

Design Note.

To: HSE

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From: Shahista Butt, Fire Engineer

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Project: Phoenix Ironworks

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Phoenix Ironworks – Response to HSE Comments.

Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
00	26/07/23	Phoenix Ironworks – Response to HSE Comments	ShB	IH	SB

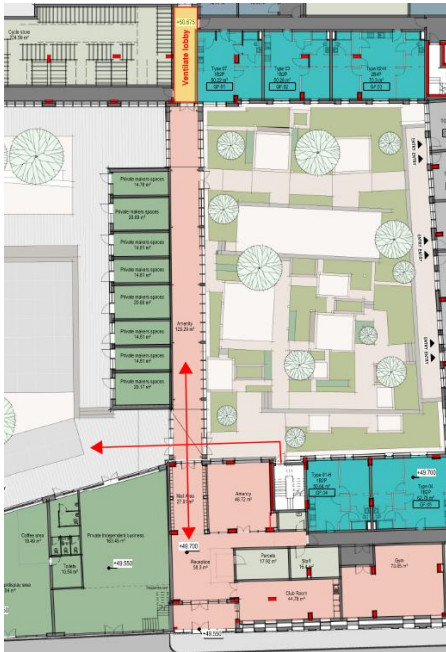
1. Introduction.

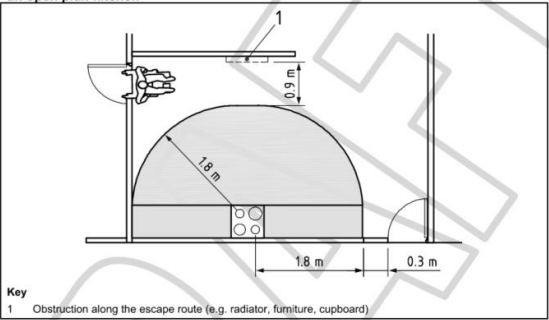
The purpose of this design note is to provide response to the HSE comments on the Gateway One Planning statement for the Phoenix Ironworks development. The documents referenced within this Note have been submitted as part of planning application:

- Gateway One statement: REP-1922359-5A-ShB-2023 06 15-Gateway one-Rev01
- Fire Strategy Report: REP-1922359-5A-ShB-20230222-Fire Strategy-Rev01

2. Response to Comments.

HSE Comment	HL Response
1.6 It is noted that staircase 4 discharges into an enclosed garden, from where the means of escape for people evacuating would require re-entry into the building via an amenity corridor giving two directions of travel. This would be either through an adjacent door into an enclosed courtyard where total safety can be achieved by way of an external gate to Radium Road or, alternatively,	The amenity corridor will only serve as a walkway between the two wings of the building and will be separated from ancillary accommodation (i.e. loading bay) via a mechanically ventilated lobby. As the apartments in the building follow a 'Stay in Place' evacuation policy, only the few occupants within the apartment of fire origin will be evacuation via this route, which can comfortably be accommodated by the amenity

from the amenity corridor into the post/reception area where a final exit is located giving access to Jersey Street.	corridor, from where multiple directions of escape is possible.
1.7. Section 7 of the fire statement states the following: "Stair 4, whilst discharging to the outside at ground level, does not provide a direct route to evacuate the building premise. Occupants escaping from Stair 4 are required to exit the building into and internal courtyard and then escape via the walkway connecting the two wings of the building. However, once inside the walkway, the occupants are provided with two directions of escape, one which discharges directly to the outside, with clear access to the adjacent public road".	 Figure 1: Escape route from Stair 4 at ground floor. It is noted that Stair 4 is the closest staircase to only six apartments on four of the upper floors, and furthermore, all apartments in the south wing have access to an alternative stair within the travel distance limits (60m - multiple direct travel distance). The most remote areas of all apartments are also accessible within the required hose laying distance (60m) from the firefighting shaft (Stair 3). Based on all elements noted above, the arrangement is considered to be acceptable. This has been discussed and provisionally agreed with Manchester Building Control in a meeting on 6th July 2023.
2.1 Section 7 of the fire statement states the following: "The building contains some open-plan apartments with dimensions less than 12m x 16m. These apartments meet the other requirements of BS 9991 but have dimensions greater than 8m x 4m and open kitchens. It is proposed that this arrangement is reasonable on the condition that a minimum distance of 1.8m is provided between the hob and escape route. All apartments have been reviewed to confirm this is achieved and the	Whilst this arrangement is currently not in line with the current version of BS 9991 (2015), the proposed arrangement would comply with the principles contained within the Draft BS 9991 document, which makes reference to a 1.8m distance from the edge of a cooking apparatus to the escape route, where the escape route must be no less than 0.9m wide.

methodology is detailed within the Fire strategy report for Building Control submission”.	Figure 1 – Minimum separation distances of cooking facilities from escape routes in an open plan kitchen  Figure 2: Figure 1 from Draft BS 9991.
2.2. Fire safety standards state that: “the kitchen should be enclosed in open-plan flats having an area exceeding 8m × 4m. Cooking appliances in open-plan flats having an area smaller than 8m × 4m should not be adjacent to the entrance of the flat.” Cooking facilities should be located at the most remote part of the flat to protect the means of escape.	Whilst it is noted that the proposed guidance noted is in draft form, it is our understanding from the draft document that the BS 9991 committee find this arrangement to be acceptable. The 1.8m distance from the hob is also supported by research carried out by Hoare Lea, which is referenced within Appendix A of the fire strategy report (REP-1922359-5A-ShB-20230222-Fire Strategy-Rev01). Therefore, on the condition that sufficient distances are provided between the edge of a cooking appliance and escape route, the apartment layouts with dimensions more than 8m x 4m, but less than 12m x 16m are considered to have suitable internal escape provisions. This has been discussed and provisionally agreed with Manchester Building Control in a meeting on 6th July 2023.
2.3. Design changes in this instance, comprising internal alterations only, are unlikely to affect land use planning and will be subject to later regulatory consideration.	
2.4. It is understood that pigmented standing seam zinc is proposed to sections of the external walls meeting classification A2-s1, d0 or better, as stated in the Design and Access Statement.	The design team will provide these at the relevant stages. All external wall systems are to be designed in accordance with the relevant guidance.
2.5. It should be noted that amended Building Regulations now state; “Building work shall be carried out so that relevant metal composite material does not become part of an external wall, or specified attachment, of any building.” Confirmation should be provided about whether the proposed external wall systems include the prohibited relevant metal composite materials. This will be	

subject to consideration at later regulatory stages.	
2.6. Drawings show a single staircase (staircase 2) from the 10th to 9th storey connected by way of lobbies to the ancillary accommodation on the 1st storey. Such accommodation includes the refuse stores, LV room and undercroft car park.	Whilst the single stair (staircase 2) is provided with a link to ancillary accommodation, there is no direct connection to the loading bay, and the stair is also provided with a direct discharge route to the outside. In addition to the ventilated lobby provided between the stair and the residential common corridor (with ventilation which will exceed the minimum 0.4m² ventilation requirements for ancillary accommodation, by virtue of a connection to the residential smoke shaft serving the upper residential levels), an additional lobby will also be provided between the corridor and the loading bay. The additional protected lobby will be provided with mechanically powered smoke ventilation system conforming to BS 7346-7, achieving 10 air changes per hour. As an enhancement to the design, the loading bay will also be separated from the rest of the building via 90-minute fire resistant compartmentation, thus creating a separate compartment from the residential areas.
2.7. Section 7 of the fire statement states the following: "Due to the step back of the building, the Ninth floor is provided with means of escape via Stair 2 only. The travel distances at Ninth floor are within the limits of BS 9991. Whilst this stair is provided with a direct discharge route to the outside, it is also provided with a connection to a lobby which serves some ancillary accommodation. However, this is considered acceptable on the basis that the lobby will be provided with ventilation which will exceed the minimum 0.4m² ventilation requirements for ancillary accommodation, by virtue of a connection to the residential smoke shaft serving the upper residential levels".	 Figure 3: Stair 2 connection to ancillary accommodation. Based on all elements noted above, the arrangement is considered to be acceptable. This has been discussed and provisionally agreed with Manchester Building Control in a meeting on 6th July 2023.
2.8. The adopted fire safety design standard, BS9991, states: "Where a common stair forms part of the only escape route from a flat...it should not also serve any covered car park, boiler room, fuel storage space or other ancillary accommodation of similar fire risk."	
2.9. Therefore, the connection of the single staircase with ancillary accommodation by way of lobbies is not acceptable. Design changes necessary to provide imperforate separation to the ground floor escape corridor between ancillary and residential accommodation from staircase 2 is unlikely to affect land use planning and will be subject to later regulatory consideration. In addition, access to the LV room would remain unchanged with entry via the refuse store.	



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