains

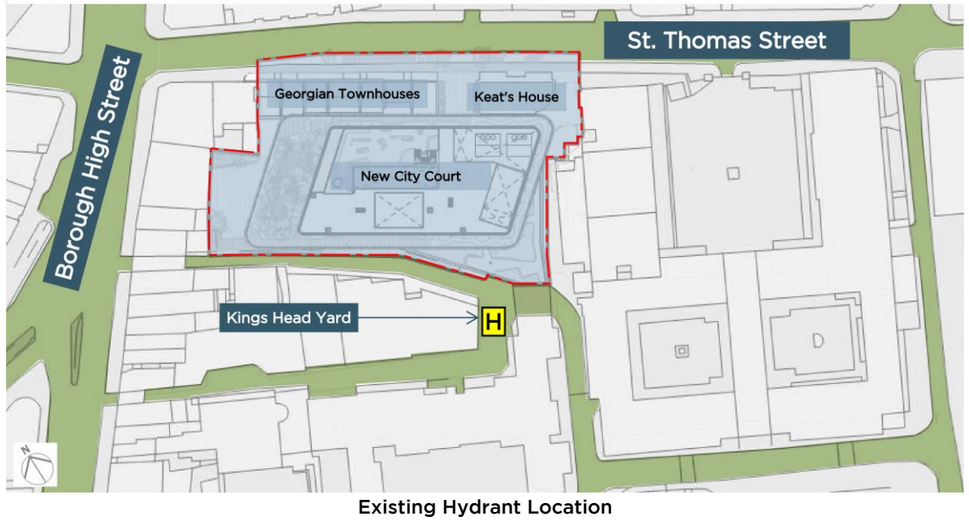
The New City Court project is above 30m in height; therefore a wet fire main must be provided. This ensures the water is immediately available with the required pressures to create an adequate water supply to the landing valves at each level. The wet riser system including the dedicated tank shall be designed in accordance with BS 9990:2015. Note: The pump indicators will be repeated within the FCC room.

Landing Valves

In accordance with Section 22 of BS 9999:2017, 'Water supplies for fire and rescue service use'; Fire mains should be installed in any building provided with a fire-fighting shaft and located within a protected lobby where provided.

7.3 Fire hydrants

Fire hydrants are to be provided to within 90m of an entry point to the building and not more than 90m apart. The existing infrastructure around New City Court will satisfy the above. Refer to the MEP package for further information.



Existing Hydrant Location

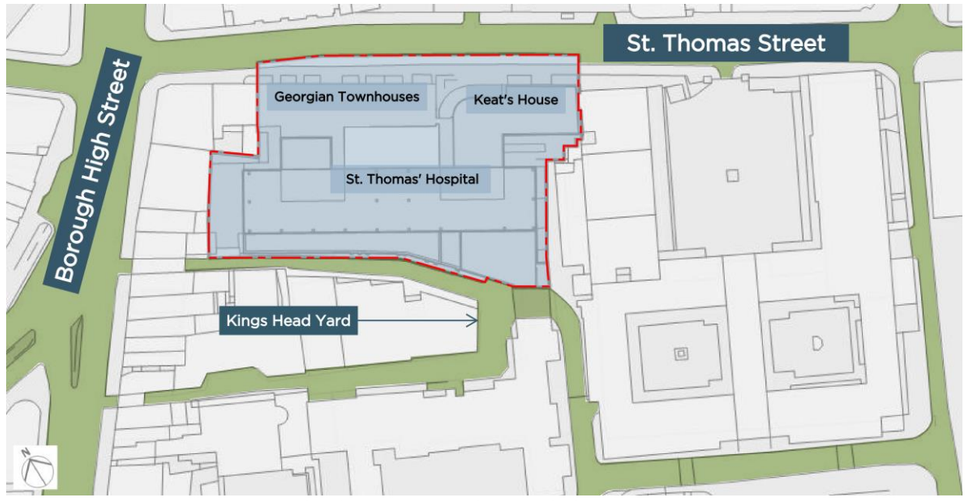
7.4 Fire tender access

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 pumping appliance. It is expected the existing infrastructure around New City Court will accommodate the below.

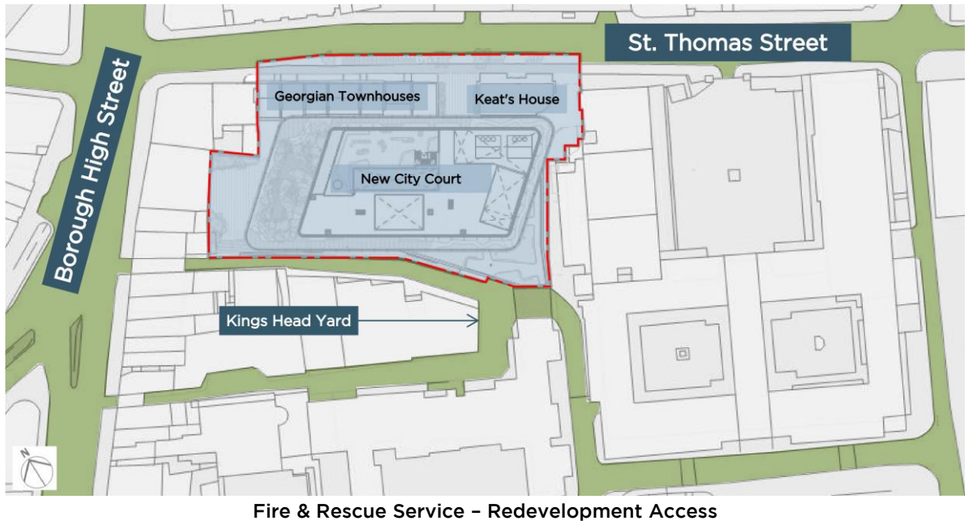
Min. width of road between kerbs (m)	Min. width of gateways (m)	Min. turning circle between kerbs (m)	Min. turning circle between walls (m)	Min. clearance height (m)	Min. carrying capacity (t)
3.7	3.1	16.8	19.2	3.7	12.5
Fire service vehicle access route requirements [1]					

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.

The redevelopment does not intend to alter the existing access provisions as highlighted below:



Fire & Rescue Service – Existing Access

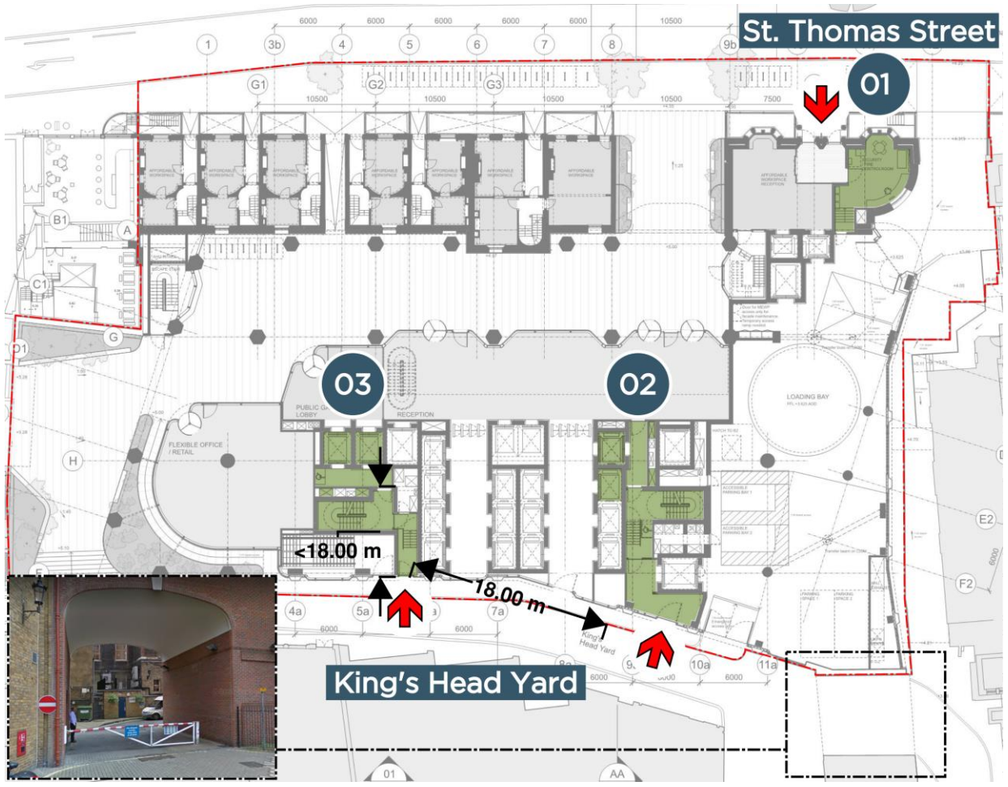


Fire & Rescue Service – Redevelopment Access

7.5 Fire service access

In accordance with BS 9999:2017, where a wet riser is provided, the following travel distance apply:

- The total travel distance from the fire tender to the point of entry into the protected route should be no more than 18.0m.
- The total travel distance for fire service personnel, from the point of entry to the fire & rescue service mustering point, should be no more than 18.0m.



Fire & Rescue Service – Access Routes

Access point 01

The first point of contact for the Fire & Rescue Service will be to the Fire Control Room where the Building Management Team can brief the brigade regarding the incident upon arrival.

Access point 02 & 03

Depending on the fire location and size, the Fire & Rescue Service can select which firefighting shaft will provide them with the best advantage upon approach. The existing access & facilities within King's Head Yard shall be retained to accommodate acceptable travel distance from the fire tender to each mustering point at ground level.

Early consultation with the approving authorities has been undertaken as documented with the Appendix.

8 Future Modifications

The building fire strategy is relevant to the proposed design at the time in which the strategy was produced. Any future modifications to the internal or external building 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 the base build fire strategy design.

8.1 Relevant qualification & experience

This fire statement has been completed by the following suitably qualified engineer and supporting team.

Author's Name:	Michael Stitt
Qualification:	Bachelor of Engineering (Hons) in Fire Safety Engineering – BEng (Hons)
Membership:	Associate of The Institution Fire Engineers - AIFireE
Position:	Senior Fire Safety Engineer

Michael's introduction to the fire safety industry began during his time at the Letterkenny Institute of Technology in Ireland. In 2012, he began the Bachelor of Engineering (Hons) in Fire Safety Engineering course that comprised of modules such as Construction Law & Professional Ethics, Fire Service Operations and Fire Dynamics.

In 2016, Michael successfully obtained his degree in Fire Safety Engineering and was then employed by a well-established Fire & Security company based in Belfast. The company specialise in the design, installation, and commissioning of fire detection & alarm systems. Michael's role as an AutoCAD Design Engineer was not only to design the system layouts but also ensure that this information was installed as per specification on-site which exposed Michael to practical experience on a daily basis.

Since 2017, Michael has worked as a Fire Safety Engineering Consultant for a multidisciplinary company based in London. Now as a senior member of the team and project lead, it is Michael's responsibility to win new projects, manage the jobs financially and meet the deliverables within the agreed deadlines while advising on the highest standard of fire safety. Michael continues to attend FireX International – Europe's leading annual fire safety event in addition to undertaking CPD's with the aim to become a Chartered Engineer that is competent in all aspects of Fire Safety Engineering.

This statement has been developed by Ben Green (Associate Director), updated by Michael Stitt (Senior Fire Engineer), and authorised by Paul McLaughlin (Operational Director) with the support of chapmanbdsp.

8.2 Fire strategy development

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 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.

8.3 Sign off

This fire statement has been completed by:

Signature:	Date:
Yours sincerely,  **Michael Stitt** Senior Fire Engineer, chapmanbdsp M: +44 (0)20 7618 4800 E: Michael.Stitt@chapmanbdsp.com	14th September 2021

9 Appendices

9.1 Appendix 1 – Meeting Minutes

chapmanbdsp

Minutes of Meeting

Project Name:	New City Court	**Project No.:**	55287_F
Subject:	LFB Preliminary Consultation	**Time:**	14:00 – 15.30
Date of Meeting:	Wednesday 16th June 2021	**Venue:**	Microsoft Team's
Date Prepared:	Tuesday 22nd June 2021		
Present:	Tom Hatherley [G&T], Michael Wadood [Sweco], John Sutherland, Paul Judson [LFB], Haydn Thomas, David Kahn, Gosia Malus, Natalia Maslennikova, Robert Romanis, Sara Martins [AHMM]. Ben Green, Michael Stitt [cbdsp].		
Apologies:	Edmund Vaughan, Paul McLaughlin, Christopher Griffiths, Pushkin Passey, Mark Keane, Ben Graham [cbdsp].		
Distribution:	All above.		

Item	Comment / Description	Date / Action
1	**Sweco Introduction**	16th June 2021
Discussion	A high-level overview was provided by Sweco that included a focus on the key discussion points namely; Access & facilities for the fire and rescue service within New City Court. Sweco continued by introducing the design team & allowing AHMM to present the scheme from an architectural point of view.	Noted.
2	**Allford Hall Monaghan Morris Introduction**	16th June 2021
Discussion	The architectural team provided a high-level description while presenting the general arrangements of the proposed New City Court development. The New City Court development consists of three building blocks. The predominant 'New City Court' building consists of 29 storeys that range from Basement Level 02 up to Level 26. The building is served by 2 primary vertical cores that can be accessed from every level for means of escape & firefighting operations. New City Court is an office development with a potential independent office/retail unit, accessible from a public courtyard. The primary access point to the New City Court development for the Fire & Rescue Service will be from the existing 'King's Head Yard' laneway which currently serves the existing & adjacent sites. The New City Court building is approximately 95.00m, Keat's House is approximately 11.50m & the Georgian Townhouses are approximately 11.00m in height. The basement levels within New City Court are greater than 10m in depth.	Noted.
3	**Chapmanbdsp Introduction**	16th June 2021
Discussion	Cbdsp continued the present the Draft Stage 2 Fire Safety Strategy. The report will be formed of the following headings: Executive summary, Introduction, Legislation requirements, Active fire protection system, Requirement B1: Means of warning & escape, Requirement B2: Internal fire spread (Linings), Requirement B3: Internal fire spread (Structure), Requirement B4: External fire spread & Requirement B5: Access and facilities for the fire service. The access provisions associated with the existing New City Court site were then presented.	Noted.

Item	Comment / Description	Date / Action
4	**Access & facilities for the fire and rescue service**	16th June 2021
Discussion	Cbdsp presented the comparisons between the existing site & the newly proposed New City Court site. It was discussed & agreed in principle with LFB that the redevelopment proposes no change or alternations to the existing access provisions for the fire service. Subsequently, LFB will confirm the existing firefighting operations in place in terms of the pre-determined attendance plan and rendezvous points to accommodate for at least 5 appliances. It was noted that currently access can be achieved via 'Beak alley' within the adjacent site through an archway with barrier stating, "Fire Brigade access, keep clear at all times". LFB shall therefore investigate the current protocols to gain access to King's Head Yard.	LFB to investigate pre-determined attendance provisions for the development.
5	**Basement Stairs**	16th June 2021
Discussion	In accordance with Section 17.5 of BS 9999:2017; 'if there is more than one escape stair from an upper storey of a building, only one of the stairs serving the upper storeys of the building need be terminated at ground level'. New City Court is a tall building with a basement <10m in depth. Therefore, the recommendations provided within Section 20.2.4 of BS 9999:2017 ('Firefighting stairs') have been implemented. This ensures the firefighting stairs serve every level and to prevent smoke from basement storeys penetrating the stair enclosure above ground level, firefighting stairs serving floors both above & below ground level have been sub-divided by a fire door. In addition, the firefighting lobbies at basement levels will be provided with a mechanical smoke control system. The primary objective of this system is to maintain smoke-free conditions in the staircase during both means of escape and firefighting operations. In summary, it is considered acceptable for both firefighting stairs to serve every level and continue down to serve basement levels. This interpretation of the guidance must be agreed with the approving authorities.	LFB & Sweco to review and comment on stair arrangements.
6	**Building height**	16th June 2021
Discussion	In accordance with Section 0.3 of BS 9999:2017, it is recommended that a qualitative design review in accordance with BS 7974 is undertaken to determine whether the recommendations in BS 9999:2017 are appropriate, or whether a full fire engineered solution is required for buildings in excess of 50m in height. Cbdsp will establish whether specific evaluation of all fire safety provisions is needed for the New City Court project based on the structural integrity, services, fire safety system, means of firefighting and the evacuation strategy.	Cbdsp to provide an evaluation and feedback to teams.
7	**Evacuation protocols**	16th June 2021
Discussion	It was discussed & agreed with Sweco that upon fire alarm activation, this will instigate the evacuation of occupants, on the floor of fire origin, ground and basement levels and occupants within assembly & recreation categories. In addition, building management should evacuate any occupants with disabilities or reduce mobility during the initial stages using evacuation lifts.	Cbdsp to highlight at Stage 2.

Item	Comment / Description	Date / Action
8	**Final exits from stairs & evacuation lifts**	16th June 2021
Discussion	In accordance with Section 17.2.7 of BS 9999:2017, every protected stairway & evacuation lift should discharge by way of a protected exit passageway to a final exit. The fire safety management plan for the building must consider that level access cannot be achieved from the evacuation lift grounding & King's Head Yard. Therefore, trained staff should evacuate disabled occupants via the building main reception. Should fire occur within the reception, occupants can await assistance within the refugees provided. The Goods lifts and service lifts should not be located within fire-fighting shafts as reiterated by LFB. Therefore, access to the goods lift for cycle storage & the transit of good will be via the loading bay. 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. Inward opening doors provided with motorised actuators linked to the fire detection & alarm system can serve more than 60 occupants and are proposed at ground level to avoid doors swinging onto the pedestrian walkways.	AHMM to amend the GA's based on feedback from LFB.

End of Minutes. Note: meeting notes are assumed accurate unless comments are received within 7 days.