

Refurbishment work to Willaston Memorial Hall, The Green, Willaston

Further to recent comments regarding the re-pointing works to the Memorial Hall as part of the maintenance and refurbishment work, we wish to clarify the situation to prevent further inaccuracies.

Following the building survey report carried out by Messrs McLachlan Associates in 2005 and ourselves in 2016, both identifying the deterioration of the red sandstone due to the previously incorrectly specified sand and cement mortar, it was concluded that this defect required rectifying to avoid further damage. Consequently, as part of the maintenance work, a programme of repointing was written into the specification, details of which are recorded later.

It is important to understand the reasons why the present cement pointing is deteriorating the building envelope. It is well documented that Portland cement and sand pointing, particularly stronger mixes are not porous and by their very nature shrink as they set and thermally move at a different rate to the surrounding masonry. They further cause erosion of the surrounding soft material which is clearly in evidence with the red sandstone on the Memorial Hall elevations.

In contrast, a correctly specified lime mortar, as was originally used, is vapour permeable and allows water vapour to pass out from the building envelope, enabling the structure to effectively breathe. It also reduces the risk of freeze thaw deterioration.

The existing elevations to the front side and rear of the Memorial Hall have red sandstone facings with horizontal joints varying from 8 – 20mm, with an average of around 12mm and vertical joints, slightly narrower, at 6 – 15mm, at an average of 10mm. As stated it was important to remove the red dyed sand and cement mortar to prevent further deterioration to the red sandstone, see photographs.

A specification was drawn up and included in the documentation forwarded to the tenderers and called for the careful raking out of all mortar joints within the stonework to each of the elevations and chimneys to a depth of 20mm. The joints were to be cleaned and re-pointed with 3.5NHL lime mortar using an Anglesey grit sand. A sample panel was to be prepared at the start of the contract for approval by the Conservation Architect and then used as a standard for the remaining works.

At the start of the contract a sample area of pointing was raked out with hand tools, as per the specification, and repointed with the approved lime mortar. It was evident from this sample panel that, despite careful raking out to remove the hard cement mortar, the soft sandstone arises were fracturing due to their adhesion with the old cement mortar. This had the undesired effect of widening the joints (mainly the horizontal plane). As a result of this other options were tried to rake out the joints but in all cases resulted in a similar widening.

In a normal situation we would not allow the use of mechanical cutters to remove old mortar but in this instance it was found that by using a thin blade cutter to cut through the centre of the existing sand and cement pointing we were able to keep the arises intact, albeit that some of the existing s/c mortar remained attached at the perimeter. By using a cut to a depth of around 20mm, to that of the original lime mortar, we were then able to re-point with the new lime mortar to the original which would then allow the building to breathe correctly.

In other re-pointing works we have normally recessed the joints slightly which produces a more acceptable appearance. However, as the red sand and cement mortar was still attached to the edges of the sandstone, flush pointing with a brush finish was used to the joints.

We are also aware of the comments regarding the colour of the new mortar which you will see from the photographs is close to that of the original. This mortar will, over the next 18 – 24 months, fade in its stark appearance due to natural curing and atmospheric pollution.

In conclusion, it has been the intention of these maintenance works to alleviate the deterioration of the external fabric of the Memorial Hall by using correctly specified materials. It is unfortunate that in the past this has not been the case and as such has resulted in the need to carry out these and other repair works on the building.



Geoff Stott
RIBA Conservation Accredited
Paterson Macaulay & Owens Chartered Architects

* * * * *

Copied to Colin Jerret, Roger James & Kirsty Henderson (Cheshire West & Chester Council)

PARTNERS:

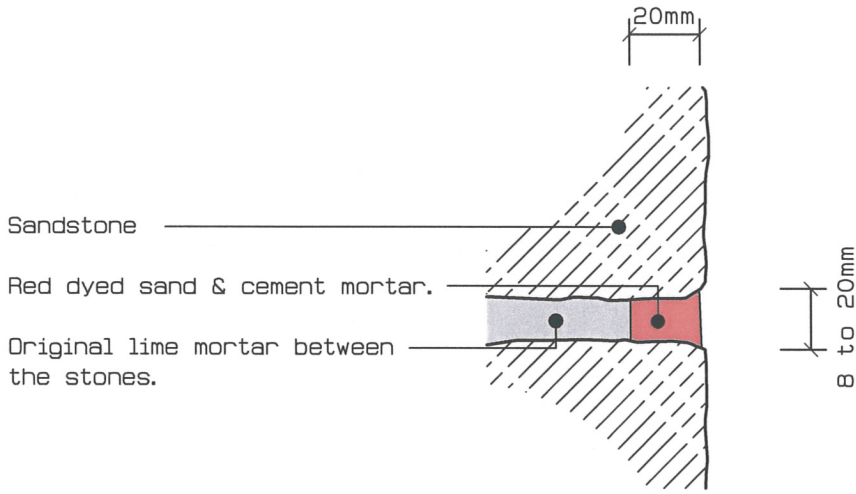
Alison Mackinder
BA(Hons) Architecture
Dip. Arch, RIBA

Geoff W Stott
BA(Hons) Architecture
Dip. Arch, RIBA, MSAI

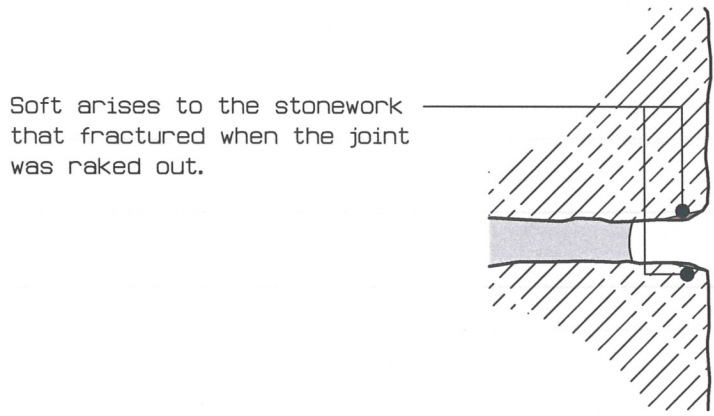
CONSULTANT:

Alisdair M Macdonald
Conservation Architect
RIBA, RIAS

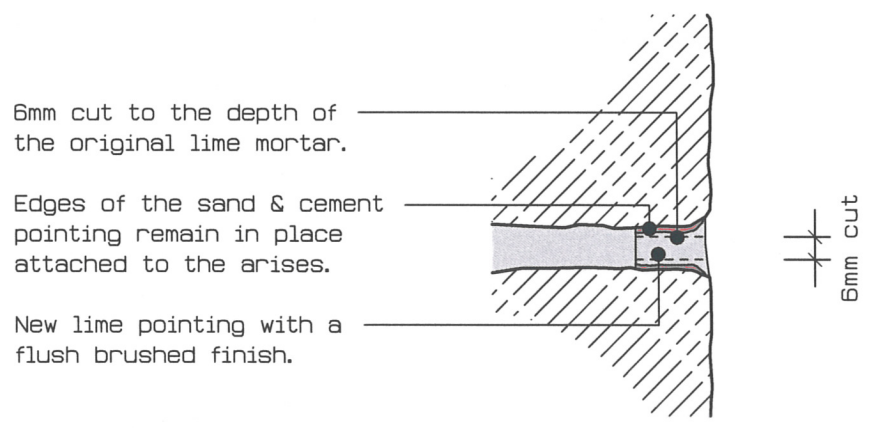





Existing Joints



Problem Encountered with the Raked Joints



Re-pointed joints with the 6mm wide cut.

Willaston Memorial Hall		Drawn gws	 Paterson Macaulay & Owens Beblington Telephone 0151 334 0250 Fax 0151 334 0250 Mould Telephone 0151 782000 Fax 0151 782000 E-Mail enquiries@patmac.co.uk
Willaston, Wirral.		Checked	
Stonework joints.		Date 09/16	
		Scale 1: 2	
<small>This drawing is COPYRIGHT Contractors must check all dimensions on site Only figured dimensions are to be worked from Discrepancies must be reported immediately to the Architects before proceeding</small>		Job no 4680	Desig no WO1 Rev —