

# King's House School, London

---

## London Plan Policy D12 (A) – Planning Fire Safety Strategy

### King's House School

Job No: 1018236  
Doc Ref: 1018236-KHS-PFSS-001  
Revision: A  
Revision Date: 26 May 2021

<b>Project title</b>	King's House School, London	<b>Job Number</b>
<b>Report title</b>	London Plan Policy D12 (A) – Planning Fire Safety Strategy	1018236

**Document Revision History**

Revision Ref	Issue Date	Purpose of issue / description of revision
-	21 May 2021	First issue
A	26 May 2021	Revised to include comments from Architects

**Document Validation (latest issue)**

26/05/2021	26/05/2021	26/05/2021
<hr/> Principal author	<hr/> Checked by	<hr/> Verified by
Signed by: Comerford, Suzanne	Signed by: Leston-Jones, Lee	Signed by: Leston-Jones, Lee

© Cundall Johnston & Partners LLP ("Cundall") owns the copyright in this report and it has been written for the sole and confidential use of King's House School. It must not be reproduced in whole or in part or relied upon by any third party for any use whatsoever without the express written authorisation of Cundall. If any third party whatsoever comes into possession of this report, they rely on it at their own risk and Cundall accepts no duty or responsibility (including in negligence) to any such third party.

## Contents

---

<b>1.0</b>	<b>Fire Statement</b>	<b>2</b>
1.1	Fire safety information	
1.2	Life of the development and the 'Golden Thread' of information	
<b>2.0</b>	<b>Planning Fire Safety Strategy</b>	<b>3</b>
2.1	Author introduction	3
2.2	London Plan Policy D12(A)	3
<b>3.0</b>	<b>Design code and standards</b>	<b>7</b>
<b>4.0</b>	<b>London Plan Policy D5(B5)</b>	<b>8</b>

---

# 1.0

## Fire Statement

---

## 1.0 Fire Statement

---

### 1.1 Introduction

The proposed works involve the refurbishment of certain areas of the existing King's House School as well as the construction of a new teaching building adjacent to the existing Sports Hall, as an extension.

King's House School is formed by a series of interconnected buildings and extends from lower ground floor to second floor level, with most areas terminating at first floor level.

The proposed refurbishment of the school building mainly affects the North East of the school, which is essentially new build, following the demolition of the existing structure. The majority of the other areas within the remainder of the school are being subjected to minor alterations, such as removal partitions.

The design of the building and refurbished areas has been carried out in line with the requirements of BS 9999: Fire safety in the design, management and use of buildings – Code of practice.

During construction stage a fire risk assessment shall be carried out to ensure any risk of fire are provided with appropriate preventative measures. Method statements will be provided by the contractor for each task and toolbox talks should occur on a daily basis. The fire safety design of the building and refurbished areas has been carried out in line with the requirements of BS 9999: Fire safety in the design, management and use of buildings – Code of practice, which is outlined in detail within the Fire Safety Strategy report (ref: 1018236-RPT-MD-002, first issue) for the development. Incorporating the fire safety strategy will ensure the proposed development achieve the highest standards of fire safety, proportionate to the size and nature of the development.

## 2.0 Planning Fire Safety Strategy

---

### 2.1 Author introduction

The author of this document is Suzanne Comerford, who is a Fire Engineer working for Cundall who holds a MSc in Fire Engineering obtained from the Ulster University.

At the time of writing she has been working as a Fire Engineer with Cundall since January 2016 and hereby has 5 years and 5 months relevant experience.

This document has been written under the supervision of Lee Leston-Jones, Structural Partner at Cundall. He initially graduated with a degree in Structural Engineering from the University of Sheffield in 1993, before completing a PhD in the response of structures to fire in 1996. Prior to joining Cundall he was a founding Director of a fire engineering consultancy and has been involved in the fire engineering of projects since obtaining his doctorate 25-years ago.

### 2.2 London Plan Policy D12(A)

#### 2.2.1 The building's construction method and products and materials used

The construction process will be subject to the strict regulations designed to minimise disruption to neighbouring properties, staff and pupils.

The new classroom block is designed as a concrete framed structure, minimising the need for large cranes and making the construction more efficient.

Cladding materials and wall construction will be in line with Building Regulations requirements for a building of this height and include the following materials:

- Red bronze coloured metal cladding;
- Obscured glazing;
- Richmond blend bricks – red and buff tones;
- Reconstructed stone surrounds; and
- Green wall and roofs where possible.

The potential fire risk as a result of green walls and roofs has been reviewed in line with Government guidance note “Fire performance of green roofs and walls” (DCLG 2013) and it has been determined that the proposals are not considered to create a particular risk.

#### 2.2.2 Means of escape for all building users and evacuation strategy

The means of escape for all building users has been sized and located to demonstrate the travel distances and exit capacity recommendation set out in BS 9999:2017 have been met. The means of escape strategy for the building will be a simultaneous evacuation on confirmation of a fire.

A sufficient number of exits have been provided at ground floor level taking the estimated number of occupants into account. The building comprises of ground floor plus two upper storeys and is served by a single protected escape stair. The building does not exceed 11 m in height and the stair is accessed through a protected lobby.

#### 2.2.3 Passive and active fire safety measures

##### 2.2.3.1 Passive fire safety measures

In accordance with the guidance contained in BS 9999:2017, there is no limitation on the maximum compartment sizes for this building.

There are, however, a number of required fire rated enclosures that are detailed below:

- All low risk storage rooms to form 30-minute fire resisting enclosures, with FD30S doors.
- Fuel storage room should be provided with a 120-minute fire resisting enclosure, with FD60S doors.
- Plant rooms (non-life safety) should be provided with 60 minutes fire resistance, with FD60S doors.
- Plant rooms that are associated with a life safety function should be provided with a 120-minute fire resisting enclosure, with FD60S doors.
- LV switch rooms to be provided with 30-minutes fire resistance, with FD30S doors.
- Changing rooms to be provided with 30-minutes fire resistance, with FD30S doors.
- Lift shafts to be provided with 60-minutes fire resistance and FD60 doors.
- Services risers to be provided with 60-minutes fire resistance and FD60 doors.

It is therefore considered that the compartmentation strategy for the building, meets the minimum requirements as set out in BS 9999:2017.

For the external wall construction, as the building is less than 18 m in height, all external surfaces of walls on the building should achieve Class 0 (National Class) or Class B-s3, d2 or better (European Class), in accordance with Figure 47 of BS 9999:2017.

Cavity barriers should be provided to all external cavity wall constructions in accordance with Clause 33.1 of BS 9999:2017 and shall be provided in the following locations:

- At the junction between any internal cavity wall which does not comply with Figure 36 of BS 9999:2017, and every compartment floor, compartment wall or other wall or door assembly which forms a fire-resisting barrier; and
- At the junction between any external cavity wall which does not comply with Figure 36 of BS 9999:2017, and every compartment floor and compartment wall.

All fire resisting walls shall be carried to full storey height. Cavity barriers shall be provided to ensure that the maximum dimension in the concealed space does not exceed those recommended in Table 32 of BS 9999:2017 which range from 10 to 20m depending on the location of the space and the flame spread classification of the surfaces exposed within the cavity.

### 2.2.3.2 Active fire safety measures

A category L2 automatic fire detection and alarm system should be provided throughout the building. This category of system will generally provide coverage to escape routes, rooms off escape routes and places of special fire hazard as well as voids greater than 800 mm in accordance with BS 5839-1.

Manual call points will be provided in accordance with the recommendations of BS EN 54-11, to be located on exit routes, in proximity to entry points of storey exits and at exits to the open air. Points shall be located so that no person in the premises need travel more than 30 m to reach one.

Audio alarms shall be provided in accordance with BS 5839-1, capable of providing a minimum of 65dB(A) or 5dB(A) above sounds likely to persist for some time. With regards to the studios, the sound system should be interlinked to the fire detection and alarm system to shut down in order for the fire alarm to be audible. In addition to this, the lighting system should be interlinked to the fire detection and alarm system to switch the general lighting on upon activation of the alarm.

If there are areas of the building where occupants may be unaware of a fire alarm sounding i.e. areas where ear protectors are used, and at roof level warning devices such as visual alarm devices shall be provided. All sanitary facilities shall be provided with strobes to alert occupants who have a hearing impairment and may be unaccompanied. All strobes shall be provided in accordance with BS 5839-1.

The two-way communications systems for all disabled refuges should be located adjacent the fire alarm panel.

Upon activation of the fire alarm system the following should occur:

- The release of any hold-open devices to fire doors.
- Access control on doors will be disabled (once it is confirmed that this does not conflict with the security design).

- Any fire dampers required to close on operation of the fire alarm system;
- HVAC systems to shut down;
- Lifts, which will descend to ground floor and the doors open.

Due to the extension of the building and to assist with Fire Service intervention it is proposed that an automatic sprinkler system is installed to the Sports Hall and new extension.

The sprinkler system is to comply with the design principles detailed in:

- BS 9999:2017 (Code of Practice for Fire Safety in the Design, Management and use of Buildings);
- BS EN 12845:2015 – Fixed firefighting systems - Automatic sprinkler systems - Design, installation and maintenance;
- LPC rules for automatic sprinkler systems and the associated LPC technical bulletins;
- BS 9990 - Code of practice for non-automatic fire-fighting systems in buildings.

The sprinkler system will be designed to OH1 classification as per BS 12845 and LPC technical bulletin 221 for sprinkler protection of schools.

The sprinkler system will be fed from a dedicated sprinkler water storage tank for building. The tank will be suitably sized to contain sufficient water to deal with the highest sprinkler risk area, for OH1 classification a minimum effective volume of 27.5m<sup>3</sup> of storage is required.

The tank and pump house are to be located in the headmaster's garden, and of timber construction. Heating, ventilation and associated services are to be provided as per BS 12845.

A dedicated water supply infill connection will be required to fill the tank in accordance with BS EN 12845 / LPC Requirements. The building will be served by a single diesel driven sprinkler pump and Installation Control Valve configured to suit the occupancy requirements of the building.

From the Installation Control Valve within the pump house, water will be distributed through risers to the floors, via subsidiary monitored valves and flow switches. The floors will typically be served by a zoned sprinkler connection located within a dedicated sprinkler riser in the building.

The wet pipe sprinkler control valves will incorporate pressure sensitive alarms to indicate sprinkler operation, and these shall be considered as fire alarm signals. Flow alarm switches may also be incorporated at the control valve sets at the discretion of the system installer and where fitted; these also shall be interfaced with the house fire detection system.

#### **2.2.4 Access and facilities for the fire service and rescue service**

Fire Service vehicle access is afforded via the street and is existing for the school site.

However, as part of the proposed development at the site the central part of the existing school will be demolished to create a courtyard-like area, and a new extension will be built at the existing Sports Hall location. Although the erection of the new extension does not constitute a change in building perimeter, as there is an equal perimeter removed as part of the demolition works, the overall distance to reach the furthest point of the new extension has increased. Therefore, for this reason the proposed arrangement includes for the provision of a sprinkler protection system to the Sports Hall and new extension building areas in mitigation of the increased distance that is created.

Personnel access to the building is provided via the normal means of escape from the building.

External firefighting water supply will be supplied to the building via public mains feeding the existing fire hydrants located around the building.

As the site is existing, it is considered that maintaining existing provisions for water supplies is acceptable under the Building Regulations.

#### **2.2.5 Site access for the fire and rescue service**

This is an existing site and therefore the provision for fire and rescue service access is deemed acceptable.



### 2.2.6 Future development of the asset and the 'Golden Thread' of information

The fire safety management of a building is crucial to its safe operation and maintenance. The effectiveness of active and passive fire protection measures may be potentially reduced without adequate management and staff supervision.

It is recommended that a fire safety management plan be developed with the Local Authority and Fire Service.

The building should be provided with a management statement, policy documentation and procedures in accordance with BS 9999:2017. The plan should include the following:

- Development of appropriate management levels through assessment (including occupancy).
- Fire safety policy statement and manual.
- Control of building modifications to ensure fire safety is not compromised.
- General housekeeping requirements.
- Control of hazardous materials (Including storage and proposals).
- Maintenance and testing procedures and records for active fire protection systems (e.g. fire alarm and detection systems, sprinkler and other suppression systems, fire curtains/shutters, ventilation systems etc).
- Maintenance of means of escape provisions (including fire doors, escape routes etc).
- Maintaining Fire Service Access to the building
- Development of plant shut down procedures in the event of a fire in various areas of the building.
- Develop a suitable management plan to address concerns raised regarding an interruption to the water supply. This management plan, which will be developed prior to building handover/operation will particularly consider the following during times of interrupted supply:
  - Availability of water from other sources,
  - Risks of fire occurrence,
  - Put in place suitable provisions to reduce particular risk of fire occurrence at these times, and
  - Put in place suitable provisions to reduce particular risks to site staff and fire fighters.
- Fire management plans should be reviewed on a regular basis and updated to reflect changes to the building design.
- Rotational cycle to help ensure waste is not retained in areas of the waste bunker for extended periods of time.

Suitable fire safety management plans will be developed by the building management, taking into account the information contained within the Fire Strategy Report.

The management should be able to identify and react to any changes as they occur, e.g. changes to the occupancy and fire growth characteristics etc. and through a suitable fire risk assessment identify and implement any alternative protection and management measures that may be required as a result.

The management of fire safety should be integrated with other management systems for the building and it is likely that a number of individuals and/or companies, e.g. landlord, tenants, the fire alarm contractor etc. will be responsible for fire safety for the building. There is a requirement to ensure that the fire safety measures and responsibilities are shared between all responsible persons and organisations.

## **3.0 Design code and standards**

---

The guidance used for this development has been based on the recommendations of BS 9999:2017 (Fire Safety in the design management and use of buildings – Code of practice) and the associated British and European Standards (BS and EN respectively).

## 4.0 London Plan Policy D5(B5)

---

*“In all developments where lifts are installed, as a minimum at least one lift per core (or more subject to capacity assessments) should be a suitably sized fire evacuation lift suitable to be used to evacuate people who require level access from the building.”*

The proposed extension includes a single lift; however, it is deemed unnecessary to include it as an evacuation lift.

The building is a school and is expected to have a high level of management as well as personal emergency evacuation plans (PEEPs) in place for occupants that may require assistance. The new build will have a small floor plan, with two storeys above ground level. The school is expected to operate regular fire drills such that in an emergency any occupant who may need assistance will be informed of the procedure.

The existing building is also not provided with an evacuation lift.

Based on the above information we do not see the provision of an evacuation lift as necessary for this development.

**Cundall Johnston & Partners LLP**

10th Floor Manchester One Portland Street  
Manchester M1 3LD United Kingdom  
Tel: +44 (0)161 244 5660

Asia Australia Europe MENA UK and Ireland  
[www.cundall.com](http://www.cundall.com)

