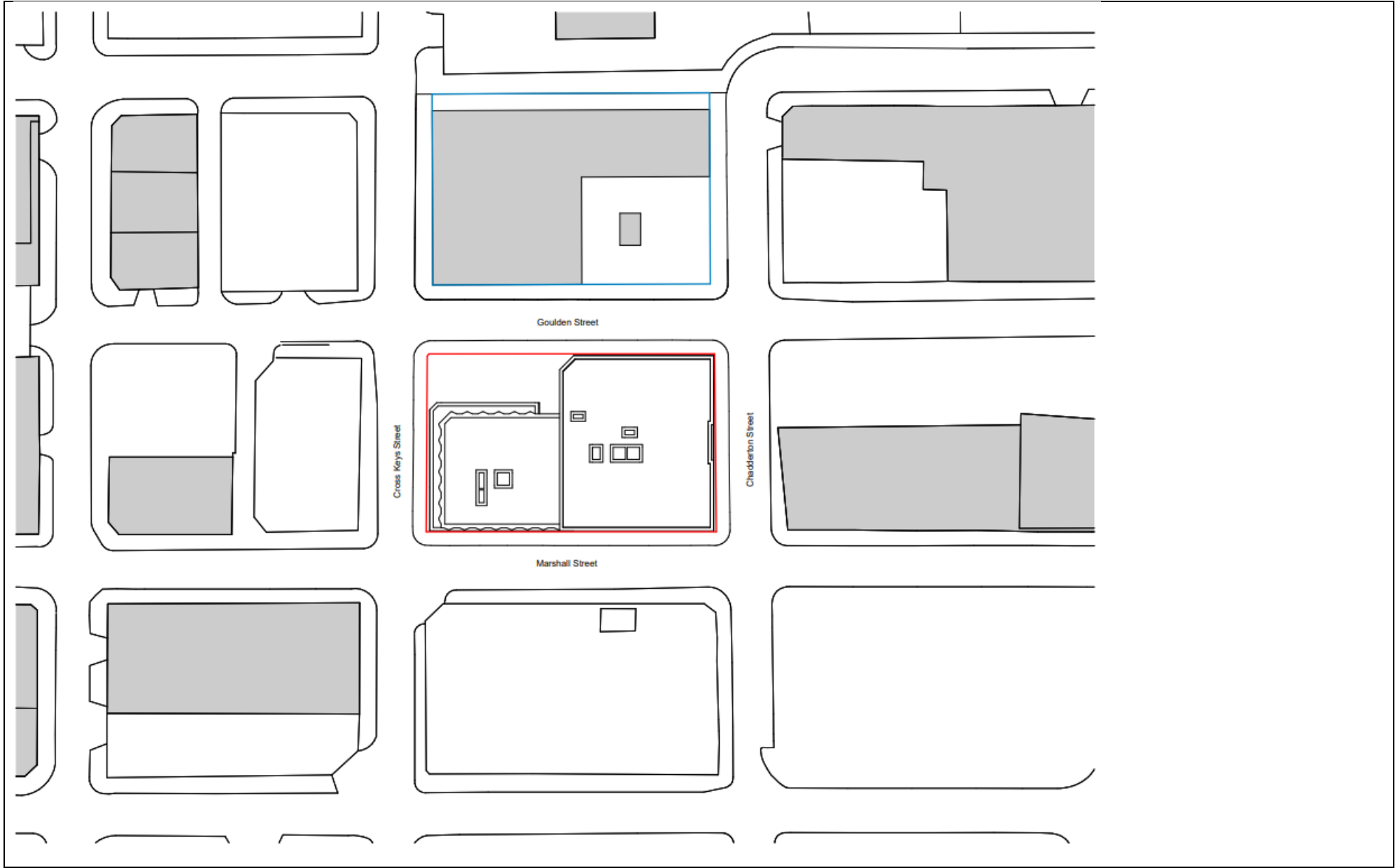


# Fire statement form

| Application information                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Site address line 1                                                                                                                         | Marshall Street, Chadderton Street, Goulden Street, Cross Keys Street                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Site address line 2                                                                                                                            | New Cross                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Site address line 3                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Town                                                                                                                                           | Manchester                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| County                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Site postcode (optional)                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. Description of proposed development including any change of use (as stated on the application form):                                        | <p><u>The Cross Keys development will be new build part eight-, part nine-storey residential building. It will feature one-, two- and three-bedroom units with mezzanine and duplex/townhouse units on the lower, upper ground, and first floors. From the second floor to the eighth floor, there will be open-plan flats with one or two bedrooms. The ground floor will include various ancillary areas such as a bin store, bike stores, water storage, generator room, plant room, substation room, and an entrance facility area. The terrace on the eighth floor will be designated for recreational activities.</u></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. Name of person completing the fire statement (as section 15.), relevant qualifications and experience.<br><br>Guide: no more than 200 words | <p>Prepared by: Annie Flores BSc (Hons) – Senior Fire Engineer, Hydrock<br/>           Annie has over three years' experience working in a fire safety consultancy role. Annie has a Bachelor (Honours) of Science degree in Mathematics and Statistics from Newcastle University, and is currently undertaking a Master of Science degree in Fire Safety Engineering at the University of Central Lancashire. Annie has experience developing and advising on the fire safety design across various sectors, including residential, commercial and educational, and has worked on a number of residential refurbishment projects across the North of England.</p> <p>Checked by: Yujie Wang MSc AIFireE – Associate Fire Engineer, Hydrock<br/>           Yujie is an Associate member (AIFireE) of the Institution of Fire Engineers (IFE) and has multiple years' experience of working in a fire safety consultancy role. Yujie has a Master's degree in Structural Engineering. Yujie has experience developing and advising on the fire safety design across various sectors, including residential, commercial, educational, and healthcare.</p> <p>Approved by: Mostafa Jafarian PhD,MSc,DIC,BSc, CEng, MIFireE _Technical Director</p> <p>Mostafa is a chartered fire engineer (CEng, MIFireE) member of the Institution of Fire Engineers (IFE) and many years of experience working as a consultant in the field of fire safety. Mostafa has a PhD in structural fire engineering. He</p> |

|                                                                                                                                                                                                               |                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                               | has written and contributed numerous articles to different books and papers covering different aspect of structural and fire engineering.                                                                     |
| <p><b>4.</b> 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.</p> <p>Guide: no more than 200 words</p> | Hydrock have issued an initial set of high-level fire safety comments (issued 29.11.2023), and a RIBA Stage 2 fire safety strategy report (document reference 31318-HYD-XX-XX-RP-FE-0001, issued 23.02.2024). |
| <p><b>5. Site layout plan with block numbering as per building schedule referred to in 6.</b><br/>(consistent with other plans drawings and information submitted in connection with the application)</p>     |                                                                                                                                                                                                               |
| <p>Site layout plan is:<br/>inserted in the form</p>                                                                                                                                                          |                                                                                                                                                                                                               |



| 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)<br>block no. as<br>per site<br>layout plan<br>above                                                  | b)<br>• block<br>height (m)<br>• number of<br>storeys<br>excluding<br>those below<br>ground level<br>• number of<br>storeys<br>including<br>those below<br>ground level | c)<br>proposed<br>use (one per<br>line)          | d)<br>location of<br>use within<br>block by<br>storey                                                                                                                                       | e)<br>standards<br>relating to<br>fire safety/<br>approach<br>applied | f)<br>balconies              | g)<br>external wall<br>systems | h)<br>approach to<br>evacuation | i)<br>automatic<br>suppression             | j)<br>accessible<br>housing<br>provided |
| 1 of 1                                                                                                  | Building<br>height:<br>26.27m<br><br>No. storeys<br>above<br>ground: nine<br><br>No. storeys<br>below<br>ground: zero                                                   | residential<br>flats,<br>maisonettes,<br>studios | Level 00:<br>entrance/con<br>cierge, bin<br>store,<br>substation<br>room,<br>generator<br>room, water<br>tank room,<br>plant room,<br>bike stores,<br>lower level<br>of 3x gallery<br>flats | BS9991                                                                | class A2-s1,<br>d0 or better | class A2-s1,<br>d0 or better   | stay put                        | yes-<br>residential<br>sprinklers,<br>full | none                                    |

|  |  |  |                                                                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |
|--|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|
|  |  |  | <p>Upper ground level:<br/>upper level of 3x gallery flats, lower level of 7x duplex apartments</p> <p>Level 01:<br/>upper level of 7x duplex apartments, 7x single-level open-plan apartments</p> <p>Level 02-05:<br/>13x single-level open-plan apartments</p> <p>Level 06:<br/>12x single-level open-plan apartments</p> <p>Level 07:<br/>11x single-level open-plan apartments</p> |  |  |  |  |  |  |
|--|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|

|  |  |  |                                                                                                       |  |  |  |  |  |  |
|--|--|--|-------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|
|  |  |  | Level 08: 7x single-level open-plan apartments, residents' amenity space, residents' communal terrace |  |  |  |  |  |  |
|  |  |  | Roof level: plant                                                                                     |  |  |  |  |  |  |

## 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

General:

- The building height is approximately 26.27m, i.e. greater than 18m but below 30m;
- The floor area exceeds 900m<sup>2</sup> at all floors excluding the top floor.

Residential units:

- There are a range of apartment types:
  - 1-bed open-plan;
  - 2-bed open-plan;
  - 2-bed with entrance hall;
  - Flats with galleries;
  - Duplex apartments.

Common areas:

- The building is afforded with two escape stairs; however, only one stair continues up to eighth floor.

Non-residential areas:

- The final layouts of the plant rooms are undetermined. ]

## 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

General:

- Due to the building height, the following is to be ensured:
  - The building is to be provided with a Category 4 sprinkler system in accordance with BS 9251:2021. Where the non-residential areas requiring sprinkler protection exceed the permitted area limits within Table 4 of BS 9251:2021, such areas will require a commercial sprinkler system in accordance with BS EN 12845:2019;
  - All new primary materials of the external wall are to achieve reaction to fire classification A2-s1,d0 or better;
  - The building is to be provided with two firefighting shafts;
  - Each protected stair is to be provided with ventilation via an automatic opening vent (AOV) located at the head of the stair, with free area no less than 1m<sup>2</sup>;
  - All common corridors providing direct access into the stairs (and which serve as firefighting lobbies) are to be ventilated via natural or mechanical smoke ventilation.
- Two firefighting shafts are to be provided at ground-seventh floors; however, at eighth floor, there is to be only one firefighting shaft. This is considered reasonable, subject to agreement with the approving authorities, on the basis that the floor area on eighth floor is below 900m<sup>2</sup> (c.881m<sup>2</sup>), and the hose-laying distance from the single firefighting shaft is less than 60m to the furthest point on the floor plate.

Residential units:

- It is recommended that the cooking facilities are located remote from the entrance to open-plan flats, and it is also recommended that a 1.8m radius is allowed for between the cooking facilities and an escape route from the flat;
- It is proposed that Category LD1 detection and alarm is provided to all flats, such that this, in combination with the provision of sprinklers, can allow for travel distances within the flats to be up to 20m, and no protected entrance halls be required;
- It is proposed that the gallery flats are designed to be in accordance with Section 7.1 of BS 9991:2015;
- The duplex apartments are to be provided with fire-sterile protected stairs.

Common areas:

- Ventilation is to be provided to the common corridors via a smoke ventilation system (natural or mechanical). If mechanical smoke ventilation is to be provided, computational fluid dynamics (CFD) analysis is to be conducted to demonstrate that the performance of the ventilation system is sufficient to maintain tenable conditions within the common corridor throughout means of escape phase and firefighting phase;
- At the eighth floor, there is only one stair serving the floor; therefore, in the unventilated portions of common corridor, the travel distance in a single direction would typically be limited to 7.5m. This travel distance is adhered to for the majority of apartments at this floor level, when measured to the Stair 1 lobby door; however, there is one apartment from which the travel distance exceeds 7.5m (approx. 9.35m). Notwithstanding, the layout of the stair core allows for occupants to access the stair lobby from the North or South, and it is proposed to provide a corridor subdivision to separate the two access points to the stair; therefore, the apartment in question is able to travel in either direction to reach the stair, and thus, it could be considered that there are alternative directions of escape (and subsequently the travel distance limit could be increased to 30m). This is subject to agreement with the approving authorities.

Non-residential areas:

- It is to be ensured that single travel within the plant rooms is limited to 9m, and travel where multiple directions of escape are available is limited to 18m. The minimum period of fire resistance to enclose the plant rooms is to be confirmed upon receipt of the finalised plant room layouts (including equipment to be located within each plant room).

#### **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

Requirement B4 of Schedule 1 to the Building Regulations 2010 (as amended) requires that "...the external walls of the building shall adequately resist the spread of fire over the walls and from one building to another, having regard to height, use and location of the building". As a minimum, the design/construction of the external walls should comply with the functional requirements of B4. Additionally, the requirements of Regulation 7 will apply to this building; therefore, the external walls should be constructed with materials of A2-s1,d0 or better. |

#### **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

The building exceeds 18m in height, and at most floor levels exceeds 900m<sup>2</sup> floor area. Therefore, two firefighting shafts are to be provided. One is to be accessed from the site car park, off Goulden Street, and the other firefighting shaft is to be accessed off Marshall Street.

Both firefighting shafts are to be provided with a dry rising fire main. It is to be ensured that the dry rising fire main is installed, maintained and commissioned in accordance with BS 9990:2015. Vehicle access is required to within 18m of the dry riser inlet position, and the inlet should be clearly visible from the parking location.

Hydrock are not aware of any vehicle tracking carried out to date.

Based on Google Maps, it is considered that fire service vehicle access is to be gained via Goulden Street and Marshall Street to access the firefighting shafts, or via Chadderton Street to access the plant rooms. Notwithstanding, the adequacy of the aforementioned streets should be confirmed. |

### 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

No vehicle tracking has been provided to Hydrock to date; however, the below guidance has been extracted and provided for reference from Approved Document B – Volume 1:2022, in the absence of guidance in BS 9991:2015. The below should be confirmed on site as being achieved whilst any temporary works are ongoing.

Pump appliance access route specification:

|                                       |             |
|---------------------------------------|-------------|
| Minimum width between kerbs:          | 3.7m        |
| Minimum width between gateways:       | 3.1m        |
| Minimum turning circle between kerbs: | 16.8m       |
| Minimum turning circle between walls: | 19.2m       |
| Minimum clearance height:             | 3.7m        |
| Minimum carrying capacity:            | 12.5 tonnes |

Notwithstanding, it is considered that vehicle tracking should be conducted, in order to assess whether pump appliance access is appropriate.

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

no

No vehicle tracking has been provided to Hydrock to date. It should also be noted that fire service access to the development must be maintained during the construction phase.

### 12. Siting of fire appliances

Guide: no more than 200 words

It is assumed that the fire service will have access via the car park off Goulden Street, and via Marshall Street, for the firefighting shafts. It is assumed that the vehicle access to the ground-floor plant rooms will be via Chadderton Street.

Vehicle access is required to within 18m of the dry riser inlet position, and the inlet should be clearly visible from the parking location.

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

Guide: no more than 200 words

It is recommended that a survey is undertaken to confirm the presence, location, and suitability of nearby hydrants, in order to determine whether additional hydrants will be required. Hydrants should be within 90m of the dry riser inlets. Hydrants should be in accordance with BS 9990:2015.

Nature of water supply:

hydrant- public (assumed – survey should be undertaken to confirm)

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:

Choose an item.

No fire service site plan has been provided to Hydrock.

### Fire statement completed by

#### 15. Signature

Prepared by: Annie Flores BSc (Hons) – Senior Fire Engineer, Hydrock



Checked by: Yujie Wang MSc AIFireE – Associate Fire Engineer, Hydrock



Approved by: Mostafa Jafarian PhD, MSc, DIC, BSc, CEng, MIFireE \_Technical Director



|          |            |
|----------|------------|
| 16. Date | 22/05/2024 |
|----------|------------|