

## Fire safety statement

### Introduction

Salus, as Fire Safety Consultants, have been asked to prepare a statement and commentary in relation to compliance with London Policy D12.

The developers will fully embrace the policy and ensure the development achieves the highest standard of fire safety.

The development in itself is the redevelopment of an existing site, including façade and elevational improvements, an infill extension at ground level, and change of use to form 70 self-contained residential units with associated landscaping , parking, refuse provision and external alterations.

The following plans should be read in conjunction with this report:

*FLU 119/3/19F, 18B,17E, 16G, 15G, 14G, 13G,12H,11K, 20G, 22G, 24C and 10A.*

The author is a degree qualified Fire Engineer with over 25 years of experience and is a full member of both the Institute of Fire Engineers and the Royal Institute of Chartered Surveyors.

The fire safety design has followed the principles of BS 9991 [1] .

### Building Construction method and products and materials used

The existing use of the building is a managed residential building for student use. The building structure is a concrete framed structure with concrete floors varying from 4 to 7 floors in height. The building is currently insulated externally with rendered insulation that is combustible.

As part of the works improvements will be made including replacing the external walls because the building is a relevant building as noted in the Building Regulations and as such the external walls will be completely replaced with materials that are of A2-s1-d0 or better. The new walls will be also constructed to the same specification along with the balconies along with relevant cavity barriers around openings and on compartment lines both horizontally and vertically.

The fire resistance of the building will be upgraded to ensure the structure is provided with 90 minutes fire protection.

The strategy relies on good compartmentation between units to ensure the chance of fire spread is minimised. All new walls separating units and units and common areas will be constructed with materials that are non- combustible and offer 60 minutes fire resistance if non loadbearing and 90 minutes if load bearing.

All floors will be designed as compartment floors.

The surfaces of all walls internally will achieve a minimum classification of B-s3-d2

PV panels are proposed and it is important they are fitted correctly to reduce the chance of them initiating a fire. The proposal is to install on the roof. They will need to comply with recommendations contained within RC62 produced by the RICS with the main considerations being:

- The materials considered under the PV panel should be carefully considered. The existing roof is concrete.
- Mounting systems should not interfere with other functions of a structure and thus should not straddle heat expansion joints of fire compartment lines
- PV panels and unprotected cables must not be laid over a fire compartment wall. As cables will run over compartment walls then the cables will need protection using cable ducts that extend at least 1m each side of the wall and provide the same degree of protection as the wall below.
- The PV panels should form part of the fire risk assessment for the building at occupation

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

A stay put defend in place will be the strategy adopted for the building in that only the occupants of the unit of fire origin will be notified of a fire and evacuate, all other occupants would be deemed safe due to other fire safety measures proposed including the compartmentation and smoke ventilation, which would also allow safe escape if any occupant felt threatened or requested to evacuate by the Fire Authority.

All units are treated independently and will be provided with a self-contained Grade D BS5839 part 6[2] LD3 fire alarm system and the triggering of any device would trigger a simultaneous evacuation of the unit only.

Smoke detection will be provided in the common parts but this will notify a panel and trigger the relevant smoke ventilator/s to open only. They would not sound an alarm. A full cause and effect will be produced for the fire alarm system.

Each unit will have a 30 minute fire protected entrance hall along with an FD30S self-closing fire door to the entrance. All doors will be a certified door set.

All flats have two escape routes with travel distances well within 45m of a protected staircase.

All staircases will be protected to at least a 90 minute standard and 120 minutes if deemed as a fire-fighting shaft. See below.

Whilst the building has a stay put strategy disabled occupants and escape needs consideration therefore 2 lifts will be also designed as an evacuation lift designed and installed with the guidance in BS 9991 and BS EN 81-76:2020[3]. Please note the building has 3 lifts with 2 in the main core. 2 of the lifts one in the main core and one in the second staircase will be designed as evacuation lifts the 3<sup>rd</sup> lift which is contained within the main staircase will be a dedicated firefighting lift.

### **Passive and active fire safety measures**

The building will be provided with a fire suppression system designed to BS 9251[4] and will be designed to at least a category 4 standard. This will cover all areas of the building.

Each dwelling will have a BS 5839 Part 6 grade D LD3 fire alarm as noted above however the 3 open plan units will have an LD1 system.

Each unit will be enclosed with a minimum of 60 minutes fire compartmentation

The common areas will have smoke ventilation as shown by 1.5m<sup>2</sup> natural smoke shafts in all corridors next to staircase enclosures or an external wall Automatic smoke ventilator( AOV) offering an area of 1.5m<sup>2</sup>. The 3 staircases will also be provided with a 1m<sup>2</sup> smoke ventilator These will be Automatic opening vents controlled by the smoke detection provided in the common areas. A full cause and effect will be produced. Please note the detection in the common parts will trigger the relevant AOV only.

The natural smoke shafts will need to extend through the roof by at least 2.5m as they need to extend at least 2.5m above the highest floor it serves and above adjoining structures.

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

Due to the height of the building the central staircase will be designed as a fire- fighting shaft with a fire -fighting lift and dry riser within the staircase with outlets at all levels.

The enclosure will offer 120 minutes fire resistance

The dry riser are accessible from the external public road as shown on the site plan with the inlet being within 18m of where the Fire Authority would park an appliance

An existing Hydrant is located externally on Church Grove outside of the building and is well within 90m of the building.

The fire- fighting lift and smoke ventilation systems will be supplied with a back -up electrical supply which can be from the main supply via 2 separate intakes.

The west wing will also be provided with a dry riser within the staircase at all levels. An inlet is provided within 18m of where the Fire Authority would park with outlets at all levels.

To assist fire fighters an alert system designed and installed to BS8629 [5] along with a secure information box the position to be agreed with the Fire Authority. This will be provided within the main staircase.

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

The building and fire- fighting shafts/staircase are accessible from the public highway as shown on the site plan.

### **Future development of the asset and the Golden Thread of information**

Fire safety information will be passed to the end user at completion so that they fully understand the fire safety measures provided as part of the design.

### **Conclusion**

We have reviewed the plans and can confirm that the fire safety measures deliver large improvements to the existing building and a high standard of fire safety which complies with legislative requirements and exceeds the standard expected by the current guidance document. It incorporates good levels of compartmentation, with construction materials that will mitigate fire spread, fire detection and suppression within each unit to alert the relevant occupants and reduce the chance of spread further, smoke ventilation to dilute toxic gases and to protect the staircases and escape routes from smoke and fire fighting provision to assist the fire service in fighting a potential fire.

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Issue 2 14<sup>th</sup> July 2021

Issue 3 13<sup>th</sup> April 2022

Issue 4 24<sup>th</sup> August 2022

Issue 5 6<sup>th</sup> March 2023

## References

- [1] BS 9991:2015 *Fire safety in the design, management and use of residential code of practise*
- [2] BS 5839 Part 6: 2019, *Fire detection and fire alarm systems for buildings. Code of practice for the design, installation and maintenance of fire detection and fire alarm system in dwellings.*
- [3] BS EN 81-76:2020, *Safety rules for the construction and installation of lifts particular applications for passenger and goods passenger lifts- Evacuation of persons with disabilities using lifts*
- [4] BS 9251: 2021 *Fire sprinkler systems for domestic and residential occupancies.*
- [5] BS 8629 :2019 *Code of practice for the design , installation , commissioning and maintenance of evacuation alert systems for use by fire and rescue services in buildings containing flats*

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