

Dalesford Estates Limited

FIRE STRATEGY STATEMENT

1 INTRODUCTION

1.1 Scope

Dalesford Estates Ltd have been engaged to develop a Fire Strategy Statement in support of a planning application for 54 George Street, London TW9 1HJ comprising a mixed use residential and commercial development, located in the London Borough of Richmond upon Thames. This statement includes the policies set out in the London Plan Policy D12 (Fire Safety), which are required to be met by new developments in London.

The author of this strategy has been involved in delivering inner city and urban mixed use developments in London since 1990 (including retail, commercial, hotel and residential assets) and is a Director of the company with full design responsibility over design and build decisions across the portfolio of assets developed over this period of time.

The primary objective of this statement is to provide high-level advice at this early stage on how an acceptable level of life safety may be achieved commensurate with the Functional Requirements of the Building Regulations 2010 for means of egress (B1), internal fire spread structure (B3), external fire spread (B4) and fire-fighting access (B5) only.

This fire strategy statement is a preliminary outlining key considerations at RIBA Stage 2 as required for planning application purposes and follows the policies of the London Plan Policy D12 (Fire Safety).

1.2 Primary Legislation

The Building Regulations 2010 is the Statutory Instrument, which seeks to ensure that the policies set out in the Act are implemented. The Functional Requirements of the Building Regulations 2010 may be met in one of two ways; compliance with an accepted design guidance (i.e. British Standards or Approved Documents), or through a fire engineered approach.

In this instance the primary design guidance used has been BS 9991 (residential) and Approved Document B2 (residential / retail).

Where deviations from the prescriptive recommendations are proposed these have been identified these will be assessed as part of a fire engineered approach. All fire-engineered solutions will be justified by following the general methodology proposed within BS 7974.

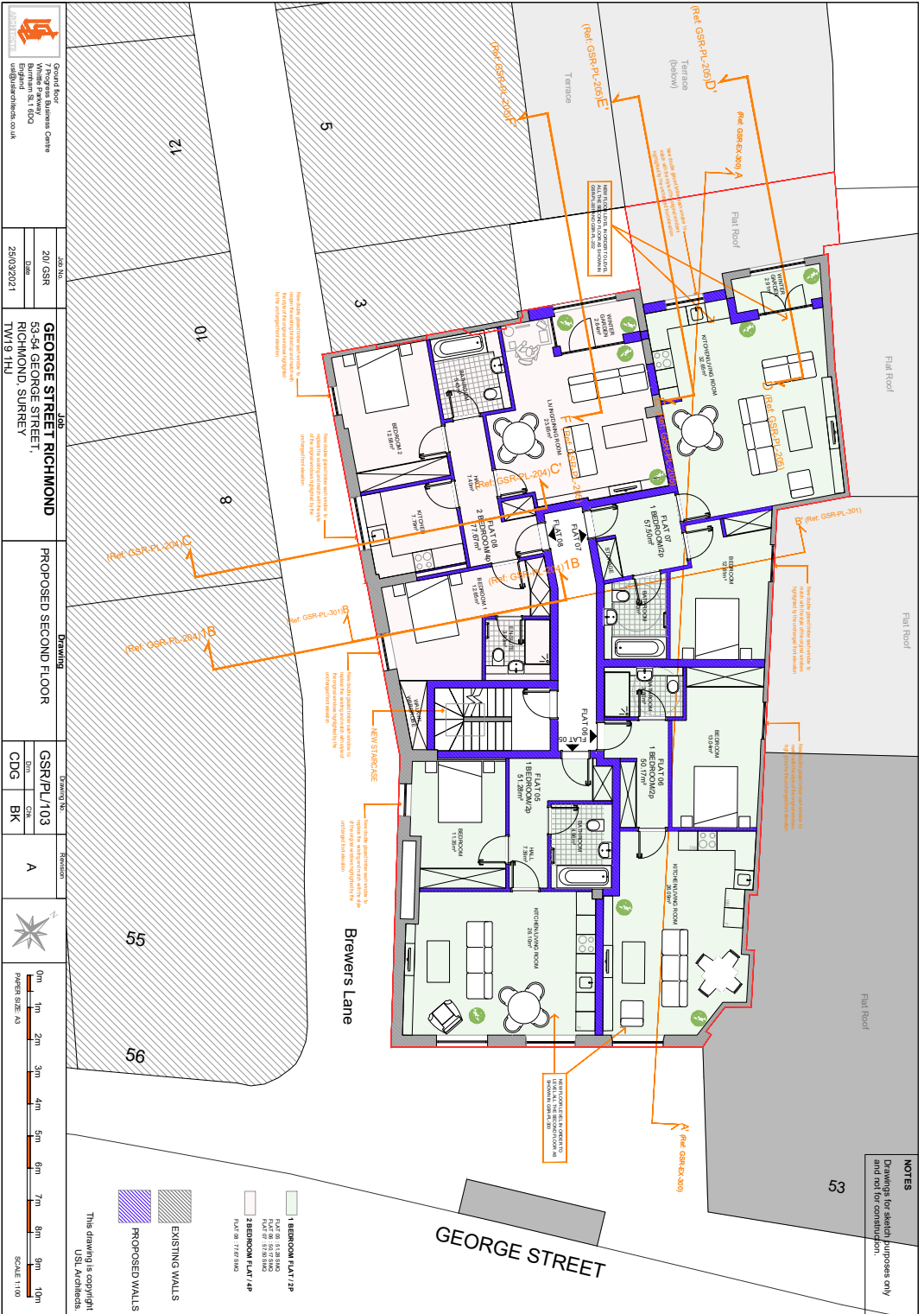
2 ARCHITECTURAL REVIEW


2.1 Key Building Characteristics

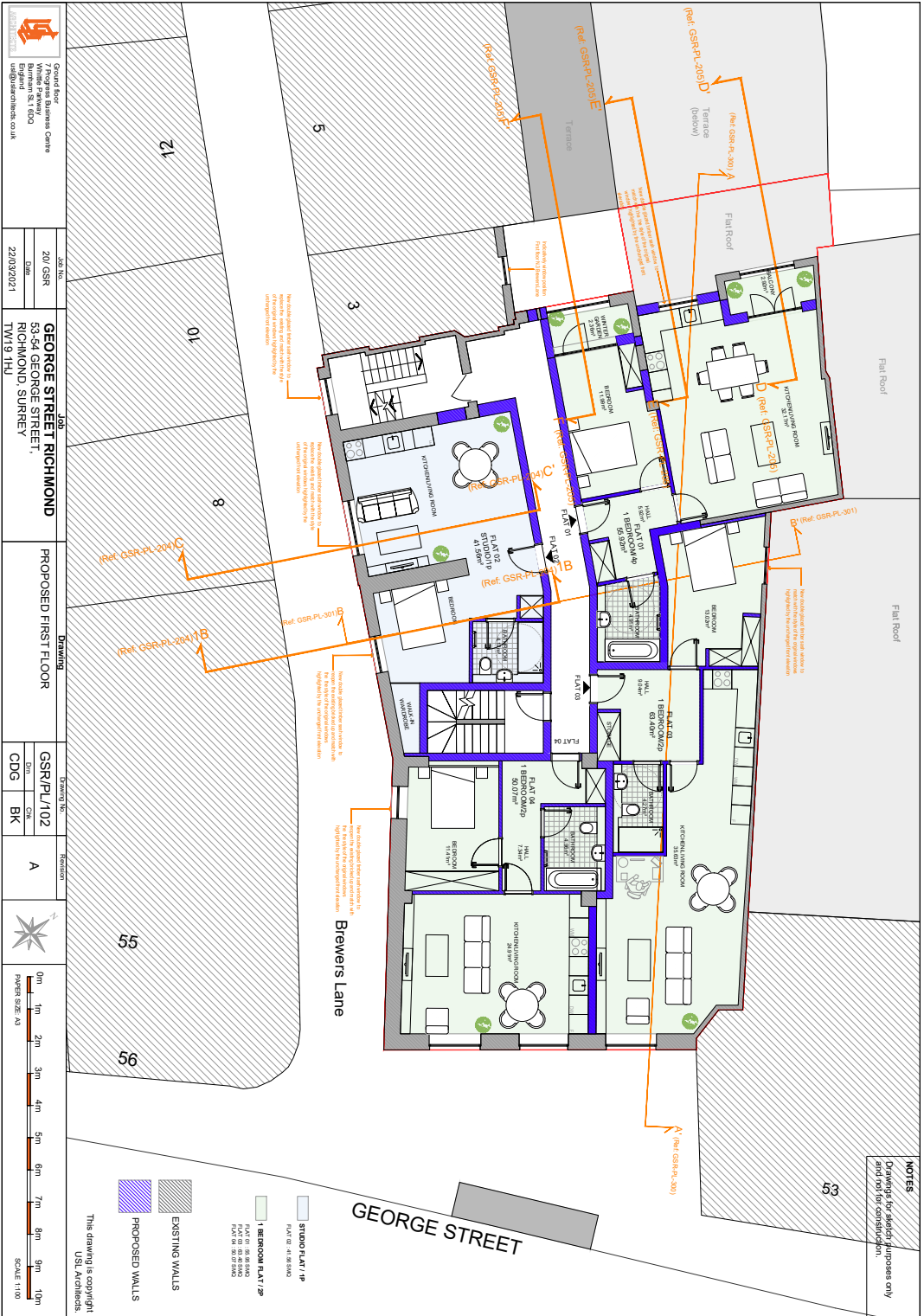
The George Street mixed-use development project will consist of 3 original blocks of buildings, which have over time been combined to form one single occupancy building. Formerly occupied by Topshop / Topman Limited.



The building is 3 storeys, namely Ground Floor, First & Second Floor. The residential elements will be sited on the 1st & 2nd floors and will have independent access/egress from the rear of the building at Ground Floor level via Brewers Lane a public pedestrianized road. The proposed residential units will be served by a single stair core. The existing building height is less than 18m in height and the proposed development will not seek to change this. The Ground Floor provides a separated retail space with independent access/egress. Apartments are provided on all floors above ground and are served by a single stair core, which is to be designed as a firefighting core.



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2.2 Building Heights

The building height is 13m and will remain unaltered.

Note:

1. The height of the top-most storey has been defined by BS 9991 as the height measured from the lowest ground level adjacent to the building to upper floor surface of top floor. This measurement is used for Structural fire resistance and combustibility.
2. Total building height, which is measured from mean ground level to mean roof level. This measurement is used for Surface spread of Flame.
3. Fire-fighting access height, which is measured from fire-fighting access level to the height of the top-most storey. This measurement is used for Fire-fighting access.

2.3 Purpose Groups

As part of the approach taken a purpose group of the premises is taken as Group 4 for the retail space which assumes a floor space factor of 2 persons for every square metre at full capacity. Therefore a worse case scenario would require 132 people to exit in case of an emergency. This will form the basis of the fire safety design of the retail space within the building or area in question.

3 MEANS OF EGRESS

3.1 Overview

Section A 4) and B 2) of the London Plan Policy D12 requires that suitable means of escape is provided for all building users. The following sections detail the active systems, which will be in place to achieve this:

3.2 Evacuation Philosophy

Residential

The fire strategy design of this residential building has been developed to facilitate a 'Stay Put' evacuation policy, whereby:

- Occupants of the unit of fire origin are reasonably expected to evacuate as soon as they are aware of a fire within their premises.
- Occupants of all other units are not automatically made aware of fire within another unit, and as such are afforded suitable protection against the spread of fire such that they should be able to remain within their own unit in relative safety. This is not to imply that residents should 'stay put' should they wish to evacuate, and suitable provisions are made to allow for occupants to safely egress from the building at any time.

Travel distances within protected entrance hallways in apartments will be limited to 9m measured from the furthest habitable room to the entrance door.

Travel distances within common corridors will be limited to 15m from all apartment entrance doors to the door of the escape stairs.

Retail

The retail units shall adopt a 'Simultaneous' evacuation strategy where the occupants escape upon activation of the fire alarm system serving the retail unit only.

Travel distances within the retail unit will not exceed 18m in a single direction and 45m where alternative directions of escape are available.

4 ACTIVE FIRE SAFETY SYSTEMS

4.1 Overview

Sections A 2) and B 3) of the London Plan Policy D12 requires that appropriate active fire safety systems are in place to reduce the risk to life. The following sections detail the active systems, which will be in place to achieve this:

4.2 Fire Alarm and Detection Systems

Residential

Both 1st & 2nd Floors will be provided with an automatic fire alarm and detection system as follows:

- All open plan apartments are recommended to have a BS 5839-6 Grade D1 Category LD1 fire detection and alarm system.
- All apartments with protected entrance hallways are recommended to have a BS 5839-6 Grade D1 Category LD2 fire detection and alarm system.
- All apartments, the common areas shall be provided with Category L5 automatic detection in accordance with BS 5839-1 to activate the smoke control systems in these areas. This system will raise an alarm in all parts of the building.

It is proposed to link the retail unit on activation of the fire alarm system serving the apartments and vice versa.

Retail Unit

It is recommended to provide no less than a BS 5839-1 Category L3 detection system to retail units for additional life safety purposes. This is above the minimum recommendation of a Category M detection system from the guidance.

Residential Units

4.3 All apartments are to be provided with a Category 2 automatic suppression system designed and installed in accordance with BS 9251.

4.4 Smoke Control is to be provided with a natural smoke control system within the common corridors and stair enclosures. The following is an overview of the system requirements to be designed in accordance with BS EN 12101-2: • A 1.5m² (free area) external AOV will be provided to the common corridors adjacent to the first floor stairwell.

A 1.5m² (free area) AOV will be provided at the head of the internal common corridor at Second Floor as illustrated in the example figure below. • A 1m² (free area) automatically opening vent (AOV), activated on fire detection within the common corridor will be provided at the head of each stair.

5 PASSIVE FIRE SAFETY SYSTEMS

5.1 Overview Section A 2) of the London Plan Policy D12 requires all buildings are designed to reduce the risk to life safety including appropriate passive fire safety systems.

The following sections detail the passive systems, which will be in place to achieve this:

5.2 Internal Linings

All internal linings and ceilings will be formed from materials with limited combustibility, predominantly comprising of gypsum-based plasterboard products over metal stud walls.

5.3 Fire Resistance

All elements of structure for both blocks shall achieve no less than 60/-/- fire resistance.

5.4 Compartmentation

Compartment Walls separating the retail unit from the residential elements is required to be a compartment wall achieving a minimum fire resistance of 60/60/60.

All walls separating each apartment are required to be a compartment wall achieving a minimum fire resistance of 60/60/60. Compartment Floors All floors above ground are required to be compartment floors achieving a minimum fire resistance of 60/60/60.

6 EXTERNAL FIRE SPREAD

6.1 Overview Section A 3) of the London Plan Policy D12 requires that the buildings are constructed in a way to minimise the risk of fire spread. The following sections detail how this is to be achieved.

6.2 Fire Spread between Buildings / Boundaries For the purposes of this assessment, fire spread from the most onerous compartments have been identified on Ground Floor and all other Floors.

All external walls from every elevation at Ground Floor will require 60 min fire resistance.

For the upper floors, all elevations on the boundary or within 2m of the boundary will require 60min fire resistance. Therefore, at least 27% of these openings will be fire resisting. These have been identified on the Fire Strategy Drawings.

6.3 External Wall Construction are all below the storey height of 18m and therefore Regulation 7 requirements with respect to external walls (and specified attachments) of the whole building will NOT apply.

Surface Spread of Flame

All external surfaces of walls of all areas of the building are to achieve a European Class A2-s3, d2 or better for surface spread of flame.

The construction materials used in the external wall construction will achieve a Class A2-s1, d0 or better with regard to combustibility.

Cavity Barriers (External Walls) Cavity barriers should be provided to close the edge of cavities including around openings (inclusive of windows, doors, service or any other penetration). Cavity barriers should also be provided at the junction between an external cavity wall and every compartment wall/floor. Cavity barriers should achieve a minimum -/30/15 rating and should not be confused with fire stopping which may require a higher fire rating. Cavity barriers must also be provided to subdivide any extensive cavities as follows:

- So that the cavity has no dimension (not diagonal) exceeding 20m where the cavity has internal surfaces which achieve a Class C-s3, d2 or better surface spread of flames. Or,
- So that the cavity has no dimension (not diagonal) exceeding 10m. Current Design Proposal of the External Wall The external wall build-up will be formed of a brick cavity wall construction, the inner leaf being formed from concrete block work, Tarmac Hemelite solid blocks or similar. All cavity trays will, therefore, be set between two leaves of masonry. All insulation used will be the non-combustible mineral wool-based product. Cavity barriers will be installed around all openings and spaces out throughout the façade. Windows and doors are all proposed to be formed from timber frames, and be fully fire retardant.

7 CONCLUSION

Access & Facilities For The Fire Services

7.1 Vehicle Access

Sections A 1) and B 5) of the London Plan Policy D12 requires that suitable outside space and access routes are provided for the fire service. This is demonstrated as being achieved as follows:

The development is provided with vehicle access via George Street to the South Eastern side of the building, as illustrated in the figure below.

7.2 Firefighting Access Provisions

Sections A 6) and B 4) of the London Plan Policy D12 requires that suitable provisions for fire-fighting access are provided for the fire service. These are highlighted on the drawings within Appendix 1.

Furthermore access and egress is arranged at a level threshold from the main entrance doorway sited at Brewers Lane linked into the main stairwell which is to be a fully protected and compartmentalised stairwell together with early warning smoke and fire detection systems as detailed above.

7.3 Building Regulations

As detailed above in this statement the Design Team will engage the services of Independent Building Regulation consultants to ensure the design and delivery of the scheme is fully compliant with the Building Regulations (updated 2020) Approved Document, Part B Fire Safety.

7.4 BREEAM Excellent

As part of obtaining BREEAM “Excellent” rating a digital manual will be provided to all future residents of the completed development which will highlight the access / egress points, fire panels and fire assembly points.

7 APPENDIX 1. FIRE STRATEGY DRAWINGS

