

Attention of: David Broad.



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SITE REPORT AND PROPOSED METHODOLOGY.

SITE. London Mill Leek

PROJECT. Restoration, structural repairs and cleaning to Brickwork and stone facings.

PRINCIPLE CONSIDERATIONS.

1. Minimising potential disruption to the substrate and retaining sound surfaces.
2. Avoiding disruption to surrounding fabric.
3. Future use and maintenance of the building.
4. Retention of masonry surfaces to show the original Architectural intent.
5. Improving weathering properties by sympathetic replacement of failed/eroded surfaces.
6. Improving structural integrity.
7. Removing painted on Graffiti and organic growths.
8. Control of residues of removal (including substances hazardous to health).
9. Suitability of methods of removal to the underlying substrate.
10. Managing the requirements of conservation officers and keeping any works within legal parameters.

CURRENT CONDITION.

The external walls are constructed of brickwork with sandstone ashlar facings cornices, quoins, window cills, heads etc. which show varying levels of degradation, staining and discolouration. The front and Well Street elevations appear to have been quite aggressively cleaned in the past with much of the fire face of the bricks now absent. Pointing appears to be a mix of original pointing and later strong cement pointing overlying the bedding mortar.





Image 1. Loss of Fired face, coarsening of surface due to previous cleaning.

There are areas of Graffiti application which appear to be a sprayed on paint, possibly cellulose car paint or similar. The paint is likely to have been absorbed into the face of the brickwork to some degree, especially where previous cleaning has coarsened the surface, and therefore some residual shadowing is possible following removal and cleaning



Image 1& 2: Graffiti, salts and atmospheric staining.

Further painted coatings are present where previous alterations and demolitions have caused internal finished surfaces to become external finishes.



Image 3: Internal painted coatings exposed by demolitions.

Stonework is unpainted and is a sandstone, probably a local Gritstone, Derbyshire Gritstone or a stone similar in geology. The stonework is generally in sound condition with some evidence of staining, erosion and decay.

METHODOLOGY

CLEANING

To facilitate cleaning, use of the DOFF or Thermatech steam systems would be considered, allowing carefully controlled temperatures and pressures to be maintained. Pressure should be limited (a maximum of 1000 psi) with a good distance from the brickwork maintained to protect substrates from degradation by the cleaning process.

This system will remove organic growths; loose material and general dirt build up and have a reasonable effect ingrained staining although some patina will remain this is generally considered acceptable. Additional benefit is derived as the systems have a biocide effect helping to slow re growth of organics.

Where Graffiti is in evidence our recommendation is to again use the DOFF or Thermatech steam systems but used in conjunction with chemical agents, if required, to assist in the removal of the spray-painted coatings. It is to be expected that the steam systems alone will not completely remove the graffiti, and some degree of

chemical application will be necessary. Application, dilution and contact times of the chemical agent will be kept to the minimum effective and it is expected this will vary across the range of graffiti incidents and adjustments will need to be made.

Following applications of chemical graffiti removal agents, the brickwork and adjacent façade will be thoroughly washed down and neutralised.

Should the graffiti be impervious to the steam or chemical applications the JOS system utilising a calcium carbonate or calcite or similar media may be effective the media choice would be selected to be softer than the substrate material.

Where previous structures have been removed and previously internal finishes are now on external walls these could also be removed by a combination of the above systems.

Selection of the appropriate methodology, pressures, media choice etc. should be established by prestart tests, test panels should be preserved for the duration of the works to provide control standards to be maintained throughout the project

It is not possible to design a perfect cleaning system, as the variables are incalculable however the aim must be to achieve a good overall result without detriment to the building. The cleaning process should not alter the surface properties i.e. by abrading the surface resulting in excessively coarse finishes. The systems we are suggesting should give a good aesthetic result without degrading the substrates unnecessarily, the building integrity will be maintained, and long-term implications minimised.

BRICKWORK

Brickwork restoration where required will involve the careful matching of the existing bricks to find a suitable unit with similar properties and aesthetics either reclaimed from site or sourced externally, any infills will be toothed into adjacent brickwork to match original coursing. Units will be cut out with great care by hand or using an Arbortech saw to avoid damage to adjacent fabrics and limit the scale of repair to the minimum. Each brick will have the bed and perp joints cut out to free it up from the surrounding fabric allowing it to be worked free, breaking out will be a last resort. Samples of bricks sourced off site will be supplied for approval prior to commencing works.

Re pointing will be limited to open and failing joints in lime mortar, as the underlying mortar appears light in colour possibly an NHL 3.5 lime with light coloured sand e.g. Mercaston building sand and a suitable grit sand, test panels will be carried out to achieve a suitable colour for approval and confirm ratios and sand types for a gauged mix. The existing joint widths will dictate the addition of coarser aggregate. Raking out will be carried out with great care using the Arbortech saw and joints will not be widened or arised damaged by the process, re pointing will be twice the depth of the joint height or a minimum of 20mm or as agreed with the contract administrator. Mortars will be pressed and compacted into thoroughly cleaned pre wet joints using



suitable sized pointing irons and finished by brush or tamping to a flush or slightly recessed finish.

Modern hard cement mortar although undesirable will not be removed if in sound condition as such removal could damage brick arises thereby outweighing the benefit.

HELIBAR AND CRACK STITCHING

Where indicated by structural engineers design Helical bar reinforcement will be carried out as work stages become available. Bed joints will be removed by use of the Arbortech and vacuumed clear of dust. Helical bar will be offered up to the workplace to confirm sufficient clearance to allow positive fixing and locate the position of bends required. The Helibar will be cut to length as per Helifix specification for the application and if required bent in a vice or jig to give a tight angle when wrapping a corner and offered up again to confirm suitable placement. The bed joint will be given an initial fill with grout and the bar pressed firmly into position to achieve a good contact. Once positioned the bar will be subject to a second fill of mortar firmly pressed back to give full coverage of the bar. The remaining bed joint will be pointed up after an initial set period, mortar and finish as described elsewhere.

Crack stitching will be achieved by the careful removal and replacement of cracked bricks as detailed above. Bed joints will be opened up at 450mm centres using the Arbortech and vacuumed clear of dust. Helical bar will be offered up to the workplace to confirm sufficient clearance to allow positive fixing. The bed joint will be given an initial fill with grout or mortar (as confirmed onsite inspection) and the bar pressed firmly into position to achieve a good contact. Once positioned the bar will be subject to a second fill of mortar firmly pressed back to give full coverage of the bar. The remaining bed joint will be pointed up after an initial set period as elsewhere.

All works with Helibar will be carried out in line with Helifix approved methodology.

STONWORK

Only a small amount of stone repair is envisaged however methodology is included for completeness. Stone repairs to the facings within the façade will be approached with a variety of options dependant on the degree of damage and location of the stone unit. Where only a small degree of surface material is affected by blistering, powdering or delaminating treatment can be limited to hand scabbling, defrazzing or gentle Phosphor bronze brushing to restore to a sound surface. Larger repairs can be treated with a mortar repair where the surface is reasonably protected, or with indented new stone if larger or subject to exposure. Stainless steel dowels or pins may be required to support mortar repairs or to fix indents into place. Whole stones or missing stones could be carefully cut out and replaced with new stone carved to match the existing profiles, bedded on lime mortar. New stone will be approved by the provision of samples prior to commencing replacement. All bedding and pointing will be in a suitable lime mortar and sand subject to prior approval by samples.



Any new stone required will be sourced as locally as is possible and supplied as samples for prior approval.

All restoration to brickwork or stonework facings will be carefully considered and approached with the intent to retain historic materials wherever possible. Replacement materials must mimic the original substrates as far as is practical in terms of strength, dimension, appearance and weathering properties.

Report carried out by: D.N.Parkes.

Signed:  Date: 20th October 2025

D.N.Parkes
For Midland Masonry

