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Design and Access Statement

Design Justification Statement for the Installation of Fire Ceilings in the Basement of Victoria Mill

Design Intent

Around the base of the mill chimney and underneath the lifts in the basement there are void spaces. At the beginning of this project, it was unclear whether these spaces were in the client's demise. It has been determined that they are within the client's demise and therefore it is our responsibility to provide fire protection between these basement floor spaces and the ground floor above. The building regulation requirement is to provide 90 minutes fire protection between basement and ground floor.

In the brick arch areas of the building the Building Research Establishment (BRE) have confirmed that the historic brick arches with the addition of intumescent paint to the supporting cast iron and steelwork will provide 90 minutes fire protection. In these void areas there are no brick arches. The existing floor structure consists of a mixture of historic concrete, modern composite metal deck, modern beam and block and modern timber joisted floors with some supporting steel beams. The fire resistance of these constructions cannot be verified. The solution therefore is to install a fire rated ceiling and fire protect any supporting steelwork.

In the spaces highlighted in red on the proposed basement plan fire ceiling extent plan, submitted as part of this application, fire rated ceilings will be installed throughout which will achieve a minimum of 90 minutes fire protection. The masonry walls will be repaired, in accordance with the repair strategy via the discharge of condition 8 of 136174/LO/223, where necessary to achieve 90 minutes fire protection. The void further to the south on the plan extends beyond the extent of the building at ground floor and falls underneath the external part of the fire escape route from the main entrance. This void will be sealed off, no ceiling will be installed here as it is not underneath the ground floor.

The central of the void areas that this statement is concerned with (highlighted in with the dashed green line on the drawing at the end of this document) is underneath the firefighting lift shaft and lobby. The perimeter walls to this area need to achieve 120 minutes fire protection (this will involve some repair to the existing masonry walls). Within this space a fire ceiling is also required. This ceiling may only be required to achieve 60 minutes protection but for ease on site the same specification of fire rated ceiling will be installed throughout which will achieve a minimum of 90 minutes fire protection.

The level of the proposed ceiling will be set out to be tight up against the underside of the lowest steel beam to provide a level flat ceiling with the minimum void.

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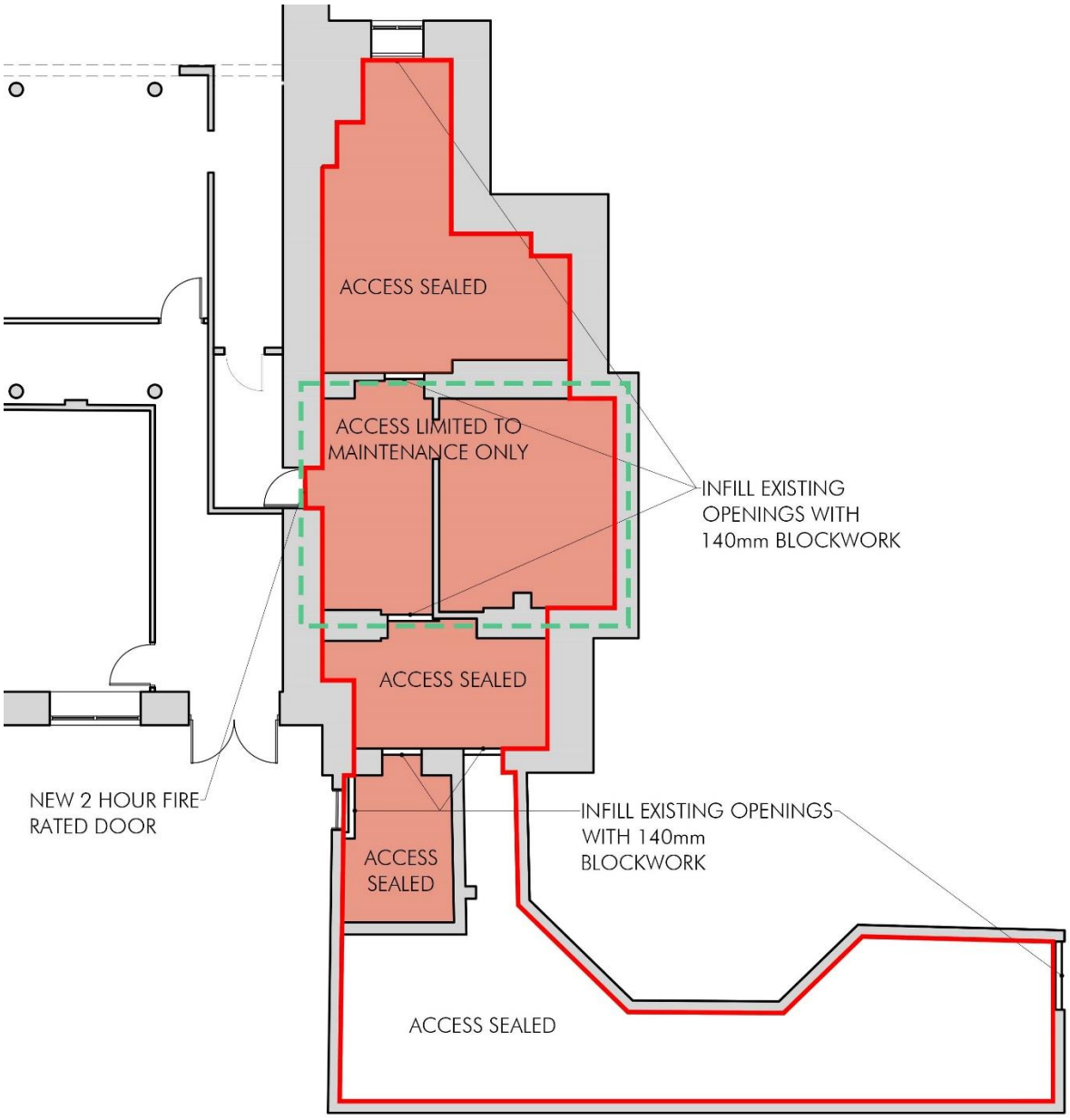
Access

All external and internal doorways and windows into these spaces will be infilled using 140mm blockwork to create fire sterile voids. The only exception to this is the central void underneath the lifts which will be fitted with a 2-hour fire rated door to allow maintenance access to the mains water stopcock. Access to this area will strictly be for access to the stopcock only and this will be highlighted in the building management strategy.

Summary

The completion of the construction work above will conclude the fire protection measures required between the ground floor and basement at Victoria Mill.

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Extract from the Proposed Basement Fire Ceiling Extent Drawing AP012