

Charles Street

Fire Statement



Fire Statement – Charles Street



Project No: MA23180

Date: 13/12/2023

Revision: R03

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Approver: Colin Bennett MEng (Hons) CEng MIFireE

1 INTRODUCTION

OFR Consultants (OFR) have been appointed by Gardner & Theobold to develop a fire statement for the Proposed residential development at Charles Street, Manchester. The fire statement aims to provide an abridged version of a Fire Strategy, and follows the process as outlined within the UK Government Guidance issued on 24/06/21 that came into effect on 01/08/21 – which requests submission via a form published by the Secretary of State (or a form to similar effect) containing the particulars specified or referred to in the form, and includes information about (not exhaustive list):

- The principles, concepts and approach relating to fire safety that have been applied to the building.
- The site layout.
- Emergency vehicle access and water supplies for firefighting purposes.
- 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.
- How any policies relating to fire safety in relevant local development documents have been considered.

The following pages contain the fire statement, in the format provided by the UK government.

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2 FIRE STATEMENT FORM

Application information	
1. Site address line 1	Charles Street
Site address line 2	
Town	Manchester
County	Metropolitan County of Greater Manchester
Site postcode (optional)	M1 7BD
2. Description of proposed development including any change of use (as stated on the application form):	New high-rise Purpose Built Student Accommodation (PBSA) development (sui generis). The proposed scheme consists of the construction of a 15-storey (Ground (G) + 14 stories of flats) residential building. Each upper level will be served by two independent firefighting shafts, one of which continues to rooftop level. Roof top consists of internal and external plant space. Two evacuation/ firefighting lifts are provided serving every level up to the 14th floor. Ancillary accommodation and amenity spaces are provided on G, 01 and 02 floor levels which include a bin store, cycle store, entrance lobby, laundry room, plant rooms, meeting room, office room and amenity spaces. The remaining levels will contain studio apartments only.

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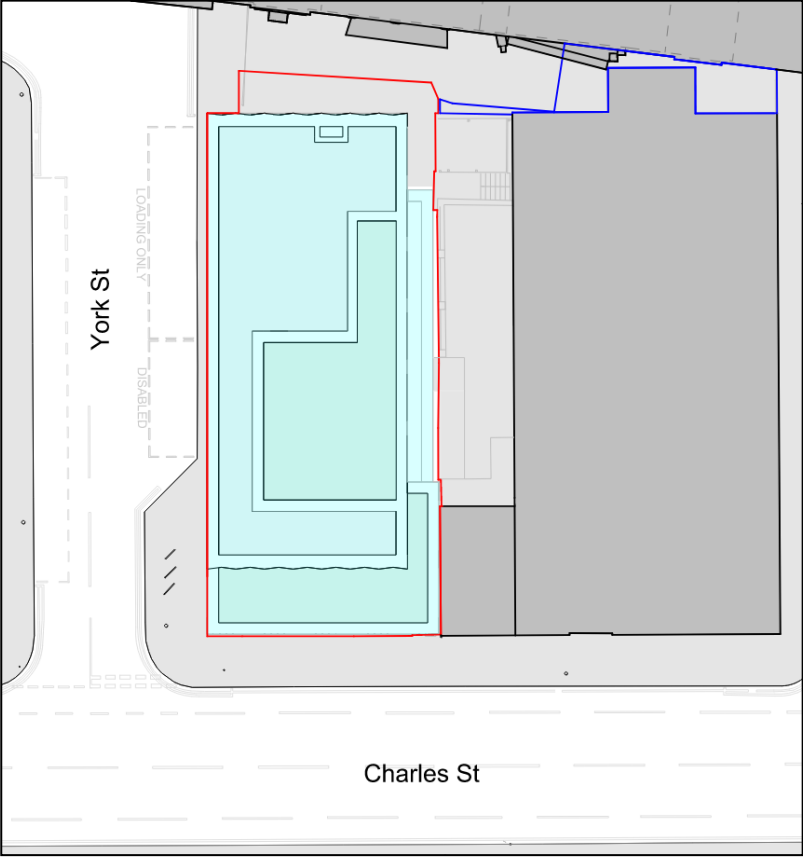
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3. Name of person completing the fire statement (as section 15.), relevant qualifications and experience. Guide: no more than 200 words	This fire statement has been produced by Budmika Karuna who is a graduate fire engineer at OFR Consultants. Budmika graduated from Ghent University, Belgium with a master's degree in fire safety engineering. The OFR-approver of this document (Colin Bennet Meng CEng MIFireE) is a registered engineer with the Engineering Council with the post-nominals CEng (Chartered Engineer) and is registered with the Institute of Fire Engineers with the post nominals MIFireE (Member). Colin joined OFR in April 2021 and has over 20 years' experience in fire engineering consultancy, both in the UK and Middle East. He has been responsible for developing and delivering fire strategies for multiple different sectors and building types and ensuring that both the legislative requirements and those of the Client are satisfied. Based on his experience and understanding of fire engineering principles Colin is able to identify where alternative approaches may benefit the project.
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. Guide: no more than 200 words	Consultation during this early design stage has been undertaken between the fire engineers (OFR Consultants Ltd.) and the architectural team (SimpsonHaugh Architects) with regards to meeting the requirements of the Building Regulations 2010 (as amended).

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:



The diagram is a site layout plan showing a street intersection. York St runs vertically on the left, and Charles St runs horizontally at the bottom. A building complex is situated at the corner. A large section of the building is highlighted in light blue, with a red outline. To the right of this blue section is a grey-shaded area. A dashed line labeled 'LOADING ONLY' and 'DISABLED' is shown along York St. The text 'inserted in the form' is present in the bottom left corner of the plan area.

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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
Sole block on site	49.005 m 15-storeys (G + 14)	Residential flats, studios	02-14	BS 9991:2017	No Balconies	Class A2-s1, d0 or better	Stay-put	Yes –BS 9251:2021 residential sprinklers, full	Accessible accommodation will be provided to 5% of the scheme
		Other residential accommodation	G + 01 + 02	BS 9999:2015	No Balconies	Class A2-s1, d0 or better	Simultaneous	Yes –BS 9251:2021 residential sprinklers full,	N/A

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

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The proposed design generally aligns with the recommendations of regulatory fire safety guidance i.e., BS 9991, BS 9999. During this stage of the design, the following items have been highlighted as they are likely to require alternative solutions to the recommendations in regulatory fire safety guidance.

- Lifts suitable for evacuation will be provided to support the evacuation of mobility-impaired persons. A smoke ventilation system is proposed to maintain tenable conditions within the common corridors across the protected stair core and the evacuation lifts. The adequacy of this system will be confirmed using Computational Fluid Dynamics (CFD) modelling.
- Each common corridor will be ventilated via a push-pull smoke ventilation system with the intention of protecting firefighting stairs and maintaining tenable conditions at the entrance to evacuation lifts.
- As a section of the eastern wall elevation of the building (opposite side to the York Street) lies on top of the relevant boundary (site boundary), it requires 120 EI fire protection from both sides of the wall. Only small, unprotected areas outlined in section 18.4 of BS 9991 are allowed in this section. For the remaining part of this wall section, only internal side shall be fire protected for 120EI.
- The residential sprinkler system will be extended to protect non-residential accommodation (<100 m² in area) as recommended in BS 9251.
- BS 9991 recommends kitchens within open plan flats are located away escape route. Radiation calculations can be completed at the next design stage to determine the suitability of hob locations to ensure adequate escape conditions can be maintained. OFR have recommended that hobs are located at least 1.5m away from the internal escape routes to reduce the risk of radiation from a potential cooking fire impacting means of escape. Internal layouts of the flats generally agree with this recommendation.

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.

- The building height surpasses 18 m; therefore, it falls under the remit of Regulation 7(2), which imposes restrictions on the materials that can be used within the external wall build up. All elements (which are not exempt) of the external wall build-up will achieve Class A2-s1, d0 or Class A1 to meet Regulation 7.
- Even though the building height and the upper floor areas demand one firefighting shaft, two protected shafts are provided to support both evacuation and firefighting. Each stair will be protected by an independent ventilated common corridor: each corridor will be provided with a separate push-pull smoke ventilation system. Additionally, each separate corridor will be provided with a lift suitable for mobility impaired occupants to evacuate the building during a potential fire scenario.
- The discharge from both stairs is directed to the internal enclosed passage which leads to outside. The passage is 1200 mm wide and has the capacity to accommodate the total occupancy during a full building evacuation. During a full building evacuation, if the fire service access through the passage is compromised, a secondary access is provided through the main entrance lobby of the building.

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- Due to the height of the building, all areas will be provided with sprinkler protection. OFR have recommended the following at this stage in the design:
 - Residential Areas
 - Category 4 residential sprinkler system in accordance with BS 9251: 2021 (Fire sprinkler systems for domestic and residential occupancies)
 - Non-residential Areas
 - Category 4 residential sprinkler system for residential (ancillary) areas as per Table 3 in BS 9251: 2021. All rooms are < 100m² or will be provided with additional fire resisting construction at the next stage once layouts are known to keep all areas < 100m² and therefore BS 9251: 2021 will be applied throughout
- The evacuation strategy for the studios will be a 'stay-put' policy whereas amenity and ancillary areas will operate a simultaneous evacuation strategy. The residential alarm system should not be linked to the alarm system in non-residential/ amenity areas.
 - The stair widths will be sized to allow for a full evacuation of the building.
- Ancillary spaces are mostly present on the ground floor and level 01 (except for amenity space in level 02) where no studio apartments are present. Therefore, they have separate means of escape from the residential units whereas the amenity space Level 02 shares a common means of escape with two residential units.
- The two steps in the exit passage next to the rear stair are considered acceptable due to the presence of a 24-hour concierge service in the building to assist in the management and support of any disabled person evacuating from this stair through the passage. An additional level escape route is also present inside the building through the ground floor.

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.

Not applicable.

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?

The Fire Service access and facilities provisions will be based on BS 9991 and BS 9999 as shown in Section 14.

The Fire Service access route will be via Charles Street. The site design will ensure that the horizontal section of pipe from base of riser to inlet is limited to 18m and the fire appliance can access the inlet within 18m of parking position with good sight lines between the appliance and inlet.

Access to the firefighting shafts will be primarily via the ramped passage to the east and a secondary access is available via the building entrance. The primary firefighting shaft at the building front with the fire main outlet is accessible within 18 m from the Charles Street where a fire appliance can be stationed during a fire service intervention. The northern stair also contains all the associated protection and equipment for a fire-fighting shaft (including lift) as another means of access if necessary. Even though the distance from the fire main inlet to the outlet point at the northern stair is greater than 18m, the overall system still complies with the standard requirement which is satisfied by the southern stair which is closer to the Charles Street.

11. Emergency road vehicle access

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

As noted in Section 10, vehicular access to the site will be via Charles Street. As the fire service is not required to drive more than 20m into the site to get within 18 m of the entrance to the primary firefighting shaft and sight of the fire main inlet connection, turning facilities are not required.

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

yes

12. Siting of fire appliances

The firefighting strategy for the building will be internal via two independent firefighting shafts provided with dry fire mains. Vehicle access for pumping appliances will be accommodated. Access will be provided within 18m of the entrance to the primary firefighting shaft and within sight of the inlet for dry fire main (for both firefighting shafts) and sprinkler infill as recommended in BS 9991.

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

A public external hydrant is located approximately 70m from the proposed building. This hydrant is located at the intersection of Pritchard Street and Charles Street. The location and the operational status of this hydrant is to be confirmed by the Fire Service. However, the provision of sprinklers reduces the reliance on the hydrant flow rates and performance. If existing hydrant provisions do not align with BS 9991 recommendations, additional hydrant (s) will be provided within 90m of the fire main inlet to meet BS 9991 recommendations.

Nature of water supply:

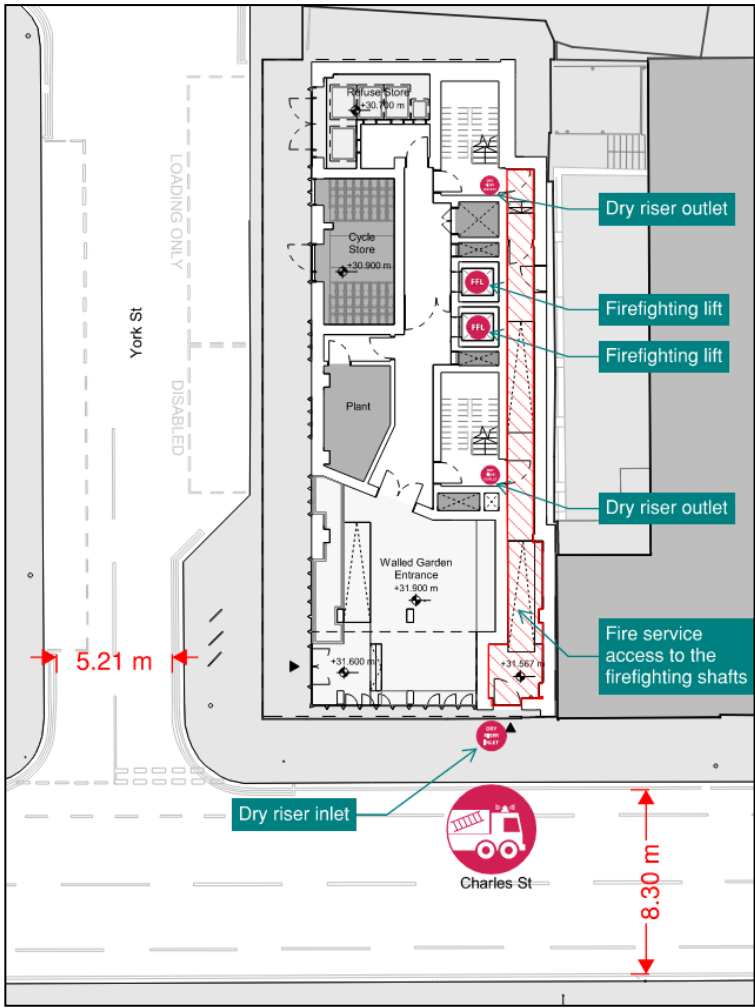
hydrant- public

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

don't know

The suitability of the existing public fire hydrant(s)) will be reviewed with the Fire Service at the next stage.

14. Fire service site plan



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• Fire statement completed by		
15. Signature		
16. Date	13/12/2023	