SPECIFICATION FOR THE RESTORATION & REPAIR OF THE BRICKWORK

1.0 Introduction

1.1 The work is to be carried out in accordance with the requirements of the following British Standards;

1.2 BS8221-2:2000 Code of practice for the cleaning and surface repair of buildings-Part 2 Surface repair of natural stones, brick and terracotta.

1.3 BS7913:3013 Guide to the conservation of historic buildings.

2.0 BRICKWORK

2.1 Brickwork replacement and repair

2.1.1 Replacement brickwork should match the original bricks, mortar, joint profile and bonding. New replacement bricks should match the originals in material, size, colour, texture, density, hardness and porosity. It may be possible to remove, reverse, clean and reuse bricks providing the brick is generally sound.

2.1.2 Cutting out should be performed with minimal disturbance to adjacent sound brickwork. Where whole bricks are replaced, bricks should be cut out to a minimum single brick depth.

2.1.3 Replaced bricks should be fully bedded in mortar to ensure thorough re-bonding into the wall. The mortar for rebuilding should be compatible with the existing mortar. Excessively strong mortars or grouts unable to accommodate building movement should not be used.

2.1.4 Dry packing to the top joints of a repair area should use a compatible mortar. This mortar should be placed with a purpose made pointing key that fits into the joints width and that can be used to push the material to the rear of the joint and suitably compact it.

2.1.5 Where the repair area is extensive, new matching brickwork should be tied in with header bricks or stainless steel ties or anchors to provide mechanical bonding. Ties should be inserted on a staggered grid of 450mm.

2.1.6 Where cutting out is likely to disturb adjacent sound brickwork, a brick slip or insert could be used rather than a full size brick. These can be used to repair damaged or decayed brickwork. Repairs using brick slips should be limited to individual bricks or relatively small areas of up to six bricks. Slips should be solidly bedded on mortar that enables the original moisture movement of the wall to continue. Brick slips should only be used in unexposed areas.

2.1.7 Mortar patch repairs to bricks should only be used for minor repairs to isolated bricks. The damaged area of the brick should be cut back to a sound face at a depth of at least 20mm. Repair mortar may contain coloured sands and other crushed masonry aggregates, pozzolans and binders of cement, lime or resin. (Joints should be cut out and pointed separately).

3.0 Removal of Redundant Fixings from Brickwork

3.1.1 All redundant fixings must be removed.

a) Any plastic or timber plugs / fixings will be carefully removed by drilling / cutting.

b) Any steel or iron fixing bolts or plates will be cut out / core drilled ensuring that all rust and corrosion products are removed. The location and size of the hole left will dictate the method of repair.

4.0 Jointing and pointing repair

4.1.1 Old, damaged or missing mortars should be repaired with material and mixes that match the original as closely as possible. There are no standard mixes for repair work and adjustments should be made to match the appearance and composition of the original mortar type for the brickwork.

4.1.2 Replacement mortar should be compatible with and should match the un-weathered interior of the original mortar, in composition, strength, colour and texture.

4.1.3 Identified cracked and failed mortar is to be suitably repaired. Any cutting out of the mortar joints must be undertaken with care to ensure that there is no damage to arises of the bricks. Ensure that the cutting process does not cause damage at the bed and perp joints.

4.1.4 Joints are to be re-pointed in accordance with BS8221-2, clause 7.1 to 7.3.5.

4.1.5 New repair mortar is to match old mortar and should be in accordance with BS8221-2, clause 6.3 to 6.5.

4.1.6 Joints should be cleared of damaged or loose mortar prior to re-pointing. Old cracked

mortar joints should be cut out to a depth of at least 20mm and not less than twice the thickness of the brick joint. This depth should be increased in areas of high exposure and this could be up to 30mm.

4.1.7 Cut out joints should be thoroughly (not excessively) cleaned and wetted before placement of new mortar. The mortar for filling the joints should be compacted into the joint to ensure maximum penetration and bond to the original bed.

4.1.8 Where the mortar joints have disintegrated to a large depth, the mortar should be deep tamped with replacement mortar and if required hand grouted to fill he joint to the depth needed. In areas where a thick layer of mortar is required then it should be placed in layers, each underlying layer should be initially set, not fully dried out, prior to placing the next layer.

Care must be taken not to smudge or spread the mortar on the face of the brickwork.

5.0 Cracks in bricks

5.1.1 Cracks in insitu bricks should be filled with colour matched, thixotropic resin pastes, or grouted with liquid or thixotropic resins. Cracks/fractures wider than 6mm should not be repaired but the bricks cut out and replaced in accordance with clause 2.1.

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