

1.00 GENERAL

Both flank elevations are to be cleaned using one of the approved methods described in the specification. The cleaning works are to be carried out in order to verify the exact extent of the stone and brick repairs required. No repair works are to be carried out until such an inspection has taken place and the extent of works agreed.

2.00 DEPOSITS TO BE REMOVED

The material to be removed will generally consist of airborne dirt, often bound together as well as to the masonry surface with either calcium sulphate or silica depending on the substrate.

BIRD FOULING: Bird fouling should be carefully removed prior to using the appropriate cleaning method for the substrate.

ORGANIC GROWTH: Organic growth can either be removed with wooden scrapers and/or bristle brushes. The cleaned surface should be treated with a durable toxic wash.

3.00 BRICKWORK CLEANING

Cleaning is carried out before re-pointing.

Abrasive and mechanical methods may not be used without authorisation of the SO.

Where brushing is needed to assist in the removal of dirt from soft carved or moulded brickwork e.g. red rubbers, it should be carried out lightly, using only fibre brushes.

Where cleaning is by any of the water spray processes ensure that the brickwork never becomes saturated, in order to avoid the possibility of efflorescence.

Any efflorescent salts should be either allowed to weather away naturally or be brushed off with a dry fibre brush.

4.00 STONework CLEANING

The existing stone weatherings and courses are noted as being York stone. Water cleaning should be carried out using one of the methods detailed below.

Air abrasion may be used to clean the harder limestones, but should not be used on softer stones.

Alkaline chemical cleaners may only be used with the authorisation of the SO.

5.00 CLEANING METHODS

METHOD STATEMENTS: Provide method statements for approval by the SO for all work proposed for cleaning stonework and brickwork.

BRUSHING: Brushing may be used on its own e.g. for removing efflorescent salts, using fibres brushes, or, more commonly, in conjunction with water spray or chemical cleaning, using fibre or bronze brushes. Steel wire brushes should never be used, because broken particles from the wire can cause rust staining.

WATER: The water for all the works must be clean and uncontaminated. Obtain approval from the SO for other than mains supply.

WATER SPRAY: Fine nebulous sprays of clean cold water are to be used to soften the dirt deposits, which are afterwards brushed off. In certain cases, it may be necessary to rub with a soft gritstone as well to remove heavier encrustations taking care not to damage any original tool marks.

HIGH PRESSURE WATER LANCE: The high pressure water lance may not be used.

It is essential to use only enough water to keep the surface wet.

For cleaning some areas, it may be advisable to use only a bucket of water and a brush, so as to minimise the amount of water used.

Care should be taken to prevent water ingress to interior finishes and fittings, for example plaster and timber.

6.00 NEW FACING BRICKWORK

Selected bricks to be FL grade (frost resistant and low salt content) to match the characteristics and colour of the existing brickwork (after cleaning). Contractor to provide samples for approval with details of source and consistency of size and colour.

Every care should be taken in checking the sizes of the bricks obtained for repair against the dimensions of the original bricks, especially where new bricks are to be used, as there may be enough difference to create problems in coursing and bonding in replacement bricks with existing work.

7.00 MORTAR

Sand to be well graded, clean, sharp, gritty sand to BS 1199 obtained from a BSI registered company. The colour and texture of the sand is critical in obtaining the required appearance for pointing. Samples to be approved by the SO for trial panel of pointing.

LIME: to be either:

- a) Lime putty ready prepared to BS 890 Section A, or
- b) Natural Hydraulic Lime Binder 'UNILET FEN X' obtained from Telling Lime Products Ltd, or equal approved.

MORTAR: Mortar for re-pointing is to be 1:3 lime: sand.

ANCHOR, CRAMPS AND REINFORCING WIRE : To be fabricated from austenitic stainless steel.

8.00 WORKMANSHIP

SAMPLES: Provide samples of the following:

- a) Sample of mortar joint and re-pointing at agreed location before commencing any work.

PROTECTION: Provide all necessary protection to surrounding stone and brickwork. Keep all stonework and brickwork clean.

METHOD STATEMENTS: Provide method statements for approval by the SO for the brickwork repair.

CUTTING OUT OF BRICKWORK: Surface repair of brickwork may involve either the replacement of individual bricks or the replacement of a defined area of brickwork. The cutting out operation should be that which least disturbs the adjacent sound brickwork. Use manual tools only, percussion power tools will not be permitted.

Notify the SO if any signs of structural movement are found during the cutting out operation.

The use of brick slips will not be allowed.

Where the area requiring repair is extensive (i.e. in excess of 0.4m²) it will be necessary to tie in a new leaf of matching brickwork using suitable stainless steel tie wires, or anchors as appropriate.

All cavities formed when brickwork has been cut out should be clean and regular and filled with mortar compatible with that in the original brickwork as the new brick skin progresses. No cavities are to be left in finished work.

REPAIRS USING SPECIAL MORTARS ('MASTIC' REPAIRS): Generally no 'mastic' repairs are envisaged. For minor repairs, and only with the authorisation of the architect, where it is desirable to cause minimum disturbance, the repair of individual bricks may be allowed by dubbing out with special mortars ('mastic' repairs).

The damaged bricks should be cut back to a sound face to a depth of at least 15mm and made up with a mortar to match the existing bricks. The mortar may consist of cement coloured to match the existing work, coloured sand or crushed bricks. The joints are then deeply cut and pointed to match the existing pointing in colour and finish.

CUTTING OUT MORTAR AND RE-POINTING: Existing mortar in the joints should be raked out square to a depth of not less than 15 mm to 20 mm to give an effective key. Where the existing mortar is hard or tightly adhering care must be taken to avoid damage to arrises and the exposure to which the masonry is to be subjected should be taken into account.

Where it is necessary to remove dense, strong mortar, there may be no alternative to cutting it out. Plugging chisels or claw chisel should be used rather than other types of cold chisels. Disc cutting or drilling out or any other mechanical method will not be permitted.

After removal of existing pointing, joints should be thoroughly cleaned and wetted immediately before filling. In filling the joints, the mortar should be pressed well in to ensure maximum penetration and bond to the original bed. At the same time, it should always be kept well within the confines of the joint and never allowed to spread over the face of the masonry. The face of the pointing should be kept back from worn arrises to avoid an apparent increase in the thickness of the joint and the creation of feather edges. Re-pointing should be carried out from the top of the wall downwards.

Mixing and batching of mortars should follow the recommendations of clause 4.4 of CP 121: Part 1: 1973. Only small quantities should be made up as the work proceeds.

To obtain uniform quality of mortar, accurate batching is essential. The SO is to approve the method of batching proposed.

Joints in brickwork are to be finished with pointing to match the existing.