



22nd October 2024

Brunswick Mill, Manchester - Heritage Methodology: Condition 7 – Repair works to interior and exterior masonry and stonework

This note seeks discharge of Condition 7 of the consent (Listed Building Consent reference 130395/LO/2021) regarding the repair works to the interior and exterior masonry and stonework at the Grade II listed Brunswick Mill, Manchester. Condition 7 stipulates:

7) Prior to the commencement of repair works to the interior and exterior masonry and stonework including insertion of terracotta vents, a detailed method statement and specification (including material specification) for the removal, alteration, repair, repointing, cleaning and replacement works shall be submitted for approval in writing by the City Council, as Local Planning Authority.

The approved details and method statement shall be implemented as part of the development and completed prior to the first occupation of the development.

Best endeavours shall be made to use salvage brick work and stonework and other materials wherever possible in the works associated with the development. Should it not be possible to use salvage material in the restoration then notification shall be made to the City Council, as Local Planning Authority, prior to the starting of the works.

Suitable materials shall then be agreed with the City Council, as Local Authority, and used where necessary.

Heritage Architecture Ltd have provided advice and reviewed the method statement provided by Henley Stone Remedials to ensure that good conservation practice is being followed.

The following heritage methodology applies to the following works: **Cleaning of interior and exterior brick and stonework, and repointing.**

Cleaning of interior and exterior brick and stonework

As per the consented scheme, the interior and exterior brickwork and stonework will undergo cleaning. Initially a DOFF cleaning system was trialled on various floor levels within the main mill building, however, due to the many layers of whitewash, emulsion and gloss paint within the mill interiors, the DOFF system was only able to remove partial top layers of paint in some trial locations, leaving some paint layers and paint residue of various colours remaining on the brickwork.

A TORC system of fine glass media and steam was then trialled, however, again this system resulted in areas of paint remaining on the brick surface. Subsequently, a low-pressure shotblasting machine fitted with fine glass media was trialled, with the operative standing 1.5M away from the brick surface.

These trials successfully removed almost all paint layers from the internal brickwork and did not damage the face of the brick nor eat into the historic lime mortar, whilst allowing small particles of paint to remain within a number of gaps within the face of the brickwork.



The resulting finish following the successful low-pressure shotblasting machine fitted with fine glass media process, which removed paint layers but retained small pockets of paint in undulations within the brick. This process did not damage the face of the brick nor the original lime mortar.

Paint removal system methodology

The process will start with the lowest pressure setting and gradually increase, if necessary, while monitoring the surface condition continuously. The operative will stand 1.5 meters away from the wall surface and move the nozzle in a consistent, sweeping motion to avoid over-blasting any one area. Paint removal will start at the top of the area to be cleaned working downwards. Stubborn areas may need to be agitated with the nozzle and subsequently at a slightly closer distance.

Areas of cleaning will be frequently inspected to ensure no damage is occurring and to allow for the technique to be reviewed and adjusted as required.

Paint removal exceptions

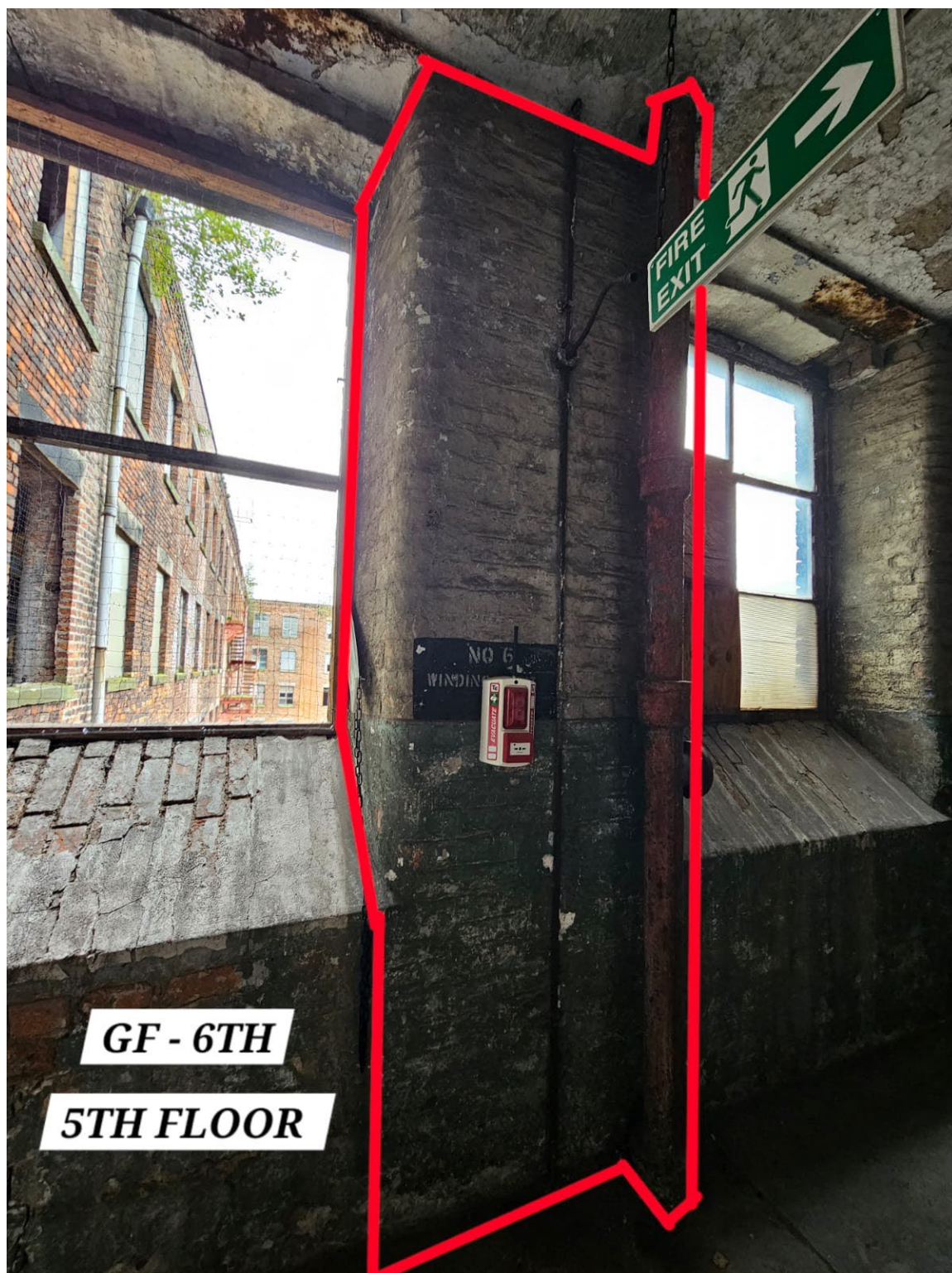
As part of the consented paint removal scheme to the interior of the mill there are certain areas that are required to retain their painted brick surfaces, and not be damaged by the paint removal system.

These areas comprise the four remaining early-20th century hand painted department signs to the east and west staircases (at 5th and 6th floor levels to both staircases), which retain the early-20th century two-tone limewash painted wall decoration with painted red pencil dado line. These isolated areas of historic paintwork will be gently brushed down with a very soft brush to remove any dust and loose debris and sealed with a clear, matt sealant to halt any further paint loss.

In order to create a crisp line between the retained paintwork and the grit-blasted brickwork, timber boards should be secured to the walls/sills to create a straight and crisp line that will protect the paintwork from the grit-blasting procedure. It is likely this will largely concentrate on the junction between window reveal and window sill, so boarding can be wedged in place within the width of the reveal to avoid the need for fixings into the brickwork.

The two final areas of retention concentrate on areas of original lime plaster to the domed ceilings of the east and west staircases (at 6th floor level), which will be repaired/replastered as part of the consented scheme.

The following 6 photographs illustrate the extent of paint retention to each landing to the east and west staircases and the extent of domed ceiling to both staircases to remain.



East staircase - 5th floor. Early 20th century painted floor level sign for "No 7 Spinning Dept". The red outline denotes the extent of paint retention, which includes the pier from floor to ceiling, both returning reveals to either side, and the late-Victorian/Edwardian vertical red fire sprinkler pipe.



West staircase - 5th floor. Early 20th century painted floor level sign for “No 6 Winding Dept”. The red outline denotes the extent of paint retention, which includes the pier from floor to ceiling and returning reveal to the window side.



East staircase - 6th floor. Early 20th century painted floor level sign for “No 7 Spinning Dept”. The red outline denotes the extent of paint retention, which includes the pier from floor to ceiling, both returning reveals to either side, and the late-Victorian/Edwardian vertical red fire sprinkler pipe.



West staircase - 6th floor. Early 20th century painted floor level sign for "No 7 Spinning Dept". The red outline denotes the extent of paint retention, which includes the pier from floor to ceiling, both returning reveals to either side, and the late-Victorian/Edwardian vertical red fire sprinkler pipe.



The landing of the east staircase at 6th floor level, showing the original plastered domed ceiling of the staircase, which will be retained as part of the paint removal process.



The landing of the west staircase at 6th floor level, showing the remains of the original plastered domed ceiling of the staircase, which will be retained as part of the paint removal process.

Repointing

As part of the consented scheme, the exterior brick walls of the Grade II listed Brunswick Mill will be repointed using traditional lime mortar to an agreed mix.

Heritage Construction Projects propose to use a mix of hand held tools and a 2mm diamond blade grinder. Due to a high level of the building's facades having been subsequently repointed during the 20th century with cementitious mortar, which is much harder than the softer brick, it is considered that using hand held tools for raking out will not be possible, and may create additional harm to the brickwork.

Consequently, it is considered that it will create less brick damage to run a cut through the centre of the mortar using a 2mm diamond blade was used to cut through the centre of the mortar and then use hand tools to remove the modern mortar.

The raking out will be carried out to a depth of not more than twice the width of the joint and any loose matter or materials will be brushed out of the joint leaving the area clean and washed out using a water spray to allow for repointing.

Upon initial visual investigations undertaken by Heritage Construction Projects it was found when the mortar beds were raked back that the original mortar was a light-coloured lime mortar, which is considered to be Nosterfield and Leighton Buzzard aggregates and sharp sand mixed with a 3.5 non hydraulic lime.

Three sample repointing panels have been prepared on the Bradford Road elevation, which have trialled three different lime mortar mixes with the aim of visually matching the colour and aggregate mix found in the original mortar. The three mixes comprise 3 parts Nosterfield 1 part Sherbourne and 1 part NHL 3.5 (photo 1 below), 3 parts Sherbourne 1 part Nosterfield 1 part NHL 3.5 (photo 2 below), and parts 2 Sherbourne 2 parts Leighton Buzzard 1 part NHL 3.5 (photo 4 below).

Out of the three samples, it is considered that the sample shown in photo 2, containing 3 parts Sherbourne 1 part Nosterfield 1 part NHL 3.5, provides the closest visual match to the original 1840s mortar mix in terms of colour and aggregate.

When applying the chosen lime mortar mix, the areas of brickwork will be dampened down with mortar being firmly pushed into the joint as deeply as possible and left to start curing. The mortar will then be tamped back with a stiff brush and lightly brushed off to allow the aggregate in the mortar to become exposed.



Photo 1. 3 parts Nosterfield 1 part Sherbourne and 1 part NHL 3.5



Photo 2. 3 parts Sherbourne 1 part Nosterfield 1 part NHL 3.5. (preferred option)



Photo 3 - Raked out cutting through the centre of the mortar with a thin blade and then taken out the mortar using handheld tools to the required depth and brushed out leaving the area clean.

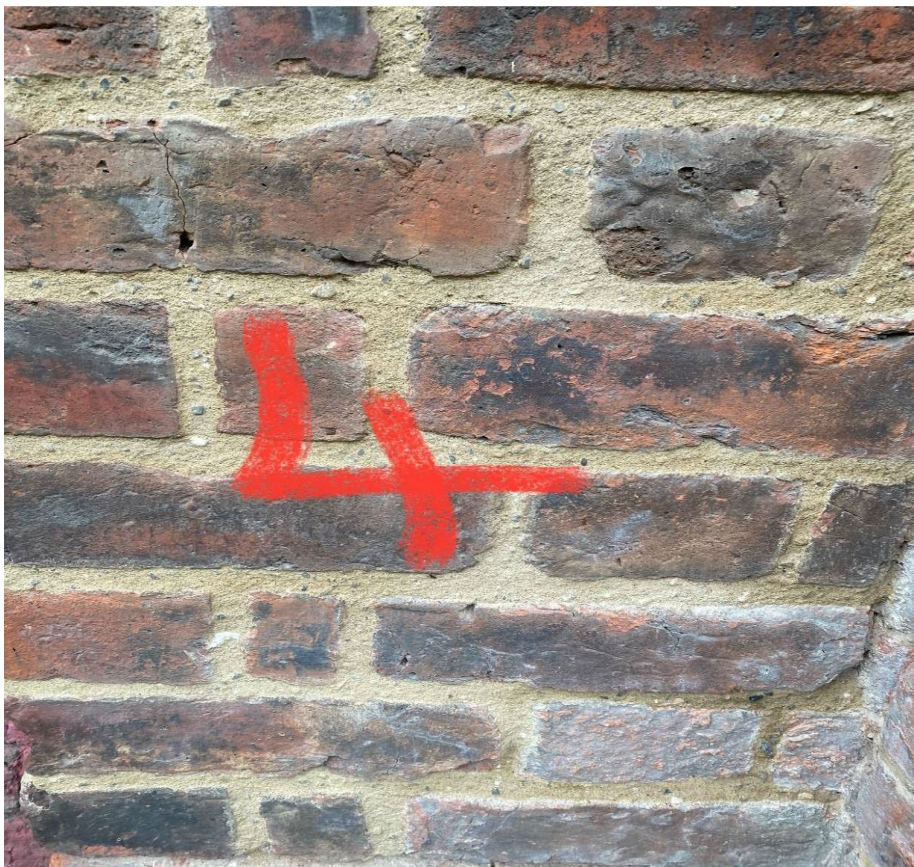


Photo 4. parts 2 Sherbourne 2 parts Leighton Buzzard 1 part NHL 3.5.

General principles

- All works should be performed by a contractor with proven experience with the material substrates affected.
- Prior to commencement of any works, the appointed contractor/operative must receive an induction on the heritage significance and sensitivity of the building and made aware of the implications of the listed status of the building prior to undertaking any works to ensure that the works do not result in any damage or loss of important fabric outside of the agreed scope.
- The submitted Heritage Statement of the consented scheme for Brunswick Mill by Heritage Architecture Ltd must be provided for operatives' perusal before any works commence.
- All works shall be completed in the most careful manner preventing unnecessary destruction of adjacent surfaces and materials where applicable.
- All operatives must be made aware that only elements that form part of their works should be removed/altered. Any necessary removal outside of these works must be checked by the project manager and heritage advisor before commencing.
- Prior to the commencement of any works all operatives will be inducted and trained in the careful removal of relevant building elements to ensure no unnecessary/accidental damage is caused to retained fabric and features of the building.
- When removing building fabric from the listed building, care must always be taken for careful removal in order to not damage surrounding historic fabric, such as retained brickwork.
- All work to be performed on the building should be executed in a professional manner so as to cause minimum disturbance to remaining historic features and building materials.
- The contractor will remain responsible for the work executed and for the application of this methodology.
- Any damage occasioned at any time is to be completely repaired to the Heritage Advisor's/LPA's satisfaction.
- Ensure, once any works are completed, that any areas exposed left are protected from wind and weatherproofed to prevent further degrading of existing fabric.

Health and safety – Dust, burning on site, gas, vapour risks, noise

- Dust – Reduce dust by properly protecting areas of work with plastic and tarpaulin as necessary.
- Noise – Works that cannot be executed without undue noise or vibration will be agreed in advance with the client.