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Project No:	230517
Document No:	MZ-230517-03-PG1-01-ISS02
Date:	08/08/2024
Issue No:	02

Arundel Street – Fire Statement Form

Note: Whilst the present fire statement records the current design principles which have evolved since the most recent Maze Fire RIBA 2 fire strategy (MZ-230517-04-FSS-01-ISS01), it is considered that full assumptions and qualifications will be documented in subsequent iterations of the fire strategy, pending Maze Fire's appointment to future stages of work. The previous fire strategy assumptions and qualifications have fed into the present fire statement, with variances updated to reflect the current design proposals.

Application information	
1. Site address line 1	Arundel Street
Site address line 2	-
Site address line 3	-
Town / City	Manchester
County	Greater Manchester
Site postcode (optional)	M15 4JZ

Application information	
2. Description of proposed development including any change of use (as stated on the application form):	Construction of a part 8 and 9 storey building located on Arundel Street and Worsley Street to comprise residential uses (Use Class C3) and ground floor commercial units (Use Classes A1, A2, B1, D1 and D2) and resident roof garden; a part 11 and part 23-storey residential building located on the Mancunian Way (Use Class C3); demolition of the existing industrial buildings; the refurbishment and conversion of the existing 4-storey DOT Building (Use Class C3), together accommodating a total of 366No. 1, 2 and 3 bed apartments; along with associated courtyard car parking (24No spaces), cycle parking, access, landscaping, and associated work. This is an amendment application for a previously approved scheme.
3. Name of person completing the fire statement (as section 15.), relevant qualifications and experience. Guide: no more than 200 words	Mark Jones PhD, MEng (Hons), CEng, APAEWE, MIFireE Associate, Maze Fire Consulting Mark has worked in the fire safety industry for 16 years (for Warringtonfire from 2008 – 2022 and Maze Fire Consulting from 2022 – present) and is experienced in providing fire safety strategies for large, complex developments including high-rise residential blocks of residential flats and student accommodation. CV is appended.
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	It is generally considered appropriate to consult with the Approval Authority regarding the design principles to be taken forward. However, at the date of issue, it is the understanding of Maze Fire that the Building Safety Regulator, who will be the Authority Having Jurisdiction due to the status of the building as a 'higher-risk building' (HRB), would not as a matter of policy consult on designs prior to the Gateway 2 submission. As such it is anticipated that consultation on the proposals will be instigated and managed by the Building Safety Regulator following the Gateway 2 submission required by the Building Safety Act and secondary legislation. Maze Fire has developed a RIBA Stage 2 fire strategy covering Buildings 1 and 2 (ref. MZ-230517-04-FSS-01-ISS01 of 12/04/24) to provide guidance to the design team for the development of the current plans. Maze Fire is also undertaking a Qualitative Design Review (QDR), as envisioned in BS 9991 and described in BS 7974, given the building height (in respect of parts of the Building 1 and 2 development) is in excess of 50m. An updated Fire Strategy and record of items considered in the QDR will be provided at Gateway 2.

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

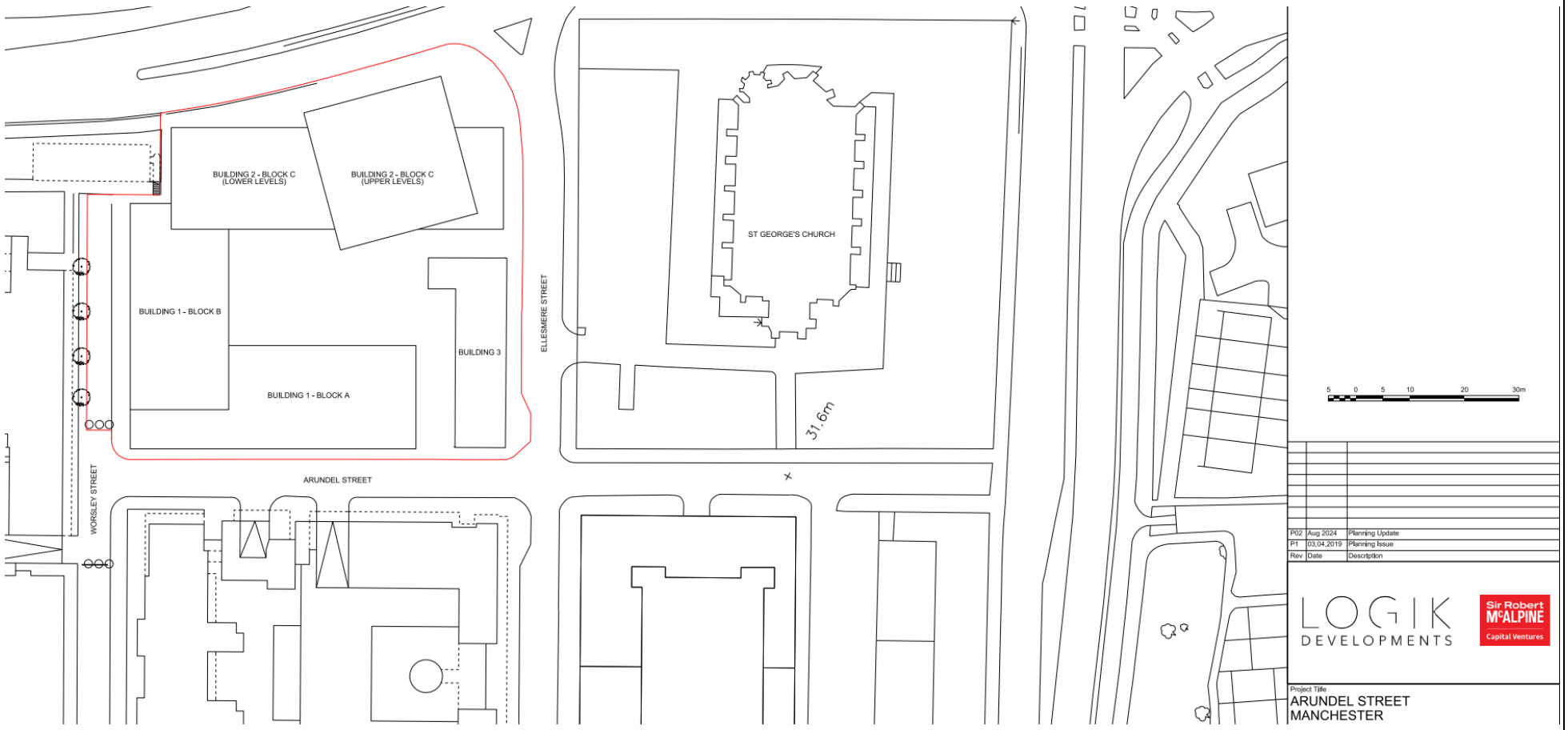


Figure 1 Site Plan provided by Simpson Haugh Architects

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 basements number of storeys including basements	c) proposed use (one per line)	d) location of use within block by floor level	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
Block A (Building 1)	08 Floors (Ground Floor and 07 upper Floors) with an additional roof top residential and social amenity space. No basements A total height of 26.625m to the parapet, 22.6m to the top accessible residential accommodation floor and a height of 26.3m to the top accessible floor (Roof top residential social amenity space).	Residential accommodation (including ancillary residential amenities).	Ground: Residential amenities and ancillary (concierge/ refuse store/ bicycle store/ plant rooms). Floors 01 – 07: Residential apartments. 08: Residential social amenity roof terrace.	BS9991	balconies- Class A2-s1, d0 or better	Class A2-s1,d0 or better. Roof terrace materials design to be to BS 8579 guidance as well as requirements in BS 9999 for roof coverings, whichever is more onerous in relation to distance to boundaries or proximity to external façade which continues upwards	For residential partments: stay put For Level 08 residential amenity areas / roof terrace (if fire detection in these locations or access route): simultaneous For Ground floor ancillary / commercial unit: simultaneous	yes- residential sprinklers, full	M4(2) & M4(3) TBC – design team to confirm the number of each

		Three separate commercial units at Ground Floor.	Ground: Three separated commercial units.				For Ground floor ancillary / commercial unit: simultaneous		
Block B (Building 1)	09 Floors (Ground Floor and 08 upper Floors), with an additional roof top residential and social amenity space. No basements A total height of 29.625m to the parapet, 25.6m to the top accessible residential accommodation floor and a height of 29.3m to the top accessible floor (Roof top residential social amenity space).	Residential accommodation (including ancillary residential amenities). Building management and staff amenities at ground level. Under croft parking.	Ground: Building management and staff amenities. Ground: Under croft parking (residential/commercial). Ground: Residential amenities and ancillary (concierge/ refuse store/ bicycle store/ parcel room). Floors 01 – 08: Residential apartments. Floor 09: Residential social amenity roof terrace.	BS9991	balconies- Class A2-s1, d0 or better	Class A2-s1,d0 or better. Roof terrace materials design to be to BS 8579 guidance as well as requirements in BS 9999 for roof coverings, whichever is more onerous in relation to distance to boundaries or proximity to external façade which continues upwards	For residential apartments: stay put For Level 09 residential amenity areas / roof terrace (if fire detection in these locations or access route): simultaneous	yes- residential sprinklers, full	M4(2) & M4(3) TBC – design team to confirm the number of each
		Commercial units at ground floor.	Ground: Commercial units (subdivision TBC).				For Ground floor ancillary / commercial unit: simultaneous		

Block C (Building 2 Lower Levels)	10 Floors (Ground Floor and 09 upper Floors), with an additional roof top residential and social amenity space. No basements A total height of 35.625m to the parapet, 31.6m to the top accessible residential accommodation floor and a height of 35.3m to the top accessible floor (Roof top residential social amenity space).	Residential accommodation (including ancillary residential amenities).	Ground: Residential amenities and ancillary (concierge/ refuse store/ bicycle store/ Gymnasium/ plant rooms). Floors 01 – 10: Residential apartments. Floor 11: Residential social amenity roof terrace.	BS9991	no balconies	Class A2-s1,d0 or better. Roof terrace materials design to be to BS 8579 guidance as well as requirements in BS 9999 for roof coverings, whichever is more onerous in relation to distance to boundaries or proximity to external façade which continues upwards	For residential apartments: stay put For Level 11 residential amenity areas / roof terrace (if fire detection in these locations or access route): simultaneous For Ground floor ancillary: simultaneous	yes- residential sprinklers, full	M4(2) & M4(3) TBC – design team to confirm number of each
Block C (Building 2 Upper Levels)	23 Floors (Ground Floor and 22 upper floors), No basements A total height to the parapet of 71.625m and height of 67.6m to the top accessible floor.	Residential accommodation (including ancillary residential amenities).	Ground: Residential amenities and ancillary (concierge/ refuse store/ bicycle store/ plant rooms). Floors 01 – 22: Residential apartments.	BS9991	no balconies	Class A2-s1,d0 or better. Roof terrace materials design to be to BS 8579 guidance as well as requirements in BS 9999 for roof coverings, whichever is more onerous in relation to distance to boundaries or proximity to external	For residential apartments: stay put For Ground floor ancillary: simultaneous	yes- residential sprinklers, full	M4(2) & M4(3) TBC – design team to confirm number of each

						façade which continues upwards			
Building 3 (DOT Building)	04 Floors (Ground Floor and 3 upper floors). No basements A total height to the roof void of 14.7m and height of 11.48m to the top accessible floor.	Residential accommodation (including ancillary residential amenities).	Ground: Residential accommodation (including ancillary residential amenities comprising bin and bicycle storage and plant). Ground – 03 Residential apartments and duplexes	BS9991	balconies- Class A2-s1, d0 or better	Class A2-s1,d0 or better. BS 9999 for roof coverings, whichever is more onerous in relation to distance to boundaries or proximity to external façade which continues upwards	For residential apartments: stay put For Ground floor ancillary: simultaneous	yes- residential sprinklers, full	M4(2) & M4(3) TBC – design team to confirm

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

Due to high-rise nature of Buildings 1 and 2, both sprinkler protection (Cat 4. BS 9251 with enhancements required by BS 9251 for non-residential areas which are in scope of that standard) and four means of escape stairs are being provided (three of which are fire-fighting shafts). All stairs will have protected lobbies with mechanical smoke ventilation to the lobbies. The lobbies will also function as evacuation lift lobbies with dual-purpose fire-fighting and evacuation lifts serving the firefighting cores and an evacuation lift serving the evacuation shaft.

At Level 11, Building 2 steps back, with the remainder of the floors (11-22) constituting the 'tower' portion of the building. The core in this portion contains two distinct shafts (a firefighting and an evacuation shaft) which can be entered from either side of the core. To enhance the provision, a dry riser will also be provided to the evacuation shaft (protected non-firefighting stair). A bespoke variable smoke shaft system linked to pressure detection within the lobby is proposed to provide smoke ventilation within the lift lobbies with one shaft per lobby. The proposed smoke ventilation system will require validation (expected to be by way of CFD modelling) to demonstrate that tenable conditions are maintained during evacuation and firefighting.

Charging for electric vehicles (EVs) is proposed for the undercroft and courtyard car parking. It is noted that prescriptive and functional guidance (BS9991, BS9999, Approved Document B etc.) has yet to comment specifically on the potential increased level of fire risk posed by the potential thermal runaway that can occur when Lithium Ion ("Li Ion") batteries are exposed to certain conditions. It is proposed that 120 minutes fire resistance (REI) is provided to the floor (from the underside) and to the wall (to each side separately) forming the undercroft parking area. A compartment wall is also proposed to subdivide the undercroft parking areas to reduce the risk of fire spread (and thus a larger fire) adjacent to the building. This area will also be covered by the BS 9251 sprinkler system. Maze Fire recommend that suitable power isolation systems are installed as recommended in the RISC Authority guidance note RC59: Recommendations for fire safety when charging electric vehicles.

Accessible apartments are proposed within the development, it is likely that some residents will use mobility scooters and/or electric wheelchairs. Mobility scooters and electric wheelchairs may pose an ignition risk. In line with BS 9991 and BS 9251, it is therefore recommended that a suitable charging and storage space is provided within M4 (3) apartments, provided with 30 minutes fire resistance and covered by the sprinkler system. Additionally, the number of dwelling fires occurring because of

the use of e-mobility devices (e-bikes and scooters) has increased over recent years. Maze Fire Consulting recommend that dedicated storage areas are provided for the charging of these devices to avoid the storing and charging of them on the means of escape or within apartments.

The travel distance within the extended corridor in Block A/Building 1 is ~30m. As such, mechanical smoke ventilation is proposed for the extended corridor in addition to the firefighting shaft provision. The proposed solution has been substantiated by computational fluid dynamics (CFD) analysis in order to demonstrate that the stairs are maintained free of smoke ingress and that smoke ingress into the lobbies and corridor can be cleared by the system consistent with the guidance set out in the Smoke Control Association (SCA) Guidance on Smoke Control to Common Escape Routes in Apartment Buildings (Flats and Maisonettes) Rev. 3.1 (13/07/20). Further validation of the proposed mechanical smoke control provision to Block B/Building 1 and Building 2 is to be undertaken at a later design stage.

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

The whole scheme is being designed in line with the guidance of BS 9991 and BS 9999. As BS 9991 was last formally revised in 2015 the fire safety design also takes account of updates to Regulation 7 (with regard to external wall materials) and Approved Document B which have been made since. Where relevant British standards cited in BS 9991 have been updated since 2015, the latest version is to be used). For example, the sprinkler system will be designed as Category 4 to BS 9251 (2021) with the guidance in that document followed for application of such a system to associated non-residential areas which are within scope.

BS 9991 (2015) does not contain detailed guidance or requirements in relation to evacuation lifts. Therefore, cognisance has been taken of the March 2024 Amendments to Approved Document B and the guidance outlined in the 2021 draft BS 9991 in anticipation of its publication prior to building works commencing.

Furthermore, in line with best practice, cognisance has been taken to significant updates to Approved Document B since the publication of BS 9991 and additional provisions such as wayfinding signage and an evacuation alert system are proposed.

Building 3 (DOT) does not constitute a higher-risk building and is at concept-stage. Details of the fire strategy have therefore not been included in this Fire Statement. High-level aspects of the plans (fire-fighting access and water supply) are considered here due to its location within the curtilage of the new-build higher-risk buildings (Buildings 1 and 2). Building 3 is existing (though due to be converted) and will not affect fire-fighting access to the new buildings.

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

N/A

Emergency road vehicle access and water supplies for firefighting purposes

10. **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?

Guidance from BS 9991 (for residential buildings) and BS 9999 (for fire-fighting shafts) has been used to develop the fire service access and provisions. Amendments (since the publication of BS 9991 in 2015) to Approved Document B have been considered with regard to wayfinding and signage, evacuation alert systems and premises information boxes.

Access for the fire service to the buildings is provided along existing public highways and existing roads (Ellesmere Street, Arundel Street and Worsley Street). This allows compliance of distance not exceeding 18m from Fire Service vehicle parking position to the rising main inlets and wet main suction tank replenishment points for the building. The access on Worsley Street will be provided with bollards which the Fire Service can lower to reach a position within 18m of the rising main inlet. The access on Ellesmere Street is proposed to be provided with drop curbs to allow the fire appliance to park off road, this solution is design to reduce the risk of interaction with vehicles exiting Egerton Street onto Ellesmere Street. Buildings 1 and 2 are provided with fire-fighting shaft with fire-fighting lift, fire-fighting lobby (with mechanical ventilation smoke extract) and Fire Service access corridors from the Arundel Street, Ellesmere Street and Worsley Street elevations providing access into the fire-fighting shafts.

Building 2 has storeys of >900m^2 floor area per floor. Therefore, each core is provided with a fire-fighting shaft with fire-fighting lift, fire-fighting lobby (with mechanical ventilation smoke extract) and Fire Service access corridors. Within the building at Ground floor level main entrance and staffed concierge office located on the Worsley Street elevation, will provide facilities for the Fire Service, with a secure information box (to be in accordance with Sections 2 to 4 of the Code of Practice for the Provision of Premises Information Boxes in Residential Buildings – Fire Industry Association) and evacuation alert system to BS 8629.

Evacuation Assembly Points have not yet been identified by the design team, however, Maze Fire Consulting has considered egress away from the buildings. Each evacuation lift and stair discharges via a protected route to a paved area on an existing road (not via the courtyard), providing unobstructed egress away from the building. Occupants within ancillary accommodation on the courtyard elevations have the ability to enter the building via protected routes or exit the courtyard via two routes.

11. **Emergency road vehicle access** - can emergency road vehicles access the site entrances indicated on the site plan?

Yes, compliant access is provided to the building.

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

Yes

12. Siting of fire appliances

Access for a fire appliance is provided to within 18m of the rising main inlets and wet main suction tank replenishment along Worsley Street and Ellesmere Street. Worsley Street is accessed from the adjacent main road of Arundel Street, which itself is accessed from Ellesmere Street. The access on Worsley Street will be provided with bollards which the Fire Service can lower to reach a position within 18m of the rising main inlet. The access on Ellesmere Street is proposed to be provided with drop curbs to allow the fire appliance to park off road, this solution is design to reduce the risk of interaction with vehicles exiting Egerton Street onto Ellesmere Street. It is not necessary for a vehicle to travel more than 20m into Worsley Street to achieve compliant access. Therefore, turning facilities are compliant. The main Fire Service entry points will be for Building 1 Block A via Arundel Street directly into a corridor which directly accesses the firefighting lobby. Access to Building 1 Block B will be Via Worsley Street into a firefighting access corridor with direct access into the fire-fighting shaft (the corridor distance is <18m in compliance with BS 9999 exemplar). Building 2 access will be via the northeastern elevation (Egerton Street) directly accessing into Core C. The DOT building will be accessed via Ellesmere Street.

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

Water supplies to site will be provided by existing infrastructure.

Nature of water supply:

hydrant- public

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

The proposed development will rely on existing hydrant provision. Nearest locations indicated on drawings below. Usability and operability are to be confirmed.

14. Fire service site plan

Fire service site plan is:

provided as a separate plan

Hydrant locations and the Fire Service Tracking plans are inserted into this document. Please see the attached mark-up of other provisions.

Site Plan indicating hydrant positions as follows. Fire Service vehicle access to be via the existing roads indicated.

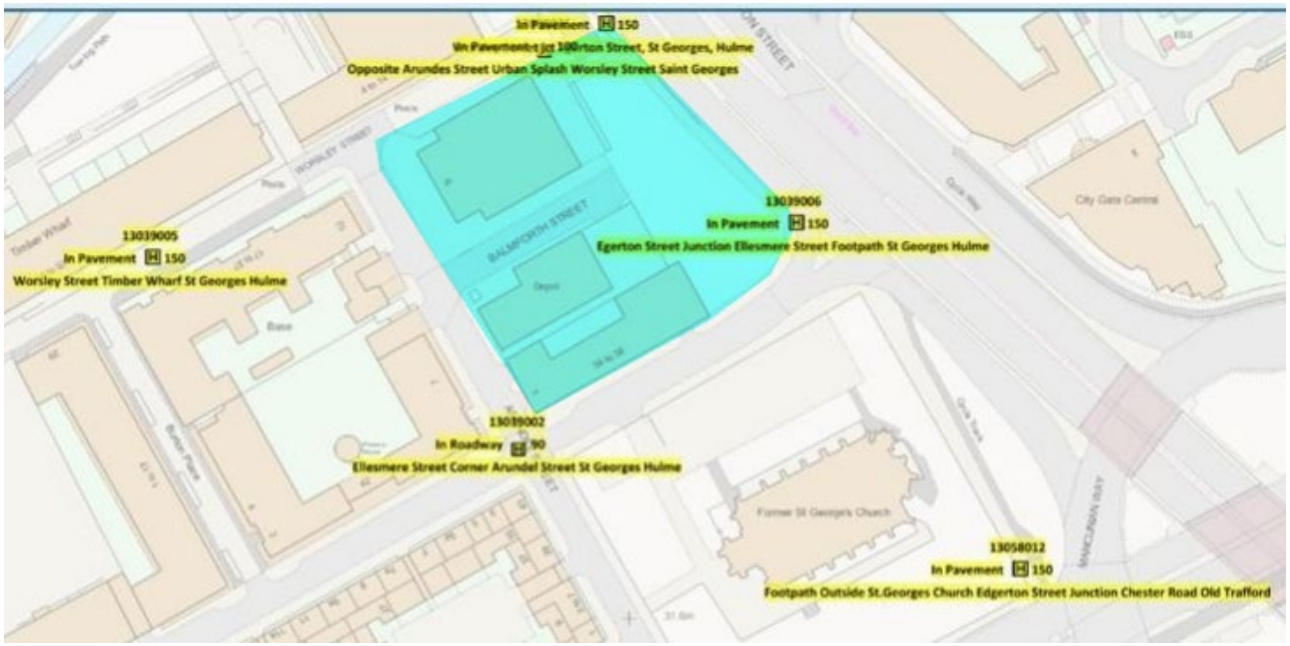


Figure 2 Fire Hydrant location diagram from Greater Manchester Fire and Rescue Service

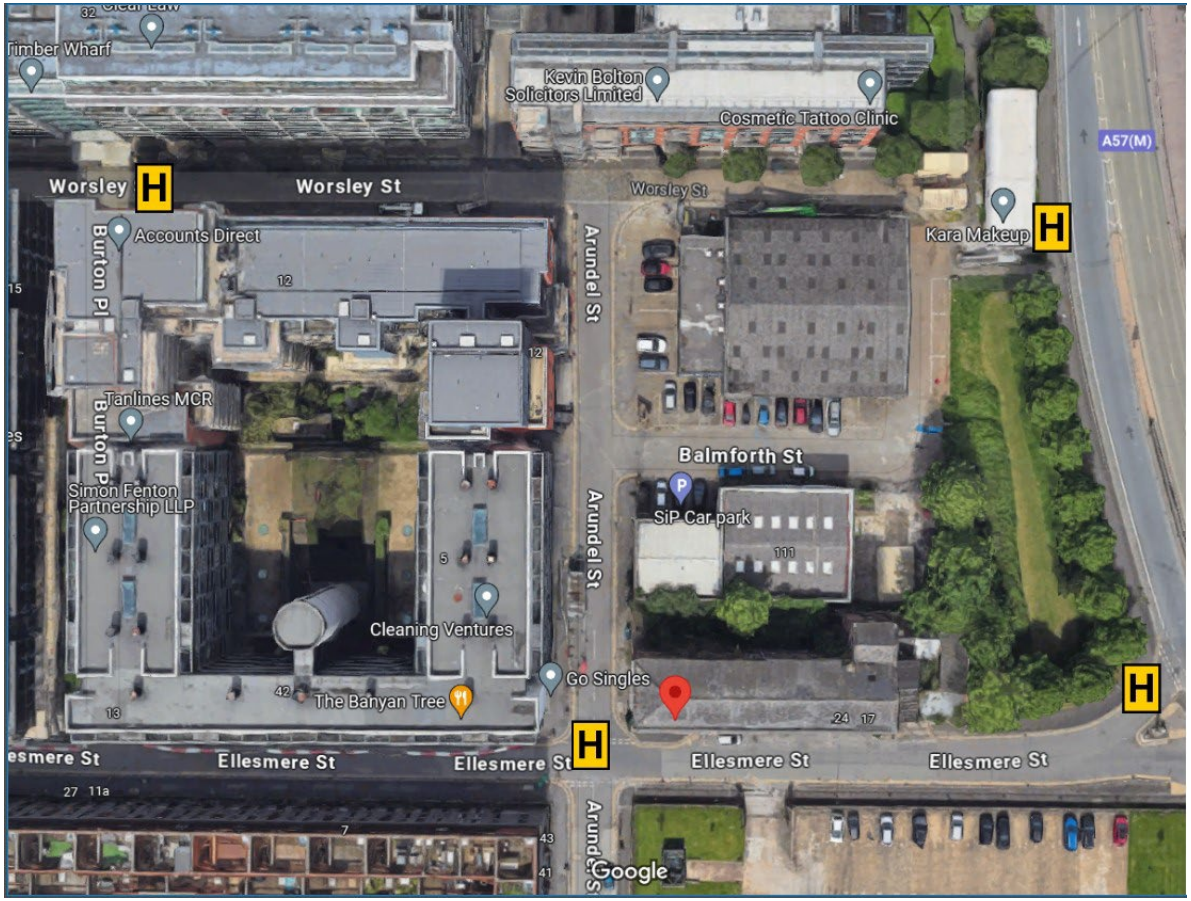


Figure 3 Fire Hydrant Locations Google maps ariel view

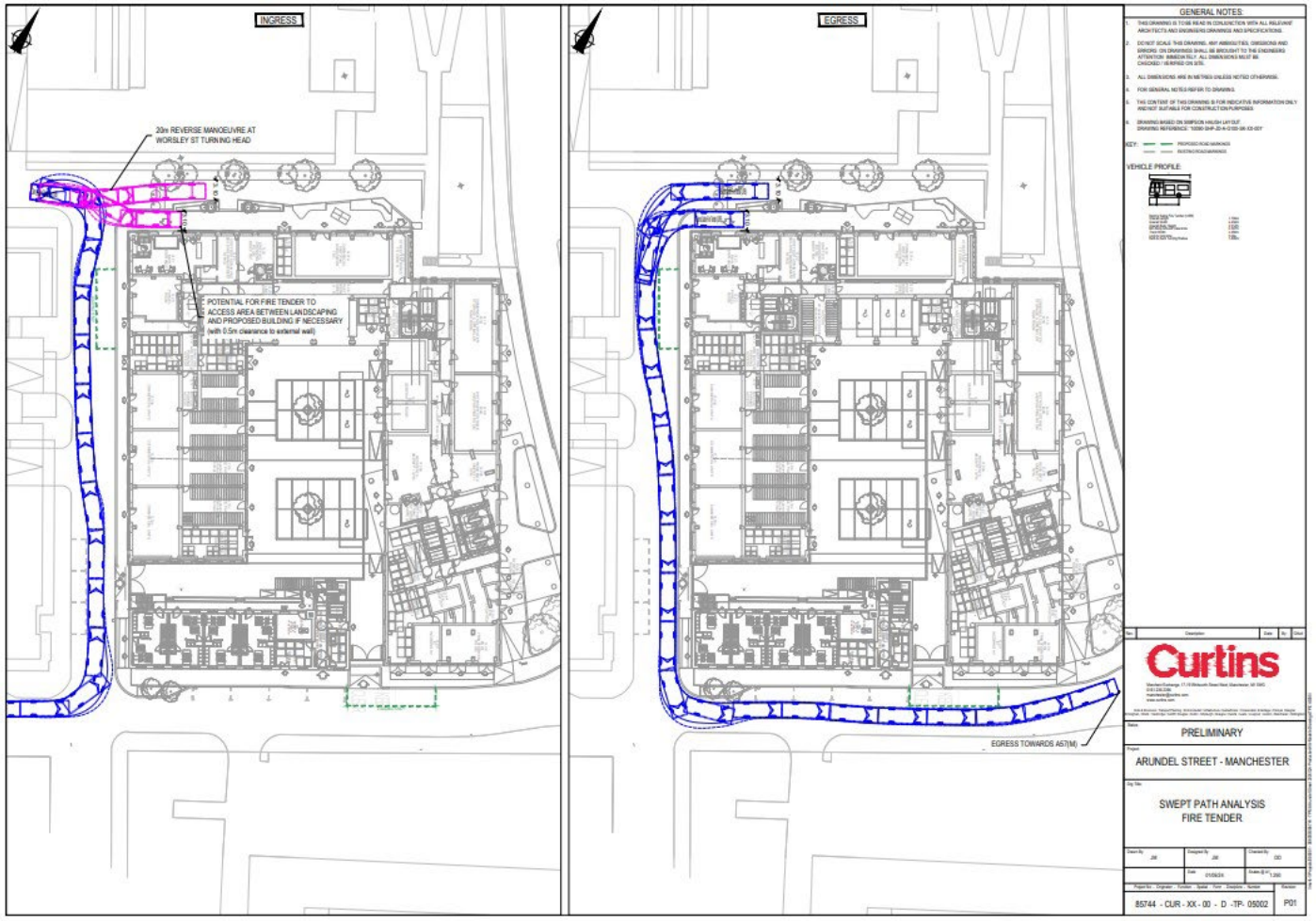


Figure 4 Fire service vehicle access route plan from Curtins

Fire statement completed by	
1. Signature	 Dr Mark Jones, CEng Associate for and on behalf of Maze Fire Consulting Limited
2. Date	08/08/2024

Quality Management

Issue	Date	Reason for Issue	Prepared by	Reviewed by
01	01/08/2024	1st Issue	Mary Button Senior Consultant	Mark Jones Associate
02	08/08/2024	Updated to show scheme description as per planning application.	 Mary Button Senior Consultant	 Mark Jones Associate

Validity

This document is formulated on the basis of the information and experience available at the time of preparation. It is applicable to the above-mentioned project only in accordance with the client's instructions. It is only valid provided no other modifications are made other than those for which a formal opinion has been sought and given by Maze Fire Consulting Limited.

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EGERTON STREET

WORSLEY STREET

ARUNDEL STREET

ELLESMERE STREET

Automatic Opening Vent at top of the stair cores C

Automatic Opening Vent (ventilated Lobby)

Automatic Opening Vent at top of the stair core B

Automatic Opening Vent (ventilated Lobby)

Automatic Opening Vent at top of the stair core A

G.10 M1B COMBINED COLD WATER STORAGE & SPRINKLER TANK ROOM

G.09 M4B WET RISER STORAGE AND PUMPING ROOM

G.29b RESIDENTS AMENITY / GYM

G.29c RESIDENTS AMENITY / BREAKOUT SPACE

G.05 E1 INCOMING HV

G.06 ENWL TRANSFORMER ROOM

G.03 E1B LV SWITCH

G.08 LIFE SAFETY

G.07 E6 GENERATOR ROOM

G.29a RESIDENTS AMENITY / GYM

G.27 COURTYARD ENTRANCE POST ROOM TO CORE C

G.11a RESIDENTS ACCESSIBLE REFUSE STORE CORE C

G.11b HOLDING REFUSE STORE CORE C

G.32 REFUSE STORE

G.23 STAFF WC /CHANGING ROOM BRIEF TBC

G.25 LINK LOBBY

G.19 BICYCLE PARKING AND COURTYARD ACCESS

G.22 STAFF BOH ADMIN AND BUILDING MANAGEMENT OFFICE

G.16 HOLDING REFUSE STORE FOR CORE A AND CORE B (CONCIERGE MANAGED)

G.18a BICYCLE PARKING

G.18b BICYCLE PARKING

G.18c BICYCLE PARKING

G.34 COMMERCIAL AND OFFICE REFUSE STORE

G.14 BIN STORE AND BICYCLE PARKING ACCESS

G.17 FOLD-UP BICYCLE LOCKER PARKING

G.21 MAIN ENTRANCE

G.20 PARCEL ROOM

G.15 RESIDENT ACCESS REFUSE STORE CORE A

G.33a COMMERCIAL UNITS

G.33b COMMERCIAL UNITS

G.33c COMMERCIAL UNITS

KEEP CLEAR

+31.000 AOD assumed level, (TBC)

+31.500 AOD

+31.000 AOD

+30.600 AOD

+30.800 AOD assumed level TBC

+30.500 AOD

+31.400 AOD

+30.500 AOD

+30.500 AOD +30.500 AOD

+30.800 AOD +31.000 AOD

+30.500 AOD

+30.800 AOD

+31.000 AOD +31.100 AOD

+31.200 AOD

+30.500 AOD

+30.400 AOD

+30.300 AOD

+30.700 AOD +30.800 AOD

+31.000 AOD +31.000 AOD

+31.100 AOD

+31.100 AOD

+31.200 AOD

+31.300 AOD

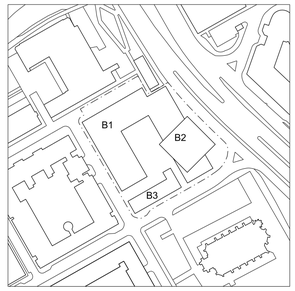
+31.000 AOD

LEGEND

	FIRE APPLIANCE
	ASSEMBLY AREA
H	FIRE HYDRANT
BI	BREECHING INLET POINT
FF	FIRE LIFT LABEL
	FIRE LIFT HATCH
5.63 m	PERIMETER MEASUREMENT
AOV	AUTOMATIC OPENING VENT
NV	NATURAL VENTILATION
	HARDSTAND
MV	MECHANICAL VENT
	FIRE FIGHTING ACCESS POINTS
	FIRE PUMP ROOM
	FIRE TANK
Evac Lift	EVACUATION LIFT
	DRY RISER
	WET RISER

Note:
Whether in hardcopy or digital format, this drawing should not be used as a basis for measurement or setting-out unless specific dimensions have been provided. SimpsonHaugh and Partners will not be responsible for the accuracy of any dimension that is scaled or measured from this information.

North:



FLOOR PLAN KEY

- 1 Bed
- 2 Bed
- 2 Bed Duplex
- 3 Bed
- Lobby and FOH amenity
- Circulation and BOH
- Commercial space
- Access and services

1 0 1 2 3 4 5 10m

Rev	Date	Description
P2	April 2022	Planning Update
P1	03.04.2019	Planning Issue

LOGIK DEVELOPMENTS

Sir Robert McAlpine Capital Ventures

Project Title
ARUNDEL STREET
MANCHESTER
M15 4JZ

Drawing Title
Proposed Floor Plan
Level 00 Ground Floor
General Arrangement
April 2019 Planning Application

Status
Planning

Job No	Scale	Date
10090	A1 - 1:200	03/04/2019

Drawing No	Revision
10090-1903-A-G200-P-100	P2

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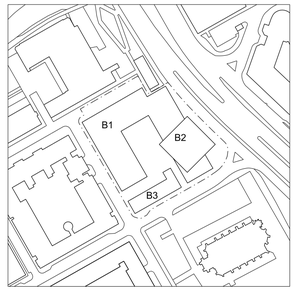


LEGEND

	FIRE APPLIANCE
	ASSEMBLY AREA
H	FIRE HYDRANT
BI	BREECHING INLET POINT
FF	FIRE LIFT LABEL
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NV	NATURAL VENTILATION
	HARDSTAND
MV	MECHANICAL VENT
	FIRE FIGHTING ACCESS POINTS
	FIRE PUMP ROOM
	FIRE TANK
Evac Lift	EVACUATION LIFT
	DRY RISER
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North:



FLOOR PLAN KEY

- 1 Bed
- 2 Bed
- 2 Bed Duplex
- 3 Bed
- Lobby and FOH amenity
- Circulation and BOH
- Commercial space
- Access and services

1 0 1 2 3 4 5 10m

Rev	Date	Description
P3	Aug 2024	Planning Update
P2	April 2022	Planning Update
P1	03.04.2019	Planning Issue

LOGIK DEVELOPMENTS

Sir Robert McALPINE Capital Ventures

Project Title
ARUNDEL STREET
MANCHESTER
M15 4JZ

Drawing Title
Proposed Floor Plan
Level 01
General Arrangement
April 2019 Planning Application

Status
Planning

Job No	Scale	Date
10090	A1 - 1:200	03/04/2019

Drawing No: 10090-1903-A-G200-P-101
Revision: P3

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Associate

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QUALIFICATIONS

- Sep 2004 - Sep 2008 PhD. Civil Engineering, University of Manchester "Tensile and shear behaviour of fin-plate connections to hollow and concrete-filled steel tubular columns at ambient and elevated temperatures"
- Sep 2000 - Jun 2004 MEng (Hons.), 1st Class, Aerospace Engineering (enhanced & extended), University of Manchester
- May 2017 – Legal Experience Training Advanced Professional Award in Expert Witness Evidence (LETAPAEWE), accredited by Pearson Learning at Level 7 (Masters) BTEC
- Chartered Engineer with the IFE as of January 2019

EMPLOYMENT HISTORY

Oct 2022 - Present
Maze Fire Consulting Ltd
Jul 2008 - Sept 2022:
Warringtonfire Consulting

MEMBERSHIPS/COMMITTEES

- Chartered Engineer, Institution of Fire Engineers
- Member, Institution of Fire Engineers

CAREER SUMMARY

Mark is a chartered fire consultant with significant expertise in team management and fire engineering. After completing his PhD in structural fire engineering, he joined Warringtonfire as a graduate and eventually rose to Principal, where he managed a team of consultants in the Manchester office. Along with senior colleagues, he was part of the management team that completed a buy-out of Warringtonfire Consulting in October 2022, and he now plays a key role at Associate level at Maze Fire Consulting.

Mark has a broad project portfolio across all sectors, successfully leading fire consultancy from Concept through to Construction stages. He is proficient with CFD and Vulcan specialist software. Qualified in expert witness work, Mark also routinely conducts 3rd Party reviews for national and local building control bodies.

PROFESSIONAL EXPERIENCE

Since joining Warringtonfire in July 2008, Mark has worked on numerous UK and international projects across Europe, the Middle East, Central America, the Far East, and Africa. This experience has given him a comprehensive understanding of fire engineering and its application to the design and refurbishment of buildings across various sectors of construction. He currently manages the Manchester consultancy office of Maze Fire Consulting and was instrumental in the management team that completed the buy-out of Warringtonfire Consulting.

Mark has developed fire safety strategies for a wide array of building types, assisting in obtaining statutory approvals for complex and innovative designs. He has carried out detailed code equivalency and fire engineered analyses to ensure designs comply with The Building Regulations and international standards like the NFPA suite. Mark also regularly conducts 3rd party and expert witness reviews for clients, including building control authorities.

He has specific expertise in full-frame finite element analysis, using this method on major projects to optimise the fire resistance of steel and concrete composite structures. Mark is skilled in using Computational Fluid Dynamics (CFD) software to analyse smoke flow in buildings and applies various analytical techniques, such as thermal radiation analysis to determine fire resistance requirements, smoke modelling to assess ventilation needs, and evacuation analysis.

Mark also co-authors academic research papers and maintains ties with the University of Manchester as an occasional guest lecturer, providing CPD talks to architects on diverse aspects of fire engineering. He has completed professional Expert Witness training as well.

RECENT PROJECTS

- 100 Bishopsgate: Full-frame structural fire engineering analysis on a 40-storey steel & composite skyscraper proposed for the City of London
- Queen Alia International Airport, Amman: Means of escape analysis & fire strategy for new terminal
- Tocumen Airport, Panama: Extensive and detailed CFD modeling of new airport terminal
- Crossrail On-Network: Full fire safety strategies for a number of existing & proposed above ground rail stations
- Doha Metro, Qatar: CFD analysis of stations and depots for new metro system including extensive client liaison concerning design of smoke extract systems
- VietinBank Hotel, Hanoi: CFD analysis of skyscraper tower with full height atrium
- 3 St Pancras Square: Full-frame structural fire engineering analysis and QDR lead on a 10-storey steel & composite skyscraper in London Borough of Camden
- Portland House: Fire strategy and full-frame structural fire engineering analysis and QDR lead on skyscraper redevelopment in London
- Geneva Airport: Design advice and detailed structural fire engineering concerning optimisation of fire protection to new terminal building
- Extensive expertise in 3rd party reviews including 30+ 3rd party CFD reviews for building control body NHBC Town Hall redevelopment (Heritage project)

PUBLICATIONS

- Jones, M.H. & Wang, Y.C. (2006). Shear behaviour of fin plates to tubular columns at ambient and elevated temperatures. Proc. 11th International Symposium on Tubular Structures, Tubular Structures XI, Packer & Willibald (eds.), Quebec City, Canada. 2006. pp 425-432
- Jones, M.H. & Wang Y.C. (2007). Experimental studies and numerical analysis of the shear behaviour of fin plates to tubular columns at ambient and elevated temperatures. Proc. 3rd International Conference on Steel and Composite Structures, Wang & Choi (eds.), Manchester, U.K. 2007. pp 557-564
- Jones, M.H. & Wang, Y.C. (2008), "Experimental studies and numerical analysis of the shear behaviour of fin-plates to tubular columns at ambient and elevated temperatures", Steel and Composite Structures, Vol. 8, No. 3, 2008
- Jones, M.H. & Wang, Y.C. (2010), "Tying behaviour of fin-plate connection to concrete-filled rectangular steel tubular column - Development of a simplified calculation method", Journal of Constructional Steel Research, Vol. 66, No. 1, Jan 2010
- Jones, M.H. & Wang, Y.C. (2011), "Shear behaviour of fin-plate connection to concrete-filled rectangular steel tubular column - Development of a simplified calculation method", Journal of Constructional Steel Research, Vol. 67, No. 3, Mar 2011
- Ding, J. & Jones, M.H.(2012) COST TU0904: Integrated Fire Engineering and Response, Case Study: 'Structural Fire Analysis – Blessed Trinity RC School, Burnley', co-author with Dr J. Ding, published in COST Action TU0904 ed. Wald F., Burgess I., Rein G., Kwasniewski L., Vila Real P., Horová K., Mar 2012

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