

GATEWAY ONE FIRE STATEMENT

PROJECT NAME: Summerland Street, Exeter

28th March 2023

REF: OF-0

DATE:

OF-000974-FSS-01



Appl	Application Information						
1	Site Address Line 1	Land at Summerland Street (between Red Lion Lane and Verney Street)					
	Site Address Line 2						
	Site Address Line 3						
	Town						
	County	Exeter					
	Site Postcode (Optional)	EX1 2AT					
2	Description of proposed development including any change of use (as stated on the application form):	Demolition of existing buildings and the erection of a 167 bed-space co-living development (up to 7 storeys in height) and associated					
3	Name of person completing the fire statement (as section 15.), relevant qualifications and experience.	Ben Cooper MSc (Hons) Fire Safety Engineering BEng (Hons) Fire Engineering 8 years' experience as a fire safety engineer AlFireE with the Institution of Fire Engineers. Relevant experience: Tolworth Tower, Tolworth Ben supported the £300m redevelopment of the Tolworth Tower site in Tolworth, London from office accommodation into resident strategy for the client, Ben continued to support the scheme throughout RIBA Stage 4 and 5, reviewing construction details and co addition to supporting the design and construction of the tower refurbishment, Ben reviewed the impact that the construction neighbouring 6 storey apartment block and provided advice to the contractor on how to programme and phase works so as ont to p his essential involvement during the course of the refurbishment works, Ben was appointed to support the two proposed resident existing buildings within the Client's portfolio. Former Shredded Wheat Site, Welwyn Garden City Ben supported the proposed redevelopment of the former Shredded Wheat site from RIBA Stage 2 to 3. The masterplan proposals at Welwyn Garden City, provided by multiple apartment blocks and townhouses. Ben provided detailed advice for all fire safety system a summary of potential future proofing options and property protection provisions to the sites to assist the client in their ambition to					
4	State what, if any, consultation has been undertaken on issues relating to the fire safety of the development; and what account has been taken of this.	to ensure that the chosen patterns would not detrimentally impact the car park's natural smoke ventilation strategy. It is understood that no formal consultation has been undertaken to date with Building Control and/or Devon and Somerset Fire and has undertaken reviews of the architectural floor plans and site plan to provide comments on any required alterations that may affer incorporated the comments that would affect the land use planning of the scheme, such as fire service access and space separation. A fire safety summary of the layouts is included in a separate document, to be issued in a document titled Outline Fire Strategy (ref: key fire safety aspects within the design as a basis to support the design team for the proposed site to satisfy the functional requirer					

works	
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tial accommodation. After developing the fire coordinating designs with the design team. In n works would have on the residents of the present any undue risks to residents. Through tial towers on the site as well as review other

allowed for an additional 1,200 homes in ns required across the buildings and provided to go beyond the minimum. Ben provided ovided to the proposed undercroft car parks

nd Rescue Service on this scheme. Orion Fire ect the planning application. The architect has .

: OF-000974-OFS-01) which shall outline the ments of Part B to the Building Regulations.



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)



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	 20.5m above the lowest adjacent ground floor level 7 storeys including ground level (GF-L6) 7 storeys including those below ground level (GF-L6) 	Residential flats, maisonettes, studios	Level 1 to Levels 6	BS9991	No balconies	Class A2-s1, d0 or better	Stay put	Yes - residential sprinklers, full	None
		Flexible use	Ground Floor	BS9991	No balconies	Class A2-s1, d0 or better	Simultaneous	Yes - residential sprinklers, full	N/A non resi

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

As the building is a Co-Living building designed as a block of flats under Purpose Group 1(a) in excess of 18m in maximum occupied storey height, all external walls and specified attachments are to be constructed of materials that achieve Class A2-s1, d0 or A1, classified in accordance with BS EN 13501-1. The only exceptions are the materials listed in Regulation 7(3).



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

As the development is in excess of 18m above the fire service access level, a firefighting shaft including firefighter's lift shall be provided which shall serve all storeys. It shall serve all storeys and shall form the sole means of egress from Level 6. A single firefighting shaft is sufficient as the floor area of any storey does not exceed 900m². It shall be equipped with a firefighting stair of minimum width 1100mm, firefighter's lift, dry riser main, lift protection against water ingress, lift car control equipment and additional features as required by EN 81-72 and EN 81-20 as the applicable British Standards.

As the proposed development is in excess of 18m in storey height and primarily constitutes a residential block of flats, as per the guidance in Approved Document B: Volume 1(2019) Incorporating 2020 and 2022 Amendments an Emergency Alert Control and Indicating Equipment (EACIE) system shall be provided throughout the development. This shall remain independent from all other fire alarm and detection systems to be installed throughout the development and shall solely restricted for use by the fire service. It shall be designed to BS 8629.

The residential apartments are designed as studio flats. Where the means of egress requires passage past cooking facilities which are not located at the most remote position possible within the flat, it shall maintain a suitable separation distance. This shall be reviewed as part of the submission to approvals bodies to demonstrate compliance with Building Regulations. Where suitable separation distances cannot be achieved, the cooking appliances shall be equipped with Category B cut off devices designed to BS 50615 as a compensatory measure. KLD ancillary rooms opening to residential corridors on Levels 1-6 shall have all cooking hobs equipped with Category B cut off devices designed to BS 50615 as a compensatory measure.

An external fire spread assessment has been conducted on the development based on the site plan provided and specific elevations have been identified as necessitating 60 minutes fire resistance (REI60) from both sides where the site boundary is within 1m of the relevant boundary. For the southern, eastern and western elevations, the site boundary has been extended to the mid-point of the adjacent public roads as per the guidance in the relevant prescriptive codes, and therefore no protection shall be required to be provided to the external walls to inhibit fire spread between buildings. Where the internal compartmentation of the development is amended at a future design stage, the external fire spread assessment shall be re-assessed to determine the impact on the external wall.

Ancillary accommodation is present at all floors, and includes amenity spaces, plant rooms and storage areas. As the building forms a residential development is in excess of 11m in storey height, these would require a commercial EN 12845 sprinkler system to be provided; however, instead an enhanced residential system designed to Section 5.5 and 5.6 of BS 9251:2021 shall be provided where the floor area does not exceed 100m². The minimum design parameters for these systems shall be determined by the occupancy of each following a hazard evaluation. Each ancillary area shall be subdivided by 60 minute rated compartment walls to maintain the floor area of each ancillary space to below 100m².

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.

The firefighting stair forms a single stair arrangement at Level 6; however, cleaner's cupboards and communal living spaces (KLD rooms) are present on Levels 1-6 which serve sections of the residential corridor which form a single means of egress from dwellings and connect to the firefighting stair. This variation from BS 9991 is considered acceptable on the basis that the cleaner's cupboards and living spaces shall be enclosed in equivalent fire resisting compartmentation (60 minutes) as each of the flats, while containing inferior or equivalent fire load to the dwellings. Both ancillary spaces shall additionally be equipped with code compliant sprinkler systems and automatic fire alarm and detection, the latter of which forms an enhancement above minimum code compliance and aids more rapid summoning of the fire and rescue service. This arrangement shall be justified in more detail at RIBA Stage 3.

The firefighting shaft forms a single stair arrangement at Level 6, however connects to ancillary accommodation in the form of amenity rooms at the ground floor. This variation from BS 9991 is considered acceptable on the basis that the sole connection to the firefighting stair shall be via a protected firefighting lobby ventilated by a continuation of the natural smoke shaft serving the upper residential storeys, which shall extract any smoke which ingresses into the lobby. The ancillary accommodation itself shall be equipped with a robust sprinkler system which shall be designed to inhibit uncontrolled fire growth beyond the compartment of fire origin, in addition to automatic alarm and detection to provide more rapid warning and alarm to occupants and to aid summoning of the fire service. Furthermore, the ancillary spaces shall maintain independent means of escape from the building which do not rely on access through the firefighting shaft, and therefore no breach in compartmentation through the propping open of doors by the fire service during firefighting operations or opening of doors during occupant evacuation shall occur. Any connection directly to ancillary spaces from the firefighting stair enclosure shall be replaced by solid construction of appropriate fire resistance performance.

Level 6 of the development includes flats which have a single direction travel distance to the firefighting stair in excess of 15m. This shall be justified at a later design stage on the basis that the residential corridor shall be equipped with a mechanical smoke ventilation system (MSVS) designed in accordance with Annex A of BS 9991 and the Smoke Control Association Guidance to achieve sufficient and pre-determined tenability criteria within the corridor. The MSVS shall include standby/duty fans on the roof and shall be equipped with a secondary power supply on site, and shall activate on detection on Level 6. The extract rate and shaft sizing required to achieve predetermined tenability performance objectives shall be determined at a later design stage following CFD analysis, however at this stage has preliminarily been defined as 0.8m² as a conservative estimate. A ceiling AOV of minimum free area 0.8m² shall be provided at the far end of the Level 6 corridor to act as the inlet source of air for the mechanical smoke ventilation system.

The residential corridors on Levels 1-5 which have a code compliant single direction travel distance less than 15m from the furthest flat door to the stair door are ventilated by natural smoke shafts. The location of the smoke shafts is in close proximity to the stair at all storeys. This variation from BS 9991 is considered acceptable on the basis that numerous CFD investigations conducted by Orion have demonstrated that where the travel distance



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.

does not exceed 15m, the performance of the smoke ventilation system is not detrimentally affected by the location of the shaft. The locating of the smoke shaft in the position proposed within the architectural plans also enables the shaft to ventilate the protected lobby at the ground floor. This shall be justified in more detail at a later stage prior to submission to approvals bodies determining compliance with Building Regulations.

Where the separation distance as highlighted in Section 7 between cooking facilities and the means of escape route is not achieved, Category B cut-off devices designed to BS 50615 may be installed to mitigate reduced distances. The cooking hob locations within studio's shall be reviewed at the detailed design stage.

At the ground floor, the amenity rooms and plant rooms are accessed via a series of non-compliant inner-inner room arrangements. To achieve compliance with prescriptive requirements regarding inner rooms, additional final exit doors shall be provided at the ground floor to ensure multiple directions of escape are available from access rooms. These additional final exit doors shall also resolve existing travel distance and exit width capacity non-compliances for the ground floor under the existing design. The sizing of the additional exits shall be subject to confirmation at a later design stage where a horizontal exit width capacity assessment shall be conducted upon receipt of frozen plans for the internal layout.

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.

There are no local policies relevant to fire safety that would affect the site beyond national fire safety guidance which has been applied. The primary guidance applied to this development for the pre-planning review is BS 9991:2015 edition incorporating Corrigendum 1.

Although not a local policy, cognisance has been paid to the draft BS 9991 and some features that are not currently required for Building Regulations have been factored into the scheme.

10 Emergency road vehicle access and water supplies for firefighting purposes

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 Vehicular access to the development is provided by the public roads to the northeast, southeast and southwest of the development respectively. These access roads meet the dimensional requirements for a Pump fire appliance. Primary fire service access shall be achieved via the east elevation which provides direct access to the firefighting stair which serves all storeys within the development. The dry riser inlet location shall be adjacent to the eastern access door to the firefighting stair enclosure within 18m of a fire appliance parking position. An additional dry riser mains system is provided to the protected stair enclosure serving Ground Floor-Level 5 which is accessed directly from Red Lion Lane. No vehicular dead ends longer than 20m are present and therefore no turning facilities are required.

The building exceeds 18m in maximum storey height and will be provided with a >1100mm wide firefighting stair ventilated with an >1m² AOV at the head, a dry riser system and firefighting lift which serve all storeys.

The dry riser mains systems designed to BS 9990 which shall be present within the protected stair and firefighting stair enclosure shall have outlets located at the main landings of all storeys including ground floor. All points on the floorplate of each storey shall be within 60m of the outlet within the firefighting stair enclosure along a hoselaying route or 45m of the outlet within the protected stair. All points on the ground floor shall be within 45m of a fire appliance parking position or protected stair dry riser outlet or 60m of the firefighting shaft dry riser outlet along a hoselaying route.

Existing hydrants have been identified to the southwest of the site, both of which are within 100m of the proposed building. Information on the operability and flow rate of the existing fire hydrants surrounding the site has been requested but no utilities surveys have been conducted at this time. Once information on the existing hydrants is available, the distances from the proposed dry riser inlets to hydrants providing an acceptable flow rate will be confirmed as suitable or otherwise a new hydrant will be provided to serve the site.

11 Emergency road vehicle access

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

Primary emergency vehicle access to the residential occupancy is via the public road referenced "Verney Street". This is adjacent to the southeast elevation of the building which includes the access door to the firefighting stair enclosure and inlet connection to the dry riser mains system.

Access to the protected stair which is equipped with a dry riser mains system is provided via the public road referenced "Red Lion Lane" to the northeast.

Access to the residential ancillary areas is primarily provided from the public road referenced "Summerland Street" along the southwest elevation.

All three access roads meet the dimensional requirements for a Pump appliance

No turnaround facilities are provided as no dead end roads longer than 20m are present.

Fire appliance parking positions are present within 18m of the primary fire service access door to the ancillary areas of the development and within 18m of teach of the dry riser inlet connections.



11 Emergency road vehicle access

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

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

Yes

12 Siting of fire appliances

Fire appliances are capable of parking on the public roads adjacent to the southwest, southeast and northwest elevations.

Parking positions on Red Lion Lane and Vernery Street are within 18m of the proposed locations for the dry riser main inlets. These access roads meet the dimensional requirements for a Pump appliance. Verney Street also provides access to the adjacent entrance door to the firefighting stair enclosure.

All residential ancillary areas on the ground floor are within 45m of a hoselaying route from a parking position on Summerland Street to the southwest or 45m from the protected stair ground floor landing valve.





13 Suitability of water supply for the scale of development proposed

See responses for Item 10 – An existing hydrant has been identified but no information on the existing hydrants surrounding the site is available at this time. This will be reviewed on receipt of a utilities survey

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

Fire service site plan 14

Fire service site plan is:



Note: The Proposed Site Plan (ref: 154670-STL-ZZ-ZZ-DR-A-ZZ-00002) has been used above in place of the Proposed Ground Floor Plan (ref: 154670-STL-ZZ-00-DR-A-ZZ-10000) as the latter currently shows a direct connection between the firefighting stair and the bicycle storage room. This connection will be removed and replaced with solid fire resisting construction within the next revision as per Section 8 of the Fire Statement above.





Fire	Fire statement completed by				
15	Signature	Bez			
		Ben Cooper Director			
		Director			
16	Date	28/03/2023			

