

CONSERVATION REPORT ON SANDSTONE TOMBGRAVE FROM CROMARTY EAST CHURCH



author : Karolina Kubisz

KK Art & Conservation

E-mail: info@kkartandconservation.com

www.kkartandconservation.com

Tel.: 075278 15870

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1.0 MONUMENTS DESCRIPTIONS

TYPE: Tombstone

SUBJECT: Two naked swords with floriated cross situated on Calvary steps in the middle

AUTHOR, WORKSHOP: Unknown

SIGNATURES, INSCRIPTIONS : None

DATED: 14th century (?)

LOCATION/ : Cromarty East Church

OWNER:

MEASUREMENTS: about: 173 cm x 96,5 cm x 12 cm

MATERIAL: Red sandstone

TECHNIQUE: bas relief

PREVIOUS CONSERVATIONS: none

2.0 STATE OF PRESERVATION AND CAUSE OF DAMAGE

State of preservation: bad

- nearly all original surface is lost
- stone is delaminating
- stone is splitting in many places (cracks goes through natural segmentation layers)
- large cavities (specially in the bottom left corner)
- small cavities
- most of the surface sounds hollow, but along different bed heights
- salt problems (crystallised salts are visible, specially in the upper right corner area.)
- surface is covered with dirt
- some of the stone at the bottom is missing

Cause of damage:

- salt damages, (e.g. salts are forcing layers apart) salts probably were transported with water from the ground.
- mechanical damages (people were walking on the back of the tombstone as it was used as a slab for the floor, it might be damaged while taking out of the ground)
- stone weathering
- natural property of the stone (Stone has a lot of natural segmentation layers and it's naturally weaker between the layers)

3.0 AIM AND STIPULATIONS OF CONSERVATION

The aim of conservation is to preserve the object and to bring back both exposional and functional values. Stipulations of the works are to preserve the object without reconstructing missing parts.

Technical conservation includes consolidation, steam cleaning and desalination.

Aesthetic conservation embraces sealing all the edges with pigmented mortar.

4.0 METHOD STATEMENT, MATERIALS, TIME SCALE

No	Methods/ steps of conservation	Materials and equipment	Time scale
1	Work place preparation (situate the object on a work bench to have good access all around it)	-	4 men x 3 hours = 12 hours. Stone weighs 0.4 tonne approx
2	Gentle cleaning with soft brush, Preconsolidation (Preparing object for desalination. Sometimes when salts are forcing layers apart, after desalination layers can become more loose. It's good to protect the stone during desalination from mechanical damages causes by taking off poltices and steam cleaning).	Soft brush, 2,5- 5 % Paraloid B72 in acetone and IMS (Industrial Methylated Spirit), needles and syringes, 10% of Paraloid B72 in acetone and IMS (Industrial Methylated Spirit) for edge pointing	10 hrs.
3	Cleaning with steam and a soft brush if required	Steam cleaner, soft brushes, sponge	5 hrs.
4	Desalination. (poltices, till they are clean about from 3 to 8 times)	poltices (cellulose tissue/ lignin, deminarilised water	4hrs for each procedure , so from 12 to 32 hrs. (technical brakes – about one day- in between for poltices to dry out)
5	Remove temporary consolidant and acrylic mortar repairs applied before . Consolidation using Paraloid B72 Consolidation (by injecting the consolidant in the cracks. In some cases hand pressure method can be used. - However pressure can't be too	Acetone, cotton, cotton buds 2,5- 10 % Paraloid B72 in acetone and IMS (Industrial Methylated Spirit), needles and syringes, Stone dust for deep	5hrs 8hrs

	<p>high, because it might damage the stone)</p> <p>As a last resort surface consolidant can be used.</p>	<p>cracks,</p> <p>Consolidant based on silicic acid ester preferably: tetra-ethoxy-silane, plastic foil, needles and syringes</p>	
6	Seal the edges of cavities (it will also improve aesthetic result).	10% of Paraloid B72 in acetone and IMS (Industrial Methylated Spirit) mixed with silica sand	8 hrs.
			Total: 60 hrs. – 80 hrs. of labour

5.0 UNDERTAKEN STEPS OF CONSERVATION

Presented above methodology was followed quite precisely, with only a few changes.

1. Stone was dry cleaned using soft brushes and preconsolidated using solutions of acrylic resin- (2,5%-5% of Paraloid B72) and acrylic mortar. (No 2 in method statement)
2. Stone was put on scaffold boards to provide better access.
3. Tombstone was then gently cleaned using steam cleaner and wooden tamping brushes.
4. While the stone was still wet after cleaning poultices were applied. Desalination using poultice was repeated 5 times in total.
5. After the stone was dry previous temporary repairs were removed with methanol (IMS) and acetone. It was decided that there was no need using a surface consolidant (silanes). Stone was consolidated locally using solutions (2,5%-10%) of acrylic resin Paraloid B72 mixed with acetone and IMS.
6. At the end acrylic mortar repairs were applied to seal the cracks and edges of delaminations. For acrylic mortar repairs 10% solution of Paraloid B72 in acetone and IMS mixed with sand and pigments were used. Pigments were kept to minimum by crushing pieces of local sandstone of the same colour.
7. Then the stone was put into a specially designed display frame and rested on a base casted to shape of underneath of the stone. Base was made of polyester resin and glass fibre and then glued to the stone using Paraloid B72. Stone was protected from the raw metal with plastozote foam

6.0 PHOTOGRAPHIC DOCUMENTATION



Fig.: 1-2. Tombgrave before conservation. Efflorescence (crystalised salts) is visible on the left hand side of the stone.



Fig.: 3. Stone after preconsolidation and temporarily mortar repairs.



Fig.: 4. In the middle of cleaning process.



Fig.: 5 In the middle of cleaning process.



Fig.: 6. Desalination.



Fig.: 7. Tombgrave, detail – side view.



Fig.: 8. Consolidation with solutions of Paraloid B72.



Fig.: 9. Acrylic mortar repairs.



Fig.: 10. In the middle of acrylic mortar repairs.
Left hand side- after mortar repairs.
Right hand side – before repairs.



Fig.: 11. Tombgrave after conservation – side view.



Fig.: 12. Tombgrave after conservation – side view.



Fig.: 13. Tombgrave after conservation – detail.



Fig.: 14. Tombgrave after conservation .