

Fire statement form

Application information	
1. Site address line 1	Eaton Court
Site address line 2	Oxford Road
Site address line 3	
Town	Reading
County	Berkshire
Site postcode (optional)	RG1 7FU
2. Description of proposed development including any change of use (as stated on the application form):	Demolition and residential redevelopment to provide three buildings comprising 120 residential units (Use Class C3), along with car parking, cycle parking, servicing bay and associated landscaping, amenity space, plant and refuse areas, and access arrangements. - Building 1 is a 5 storey, two-stair residential block, comprising a total of 25 residential units, of which 23 are open-plan, and 2 are provided with protected hallway entrance. The top occupied floor height of Building 1 is approximately 14.1m above ground level. The ground floor comprises of 3 open-plan residential apartments, a common dining room, an events space, cycle storage, a comms rooms, refuse store and residential reception. First to third floor consist of open-plan residential apartments, whilst fourth floor comprises 2 apartments with protected hallway entrances. Residential apartments will be provided with either private balconies or private terraces. The roof will be accessible for maintenance only and provides space for roof plant. Primary occupant access to Building 1 will be from street level to the north-eastern corner of the building, through the residential reception. There will be no lower ground floor or basement level to Building 1. - Building 2 is a 6 storey, two-stair residential block, comprising a total of 48 residential units, of which 46 are open-plan, and 2 are provided with protected hallway entrance. The top occupied floor height of Building 2 is approximately 17.7m above ground level. The ground floor will accommodate 6 open-plan residential apartments, a residential entrance area, cycle storage, refuse store, staff facilities and plant space. First to third floor consist of open-plan residential apartments, whilst fourth floor comprises 3 open-plan residential apartments and 2 apartments with protected hallway entrances. Residential apartments will be provided with either private balconies or private terraces, with communal terraces also located on the third and fifth floor. The roof will be accessible for maintenance only and provides space for roof plant. Primary occupant access to Building 2 will be from street level to the north-western corner of the building, through the residential reception. There will be no lower ground floor or basement level to Building 2. Buildings 1 and 2 share a party wall at upper floors with no through access. Access between the buildings is available at ground floor.

	Building 3 is a 7 storey, two-stair residential block, comprising of 47 open-plan residential units, with a top occupied floor height of approximately 19.8m above ground level. The building will be classified as a Higher Risk Building under the Building Safety Act. The ground floor will accommodate a single open-plan residential apartment, a residential entrance area, cycle storage, refuse store and plant space. First to sixth floor consist of open-plan residential apartments. Residential apartments will be provided with either private balconies or private terraces. The roof will be accessible for maintenance only and provides space for roof plant. Primary occupant access to Building 3 will be from street level to the north-eastern corner of the building, through the residential reception. There will be no lower ground floor or basement level to Building 3. Construction method will include reinforced concrete construction and slab. Non-accessible green roofs will be provided to each building.
3. Name of person completing the fire statement (as section 15.), relevant qualifications and experience. Guide: no more than 200 words	The fire statement for the project has been prepared by Sweco, one of Europe's largest engineering consultancies with an extensive track record of providing fire safety consultancy services for large-scale residential, commercial and mixed-use developments across the UK and internationally. Rhiannon Williams – Fire Engineer – BEng (Hons), AIFireE Rhiannon has 7 years' experience in major hazard research relating to fire and explosive atmospheres and graduated from the University of Central Lancashire with a Fire Engineering bachelor's degree. Rhiannon now works on various projects applying her knowledge and skillset to the discipline of fire engineering. Christopher Gray – Fire Engineering Technical Director – MEng (Hons), CEng, MIFireE Christopher is responsible for delivering fire safety consultancy on some of the most technically demanding and high-profile construction projects in the UK and Europe. Christopher is a chartered engineer with the Institution of Fire Engineers and has over 5 years' experience working on high-rise (18m+) residential buildings in England. Paul McClelland – Operations Director Fire Engineering – BSc (Hons) C. Build E FCABE, MCIQB, AIFireE Paul is responsible for the management of a team of fire engineers and has been working in the compliance / fire safety sector for over 25 years.
4. State what, if any, consultation has been undertaken on issues relating to the fire safety of	At the time of writing, informal consultation has taken place with Building Control. However, as Building 3 will be classified as a Higher Risk Building under the Building Safety Act, the design requires approval from the Building Safety Regulator (BSR).

the development; and what account has been taken of this. Guide: no more than 200 words	At later design stages, CFD modelling will be developed by a competent engineer to ensure the smoke control systems are adequate to mitigate against smoke entering the stairways or the protected lift lobbies. CFD will not be undertaken by SWECO Fire Engineering. The proposed designs of the buildings have been consulted with and reviewed by SWECO Fire Engineering during the RIBA Stage 2 design. A series of mark-ups have been produced to highlight key fire safety principles and challenges to overcome in the project design stages. A Stage 2 fire strategy has also been produced, which includes the principles of Fire Safety Requirements of Part B1-B5 of the Building Regulations. There are no fire safety issues identified preventing the Planning Application. Nevertheless, the fire strategy will develop further as the design progresses and will be presented to the Approving Authorities (BSR) for review against Part B of the Building Regulations as part of Gateway 2. The aim is that the Fire Safety of the development achieves compliance via following the relevant British Standards i.e. BS 9999:2017 and DRAFT BS 9991:2021 etc
5. Site layout plan with block numbering as per building schedule referred to in 6. (consistent with other plans drawings and information submitted in connection with the application)	
Site layout plan is: inserted in the form	

Commented [GC1]: BY us or by others?

Commented [WR2R1]: Added wording



The principles, concepts and approach relating to fire safety that have been applied to the development									
6. Building schedule									
Site information				Building information			Resident safety information		
a) block no. as per site layout plan above	b) • block height (m) • number of storeys excluding those below ground level • number of storeys including those below ground level	c) proposed use (one per line)	d) location of use within block by storey	e) standards relating to fire safety/ approach applied	f) balconies	g) external wall systems	h) approach to evacuation	i) automatic suppression	j) accessible housing provided
1	14.1 5 5	residential flats	G: plant/storage /amenity space G-L4: residential flats	BS 9999:2017 DRAFT BS 9991:2021	class A2-s1, d0 or better	class A2-s1, d0 or better	Non- residential: simultaneous Residential: stay put Each evacuates independently of the other.	yes- residential sprinklers, full	M4(2) & M4(3)
2	17.7 6 6	residential flats	G: plant/storage /amenity space	BS 9999:2017	class A2-s1, d0 or better	class A2-s1, d0 or better	Non- residential: simultaneous	yes- residential sprinklers, full	M4(2) & M4(3)

Commented [GC3]: Can we do bullet points for these to make it clear what each number is

Commented [WR4R3]: Added

Commented [GC5]: Can we clarify this more? Which areas are simultaneous and which are stay put? And presumably each area is independent of the other?

Commented [WR6R5]: The template is limited as to what can be done - drop downs - added what can to clarify

			G-L5: residential flats	DRAFT BS 9991:2021			Residential: stay put Each evacuates independentl y of the other.		
3	19.8 7 7	residential flats	G: plant/storage /amenity space G-L6: residential flats	BS 9999:2017 DRAFT BS 9991:2021	class A2-s1, d0 or better	class A2-s1, d0 or better	Non- residential: simultaneou s Residential: stay put Each evacuates independentl y of the other.	yes- residential sprinklers, full	M4(2) & M4(3)
		Choose an item.		Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
		Choose an item.		Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

7. Specific technical complexities

Explain any specific technical complexities in terms of fire safety (for example green walls) and/or departures from information in building schedule above

Guide: no more than 500 words

- Open-plan apartments are within all buildings. These will be designed in accordance DRAFT BS 9991:2021. All apartments will be sprinkler protected and fitted with a Grade D1 LD1 fire detection and alarm system. Cooking hobs will be located greater than 1800mm distance from the escape route and the escape route will be a minimum of 900mm wide.
- BS 9251:2021 compliant system shall also serve non-residential areas in Buildings 1, 2 and 3, in line with the recommendations for non-residential spaces in BS 9251:2021.
- Residential apartments will operate a stay put evacuation strategy and non-residential areas will be simultaneous. Each evacuates independently of the other.
- There is a dead-end corridor to the west of Building 1 serving residential accommodation. Travel distances within the dead-end corridor will be limited to 7.5m on all upper floors. At the ground floor, the travel distance in the dead-end measures approximately 9.0m (in line with guidance with the provision of sprinklers and ventilation). To safeguard the west stair and dead-end, the common corridor on each floor will be ventilated by a mechanical smoke extract shaft located to the west of the corridor. Make-up air for the system will be drawn in from the AOV at the head of the east stair. This approach will require consultation with the system provider, who will need to validate the arrangement with CFD and on-site testing
- There is a dead-end corridor to the south of Building 2 on first and second floor serving residential accommodation. Travel distances within the dead-end corridor will be limited to 7.5m. To safeguard the south stair and dead-end, smoke control will be provided to the end of the corridor on all floors. On the upper floors, an AOV (minimum 1.5m²) will be provided to the south of the corridor. On the ground floor, the southern stair lobby door and external access door will fail open in the event of a fire, functioning as an AOV.
- Building 3 will comprise of two escape stairs. The height of the building exceeds 18m, but the floor area does not exceed 900m² on any storey, therefore, only one firefighting shaft is required. However, to cater for redundancy in the lifts, both lifts will be designed as combined firefighting and evacuation lifts and both stairs will be designed as firefighting stairs. The stair lobbies will be ventilated by a mechanical smoke extract shaft. Make-up air for the system will be drawn in from the AOV at the head of each stair. This approach will require consultation with the system provider, who will need to validate the arrangement with CFD and on-site testing. An evacuation alert system in accordance with BS 8629:2019 will be provided in Building 3.

Commented [GC9]: I simplified this as an example

- Each building will comprise non-accessible green roofs. In line with Draft BS 9991:2021, any green roof which doesn't achieve a classification of BROOF(t4) or above, will be located a minimum of 3m away from any vertical building façade and 0.5m from other perimeters of the terrace, openings, roof penetrations of roof lights. Any green roofs will also be provided with automatic watering systems.

8. Issues which might affect the fire safety of the development

Explain how any issues which might affect the fire safety of the development have been addressed.

Guide: no more than 500 words

SWECO Fire Engineering team has been involved with the design during RIBA Stage 2, offering technical guidance, producing markups and constructing a comprehensive Stage 2 Fire Strategy Report. We will ensure a robust fire safety design will be developed for each building, considering the use of the development and risk profile of occupants.

The proposed Building 3 on the site is considered as a high-rise building and classified as a Higher Risk Building under the Building Safety Act. It is proposed to follow the prescriptive design guidance of DRAFT BS 9991:2021 (residential) and BS 9999:2017 (non-residential) to ensure develop a code compliant design.

CFD modelling will be undertaken by a competent engineer at a later design stage to ensure occupants can escape in tenable conditions and stair cores within each building remain free of smoke ingress. CFD will not be undertaken by SWECO Fire Engineering.

There are a number of areas where the design needs to evolve to address the particular nuances of Draft BS 9991:2021 / BS 9999:2017 in the design stages beyond planning. These items include roof provisions and residential corridor ventilation, and Fire Service access will also require further validation to ensure turning facilities provided are sufficient.

9. Local development document policies relating to fire safety

Explain how any policies relating to fire safety in relevant local development documents have been taken into account.

Guide: no more than 500 words

Whilst the development is located in Reading, and as such lies outside the geographical location to fall under the requirements of the London Plan 2021, provisions have been incorporated in the design to closely align with the London Plan 2021. The London Plan 2021 is the statutory spatial development strategy for the Greater London area in the United Kingdom, written by the Mayor of London and published by the Greater London Authority. At its core, the London Plan aims to ensure the highest levels of fire safety are provided to new and refurbished buildings and to maximise building resilience in line with best practice.

Policy D5 (Inclusive Design) notes that the developments should be designed for the safe emergency evacuation for all building users. In developments where lifts are provided, at least one lift per core should be designed as an evacuation lift conforming to BS EN 81-70:2021, BS EN 81-73:2020 and BS 9999:2017 Annex G. In order to partially satisfy line with the intent of Policy D5, in addition to the provisions for safe means of escape for the occupants, it is proposed to provide one evacuation lift to the primary residential stair core of Buildings 1 and 2, and two combined firefighting and evacuation lifts to Building 3 (a single lift associated with each stair core). This is to ensure safe evacuation for occupants with impaired mobility.

Commented [GC16]: Develop - we cannot ensure

Commented [WR17R16]: amended

Commented [GC18]: By whom?

Commented [WR19R18]: Not Sweco Fire Engineering but we do not know at this time - is the wording suitable?

Commented [GC20]: We haven't mentioned this before - what is not compliant for this?

Commented [WR21R20]: Not non-compliant. Just requires further validation that turning facilities are suitable

Commented [GC22]: We don't need to satisfy it - I would say in line with the intent of Policy D5...

Commented [WR23R22]: amended

Policy D12 (Fire Safety) notes that developments should achieve the highest standards of fire safety and ensure that Part B of Building Regulations (Part B1-B5) is satisfied. To demonstrate this, a Fire Statement has been produced, setting out:

- The qualifications and experience of the authors.
- Information to address the headings of the policy requirements.
- Fire safety information specific to the development.
- That evacuation lifts are provided to the development in accordance with Policy D5 – noting that Building's 1 and 2 are provided with a single evacuation lift, as opposed to an evacuation lift for each individual stair core.
- The fire safety design standards adopted, and the additional measures provided.

In line with the intent of Policy D12, SWECO Fire Engineering has been appointed to review the proposed design from the early stages and to develop a robust fire safety strategy for each block. This is a continuous liaison with the design team and during construction. The principles of fire safety design for each block, guidance documents followed, and the proposed design approach are included in the above sections. Fire Safety Policy D12(A) and its aspects 1- 6 will be addressed in the contents of this Fire Statement.

Emergency road vehicle access and water supplies for firefighting purposes

10. Fire service site plan

Explanation of fire service site plan(s) provided in 14. including what guidance documents have informed the proposed arrangements for fire service access and facilities?

Guide: no more than 200 words

Buildings 1 and 2 do not exceed 18m in height, therefore do not require a firefighting shaft.

A dry rising main will be provided to Building 1 in accordance with BS 9990. A dry riser outlet will be located on each floor within the western stair core of Building 1.

A dry rising main will be provided to Building 2 in accordance with BS 9990. A dry riser outlet will be located on each floor within the northern stair core of Building 2.

Building 3 exceeds 18m in height and as such, requires a firefighting shaft. It is proposed to provide two firefighting shafts to Building 3 to cater for redundancy. Each firefighting shaft will include the following:

- A firefighting stair – (smoke ventilated – mechanical air extraction system designed to BS EN 12101-3:2015).
- A firefighting lobby – (smoke ventilated – mechanical air extraction system designed to BS EN 12101-3:2015).
- A firefighting lift, designed as a combined firefighting and evacuation lift – (smoke ventilated – mechanical air extraction system designed to BS EN 12101-3:2015).
- A dry fire main (with an outlet on each floor).

Commented [GC24]: Moved this under D5 to keep consistency in ordering of this section

Commented [GC25]: Ditto

Commented [WR26R25]: Amended

Commented [GC27]: Dry rising main in accordance with BS 9990 shall be provided within...

Commented [WR28R27]: Amended

Commented [GC29]: Ditto

Commented [WR30R29]: Amended

Commented [GC31]: I thought we only had 1?

Commented [WR32R31]: It was suggested on the markup (and by email) to construct both stairs as firefighting shafts i.e. firefighting stair, firefighting lobby, firefighting/evac lift and dry riser - this was to cater for redundancy as in terms of design, the design permits. Therefore, the only addition would be construction of 120 min

It is proposed to provide a fire appliance access route to each building with no more than 18m distance from the parking position to, and in sight of, the fire main inlet point. All buildings on-site can be accessed via the firefighting shafts/protected stairs to all habitable floors.

The guidance documents informing the proposed arrangements are DRAFT BS 9991:2021 and BS 9999:2017.

11. Emergency road vehicle access

Specify emergency road vehicle access to the site entrances indicated on the site plan

Guide: no more than 200 words

Fire appliance access routes shall be provided to each building within 18m distance from the parking position to, and in sight of, the fire main inlet.

The site is within an urban area which should be provided with accessible and appropriate roads and vehicle access (adequate width and tonnage) for fire appliances.

Private vehicle access routes to position the fire appliance within 18m of the dry riser inlets of Building 1 and Building 3 are obstructed by access gates. The gates should be sized to allow pump appliance access. Any access control should automatically be overridden in the event of an emergency i.e., fire detection within any of the buildings.

The private access routes to Buildings 1 and 3 exceed the 20m maximum dead-end requirement for Fire Service vehicle access. Space for fire vehicle manoeuvring is provided adjacent to the north-west and north-east of Building 1. However, these spaces do not strictly meet the turning circle requirements within ADB and BS 9999:2017 for fire vehicles. Sweco proposed that this is considered at the next stage and appliance tracking is to be considered, to ensure turning facilities provided are sufficient.

The Design Team will maintain co-ordination to ensure the private roads, corners and the private gate are suitable for fire vehicle access.

Is the emergency vehicle tracking route within the site to the siting points for appliances clear and unobstructed?

no

12. Siting of fire appliances

Guide: no more than 200 words

It is proposed to follow the guidance within Draft BS 9991:2021 for the Fire Service Access and Facilities.

On this basis, on the buildings being over 11m, the access routes for fire appliances will be designed to ensure adequate width and tonnage. It is proposed to provide a fire appliance access route to each block within 18m distance from the parking position to the fire main inlet point.

13. Suitability of water supply for the scale of development proposed

Guide: no more than 200 words

Each building will be provided with a dry riser. It is intended to rely on external public hydrants for additional water supplies, subject to a detailed assessment of their current condition, spacings and flow rates.

Nature of water supply:

hydrant- public

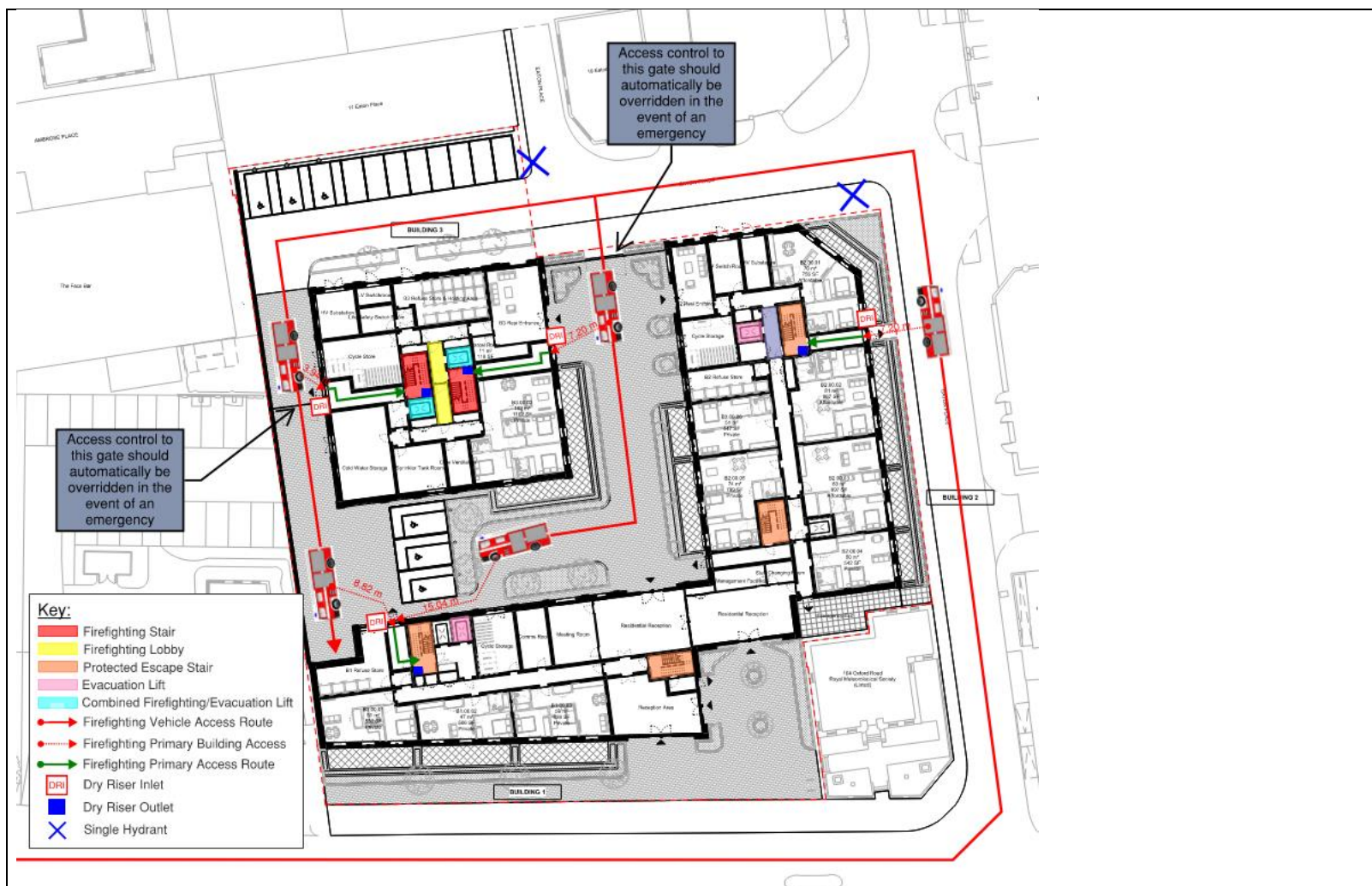
Does the proposed development rely on existing hydrants and if so are they currently usable / operable?

don't know

14. Fire service site plan

Fire service site plan is:

inserted in the form



Fire statement completed by	
15. Signature	Christopher Gray CEng
16. Date	29/04/2024

Commented [GC33]: Put my name as PGO usually requires credentials etc - as I am chartered it will help with the application