CONDITION SURVEY

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Project: LEDBURY War Memorial

Date of Inspection: 29th July, AM Conditions: Cloudy, previous light rain.

1. Introduction

1.1. This condition report on the war memorial, its surrounding paving and drainage was carried out on behalf of Ledbury Town Council, as appointed on 1 June 2021 via email by Angela Price, scope as set out in the corresponding fee proposal. This report will cover an appraisal of the current condition of the war memorial following recent repairs, and proposals for remedial works.

1.2. The inspection was visual, from ground level and no opening up or detailed analysis of materials was carried out. This report was written with the aid of information supplied by Ledbury Town Council, documents issued and received from contractors in 2019 for the repairs, and a booklet, 'War Memorials in Ledbury' by Jennifer Harrison.

1.3. The Grade II listed War Memorial is situated on the main shopping street in Ledbury, The Homend. It takes the form of a Portland stone column, with polished granite and mosaic tesserae panels, as designed by Joseph Thewlis of Headingly, Leeds. Construction was completed in December 1920, and an additional tier with painted ceramic tiles and further granite plaques was added in 1986 to commemorate the second world war.

1.4. As a historic monument, the memorial has communal, evidential and aesthetic value. Conservation principles of strict minimal intervention require balancing against the need for a smart and attractive monument with legible inscriptions, that the people of Ledbury can take pride in. The historic fabric connects us over 100 years to our past when the structure was first conceived, as a lasting tribute to the men who gave their lives during the world wars, as such preservation rather than excessive replacement is a priority.

1.5. With this in mind, the recent works were appraised based on impact on the values listed above; fitness for purpose, preservation of historic fabric, and preservation of the appearance of the monument.

2. Setting

2.1. The monument is situated on a footpath that passes St Katherine's Hospital and Almshouses, and joins a group of many other historic and listed structures within the area, in the Ledbury Conservation area. The memorial is a good vantage point to view the beautiful market hall across the road and is on an attractive route along the highstreet, with well-maintained planting and flower beds lining the path.

2.2. Many passers by stop to view the war memorial in more detail and circle around it, as there is information on all sides. It is clear this is a much-treasured monument, with locals stopping to offer visitors further information on it and to point out names of particular significance to them.

The flat area of paving around it aids this use, which steps out into the highway to allow adequate room for the main pedestrian route.

2.3. The road adjacent to it is busy with multiple waiting or maneuvering vehicles, present due to parking and loading areas, a bus stop, and the small market opposite. The kerb is low but the change in materials should give an indication to an observant driver that it is present. Perhaps the informal way for this section of road is used for parking and waiting leads to less caution. At the time of the inspection several vehicles mounted the kerb, including when I was close by. Traffic is not a new problem in this area, the memorial was hit by a lorry in 1985, following an article in the Ledbury Reporter on the 'onslaught of modern traffic', and required substantial restoration.

2.4. During parades and remembrance events, participants gather along the paving next to the memorial and on the road across from it, leaving space on the road side of the monument for wreath laying.

2.5. Before Covid restrictions, attendees were fairly closely gathered, and the area for pedestrians to move around the road facing area of the memorial is not large. This means it is important to minimise trip hazards and other obstructions in this area. Vehicle barriers may impede visitor access and affect the ceremonial use of this area.

3. Paving

3.1. The area around the memorial was historically cobbled, as noted in the listing description. Water pooled at the base of the monument, which appeared to be 'sinking', necessitating renewal of surface finishes and their bedding.

3.2. New paving is randomly laid out stone flags, of differing sizes, an average size of approx. 450 x 450mm. From measurements taken where they abut the ACO channel, they are 20mm thick.

3.3. Falls across the area of paving appear to be sufficient for the drainage of water into the ACO, no standing water was observed, levels have blended in with the adjacent natural stone paving flags.

3.4. Stone is largely grey with subtle brown banding and what appears to be a brushed or sandblasted finish, the type and source could not be established from the inspection. The bedding was not inspected.

3.5. Flags have cracked where adjacent to the stone kerb and this clearly corresponds to where vehicles have over-run. This has caused a trip hazard which is likely to get worse.

3.6. The stone kerb itself was not replaced and does not appear to have been altered as part of recent works.

3.7. Paving is not flush where it meets the channel drain and stones at the base of the monument, as described in item 4.5.

3.8. Joints in flags are of irregular widths, 3mm in some places and 15mm in others. Pointing is slightly recessed to some joints and flush with the paving elsewhere, this may be due to wear or cleaning following the paving's installation.

3.9. Information on the slip or skid resistance of paving was not provided, we strongly recommend this is confirmed to ensure the safety of the users of the footpath.

3.10. The engraved stone commemorating Mr Stuart Heaton's donation is attractive, and natural stone flags are an appropriate choice to compliment the historic setting while maintaining its function as a main pedestrian route. Visually, a better colour and coursing match with the adjacent stone flags would be desirable.

4. Channel Drain

4.1. The ACO channel drain is presumed to be polymer concrete with a galvanized steel grating. Its lightweight appearance suggests it's an 'extra light duty' or Load Class A drain, suitable for domestic occasional foot traffic. This is not an equivalent to the more durable Load Class B drain specified.

4.2. The drainage system appears to be adequately diverting rainwater from the base of the memorial, no standing water was observed. Paving falls from the kerb in the direction of the war memorial, so the presence of a drainage channel is desirable to this side. Paving to the other side of the memorial is level and may not require a channel, we advise observation of this area during or after heavy rainfall, to ensure water is draining to an appropriate location.

4.3. The grating can be easily lifted for inspection and the removal of any debris. The channel itself appears suitably sized.

4.4. The grating was slightly damaged at the corners. The trip hazard posed by missing or distorted grating and the uneven ledge to the paving is of concern.

4.5. The way the paving , ACO channel and lowest stones of the memorial plinth are laid has created ledges of various heights, around the monument, restricting the width of level trip-free space to the path. In certain lighting and to some users of the path, this change in level between finishes will be difficult to identify and safely navigate.

5. Plinth Stones

5.1. O'Brian and Price's drawing for repairs, supplied to the contractor as part of the works, advised that grouting below the existing base stones to the monument should be carried out. We cannot confirm this has happened.

5.2. A detail of the step to the base overlapping the surrounding stones, which were to be level with the pavement, was provided on the above drawing. The new lowest stones to the monument have not been installed as this detail, there appears to be no overlap and paving is not flush.

5.3. The detail as installed has the lowest stones laid next to the higher base stones, with uneven and wide mortar joints that pointing is failing to. Voids can be seen behind pointing.

5.4. Flower vases help to mark the base of the monument but may not do enough to aid detection of the change in level, this should be considered with a thorough risk assessment as they may add to the trip hazard here. They have been damaged and are unfixed, edges at the corners are sharp. To improve the durability of these and potentially minimise risks, fixing methods and chamfers to the edges are worth reviewing.

6. Stone renewal to pillar

6.1. Sources of Portland Limestone are increasingly scarce in the UK, the visual match of replacement stone is currently only fair and may blend in as it weathers.

6.2. Following renewal of a stone to the obelisk, the arrises do not line up and the monument has lost is visual crispness. The new section of stone does not appear to be to the original profile.

6.3. The joint between the new and the original stone is large and uneven, approx. 12mm wide in some places, and ledges have been created where the lower stone projects further out, which will accelerate the weathering of it and cause more distortion of it from its original profile.

6.4. The fixing of the stone has not been confirmed, this should be checked to ensure structural stability.

7. Pointing

7.1. Pointing around granite and tile plaques appears to be resin-based, and is largely intact. The glazed ceramic tiles may benefit from some repointing around the edges.

7.2. Mortar joints, particularly to the base of the monument, have failed. This could be for multiple reasons, including pointing not being installed deep enough, frost action, mortar drying out too quickly, and over-cleaning. Water will work its way into these voids and contribute to ongoing decay and staining.

7.3. There does not appear to have been an attempt to match the new mortar to existing pointing and stonework, as pointing is a poor match. It may blend in further as it weathers. Mortar appears to be very hard, it could be a strong hydraulic or cement mix.

7.4. Pointing appears to be flush with the face of the stone and follows the irregularities of the stonework. Joints which have been previously pointed with possibly resin based mortar have not been raked out fully, this gives an untidy appearance where old mortar meets new. Leaving sound hard mortar intact can prevent damage to stonework caused by its removal.

8. Granite Plaques, Ceramic Tiles and Mosaic Tesserae

8.1. Granite plaques have been kept sparklingly clean and the inscriptions are thoroughly painted.

8.2. Painted ceramic tiles appear bright and undamaged.

8.3. Pointing to mosaic tesserae has eroded, so the edges of the tesserae are exposed. There are small amounts of missing tiles, most noticeably to the sailor's hand. Abrasive or too frequent cleaning methods may have worsened the condition of the pointing and tiles.

9. Cleaning

9.1. The monument has been cleaned both during and following the repair works, so the impact of the cleaning carried out by the contractors can't be commented on, although it would be useful to know the method. It is apparent that stonework has become porous, and efflorescence has occurred, particularly to the base stones, this may have been caused by too frequent or abrasive cleaning. Mouldings to stonework and the pointing to tesserae have been eroded.

9.2. The improvements made to drainage around the monument and amendments to the frequency or method of cleaning may ensure that salt staining is not further exacerbated. Excessive water or hard cleaning compound may draw more salts out.

9.3. Signs of dirt staining are visible in more sheltered areas of the monument.

10. Analysis of Recently Carried out Works

10.1. The visual impact of the recently carried out works has been described in previous sections. In this section the work has been reviewed, within the limitations of the visual inspection, as follows:

- Compliance with the specified work and quotation provided by the contractor, which formed the contract documents for recently carried out work.
- Compliance with building regulations
- Avoidance and management of risks as required by the Health and Safety Executive
- Compliance with the Equalities Act 2010
- Reasonable standards of construction and workmanship based on British Standards and best practice for conservation of listed structures as advised by Historic England

10.2. Work not in accordance with contract documents:

10.2.1. New flagstones are not as the thickness indicated on O'Brien and Price Stroud's drawing C7725/01 or as the 50mm thickness described in the contractor's quotation dated 31/07/2019.

10.2.2. The base of the stones may not have been laid as the above structural engineer's drawing, this should be checked.

10.2.3. The grouting to the underside of the base stones may not have been carried out as described on the drawing, this should be checked.

10.2.4. The ACO channel was not as specified in the above drawing, and not to all sides of the memorial as shown.

10.2.5. The type of stone could not be verified as Yorkstone as described in the quotation, this should be confirmed.

10.2.6. Damaged vases were not adequately replaced as the quotation, as further damage has occurred.

10.2.7. The entirety of the resin based mortar was not removed and the monument was not fully repointed, this does not match the quotation.

10.2.8. Work not in compliance with building regulations 9.3.1. Part M of the Building regulations identifies the need for level access routes and requires 'the difference in level at joints between paving units [to be] no greater than 5mm, with joints filled flush'. The ledge caused by the lowest stones to the monument does not meet this criteria.

10.2.9. Widths of level paving to either side of the momument should be checked, to ensure they comply with minimum allowances in Part M.

10.3. Hazards

10.3.1. We advise a risk assessment is carried out for the momument, focused on the surrounding paving and trip hazards created by the work.

10.3.2. Previously the monument was surrounded by cobbles, which were, within the limitations of this bumpy surface, flush with the lower monument stones (Appendix A, image ref. 4). The installation of the ACO and the level of the new paving has introduced trip hazards which were not there before. Before repair works in the 1980s, the lowest stones were above the surrounding pavement by around 70mm (as shown in the previously mentioned booklet 'War Memorials in Ledbury'), so there is a precedent for a step in this section of the monument, but not the hard to distinguish small change in level currently present.

10.3.3. Fractured paving also presents a new trip hazard, pedestrians would be on guard for surface irregularities with the previously cobbled surface, but would not anticipate them in newly laid paving. There is the potential for further fracturing and instability to the paving.

10.3.4. Flower vases that are unfixed and with sharp edges may cause a risk of injury, the placement of them on the monument should be considered. The previous location on the upper step of the monument was less likely to trip people.

10.4. Accessibility

10.4.1. Government advice on Inclusive Mobility (2005) was been published to ensure new works are in accordance with the Disability Discrimination Act 1995 (DDA), which gives disabled people a right of access to goods, facilities, services and premises. These rights are also covered by the Equalities Act 2010.

10.4.2. Inclusive mobility advice notes that '*uneven surfaces, gaps between paving slabs etc whether within or outside buildings can cause problems for people using sticks and crutches, visually impaired cane users and wheelchair users'*. This makes the gaps and uneven surfaces caused by recent works to the paving and channel drain a concern.

10.4.3. It is also stated that *'Joints between flags and pavers should not be less than 2mm and not more than 5mm wide, for pedestrian-only footways, flags can be laid with wider joints (6- 10mm) filled with compacted mortar.'* Unfortunately some paving joints exceed this, although the unevenness of the joints is no greater than the existing adjacent paving.

10.4.4. The government advice suggests that gratings should be a maximum 13mm wide, to avoid confusion to visually impaired people. The product and installation specified for the slot drain on O'Brien and Price's drawing would have met these requirements, the ACO installed does not.

10.5. Work not considered of a reasonable standard

10.5.1. As described in section 2 of this document, there has been an established pattern of vehicles over-running this section of paving, and options for alleviating this problem are limited. Paving should therefore be suitable for occasional vehicle over-run, and suitable for regular pedestrian traffic as a minimum, as should the channel drain.

10.5.2. According to Highways England advice, this area of paving would be in the 'light vehicle' category of footways, as occasional overrun by HGVs can be expected. It states that the design of upgraded pavements should provide a structural life of 40 years (*CD 227*), further advice is available on suggested dimensions for paving slabs. Although stone flags are a natural product and each type has its own unique strengths and tolerances, the thickness installed could not be reasonably justified for this application.

10.5.3. Stone flags as installed don't conform to *BS EN 1341:2012 Slabs of natural stone for external paving. Requirements and test methods (115).* The British standard identifies a minimum breaking load of 0.75kN for stone flags to pedestrian only areas. For the type and size of flags used, a 20mm thick stone is insufficient to meet this standard, and would only be appropriate in a decorative setting. If all the replacement stone is this thickness, further breakage can be expected, including in areas where there is no vehicle overrun, due to the level of foot traffic.

10.5.4. The workmanship involved in the replacement stone to the monument obelisk is not of a sufficient standard for this Grade II listed structure. Good practice, which an experience stonemason should be aware of, is to cut and finish replacement stone to match the original lines and not the weathered profile, with fine joints to match those elsewhere in the monument (measured at 4mm). This is important to ensure the entire monument continues to function and weather as originally designed, and makes the historic profile of the stone easier to read.

11. Recommended Actions

11.1. A risk assessment should be carried out addressing the trip hazards presented by the new drainage channel and surface finishes, and the unfixed flower vases. This should include confirmation of the slip resistance of the paving.

11.2. The monument and area around it should be observed during or after heavy rainfall to ensure the drainage is performing as required.

11.3. Paving should be lifted to verify the inadequate thickness, and the bedding should be inspected at the same time to ensure it is appropriate for the expected traffic to this area. Paving should be renewed with dimensions suitable for the type of traffic, so for occasional vehicle over-run by the kerb, and for regular pedestrian traffic to the rest. The bedding of the paving should be improved as needed. New stone flags should be installed following approval of samples and product data sheets, and should be set to avoid trip hazards adjacent to the monument and where it meets existing paving.

11.4. At the same time the ACO channel should be renewed with one appropriate to the usage of this area, and grouting carried out to the base of the monument, further advice should be sought from a structural engineer on the base detail as installed.

11.5. It is our opinion that the quality of workmanship during the stone renewal to the column is insufficient and not appropriate for this historic listed monument, stone should be replaced by a suitably experienced craftsperson following approval of samples.

11.6. Repointing in lime mortar, following samples (an NHL 2 mix may be appropriate here) including thoroughly filling voids behind failing mortar should be carried out throughout.

11.7. Repointing, and potentially grouting of the substrate and replacement of missing mosaic tesserae should be carried out by a suitably experienced conservator.

11.8. A maintenance plan should be prepared for the memorial, including regularity and methods of cleaning, and for future maintenance of the mosaic, ceramic and granite panels. This will balance the need for preserving the appearance of the monument while minimising the damage caused by over-cleaning or inappropriate cleaning and repair methods.

11.9. We would not advise sealing or other consolidation methods for the limestone and granite surfaces, as these affect the breathability of the stonework and do not provide the required long lasting re-treatable protection.

11.10. Clay poultices to remove surface staining could be considered, although it might not make a significant impact on the current amount of staining. Periodic gentle cleaning following sheltercoating, such as that used for the cenotaphs in London and Bristol, may be appropriate. It is important that the materials and techniques are specified by suitably experienced specialists and are specific to this memorial.

APPENDIX A: Photographs

1.1 Uneven joints, and salt staining to paving stones

1.2 Unsupported edges and flimsy material to ACO grating.

1.3 Fractured paving flags by kerb

2.1 Damage to edge of stone flower vase

2.2 Eroded stone mouldings and face

2.3 Ceramic and polished granite plaques.

3.1 New pointing to stonework

3.2 Inadequately shaped new stone

3.3 Eroded pointing and missing mosaic tesserae

4.1 The memorial prior to the recently carried out works.
Source: Ledbury Town Council