



Schedule of Repairs, Renovation and Alterations to Stone work

at

St Wilfrid's Church

Cotton Lane, Cotton, Staffordshire, ST10 3DR

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1. Introduction	3
2. General maintenance and enabling works	3
2.1. Removal of Foliage	3
2.2. Removal of redundant wiring and pipework	3
2.3. Erection of Scaffolding	3
3. Alterations to Window W07	4
4. Addition of Door Below Window W15	6
5. Addition of Windows W13 & W34	7
6. Repairs to Stone work - Methodology of Works	9
6.1. Restoration Mortar Repair	9
6.2. Descaling	9
6.3. Repointing	10
6.4. Stone Indents	11
6.5. Cleaning Method	12

1. Introduction

1.1.This report identifies defective stone to be repaired or replaced. It also outlines the methodology for the alteration and insertion of a new door within the existing building.

1.2.Aesthetic factors alone do not dictate replacement or repair of existing stone work.

1.3.Best practice should always aim to retain as much original stonework of a building as possible. It is also recommended the use of minimal intervention techniques involving the least physical disturbance to the building.

1.4.All alteration and repair to the stone work is to be undertaken by an appointed reputable masonry contractor with the relevant craft skills of sizing, cutting, tooling and setting without damaging the surrounding masonry.

2. General maintenance and enabling works

2.1.Removal of Foliage

2.1.1.Remove all existing foliage attached to or near the building together with dirt and detritus.

2.2.Removal of redundant wiring and pipework

2.2.1.Prior to work commencing, all redundant wiring and plastic pipework will be removed.

2.3.Erection of Scaffolding

2.4.Scaffolding is to be carefully designed and erected to allow the works to be carried out safely and to not damage the existing masonry. Prior to the replacement of any stone, the original construction is to be measured, recorded and photographed by the specialist

contractor. This is to ensure that the new stone fits exactly in the correct location and that the dimensions of the surrounding mortar joints do not alter in size.

3. Alterations to Window W07

3.1. Prior to the replacement of any stone, the original construction is to be measured, recorded and photographed by the specialist contractor. This is to ensure that the new stone fits exactly in the correct location and that the dimensions of the surrounding mortar joints do not alter in size.

3.2. Source and obtain samples of suitable matching stone(s) for approval by the contact administrator:

3.2.1. Ensure that stone can be supplied in sufficient quantity and of consistent quality to meet the requirements of the project.

3.2.2. Existing leaded glazing and frame to be removed complete and set aside for reuse.

3.2.3. Stones identified for removal shall be cut out as follows:

3.2.3.1. The relevant stone is to be marked for removal. Cut a margin at the edges of the stone to be removed without encroaching onto adjacent stones to minimise the risk of damage to those stones.

3.2.3.2. Further cuts are to be introduced into the stone to allow the waste to be removed.

3.2.3.3. Set aside and protect the removed stone cills for re-use.

3.2.3.4.Once all the stone and internal brickwork has been removed as identified, all dust and debris is to be removed and the stone surface dampened in preparation for placing a mortar bed.

3.2.3.5.Re-use the existing stone cill and insert at the new raised height ensuring that the line and level of the stone unit is consistent with the stone is replacing. Where necessary insert stainless steel dowel fixings to secure the stone. See drawing 2016-44-920.

3.2.3.6.New cut stone arched head, jambs inserted ensuring that the line and level of the stone unit is consistent with the stone is replacing. Where necessary insert stainless steel dowel fixings to secure the stone. See drawing 2016-44-920.

3.2.3.7.Once the stone has been placed to the correct position and a mortar joint is in place using the designated mortar identified from analysis previously undertaken on a sample of the existing mortar: Example Mix - 3 parts graded sand and 1 part NHL3.5 Hydraulic Lime.

3.2.3.8.Once in the correct position all surrounding joints are to be pointed, stippled as required and then sponged down to remove any surface residue from the stonework.

4. Addition of Door Below Window W15

4.1. Prior to the removal of any stone, the original construction is to be measured, recorded and photographed by the specialist contractor. This is to ensure that the new stone fits exactly in the correct location and that the dimensions of the surrounding mortar joints do not alter in size.

4.2. Source and obtain samples of suitable matching stone(s) for approval by the contact administrator:

4.2.1. Ensure that stone can be supplied in sufficient quantity and of consistent quality to meet the requirements of the project.

4.2.2. Stones identified for removal shall be cut out as follows:

4.2.2.1. The relevant stone is to be marked for removal. Cut a margin at the edges of the stone to be removed without encroaching onto adjacent stones to minimise the risk of damage to those stones.

4.2.2.2. Further cuts are to be introduced into the stone to allow the waste to be removed.

4.2.2.3. Set aside and protect the removed stone for re-use.

4.2.2.4. Once all the stone and internal brickwork has been removed as identified, all dust and debris is to be removed and the stone surface dampened in preparation for placing a mortar bed.

4.2.2.5. Profiles to be taken of existing stone arches and new stone cut to match as shown on drawing 2016-44-922.

4.2.2.6. Insert the new cut stone ensuring that the line and level of the stone unit is consistent with the stone is replacing. Where necessary insert stainless steel dowel fixings to secure the stone.

4.2.2.7. New cut stone arched head, jambs inserted ensuring that the line and level of the stone unit is consistent with the stone is replacing. Where necessary insert stainless steel dowel fixings to secure the stone. See drawing 2016-44-920.

4.2.2.8. Once the stone has been placed to the correct position and a mortar joint is in place using the designated mortar identified from analysis previously undertaken on a sample of the existing mortar: Example Mix - 3 parts graded sand and 1 part NHL3.5 Hydraulic Lime.

4.2.2.9. Once in the correct position all surrounding joints are to be pointed, stippled as required and then sponged down to remove any surface residue from the stonework.

5. Addition of Windows W13 & W34

5.1. Prior to the removal of any stone, the original construction is to be measured, recorded and photographed by the specialist contractor. This is to ensure that the new stone fits exactly in the correct location and that the dimensions of the surrounding mortar joints do not alter in size.

5.2. Source and obtain samples of suitable matching stone(s) for approval by the contact administrator:

5.2.1. Ensure that stone can be supplied in sufficient quantity and of consistent quality to meet the requirements of the project.

5.2.2.Stones identified for removal shall be cut out as follows:

5.2.2.1.The relevant stone is to be marked for removal. Cut a margin at the edges of the stone to be removed without encroaching onto adjacent stones to minimise the risk of damage to those stones.

5.2.2.2.Further cuts are to be introduced into the stone to allow the waste to be removed.

5.2.2.3.Set aside and protect the removed stone for re-use.

5.2.2.4.Once all the stone and internal brickwork has been removed as identified on drawing 2016-44-910 & 911, all dust and debris is to be removed and the stone surface dampened in preparation for placing a mortar bed.

5.2.2.5.Profiles to taken of existing window W12 (East Elevation) and new stone cut to match as shown on drawing 2016-44-922.

5.2.2.6.Insert the new cut stone ensuring that the line and level of the stone unit is consistent with the stone is replacing. Where necessary insert stainless steel dowel fixings to secure the stone.

5.2.2.7.New cut stone arched head, cill and jambs inserted ensuring that the line and level of the stone unit is consistent with the stone is replacing. Where necessary insert stainless steel dowel fixings to secure the stone.

5.2.2.8.Once the stone has been placed to the correct position and a mortar joint is in place using the designated mortar identified from analysis previously undertaken on a sample of the existing mortar: Example Mix - 3 parts graded sand and 1 part NHL3.5 Hydraulic Lime.

5.2.2.9. Once in the correct position all surrounding joints are to be pointed, stippled as required and then sponged down to remove any surface residue from the stonework.

6. Repairs to Stone work - Methodology of Works

6.1. Restoration Mortar Repair

6.1.1. Carefully cut back decayed or otherwise defective stonework as scheduled, to form a sound mechanical base finishing square or undercut to avoid feather edging.

Introduce non-ferrous dowels and reinforcement according to need and depth to repair. Brush down the exposed areas to remove loose dust and dampen with clean water.

6.1.2. Progressively restore the disturbed areas of stonework using specialist restoration mortar in coats of even thickness, this being well tamped around the reinforcement, and finished with a wooden float to original line, profile and texture.

6.1.3. Finishing coat to be colour toned to match existing stonework.

6.1.4. Upon completion of repairs all original joints within the areas of restoration to be worked in and repoint in approved mortar to match surrounding works.

6.2. Descaling

6.2.1. Carefully remove all loose, friable material by use of stiff bristle and/or phosphor bronze brushes. Hand rub exposed stonework faces with carborundum blocks to produce the smoothest reasonable finish to blend with surrounding stonework. No lips to remain and surface should be left to facilitate water runoff and without tool marks.

6.3.Repointing

6.3.1.Sample mixes to be completed using NHL3.5 Natural Hydraulic Lime and different sands to achieve a match to existing pointing. Local washed sand if preferable;

6.3.1.1.Joints should be carefully raked out to a depth at least twice the width of the joint.

6.3.1.2.Rake out with hand tools and saw blades if practicably possible.

6.3.1.3.Where and if old cement pointing is in place a single cut to the centre of the joint to release the mortar with the use of hand tools. This will minimise any damage to the adjacent stones. If possible, where hard patches of old mortar are found then cutting out can be achieved using a plugging chisel and a masons mallet if it will not damage the stone.

6.3.1.4.Thoroughly brush out loose mortar and dust prior to spraying with clean water.

6.3.1.5.Push in the new mortar from a hand board and press it well into the joint with a 'pointing trowel' made to the size of the joints to ensure they are filled. Work towards existing mortar.

6.3.1.6.Fill the joints with mortar until it is flush with the face of the stones. Do not cover the edges of the stones no matter how uneven they are. Do not over work the mortar while it is wet, this will only encourage it to spread on to the surface of the stone. Mortar 'feathers' that have spread onto the surfaces adjacent to the joint will dry out rapidly and can be brushed off later, leaving virtually no mortar staining.

6.3.1.7.When the mortar is curing, lightly brush the surface with a soft brush. This will achieve a very slightly roughened texture for appearance and better weathering.

6.3.1.8.No pointing should be done either in frost or when frost is likely to occur.

Pointing should be protected against weather where possible by use of hessian sheeting.

6.4.Stone Indents

6.4.1.Source and obtain samples of suitable matching stone(s) for approval by the contact administrator:

6.4.1.1.Ensure that stone can be supplied in sufficient quantity and of consistent quality to meet the requirements of the project.

6.4.1.2.Defective stones identified for replacement shall be cut out as follows:

6.4.1.3.The relevant stone is to be marked for removal. Cut a margin at the edges of the stone to be removed without encroaching onto adjacent stones to minimise the risk of damage to those stones.

6.4.1.4.Further cuts are to be introduces into the stone to allow the waste to be removed.

6.4.1.5.Once all the stone has been removed to the required depth, normally a minimum of 75mm, all dust and debris is to be removed and the stone surface dampened in preparation for placing a mortar bed.

6.4.1.6.Once the stone has been repaired and a mortar joint is in place using the designated mortar identified from analysis previously undertaken on a sample of the existing mortar: Example Mix - 3 parts graded sand and 1 part NHL3.5 Hydraulic Lime.

6.4.1.7. Where necessary insert stainless steel dowel fixings to secure the stone.

6.4.1.8. Place the new stone in position, ensuring that the line and level of the stone unit is the same as the original it is replacing.

6.4.1.9. Once in the correct position all surrounding joints are to be pointed, stippled as required and then sponged down to remove any surface residue from the stonework.

6.5. Cleaning Method

6.5.1. Therma-tech is a brand-new range of superheated water cleaning equipment.

Conceived for the requirements of building conservation, restoration and refurbishment, this system is highly effective for removing soot, grease, oil and organic matter from a wide range of substrates.

6.5.2. The system is a steam-based cleaning system that reaches temperatures in excess of 150°C at the nozzle end. The steam/superheated water will remove moss, algae, fungi and other biological matter and will also kill off spores. When the temperature in the system is high the pressure of the surface being cleaned is very gentle and the volume of water is low. The surface is therefore not saturated and will be dry within minutes.

6.5.3. Therma-tech reduces reliance on chemicals, and boosts the performance of milder agents. It also uses less water than conventional hot and cold-water pressure washers. In this way it yields positive results for COSHH and REACH in safety and environmental risk assessment.