

COTTON WAR MEMORIAL



CONDITION ASSESSMENT REPORT

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INTRODUCTION

On 9th May, 2018, a visit was made to assess the war memorial.

Despite having a forward lean toward the east (**Fig. 1**), and stepped fissures to the 50mm thick concrete apron immediately surrounding the memorial (**Fig. 2**), it was not possible to remove sufficient quantity of the apron, to visualize materials beneath. However the investigation revealed a chamfer sided kerb (**Fig. 3**) and paved ledger slabs that are likely to be original to the memorial's design. This condition assessment is a summary of salient points noted on the day.



Figure 1



Figure 2



Figure 3

OBSERVATIONS

The height of the Portland stone memorial from the top of the Celtic Cross, to the concrete apron, is 3.5 metres. The stone base of the memorial measures 86 cm on the west /east (W/E) axis, and 89 cm on the south / north (S/E) axis; these subtle proportional changes reflect something of the finesse and calibre of the design.

The overall footprint dimensions including the surrounding concrete slabs, is 396 cm². One metre from the edge of the north pavement is the centre point of Yew tree stump, recently cut down. The combination of soil moisture uptake and root systems of the Yew are likely to have contributed to the uplift and distortion of the slabs and sub-soil disaggregation.

The memorial design is composed of 6 units of stone, from the two plinth and base stones, through the carved cusp, finials, sunken inscription panel, to the shaft, shaft head, and cross. The stone is fine grained, with occasional molluscan casts and bioclastic sediment, horizontal and natural bedded (**Fig. 4**), which appears to be the Basebed type of Portland stone.



Figure 4

Plumb-line / spirit level measurements showed a ~ 10mm tilt to the west, and ~ 3mm tilt to the south. Despite this, there are no discernible movements or fissures between joint lines to the stem's base or inscription panel. Apart from localised external weathering to joints, the mortar adhesion and condition is still very firmly bonded between components (**Fig. 5**).



Figure 5

Various lichen species, mosses and algae have colonised the stone (crustose, leprose, fructose). The paler light green crustose lichen has given rise to shallow root ingress (**Fig. 6**), with the oxalic acid as a by-product during the acid-base exchange mechanism. However, with surrounding species being less chelating in nature, it is likely that a symbiotic balance has occurred, with protective calcium oxalate mineral transition, and some hydrophobicity. North (N) and North-East (N.E) elevations are more prone to algal and moss deposition, particularly to convexed carved detailing and joint lines (**Fig. 7 and 8**).



Figure 6



Figure 7



Figure 8



Figure 9

Moisture run-off from the cap stone beneath the cross has led to a correlating specific crustose lichen species, possibly sulphur fixing, following the water line demarcation, on the south side (**Fig. 9**). On the World War II panel is a particularly interesting red algae, noted also on surrounding gravestones.

An original stone indentation repair is on the N.W corner; the weathering of the indent is identical to the surrounding stone surfaces (**Fig. 10**).



Figure 10

The low level metal decorative fence is attached to what appears to be a Caen stone kerb / step, by utilising a stone mortice recess for the ferrous tenon, the shoulder of which rests directly upon the stone (**Fig. 11**). Subsequent iron expansion has split the stone, including part of a visible paviour slab between the kerb and the memorial base. Further exploration is required to see whether the original memorial included the surrounding paving stones and kerb sets / steps, which may have effectively composed / framed the memorial in a subtle and effective way, in part structural to shed water, and in part decorative by using the shift in stone colour. It appears that the metal fencing is relatively modern, inserted at the same time as the concrete apron (**Fig. 12**).



Figure 11



Figure 12

RESTORATION PROPOSALS

For cleaning the memorial, there may be display value in applying a non-hazardous solution of Algo Bio Inhibitor (Supplier: Tensid 01932 554133) which would allow a partial removal of micro-florae, permitting rainfall to effectively clean the memorial but allow patinas to remain. Pressurised steam cleaning is likely to prove difficult in the removal of darker lichens, and algal regrowth may re-occur within 6 months. The Algo Inhibitor is residual for 2 – 3 years. Another biocide, also non-hazardous, D2 quaternary ammonia compound, would provide a cleaner solution. The threshold level of the change of appearance following cleaning requires discussion; alternatively, it may be acceptable for the memorial not to be cleaned, with the focus instead being on levelling it, and assessing the damage to the sub concrete apron stonework. This would also give some perception of care and value to the appearance. So, trials for cleaning methods would be useful, to establish two cleaning levels.

To upright and level the monument, following the clearance of concrete paving slabs and ascertaining the condition of kerbing / stone slabs for re-use, it is possible to provide firm packing by insertion of slate and mortar. Soil consolidation may be required with an eminently hydraulic mortar, mixed with the soil to the east side, as a strip foundation to reduce any rotational forces of early settlement. Repointing using an hydraulic mortar (NHL 2/3.5: Aggregate 1:2), would also be of benefit where required, although the pointing is generally in excellent condition.

Archival photography and a report of the complete process would also be beneficial for the coming generations, should the memorial require restoration in a further 100years time.