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**St. Michael & All Angels church
RAVENSTONE
Leicestershire
(Diocese of Leicester)**



Plate 1: the completed tomb chest

**Conservation report on the churchyard monument to
Reverend David Thomas (d.1810)**

April 2024

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Introduction

This report forms the final conservation record regarding the tomb chest monument to Reverend David Thomas (d.1810) situated on the north side of the church. The conservation project was carried out during April 2024. The work was carried out by Senior Conservator Simon Ebbs with the assistance of Joseph Dennis both of Skillington Workshop Ltd. The report includes a photographic record. The project was kindly funded by the National Heritage Fund and carried out on behalf of Ravenstone PCC, whose point of contact was Becca Riley

Dismantling

A working area was created around the tomb using herras fencing. At this early stage a photographic record was begun along with detailed drawings and measurements to aid in the rebuilding of the tomb. A simple numbering system for the stones was also devised. The two closest grave markers to the tomb were encased in plywood sheeting so as to prevent any possible damage. Once the initial recording had been completed all of the surface ivy was removed from the tomb.



Plate 2: showing the tomb chest prior to conservation work.



Plate 3: the east end of the tomb chest displaying extensive disruption.

An A-frame gantry was erected over the tomb in readiness to lift the stone lid off and away. Prior to lifting the top off of the monument the side panels required shoring up. This was carried out to prevent the panels from toppling over and also to create a sound platform for when the large stone lid was levered up ready for lifting.



Plate 4: here we can see the east end of the tomb and the timber shoring with ratchet straps securing the stone panels. This method of shoring was also carried out to the west end also.



The tomb lid was gently levered up, one side at a time and two timber bearers were place underneath. Lifting straps were then fed underneath the stone lid and hooked onto a block and tackle. The lid was then lifted away and placed onto timber bearers on the ground to one side.

Plate 5: showing the stone lid ready to be lifted away.



Plate 6: (left) here we can see the extensive ivy network inside of the tomb.

Plate 7: (below) using the A-frame gantry the side panels are removed from the tomb.



With the lid removed a core was revealed and extensive root networks of ivy. The ivy was cut away and disposed of. The eight stones that comprise the side panels of the tomb were now numbered and removed from the plinth stones. The core comprised of mainly bricks and a handful of broken floor tiles. The bricks contained within the core, where complete, are $4\frac{3}{4}'' \times 9\frac{3}{4}'' \times 3\frac{3}{4}''$ and are a deep red colour and hand made. The Tiles were incomplete, but looked to be $4\frac{3}{4}''$ square and 1'' thick and again a deep red colour. The brick core rises from the foundation inside of the north and south plinth stones and in a cross formation up to the top of the panel stones. The lime mortar that was used for the core appears to be the same mortar as for bedding and pointing of the six large panel stones. The core came apart with ease as the mortars had largely failed and broken down. The plinth stones were then removed from the brick foundation and also given an identifying number.

Cleaning

All of the stones that comprise the tomb were to receive a very light wet clean. All of the stones are in relatively good order with no areas of disaggregation. Because of the good condition of the stones a medium stiff scrubbing brush was employed to clean the stones in conjunction with tap water. There was no need for any consolidation to the stones.

Repairs

There were numerous stones to pin back together. These mainly comprised the plinth stones where corroding iron cramps had rusted and laminated causing the stone to fracture. Also the west end panel required fixing together using steel armatures. All of the steel used for repairs was 316 grade stainless steel. The steel used for pinning stones together was threaded rod with a diameter of 8mm. the steel used to repair the west end panel was, again, threaded rod with a diameter of 10mm. all of the steels were set into Hilti H170 resin.



Plate 8: here we can see the level of delamination to one of the plinth stones iron cramps. This delamination has caused the surrounding stone to fracture and break away.



Plate 9: one of the hidden pins ready to be fixed into position along with the fractured stone.



Plate 10: this is the rear of the west end panel. The stainless steel dowels are set into pre-cut grooves.

Rebuilding

The foundation for the monument consists of bricks and mortar, the same bricks as the core of the tomb. To the west side of the foundation the bricks were displaced and loose, these were lifted and re bedded into position. The lime mortar mix for this process is given later when discussing the building of the brick core. What remained of the ivy roots was treated with Roundup root and stump killer, following the manufacturer's instructions.



Plate 11: showing the disruption to the brick foundation.

Once the foundation had been completed the plinth stones were moved into position and bedded down. The bedding and pointing mix is given below. We fabricated, on site, 316

stainless steel strap into legged cramps. The stainless steel strap was 20mm x 3mm and at various lengths. The turned down legs were 40mm long each. These would be set within pre-prepared holes drilled into the tops of the stones. A channel was then chiseled away linking the drilled holes allowing the new cramps to be set recessed below the upper surface of the stone. The cramps were set into Hilti H170 resin. Once the plinth stones had been completed, including cramping them together, the brick core could be built up to plinth course height.



Plate 12: here we can see the plinth stones in position and cramped together. Also the brick core was built up in the same arrangement as the original.

Lime mortar for the core construction and foundation	
NHL 2 St Astier	1 part
Baston sharp sand	1 ½ parts
Baston plastering sand	1 ½ parts
Lime mortar for Bedding and pointing	
NHL 2 St Astier	1 part
Baston plastering sand	2 parts
Clipsham stone dust (sieved to 2mm and below)	1 parts

The panel stones were then set out on the top of the plinth stones dry to achieve the correct setting out and spacing. Once this process had been completed the stones were set onto a lime mortar bed. When all had been set correctly they were cramped together as above.



Plate 13: the panels are now bedded down and cramped together. The brick core was built up with slate packers to bring the core level with the outer panels. Although all of the good core material was used up it was necessary to include 25 new bricks. The new bricks were supplied by Bulmer Brick and Tile company, Sudbury.



Plate 14: the stone top to the memorial was then maneuvered into position utilizing an A-frame and lifting equipment. The lid was placed onto the same bedding mix as the rest of the tomb stones.

Future maintenance requirements

Whenever building works are undertaken in the vicinity of the tomb care should be taken to protect the tomb from damage. Protection should preferably be by boxing-in rather than sheeting

The tomb should be periodically inspected by the PCC to check for any signs of damage such as cracking, salt efflorescence, impact damage or stone displacement. Also any signs of ivy growth. Any ivy growth should be removed by hand where possible and as early as viable. The monument should also be checked by the church's architect at his or her quinquennial inspections. If there is any sign of damage then further advice should be sought from ourselves or an ICON accredited specialist monument conservator.

Simon Ebbs
April 2024