

Kennet & Avon Canal Trust - Crofton Beam Engines

Pumphouse Cottage : Listed Building Consent Application

Method Statement for South and West Wall Render Removal

Background

Photographic and archive information indicates that Canal Cottage and Pumphouse Cottage were built concurrently with the Crofton Beam Engine boiler house and engine house at the end of the 18th century, to be ready for the installation of the first Boulton & Watt steam engine in 1807. The cottages housed the engineman's family and the boiler-man and would have been needed in time for the final completion of the canal in December 1810, some pumping having been commenced some years earlier as individual sections of the canal were completed and filled with water. Trial render removal has indicated that the cottages were built in English bond brickwork to match the engine house.

The first photograph showing external render applied to Pumphouse Cottage seems to be from the late 1920s or early 1930s. At this stage it had *not* been applied to the east or north elevations or the rear (north) wing. The assumption has been that the exposed south and west elevations were becoming regularly saturated by driving rain and this was seen as a form of protection, accompanied by vertical tile hanging on the upper gable end of the west elevation, visible in the 1930 photograph. At this time the render would have almost certainly been a lime/ sand mix, but at some point in the second half of the 20th century the roof pitch was reduced, the tile-hanging removed and the render steadily replaced by a hard cement-based render which is now tending to trap moisture within the wall thickness, exacerbated by the use of a gypsum-based internal wall plaster.

The Kennet & Avon Canal Trust wishes to steadily reverse the unsympathetic changes made in the mid-20th century, including, eventually, the type of window and door joinery used, but initially to remove the hard render to allow the walls to dry out.

Method to be used

Removing hard renders from hand-made red brickwork needs to be done with great care to avoid surface damage and, as far as possible, loss of original pointing. From 2022 onwards a number of small trial areas were undertaken at Pumphouse Cottage to explore the viability of render removal under the direction of Rob Dunton, a former director of Donald Insall Associates, Historic Building Consultants and an Architect Accredited in Conservation. The technique used followed a large-scale hard render removal carried out a few years earlier from No.1 Bayshill Road, Cheltenham, where a similar damaging render had needed to be removed from a listed neoclassical building undergoing repair and conversion in agreement with the Cheltenham

Council Conservation Officer, in this case retaining areas of sound historic render formed in decorative features such as Corinthian and Composite column capitals. The result after cement render removal and re-rendering in a traditional lime/sand render can be seen to the right. In this case some experimentation was necessary in order to discover the optimal technique to avoid any damage to a limestone rubble plinth and a soft red brick upper wall construction, some of which had been damaged when the hard render had been applied in the late 20th century, after removal of the original Regency stucco finish using unskilled labour.



What became clear after numerous trials with the leading stonemason was that using a sharp chisel driven at an acute angle to the masonry face, although seeming intuitively the best option was *not a reliable technique* to avoid surface damage. Where the render mix was particularly hard this tended to be *more* likely to cause surface damage to the brick face. What was found to be most successful was to use a less sharp chisel driven in short 'punching' taps at an angle of about 70° to 80° to the wall surface, which would loosen the render by fracturing it locally and breaking its bond to the brickwork. It could then be removed in small areas without any serious surface damage to the underlying brickwork.

This approach was used at the Crofton site in the initial trials, where small rectangles such as that to the right were exposed. As can be seen, not only did this minimise any surface damage to the brickwork but it was also possible to preserve the majority of the original pointing without the need to repoint, which clearly has major advantages. This is therefore the proposed method to be used in render removal at Pumphouse Cottage. It is accepted that, particularly at low levels, there will be locally damaged or frost-affected bricks which will require renewal, but good local sources of matching salvaged bricks are being identified. The existing render is not well keyed, which means brickwork joints are not recessed, requiring little repointing.

