

FORTROSE CATHEDRAL

BISHOP'S TOMB CRESTING STONE REPAIR WORKS

METHODOLOGY AND SPECIFICATION

17TH JUNE 2016

1.0 General

- 1.1 This document should be read in conjunction with works details drawing 480-147-100.
- 1.2 Power tools are **not** to be used for any on-site works.
- 1.3 All completed exposed mortar works are to be immediately covered, daily wetted down and protected from frost and rapid drying for a minimum period of 3 weeks.
- 1.4 All carved original stone work that is taken off during these works is to be labelled (identifying original location and date of removal) and stored in the under-croft of the chapterhouse on a timber base for future display.
- 1.5 The full replacement stone is to be incised on the side face with the date, 2016, in Times New Roman numerals 50mm high.
- 1.6 All new stone to be joint bedded.
- 1.7 The full sequence of works, before, during and after, is to be clearly photographed and stored in order on the P Drive at Fort George a full copy of this photographic record is to be put on a CD and issued to Heritage Management referring to the Scheduled Monument Consent reference number.

2.0 Works

- 2.1 **Carved elements that are not subject to works:** fit bubble wrap protection.
- 2.2 **To front elevation badly damaged apex stone:** cut joints with fine chisels and hacksaw blades, lift off complete stone ensuring edges of surrounding stones are not chipped.

Prepare exposed faces to receive replacement stone; brushing off loose mortar and packing in new mortar (Mortar type A) as necessary to obtain true and smooth faces. Fit two bronze pins placed 100 mm apart set in resin, apply bedding mortar (Mortar type A) to horizontal and vertical faces (at a thickness so as to give a final joint size to match the original) and fit replacement stone setting pins into replacement stone with resin. Masking tape joints and point (Mortar type A).
- 2.3 **To front elevation of central stone damaged trefoil tip:** cut out localised area of failed stone, brush clear, fit one bronze pin set in resin, wet down, apply thin layer (1mm) of indent bedding mortar (Mortar type B) to horizontal and vertical faces and fit stone indent setting pin into indent with resin.
- 2.4 **To all faces of central stone:** Lightly brush down surface and inject grout (Mortar type C) into cracks ensuring run off is prevented from staining stone below.

- 2.5 **To rear elevation of central stone damaged trefoil:** cut out localised area of failed stone, brush clear, fit one bronze pin set in resin, wet down, apply thin layer (1mm) of indent bedding mortar (Mortar type B) to horizontal and vertical faces and fit stone trefoil indent setting pin into indent with resin.
- 2.6 **To rear elevation damaged apex stone trefoil:** cut out localised area of failed stone, brush clear, fit two bronze pins set 100mm apart set in resin, wet down, apply thin layer (1mm) of indent bedding mortar (Mortar type B) to horizontal and vertical faces and fit stone indent setting pins into indent trefoil with resin. Masking tape joints and point (Mortar type A).

3.0 Specification

Mortar Type A

Lime type:	Natural Hydraulic Lime
Strength:	3.5
Make:	Telling Fenex
Mix ratio:	1 part lime to 2.0 parts aggregate
Aggregate:	2.0 part Daviot Building Sand, 0.5 part Shell Sand.

Mortar Type B

Lime type:	Natural Hydraulic Lime
Strength:	3.5
Make:	Telling Fenex
Mix ratio:	1 part lime to 1.0 parts aggregate
Aggregate:	1.0 part silver sand, 0.5 part St Bees stone dust.

Mortar Type C

Lime type:	Natural Hydraulic Lime
Strength:	3.5
Make:	Telling Fenex
Mix ratio:	1 part lime to 0.5 parts aggregate
Aggregate:	1.0 part silver sand, 0.5 part St Bees stone dust.

Stone Type

All stone to be from UK Red St. Bees from Birkham's Quarry, Cumbria.

Stephen Watt

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Conservation Directorate