

Project No:	230373
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Issue No:	02

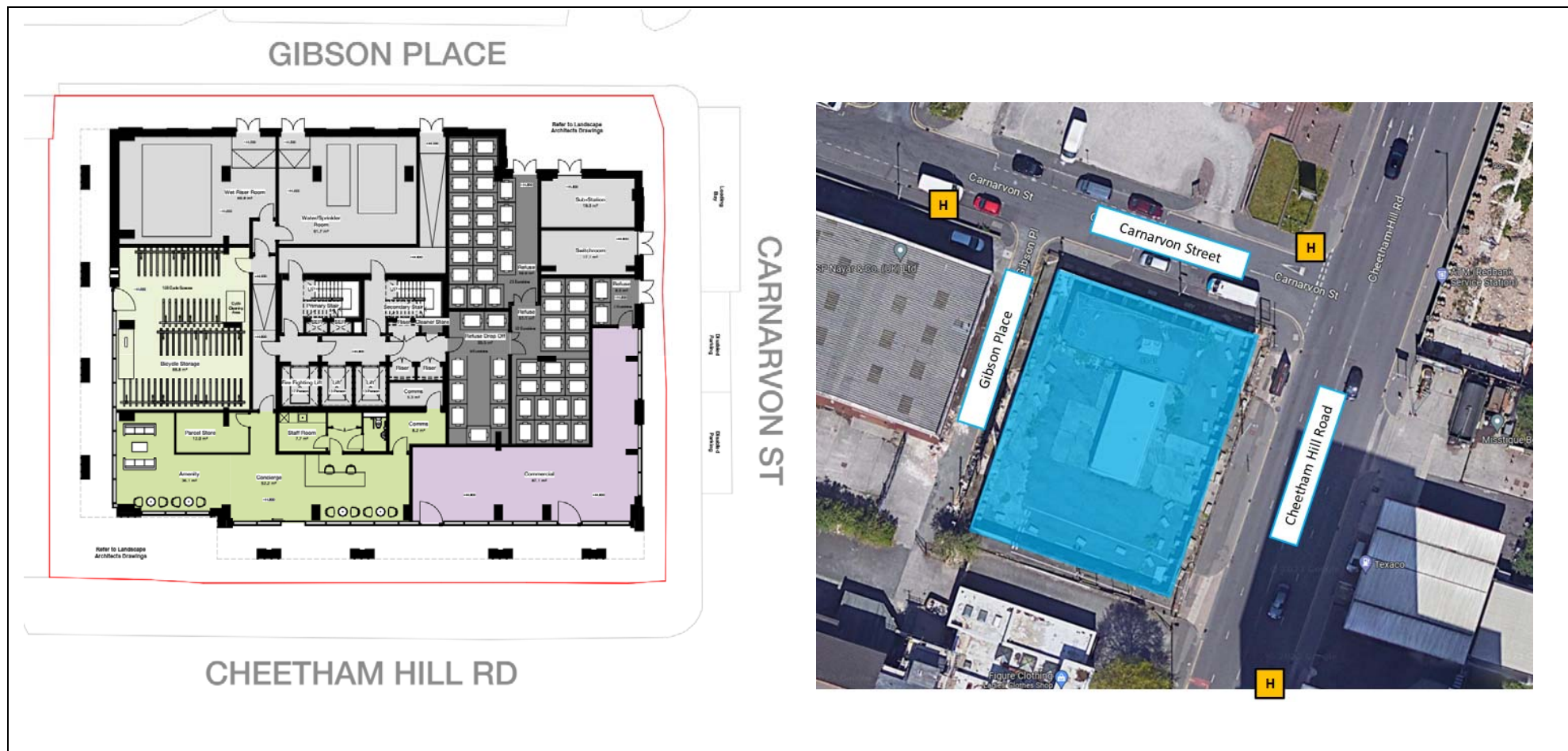
33-41 Cheetham Hill Road - PG1 Fire Statement Form

Note: this fire statement must be read in conjunction with MZ-230373-002-FSS-01-ISS03, including the assumptions and qualifications stated therein.

Application information	
1. Site address line 1	33-41 Cheetham Hill Road
Site address line 2	-
Site address line 3	-
Town / City	Manchester
County	Greater Manchester
Site postcode (optional)	M4 4FT
2. Description of proposed development including any change of use (as stated on the application form):	New-build residential construction of a 23-storey residential tower providing circa 230 apartments with private and public amenity areas at ground floor (commercial unit, refuse store, bicycle store) and level 17 (residential amenities). There are no basement levels. The proposed development site is bounded by Gibson Place, Carnarvon Street and Cheetham Hill Road. Height from ground level to uppermost occupied storey of ~69m. Associated alterations to hard and soft landscaping.
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 15 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	Initial consultation with an Approved Inspector (C3 Design Approvals) has been undertaken during RIBA Stage 2 of the design. This has included development and discussion of a fire engineering brief with reference to the qualitative design review (QDR) process as described in BS 7974 including consideration of the fire safety design given the building height in excess of 50m. The contents of the QDR fire engineering brief have been incorporated into the RIBA 2 fire strategy (ref. MZ-230373-002-FSS-01-ISS03). Email correspondence has been received from Jon Cumberlidge at C3 Design Approvals on 06/07/23 confirming they have reviewed the scheme with Greater Manchester Fire and Rescue Service and are supportive of the fire strategy. The email is copied below for reference: <i>I had a meeting with Manchester fire service last week with a good outcome and they are prepared to support the principles of the proposals with no meaningful comments. I am looking to formalise this with them. I'm in a similar position, obviously there is detail to be developed, but generally comfortable that we are progressing in a manner that would be acceptable to the BSR. I will be preparing my comments separately and issuing asap.</i>
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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 The two images copied below show the ground floor layout and surrounding roads, with a Google Maps site plan alongside to demonstrate the site layout:
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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 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 1 (scheme has only one block / tower)	23 Floors (GF and 22 upper floors), with a total height to parapet of 75m (and height of 68m to the top accessible floor). No basement.	Residential accommodation (including ancillary residential amenities) One separate commercial unit at Ground Floor	Ground: Residential amenities and ancillary (concierge / refuse store / bicycle store / plant rooms) Ground: A separated commercial unit 1 – 22: Residential apartments (residential amenities and roof terrace at Level 17)	BS9991	no balconies	Class A2-s1,d0 or better to meet Regulation 7. Roof terrace materials design to be to BS 8579 guidance as well as requirements in BS 9991 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 17 residential amenity areas / roof terrace (if fire detection in these locations): simultaneous For Ground floor ancillary / commercial unit: simultaneous	yes- residential sprinklers, full	none TBC – design team to confirm if accessible housing is provided and if so, is this type M4(2), M4(3), both or neither (as defined in PG1 guidance)

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 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 two means of escape stairs are being provided; one of which will be a full fire-fighting shaft with wet-riser due to the height. Both stairs will have protected lobbies with mechanical smoke ventilation to the lobbies.

The lobbies will function as evacuation lift lobbies and also serve evacuation lifts (one such lift per stair, for the fire-fighting shaft the fire-fighting lift will also be usable as an evacuation lift).

The mechanical smoke ventilation to each lobby is to be substantiated by computational analysis in order to demonstrate that the stairs are maintained free of smoke ingress and that smoke ingress into the lobbies 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)

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 which have been made since the last update of BS 9991 (in relation to external wall materials). Where relevant British standards have been updated since 2015 the latest version is to be used in design to rather than the version referenced in BS 9991 (2015). 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 in scope.

BS 9991 (2015) does not contain detailed guidance or requirements in relation to evacuation lift or kitchens in open-plan flat design. Therefore, best practice guidance on these points which has been documented in the 2021 draft BS 9991 update and anticipated to be present in the 2023 formal update to BS 9991 has been applied in the fire safety design.

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?

Access for the fire service to the building is provided along existing public highways and existing roads (Cheetham Hill Road, Carnarvon Street and Gibson Place). This allows compliance of distance not exceeding 18m from Fire Service vehicle parking position to the wet rising main inlets and wet main suction tank replenishment points for the building.

The building (of <900m² floor area per floor) is provided with a fire-fighting shaft with fire-fighting lift, fire-fighting lobby (with mechanical ventilation smoke extract) and dedicated Fire Service access corridor from Gibson Place elevation providing access into the fire-fighting shaft.

Hose coverage from the wet riser outlet on each floor is within the recommended distances in BS 9991 (max of 60m) with maximum hose distances to the furthest point within furthest flats of approx. 35m. There is also a second stair with similar enclosure and lobby protection (with similar mechanical smoke extract to the lobby), the second stair also includes an evacuation lift accessed off the same protected lobby as the stair (which is separate from the firefighting lobby and stair). Compliant perimeter access for a fire appliance vehicle is provided via the road access set out above.

Within the building at Ground floor level a staffed concierge office will provide facilities and functionality of a Fire Service control room, 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.

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 wet rising main inlets and wet main suction tank replenishment along Gibson Place. Gibson Place is accessed from the adjacent main road of Carnarvon Street, which itself is accessed from Cheetham Hill Road (the building is on the corner formed by Cheetham Hill Road and Carnarvon Street). It is not necessary for a vehicle to travel in excess of 20m into Gibson Place to achieve compliant access. Therefore, turning facilities are compliant. The main Fire Service entry point will be from Gibson Place into a 120-min fire-fighting access corridor to the fire-fighting shaft (the corridor distance is <18m in compliance with BS 9999 exemplar). Secondary Fire Service access into the building is available via the Concierge Office fronting on to Cheetham Hill Road. The separated Commercial Unit also fronts on to Cheetham Hill Road. This unit has no interaction internally with the rest of the building.

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

Water supplies to site will be provided by existing infrastructure (street hydrants).

Nature of water supply:
hydrant- public

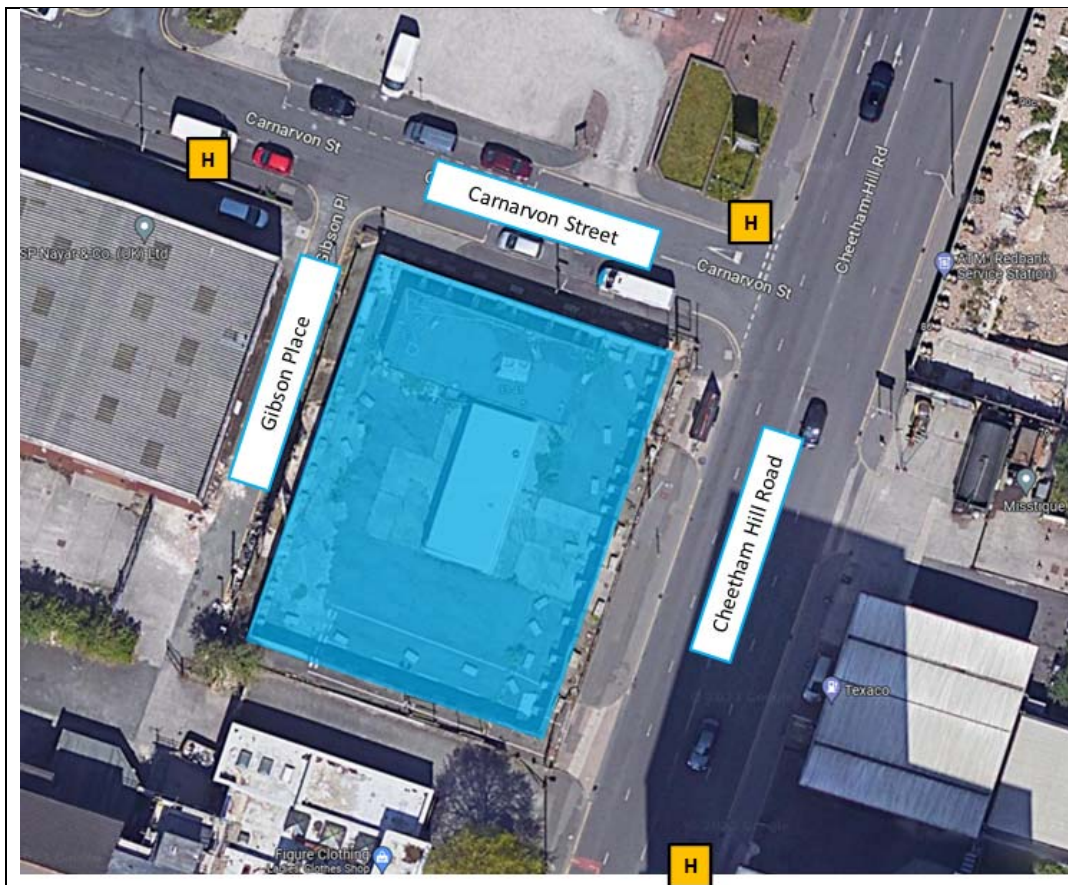
Does the proposed development rely on existing hydrants and if so, are they currently usable / operable?

The proposed development will rely on existing hydrant provision. Nearest locations indicated on plan below (indicative locations shown based upon visual review of street hydrants). Usability and operability is to be confirmed.

14. Fire service site plan

Fire service site plan is:
inserted in the form

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



Fire statement completed by

15. Signature	 Dr Mark Jones, CEng Associate for and on behalf of Maze Fire Consulting Limited Note: this fire statement must be read in conjunction with MZ-230373-002-FSS-01-ISS03, including the assumptions and qualifications stated therein
16. Date	24/11/2023

Quality Management

Version	Date	Revision History	
01	07/07/2023	Reason for issue:	1 st Issue
		Prepared by:	Mark Jones Associate
		Reviewed By	Ben Rogerson Associate
02	24/11/2023	Reason for issue:	2 nd Issue with updated reference to latest fire strategy
		Prepared by:	Mark Jones Associate 
		Reviewed By	Ben Rogerson 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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CV

CV is appended for Dr Mark Jones.

Mark Jones

Curriculum Vitae

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Personal Details:



Position:	Associate
Qualifications:	PhD MEng (Hons) CEng APAEWE MIFireE
Nationality:	British

Career Summary:

Mark is an experienced chartered fire consultant with particular team management and fire engineering expertise.

From completing his PhD in structural fire engineering Mark joined Warringtonfire as a graduate, progressing ultimately to Principal with responsibility for managing a team of consultants in the Manchester office. Together with senior colleagues he was part of the management team who completed a buy-out of Warringtonfire Consulting in October 2022 and is now a key member of Maze Fire Consulting at Associate level.

Mark has a wide range of project experience in all sectors, leading successful delivery of fire consultancy on projects from Concept through to Construction stages. CFD and Vulcan specialist software experience. He is qualified in expert witness work and experienced in carrying out 3rd Party reviews for national and local building control bodies.

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:

July '08 – September '22	Warringtonfire	Principal Consultant (from October 2015)
October '22 – Present	Maze Fire Consulting	Associate (from May 2023)

Professional Experience:

Since joining Warringtonfire in July 2008, Mark has worked on a number of UK and international projects (encompassing Europe, the Middle East, Central America, Far East and Africa) giving him a wide understanding of all aspects of fire engineering and its application to the design and refurbishment of buildings across all sectors of

construction. Currently he manages the Manchester consultancy office of Maze Fire Consulting and was part of the management team who completed a buy-out of Warringtonfire Consulting.

He has developed fire safety strategies for a wide range of building types to assist in gaining statutory approval for complex and innovative designs. Where appropriate, Mark has undertaken detailed code equivalency and fire engineered analyses to demonstrate that the design meets functional requirements of The Building Regulations and international standards such as the NFPA suite. Mark regularly carries out 3rd party and expert witness review work on behalf of clients including building control authorities,

Mark has particular experience in the field of full-frame finite element analysis and has worked on a number of major projects utilising this approach to optimise the fire resistance of steel and concrete composite structures. Mark is experienced in using Computational Fluid Dynamics (CFD) software to help analyse smoke flow through buildings. Mark is also experienced in the application of analytical techniques such as thermal radiation analysis to determine the fire resistance requirements, smoke modelling calculations to determine the ventilation requirements of buildings and evacuation analysis.

In addition to co-authoring a number of academic research papers, he maintains links with the University of Manchester as an occasional guest lecturer and also provides CPD talks to architects on various aspects of fire engineering. Mark has also undergone professional Expert Witness training

Recent or Significant Projects Include:

- 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 airport 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 optimization of fire protection to new terminal building
- Extensive expertise in 3rd party reviews including 30+ 3rd party CFD reviews for building control body NHBC

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

Professional Memberships / Committees:

- Chartered Engineer, Institution of Fire Engineers

Member, Institution of Fire Engineers