

Structural Inspection Report of Northenden War Memorial Palatine Road Northenden Manchester M22 4JT

Date:

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For:

Ian Storey

Conservation Building Services Ltd

By:

Phil White MEng CEng MICE MIStructE CMreg

Director

Phil White Associates Limited

Stores House

Walk Mill, Eccleshall

Stafford

ST21 6EP

www.philwhiteassociates.co.uk

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The Inspection Brief

I was asked to inspect the following:

- Site visit and a general visual non-invasive structural inspection of Northenden War Memorial

Based upon my inspection I was asked to produce a report listing the apparent defects and give an opinion as to cause and structural significance, together with recommendations for further investigations if required, or where appropriate, suggest in outline only the scope of any necessary remedial works, including general advice about the likely effects and need to treat any nearby trees and vegetation where it could affect the inspected structure.

The investigative procedures and exclusions of the inspection are listed in the Appendix

This report has been prepared for the client alone and no third party should rely on it.

Site Conditions

The weather on the day of inspection was overcast, the temperature was around 3 degrees Celsius.

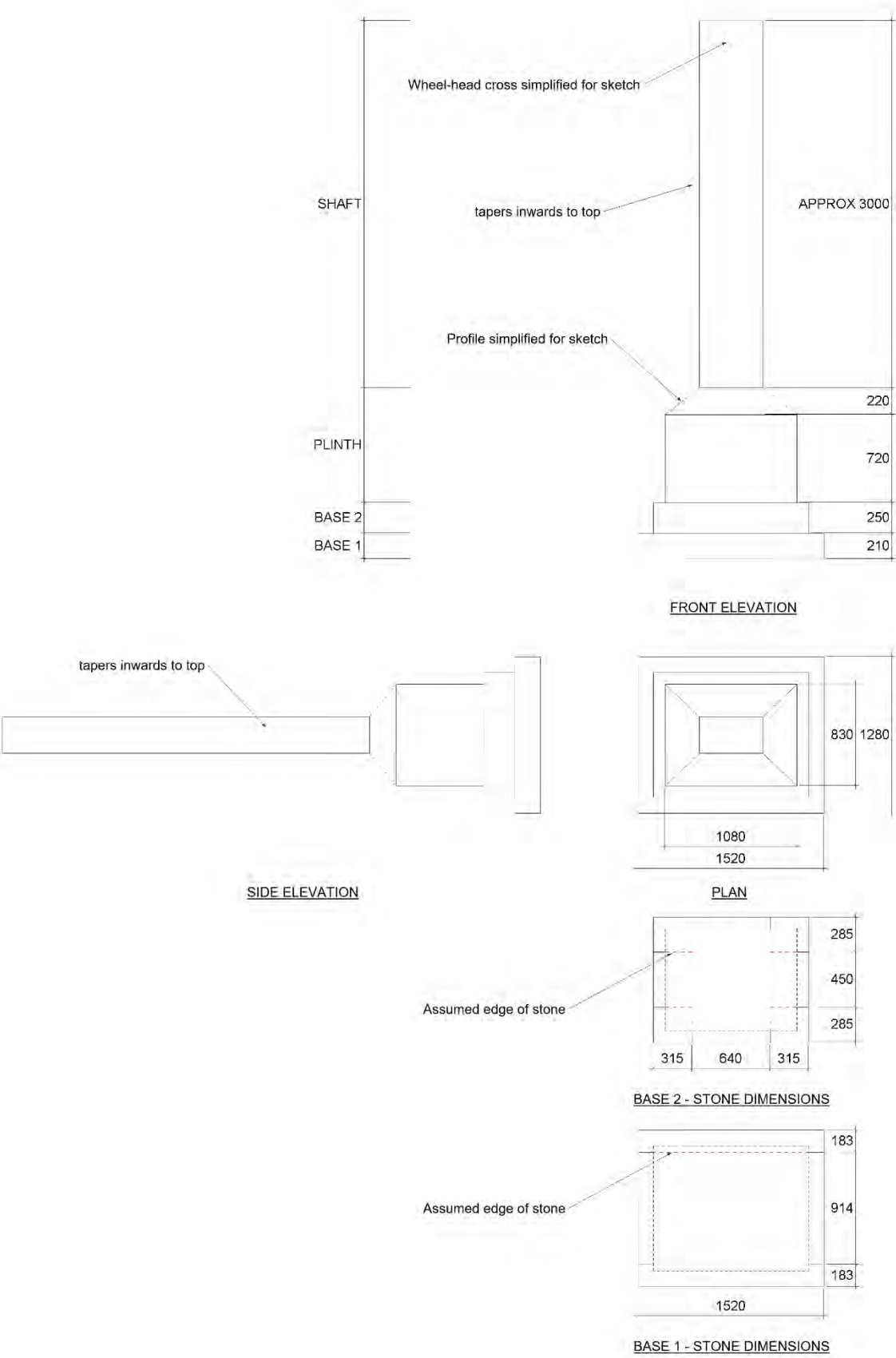
Outline description of the structure

It comprises a circa 5m tall pillar, rectangular on plan, dying back to a wheel-head cross. The front face of the cross head bears a reversed sword carved in relief, either side of which on the cross shaft is blind arcading.

The cross shaft stands on a square plinth, that stands on a two-stepped base. A large bronze plaque fixed to the front face of the plinth records the principal dedicatory inscription TO THE GLORY OF GOD AND IN MEMORY OF/ THE MEN OF NORTHENDEN WHO FELL IN THE GREAT WAR 1914-1919/ (63 NAMES). Below this, on the top step of the base, a second bronze plaque reads 1939 THE SECOND WORLD WAR 1945/ (41 NAMES).

The cross is set back from, and parallel to, Palatine Road. Palatine Road runs on a north-east to south-west line, therefore the front elevation of the memorial is facing south-east.

References to the left and right sides of the memorial will be as observed from the front of the memorial, looking towards it.



Sketch 1 War Memorial overall dimensions – all dimensions approx.

2503 - War Memorial, Northenden

Front Elevation



Photo 1 Front Elevation

2503 - War Memorial, Northenden

Left Elevation

Note: due to proximity of vegetation, a single shot capturing the whole elevation was not possible



Photo 2 left elevation showing shaft

2503 - War Memorial, Northenden



Photo 3 left elevation showing plinth and bases

2503 - War Memorial, Northenden

Rear Elevation

Note: due to proximity of vegetation, a single shot capturing the whole elevation was not possible



Photo 4 rear elevation showing upper shaft



Photo 5 rear elevation showing lower shaft

2503 - War Memorial, Northenden



Photo 6 rear elevation showing plinth



Photo 7 rear elevation showing base 1 & 2

2503 - War Memorial, Northenden

Right Elevation

Note: due to proximity of vegetation, a single shot capturing the whole elevation was not possible



Photo 8 right elevation showing shaft

2503 - War Memorial, Northenden



Photo 9 right elevation showing plinth and bases

2503 - War Memorial, Northenden

Observations & Defects

Shaft

Front



Photo 10 shaft - front elevation showing minor weathering to surface/possible too aggressive cleaning

2503 - War Memorial, Northenden

Left



Photo 11 The layers of the stone are visible, there are in a vertical orientation. 2 very minor areas of iron staining (horizontal - 30-40mm long x 0.5mm, with very mild rust staining running down the surface)

Rear



Photo 12 Very minor cracking parallel to the vertical vertices of the chamfers

2503 - War Memorial, Northenden



Photo 13 Minor pitting/spalling of stone at bottom of shaft (too aggressive cleaning or natural weathering?)

Right



Photo 14 The layers of the stone are visible, there are in a vertical orientation. • Minor cracking/opening up of minor fissures (too aggressive cleaning or natural weathering?)

2503 - War Memorial, Northenden

Plinth

Front



Photo 15 2 patches to lower edge.

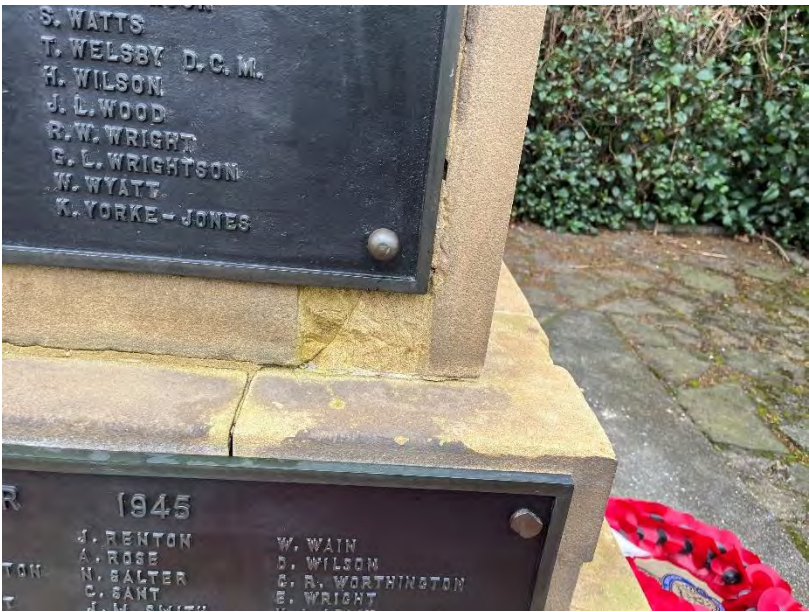


Photo 16 RHS patch has failed, showing diagonal crack

2503 - War Memorial, Northenden



Photo 17 crack across bolt in upper right corner of plaque

Left



Photo 18 Horizontal crack 2/3 way up left side, running from rear edge for ½ width

2503 - War Memorial, Northenden



Photo 19 Failing, poor quality repair on bottom edge. 2 diagonal cracks on bottom corners

Rear



Photo 20 Continuation of horizontal crack (see Photo 18), but heading diagonally up

2503 - War Memorial, Northenden



Photo 21 Diagonal crack to lower left corner



Photo 22 Bottom edge damaged

2503 - War Memorial, Northenden

Right



Photo 23 Minor pitting to upper vertical surface, upper surface – very aggressively cleaned by pressure washer, slight damage to original smooth surface

Base 2

Front

Note – plaque covers majority of this face



Photo 24 Right hand block, vertical vertex damaged to lower half

2503 - War Memorial, Northenden



Photo 25 Right hand block diagonal crack below plaque, LHS of block
Left



Photo 26 minor damage to top front corner

2503 - War Memorial, Northenden



Photo 27 damage to top rear corner



Photo 28 Vertical joints pointed up (forward joint slightly thicker) and below front block

2503 - War Memorial, Northenden



Photo 29 Misalignment between middle and front block

Rear



Photo 30 joint between left rear corner stone and rear intermediate stone open-jointed

2503 - War Memorial, Northenden



Photo 31 Right block, small diagonal crack



Photo 32 Slight spalling/aggressive cleaning

2503 - War Memorial, Northenden

Right



Photo 33 Rear joint re-pointed and slightly wider



Photo 34 Front block has 2 damaged areas with corner damage (as noted on Photo 24)

2503 - War Memorial, Northenden

Base 1

Front



Photo 35 minor area of damage to upper surface in centre



Photo 36 minor area of damage to the upper surface at RHS

2503 - War Memorial, Northenden

Left



Photo 37 Very wide front joint between front and side stones, which has been repointed



Photo 38 The middle stone has been displaced to the left

2503 - War Memorial, Northenden

Rear



Photo 39 some staining on upper surface



Photo 40 minor crack on upper surface to RHS

2503 - War Memorial, Northenden

Right



Photo 41 both vertical joints have been repointed, both joints are wide, especially the forward vertical joint



Photo 42 minor crack on upper surface of middle stone on its front side

Apron

The apron is a cast insitu concrete with fine aggregate, which has been exposed by weathering. It slopes away from the base of the memorial. It was case monolithically around the memorial, but now has several cracks in it.

2503 - War Memorial, Northenden



Photo 43 front apron showing cracks (highlighted in purple)



Photo 44 left side of apron showing cracks (highlighted in purple)

2503 - War Memorial, Northenden



Photo 45 rear of apron showing cracks (highlighted in purple)



Photo 46 right side of apron showing cracks (highlighted in purple)

Discussion & Conclusions

The memorial has suffered some structural distress but appears to be stable. I think there has been 2 structural issues occurring:

1 – there has been some settlement of the foundations to the front left corner of the base of the memorial

2 – there has been some settlement to the internal fill of the bases (Base 1 & Base 2) of the memorial (I am assuming that this is crushed rock/very weak concrete infill)

The consequences of these two acting together has propagated the following:

- The front stone of Base 1 has been displaced forwards, hence wide mortar joints to the two side stones, as seen in Photo 37 & Photo 42
- The left stone of Base 1 has been displaced sideways at the front side, as seen in Photo 38
- The effects on Base 1 stones have affected the front stones of Base 2, especially the front left stone, which had moved forward, as see Photo 26 (showing the wide mortar joint)

This has resulted in the support of the plinth above becoming uneven, and the plinth stone has adjusted itself to the new support arrangement.

Base 2 is made up of 8 stones, 4 square(ish) corner stones, with 4 long rectangular side stones, between the corner stones. I am making the assumption that the infill is crushed stone or very weak concrete (to save construction costs). I believe the 4 corner stones were the stiffest support for the plinth, and as the memorial settled, the plinth was only supported at its corners by the four corner stones in Base 2.

Over time, the plinth stone has cracked at the corners (as seen in Photo 19, Photo 20 & Photo 21) allowing the plinth to drop and active the support of the settled fill and side stones of Base 2. This has then caused the bottom left edge of the plinth to become damaged as the plinth adjusted itself to the new support, which has been repaired (as seen in Photo 19). The plinth has now come to rest, supported by the corner stones, the side stones and the infill, but with the observed movement of Base 1 & Base 2 stones and the damage to the plinth.

This settlement damage and a combination of weathering and accidental damage has been repaired over the years, with some poor and some acceptable repairs.

The memorial appears to be stable, but with signs of settlement. If further settlement is observed, then ground stabilisation works should be considered, but only if there is evidence of further settlement.

The cracking seen in the apron is due to the ground settlement and that it was cast monolithically without expansion gaps. Sun, weather and loading as caused it to crack.

Recommendations

The following items should be investigated further:

- A search of the archives to see if the construction drawings can be found

The following items should be monitored:

- Repointed mortar joints should be monitored for gaps/cracks, existing cracks should be monitored. If there is any new cracking, or any existing cracking extends or widens, or gaps/cracks appear in the repointed mortar joints, a suitably experienced and competent person should inspect the movement

The following items should be addressed (please note these relate to the inspected elements only, they do not cover regular maintenance and repairs that every structure requires):

Priority 1 - Immediate

Work that should commence without delay for public safety or health and safety reasons, to prevent imminent damage or to arrest rapid deterioration.

- None

Priority 2 – Urgent

Work that should be carried out within weeks or months, and within 12 months at most. Failure to do so would be likely to result in significant further damage or deterioration and increased cost.

- None

Priority 3 – Necessary

Work that should be carried out, for which there is time to plan, and which can be integrated with other work. This is work that is due in order to keep the structure in a state of good repair and to maintain its value and usefulness.

- Seek the advice of an experienced stone mason to see if any stone repairs are feasible, which do not harm the memorial. NOTE the mason must consider that the plinth stone and the base stones beneath it have localised areas of high stress, and that removal of material to let in new stone may cause further movement and damage to the memorial.
- Repointing of open joints and filling of cracks with very weak lime mortar (if they are not to be repaired with stone). This will reduce the amount of water entering the monument and allow monitoring of further movement.

Priority 4 - Desirable

Work that is desirable, if not strictly necessary, but that might improve the functioning or performance of the structure.

- A review of drainage around the memorial, to ensure rain water is quickly removed from around the memorial, to prevent the ground under the memorial from being soaked

Phil White MEng CEng MICE MStructE CMreg

21st February 2025

Appendix - Investigative Procedures and Exclusions of The Inspection

Investigative Procedures

Subject to safe and reasonable access as determined by myself, based on the conditions encountered at the time of the inspection:

External inspection of the building was carried out from ground level by visual and optical sighting. I cannot advise that obscured parts are free or not from defect.

The internal inspection was made within the limits of ready accessibility as it is not normal practice to lift floor coverings or floorboards, remove panels or plaster, or move heavy items of furniture. Consequently, I was not able to inspect any parts of the structure, which were covered, unexposed or inaccessible. It is neither implied nor should it be construed that un-inspected parts are free or not from defect. Internal observations were made with the aid of a hand held torch where natural light was insufficient.

My inspection of the drains was limited to the raising, where possible, of visible inspection chamber covers. (if appropriate to the scope of the structural inspection)

Areas where reasonable entry was denied to me, or where safe and reasonable access was not available, are excluded from and do not form part of the inspection. These areas are identified within this report

The Inspection only checked for visual evidence of damp.

The Inspection compared the inspected structure with a structure that was constructed in accordance with the generally accepted practice at the time of construction, and which has been maintained to a reasonable condition such that there has been no significant loss of strength, stability and durability over time.

The appraisal of the structure will be based on the areas investigated in the belief they are representative.

Exclusions of the Inspection

Unless specifically mentioned in my report, my inspection does not include:

- Any defects which may not be apparent due to prevailing weather conditions at the time of the inspection. Such defects may only become apparent in differing weather conditions.
- An investigation into the presence of asbestos
- Testing for any form of contamination, pollution, or any other environmental impairment (methane, radon. etc.)
- An inspection of the electrical and mechanical installations
- Enquiries to the Local Authority regarding Building Regulations completion certificates
- An investigation into the history of the extraction of materials on, under or around the site
- The reporting of the presence and/or impact of vermin, insects, fungi, or mould

This report does not constitute a Homebuyers Report, Valuation or Schedule of Refurbishment.

The lack of specific reference to any structural elements, materials or type of construction does not infer compliance with current British Standards, Codes of Practice, or Building Regulations.