

**Capel Manor College,
Mottingham Campus,
London, SE12 9AW**

GLA Fire Statement

Client: Fusion Project Management

Revision 4.4 - October 2023

Notice

This statement has been prepared for Fusion Project Management Limited and is only intended for their information in relation to the GLA Fire Statement for the development at Capel Manor College, Mottingham Campus, London, SE12 9AW.

Cahill Design Consultants Limited will assume no responsibility towards any other party in respect of this statement or its contents.

This statement has 12 pages including the front cover.

Document history

Document ref No: P1541/Dec21					
Rev.	Description	Originated	Checked	Authorized	Date
1.0	ISSUE	GB	TM	BC	10 December 2021
1.1	ISSUE	GB	TM	BC	13 December 2021
2.0	ISSUE	TM	BC	BC	7 July 2022
2.1	ISSUE	TM	BC	BC	17 October 2022
3.0	ISSUE	TM	BC	BC	21 March 2023
4.0	ISSUE	TM	BC	BC	23 March 2023
4.1	ISSUE	TM	BC	BC	20 April 2023
4.2	ISSUE	TM	BC	BC	22 April 2023
4.3	ISSUE	TM	BC	BC	17 October 2023
4.4	ISSUE	TM	BC	BC	24 October 2023

Table of contents

Sections

Executive Summary4

1 Introduction.....5

2 London Plan Policy D12 – Fire Statements6

3 London Plan Responses7

4 London Plan Policy D5 – Evacuation Lifts 11

5 Declaration of compliance..... 11

6 Author's details 11

Executive Summary

Fusion Project Management Limited appointed Cahill Design Consultants Limited, on behalf of their client, to provide fire safety and fire engineering advice and support to the proposed development at Capel Manor College, Mottingham Campus, London SE12 9AW.

This GLA Fire Statement aims to support the design and construction of the proposed buildings to meet the fire safety requirements of the **London Plan 2021** to support the planning application for the project whilst also ensuring that the building design will meet the requirements of the client.

The buildings that are the subject of this GLA Fire Statement do not meet the criteria to be considered relevant buildings for the purpose of a Gateway 1 Fire Statement, and therefore a separate Gateway 1 Fire Statement for the development will not be provided.

The guidance and recommendations given in **BS 9999:2017, Fire safety in the design, management and use of buildings. Code of practice** and **Building Bulletin 100, Design for Fire safety in schools**, have been used to demonstrate that the design of the buildings will meet Fire safety in the design, management and use of buildings. Code of practice to the fire safety requirements of the **London Plan 2021**.

Where the solution provided deviates from the above guidance documents a design solution based on the fire engineering principles and professional judgement has been used, as detailed in **BS 7974:2019, Application of fire safety engineering principles to the design of buildings. Code of practice**.

1 Introduction

This GLA Fire Statement is in relation to the proposed development of the Mottingham Campus site of the Capel Manor College.

The proposed development will comprise of two new buildings and changes to an existing building, the scope of the development is briefly described as follows:

- **Glasshouse:** The Glasshouse is an existing single storey structure with a total floor area of under 300m² and a mean roof height a little more than 3.9m.
The Glasshouse will be converted from an existing teaching space and will provide a new Horticultural area to the south of the building and a smaller Floristry and Aquatics area to the north of the building that will also contain a small cold store.
- **Welcome Block:** The Welcome Block will be a new 2-storey structure with a Ground floor area of less than 360m² and a first floor level of less than 410m².
The first floor of the building will be less than 3.8m above ground floor level and the roof height will be less than 9.7m above ground floor level.
The Welcome Building will have an open internal stair to first floor level, an open external stair from the first floor level on the east of the building.
There will also be a walkway at first floor level linking the Welcome Block to the Linear Block from the southwest corner of the building. A single passenger lift will also be provided between ground and first floor levels.
The ground floor level of the building will include offices, meeting rooms, social space, dog grooming, food preparation and a plant room.
The first floor level will include seminar rooms, staff rooms, counselling rooms and a server room.
- **Linear Block:** The Linear Block will also be a new 2-storey structure with a Ground floor level less than 364m² and a first floor level of less than 357m².
The height of the first floor will be less than 3.6m and ground floor level and will have a single stair from ground floor to first floor level in the centre of the structure.
The ground floor level of the Linear Block will include science labs, social space, kitchen and a plant room.
The first floor of the Linear Block will include classrooms, storage and a plant room

Generally the students at Capel Manor College will range in age from 16-19 years old.

This GLA Fire Statement has been developed for planning purposes only and is in response to the additional design information requested within the adopted **London Plan 2021** policies, with respect to fire safety issues. The relevant policies are:

- **London Plan Policy D12 – Fire statements**
- **London Plan Policy D5 – Evacuation Lifts**

A detailed fire safety strategy will be developed to support the development of the buildings, as the design progresses through RIBA stages.

This GLA Fire Statement only summarises the design requirements as they relate to the requirements in support of the imminent planning application.

The fire safety guidance upon which the fire safety design for the development is primarily based on is **BS 9999: 2017 - Fire safety in the design, management and use of buildings – Code of practice**. However **Building Bulletin 100** will also be used as a reference guide.

This GLA Fire Statement is intended to demonstrate to the Local Planning Authority, how fire safety has been taken into consideration at the earliest stage of the development to satisfy the requirements of the GLA London Plan 2021.

2 London Plan Policy D12 – Fire Statements

The London Plan Policy D12 is separated into two sections, A and B; Section A relates to all developments whilst Section B only applies to major developments.

The two sections are reproduced below (for information):

A In the interests of fire safety and to ensure the safety of all building users, all development proposals must achieve the highest standards of fire safety and ensure that they:

- 1) identify suitably unobstructed outside space:
 - a) for fire appliances to be positioned on
 - b) appropriate for use as an evacuation assembly point
- 2) are designed to incorporate appropriate features which reduce the risk to life and the risk of serious injury in the event of a fire; including appropriate fire alarm systems, and passive and active fire safety measures
- 3) are constructed in an appropriate way to minimize the risk of fire spread
- 4) provide suitable and convenient means of escape, and associated evacuation strategy for all building users
- 5) develop a robust strategy for evacuation which can be periodically updated and published, and which all building users can have confidence in
- 6) provide suitable access and equipment for firefighting which is appropriate for the size and use of the development.

B All major development proposals should be submitted with a Fire Statement, which is an independent fire strategy produced by a third party, suitably qualified assessor.

The statement should detail how the development proposal will function in terms of:

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

The buildings are new build within an existing campus and will be designed in accordance with BB100 / BS 9999.

There will be 2 stairs with a minimum width of 1m. Travel distances are within 18 / 45m. The elements of structure throughout the building should be protected to a minimum of 60 minutes fire resistance for load bearing capacity. Firefighting access will be to within 15% of the perimeter of the building.

3 London Plan Responses

The following sections of this statement give details of the development in response to the information required to satisfy items 1-6 of Part B of Policy D12.

D12(B)(1) Construction of buildings

- Method and Products and Materials

It should be noted that the Welcome Block and the Linear Block will be constructed using Cross Laminated Timber (CLT) together with some Glulam elements of structure which will not be in strict accordance with the recommendations given in the London Plan 2021 (Section 5.3.4) which states that the Fire Statement for a major development must include a commitment that the development will not incorporate combustible materials within its external walls.

Non-combustible materials are taken to be materials that are inherently non-combustible or materials that can achieve classification A2-s1, d0 or better when tested in accordance with **BS EN 13501-1:2018, Fire classification of construction products and building elements - Classification using data from reaction to fire tests**. Unfortunately, timber is not able to achieve this level of classification.

To compensate for this deviation from the guidance given for the London Plan 2021 both buildings will be provided with an automatic water fire suppression system in accordance with **BS 9251:2021, Fire sprinkler systems for domestic and residential occupancies. Code of practice** throughout.

Note: It should be noted that the use of **BS 9251:2021** is permitted for non-residential uses up to a maximum floor area of 100m² where an OH1 hazard profile is appropriate (see **BS 9251:2021 Table 3** and **Table 4** for further information).

Furthermore, the timber elements within the external wall build-ups of these two buildings will be treated with a proprietary fire retardant coating to meet a minimum of classification of B-s3, d2 when tested in accordance with **BS EN 13501-1:2018, Fire classification of construction products and building elements - Classification using data from reaction to fire tests**. This classification is considered equivalent or better than Class O when tested in accordance with BS 476-6 and BS 476-7 for national testing purposes.

D12(B)(2) Means of escape

The means of escape will be designed in accordance with the guidance given in BS 9999: 2017. The fire evacuation strategy for the college buildings will be a simultaneous fire evacuation, which is the standard recommended evacuation strategy for this type of building in the UK, in accordance with both BS 9999 and BB 100.

The risk profile of the 2 new buildings has been taken to be A1, in accordance with BS 9999 Table 4, where the occupants will be awake and familiar with the layout of the buildings and a 'Slow' fire growth rate has been assumed due to the provision of sprinklers within the 2 new buildings.

The risk profile for the Glasshouse has been taken to be A2, as sprinklers will not be provided in this building.

The maximum horizontal travel distance for an A1 risk profile will be limited to 26m in one direction and 65m when travel is available in more than one direction.

The maximum horizontal travel distance for an A2 risk profile (Glasshouse) will be limited to 22m in one direction and 55m when travel is available in more than one direction.

All exit doors will have a minimum clear width of 850mm and will accommodate a minimum of 151 people for an A1 risk profile and 138 people for an A2 risk profile, in accordance with **BS 9999:2017, Table 12, Exit widths when minimum protection measures are provided** and **16.6.1, Doors** (Using Equation 1).

The Linear Block will have 7 final exits from ground floor level, all on the west elevation of the building

The linear Block will also have step-free storey exits on the east and west elevations of the building at first floor level onto the external walkway provided around the perimeter of the accommodation of this building.

The Glasshouse will be provided with 4 step-free exits from the building, 2 on the north elevation of the building and 2 on the south elevation of the building. All travel distances within the building will be within the recommendations for actual travel given in BS 9999:2017.

The Welcome Block will be provided with 5 final exits, 1 on the north elevation, 1 on the east elevation, 2 on the south elevation and 1 on the west elevation but facing south.

The exit on the west elevation does not appear to be step-free but the other 4 are.

There are 2 storey exits at first floor level, 1 onto the external stair on the east elevation of the building and 1 in the southwest corner of the building leading onto the walkway to the Linear Block.

The external stairway for the Welcome Block will comply with the following:

- All walls and doors within 1.8m to the stair will be appropriately fire rated. Glazing within 1.8m of the stair will be fire resisting glazing assemblies and will be fixed shut.
- The final exit will not be any narrower than the storey exit.

Vertical means of escape will be via external stairs and walkways to the adjacent building. The minimum width of the stair will be 1000mm. Note; an external escape stair is acceptable, provided there is also an internal escape stair. However, none of the internal escape stairs will be protected stairs but travel distances will be in accordance with the recommendations of BS 9999 for escape via open accommodation stairs.

D12(B)(3) Passive and active fire safety measures

The relevant active and passive fire safety measures will be incorporated into the fire safety design, following the guidance of BS 9999. A summary list of the key items is as follows:

Active fire safety measures:

- Each building will be provided with a fire detection and fire alarm system in accordance with **BS 5839-1:2017, Fire detection and fire alarm systems for buildings - Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises**, to a minimum of category L2 coverage to include all escape routes and rooms opening onto escape routes, and specifically identified high risk areas;
- Each building will be provided with emergency escape lighting in accordance with **BS 5266:2016, Emergency lighting - Code of practice for the emergency lighting of premises**;
- The Welcome Block and the Linear Block will be provided with an automatic sprinkler system in accordance with **BS 9251:2021, Fire sprinkler systems for domestic and residential occupancies. Code of practice**;
- Each building will be provided with appropriately specified fire dampers where HVAC ductwork passes through a fire compartment wall or floor.

Passive fire safety measures:

- The fire protection to elements of structure for the Welcome Block and the Linear Block will be provided with a minimum of 60 minutes fire resistance (R 60);
- Due to the relatively small size of each of the buildings (less than 800m²) no additional fire compartmentation is considered necessary;
- Any identified higher fire risk areas will be enclosed in fire resisting construction of a minimum of 30 minutes fire resistance (REI 30) e.g. plant rooms, storerooms;
- Cavity barriers and fire-stopping will be provided in accordance with **BS 9999:2017, 32.6, Fire-**

stopping and **33.1, Provision of cavity barriers**, as necessary;

D12(B)(4) Access for the fire & rescue service

Access and facilities for the fire service have been incorporated into the design of the buildings to satisfy Part B5 of the Building Regulations 2010. The fire strategy applies the recommendations of BS 9999; the measures include firefighting access around the perimeter of the building.

Firefighting vehicle access should be within 45m of every point of the footprint of the building or 15% of the building perimeter, whichever is less, in accordance with **BS 9999:2017, 20, Facilities for firefighting**.

This is achieved for the Welcome Block and for the Glasshouse, but the Linear Block is set back from the vehicle access routes and will be more than 45m from a suitable vehicle location.

However, this extended distance to the Linear Block is considered reasonable as the building is provided with ample exit routes, automatic sprinklers throughout, and early detection of a fire situation will be given by the category L2 fire detection and alarm system to be provided.

A public hydrant is located outside No. 72 Winn Road, London SE12, which is further than 90m from the entrances to the buildings.

Therefore a private fire hydrant will be provided within the site of Capel Manor College to ensure that it is within 90m of any entry point to each building and not more than 90m apart from other fire hydrants, in accordance with **BS 9999:2017, 22.2 Location and access to external water supply**.

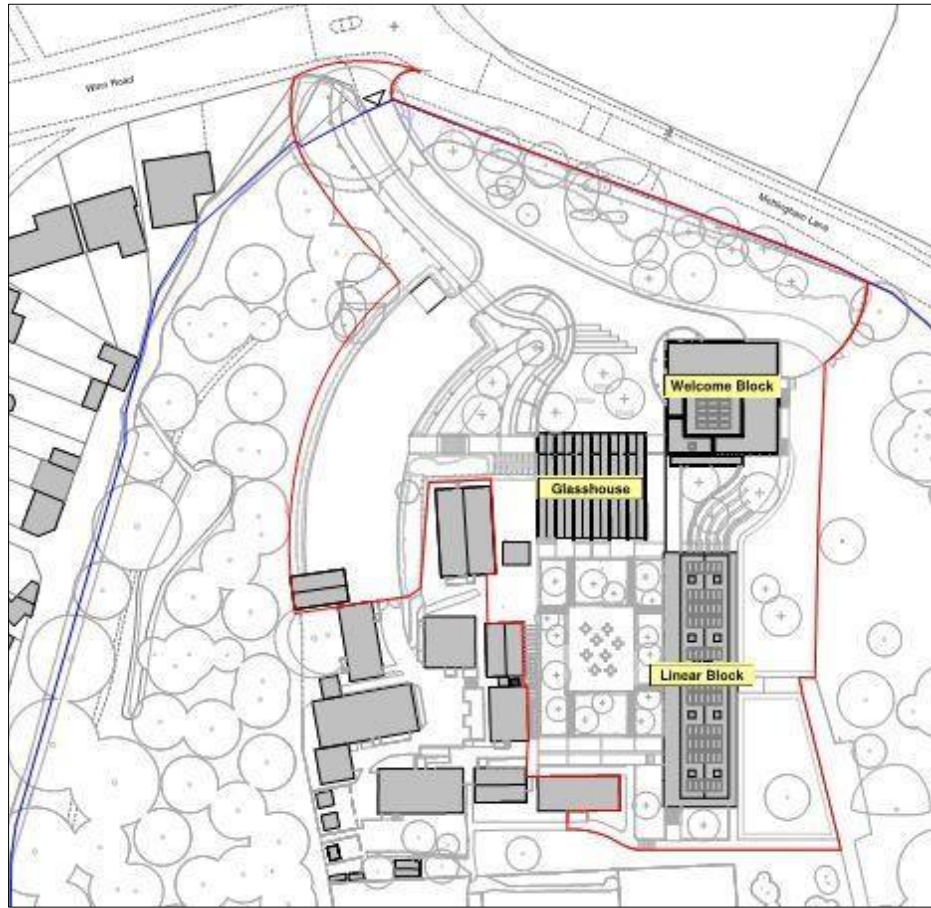
D12(B)(5) Vehicle access to site

Access to the site for fire service emergency vehicles will be available from the junction of Winn Road and Mottingham Lane (see Figure 1 below).

Vehicle access will be provided to within 45m of all points within the Welcome Block and the Glasshouse, but hose distances will be more than 45m from a suitable fire service vehicle location for the Linear Block due to the physical constraints of the site.

However, the available vehicle access to the Linear Block is considered acceptable due to the provision of sprinkler protection throughout the building which will give the fire service additional time to lay out hose lines in excess of 45m distance to the Linear Block.

Figure 1 Vehicle access



D12(B)(6) Future modifications

Any future modifications to the buildings will be carried out in full accordance with the **Building Regulations 2010** (as amended), or any subsequent relevant legislation.

Additionally, the buildings will be managed and maintained in full accordance with the **Regulatory Reform (Fire Safety) Order 2005** (as amended), or any subsequent relevant legislation.

The fire protection measures described in this GLA Fire Statement detail an outline holistic strategy that is specific to the buildings within the proposed development and any future redevelopment or modification to these buildings will be designed and implemented according to a further specific fire safety strategy for the new works.

The **Golden Thread** of fire safety information will run through the design process for the development and a detailed fire safety strategy report containing the important fire safety information explaining the measures needed for fire safety of the buildings will be developed as the design and construction of the buildings progress.

The principle of the **Golden Thread** will continue to be applied as the design progresses, through the construction phase of development to completion, and eventual occupation. Appropriately detailed information will be recorded to form a complete picture of the fire safety design development and will be included within the necessary Regulation 38 package of information at the conclusion of the construction phase of the development.

The new concept of the **Golden Thread** is yet to be fully defined or incorporated into standard fire safety guidance, but the principles will be applied by the project team in accordance with emerging best practice (and will comply with future specific guidance as and when issued).

4 London Plan Policy D5 – Evacuation Lifts

The fire evacuation strategy for each of the three buildings will be a simultaneous fire evacuation, in accordance with standard UK guidance for academic type buildings.

The Glasshouse building will not be provided with a passenger lift as it is a single storey structure which will also be provided with a several step-free final exit doors from the building to enable all building users to self-evacuate without the need for an evacuation lift.

The Welcome Block and the Linear Block will both be provided with a single passenger lift in accordance with **BS EN 81-20:2020, Safety rules for the construction and installation of lifts. Lifts for the transport of persons and goods - Passenger and goods passenger lifts** and **BS EN 81-70:2021+A1:2022, Safety rules for the construction and installation of lifts. Particular applications for passenger and goods passenger lift - Accessibility to lifts for persons including persons with disability.**

Furthermore, the evacuation lifts will be operated and maintained in accordance with the guidance given in **BS 9999:2017, Annex G, Recommendations for refuges and evacuation lifts**, for the assisted evacuation of people with reduced mobility.

Students with reduced mobility will be provided with an agreed personal emergency evacuation plan (PEEP) as part of their induction into the College. Other people (visitors) with reduced mobility will be escorted by a trained member of staff who will assist them should it be necessary to evacuate the building during their visit.

The lift within the Welcome Block will serve the ground and first floor levels and will be enclosed within a protected shaft that will provide a minimum of 60 minutes fire resistance (REI 60). A refuge area will be provided adjacent to the lift at first floor level within the confines of the toilet to give direct access to the external stair should access to the step-free egress via the external walkway to the Linear Block be inaccessible due to the location of the fire.

The lift within the Linear Block will also serve the ground and first floor levels and be enclosed within a protected shaft that will provide a minimum of 60 minutes fire resistance (REI 60). A refuge area will not be necessary at first floor level as adequate alternative step-free escape routes will be available from both floor levels.

5 Declaration of compliance

To the best of my knowledge this GLA Fire Statement and the technical content within it complies with the relevant legislation and requirements of the London Plan **Policy D12(B) – Fire Statements** together with **Policy D5(B5) – Evacuation Lifts**.

Terry Marsh

Terry Marsh, *BEng (Hons), MIFireE*,
Associate Fire Engineer, Cahill Design Consultants

6 Authors details

Terry has worked in fire safety since September 1986 when he joined the London Fire Brigade (LFB) as an Operational Firefighter.

During his 30 year career with the LFB Terry served in operational roles from firefighter through to Station Manager, and specialist roles from Fire Safety Inspecting Officer through to Deputy Head of Fire Safety Policy Team and Head of the Fire Safety Quality Assurance Team.

Terry also served as an operational Senior Fire Safety Officer and operational Senior Fire Officer for over 15 years.

Terry has been a member of the Institution of Fire Engineers since 1987 (Membership No. 00014826).

Terry Mas been a member of the Fire Protection Association since 2020 (Membership No. A-121546).

Terry was awarded a first class honours degree in Fire Engineering from the University of Central Lancashire (UCLan) in June 2016.

Terry has worked continuously as a fire safety consultant and fire engineer since his retirement from the LFB in September 2016 and is now an Associate Fire Engineer and Technical Lead for the Fire Engineering Team at Cahill Design Consultants Ltd.