



SALTWORKS LANE, WESTON, STAFFORDSHIRE

Archaeological Watching brief

Oxford Archaeology North



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SUMMARY

In 2005 George Wimpey Midland Ltd submitted a planning application (planning reference 05/05368/OUT) for a domestic development of a c 3.2 ha brownfield site at Saltworks Lane, Weston, Staffordshire (NGR SJ 97640 26548). Development of the site, which is divided into eastern and western areas by an arm of the Trent and Mersey Canal and a contiguous access route, will involve the demolition of the existing modern structures on the site, together with considerable disturbance of subsoil deposits during, and in advance of, construction. A desk-based assessment, undertaken by Waterman CPM in 2005, identified that the site lies within an area of some archaeological potential, encompassing the location of a historically-important post-medieval salt works and, accordingly, the Staffordshire County Council Archaeologist (SCCA) requested that a programme of archaeological evaluation be undertaken on the proposed development area. This evaluation, undertaken by OA North in May 2007, identified at shallow depth highly-significant and well-preserved structural remains of the nineteenth-century industrial sites that had formerly occupied the site.

Due to the significance of these remains the SCCA issued a brief for a watching brief to be maintained on groundworks associated with the development. Following provision of a costed project design to meet the requirements of the SCCA brief, Waterman CPM, on behalf of George Wimpey Midland Ltd, commissioned Oxford Archaeology North (OA North) to undertake the programme of archaeological watching brief.

The watching brief, undertaken in June and July 2007, monitored the first phase of the groundworks on the site, comprising the removal of the concrete slabs that covered the vast majority of the development site. As such, groundworks rarely penetrated the underlying rubble make-up material beneath the slabs, and no significant remains associated with the historic nineteenth-century industries were identified.

Within the western plot a 140m long narrow gauge railway was revealed running east/west, close to, and almost parallel with, the north boundary of the site. The fact that this railway was bedded on rubble material similar to that underlying later concrete surfaces suggests that it relates to the twentieth-century use of this area, and is not particularly significant. A small area of alluvium was revealed at the north-west corner of this area, where the underlying rubble was removed, but no remains of archaeological significance were revealed.

The present phase of groundworks has not impacted upon the regionally significant remains of the historic industries that formerly occupied the eastern part of the site. However, any future works involving negative groundworks will certainly have a major impact on these remains, the destruction of which would need to be mitigated through detailed archaeological recording.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank George Wimpey Midland Ltd for commissioning the work and Christine Cox and Ian Travers of Waterman CPM for their assistance during the project and for providing written instruction. OA North are also grateful to Kenny Monaghan and Phil Kinsman of McPhilips Demolition for their liaison and assistance on site. OA North would also like to thank Stephen Dean, the Staffordshire Country Council Archaeologist.

The watching brief was undertaken by Richard Lee, Kathryn Levey and Steve Clarke, the latter of whom compiled the report. The illustrations were produced by Marie Rowland, and the project was managed by Stephen Rowland, who also edited the report.

1 INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

1.1.1 In 2005 George Wimpey Midland Ltd (GWM Ltd) submitted a planning application (planning reference 05/05368/OUT) for a domestic development of a c 3.2 ha brownfield site at Salt Works Lane, Weston, Staffordshire (NGR SJ 97640 26548). Development of the site will involve the demolition of the existing modern structures on the site, together with considerable disturbance of subsoil deposits during and in advance of construction. A desk-based assessment (Waterman CPM 2005) identified that the site lies within an area of archaeological potential, encompassing the location of a historically important post-medieval salt works and thus the Staffordshire County Council Archaeologist (SCCA) requested that the site should be archaeologically evaluated. The evaluation, undertaken by Oxford Archaeology North (OA North) in May 2007, identified at shallow depth highly-significant and well-preserved structural remains of the nineteenth-century industrial sites that had formerly occupied the site. Accordingly, the SCCA requested that groundworks at the site should be archaeologically monitored, and issued a specification for an archaeological watching brief (*Appendix 1*). Following provision of a costed project design (*Appendix 2*) to meet the requirements of the SCCA brief, OA North were commissioned by Waterman CPM, on behalf of GWM Ltd, to undertake the programme of archaeological watching brief. The following report sets out the results of the watching brief, which was undertaken intermittently in June and July 2007.

1.2 SITE LOCATION, TOPOGRAPHY AND GEOLOGY

1.2.1 The roughly triangular development site is located on the southern edge of Weston, in the Trent Valley. It is defined to the north by the twentieth-century urban expansion of Weston, to the west by the Trent and Mersey canal conservation area, and to the east by agricultural land that follows the former route of a branch railway, that once linked the site to the Stafford to Uttoxeter railway, to the north (Fig 1). The presence of a north/south aligned arm of the canal together with a similarly aligned access between the canal to the south and Salt Works Lane to the north, effectively divides the site into two distinct parcels of land.

1.2.2 The site occupies an area of relatively flat land in the broad valley of the River Trent, at an absolute height of approximately 75m OD. To the north-east, the ground upon which the settlement of Weston is located rises gently. To the south-west, beyond the Trent and Mersey Canal and the River Trent, the land rises more steeply towards Ingestre Park. Both parts of the development area have, until very recently, been in use as depots for scaffolding and plant; offices, outbuildings, sheds and reinforced concrete storage yards were still in place at the time of the evaluation. Ground testing at the site has recorded high levels of contamination, from hydrocarbons and other high toxicants, particularly in the south-east corner of the development area.

- 1.2.3 The underlying geology of the area consists of deposits of gravely glaciofluvial or river terrace drift, overlain by soils of the Wick 1 association. These are deep, well-drained, coarse loamy and sandy soils (SSEW 1983).

1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 1.3.1 **Introduction:** the following section is intended only as a brief overview of the archaeological remains known from the locale and is based largely upon the Waterman CPM (2005) desk-based assessment of the site.

- 1.3.2 **Pre-medieval:** there is only limited evidence for human activity within and immediately around the development area prior to the medieval period. During fieldwalking along the route of the Audley to Alrewas Gas Pipeline, some 500m to the west of the site, a diffuse scatter of Late Mesolithic and Neolithic/Bronze Age worked flint was found over a distance of around 1km (SHER 05063; Waterman CPM 2005). Cropmarks of a probable Late Bronze Age pit alignment (SHER 04609) are located a similar distance to the east (*ibid*).

- 1.3.3 **Medieval:** Weston (SHER 02594) is recorded in the Domesday Survey of 1086 as one of Pirehill Hundred's smaller settlements, supporting a single plough and three acres of meadow (Williams and Martin (eds) 2002). The village's Grade II*-listed St Andrew's Church (SHER 08178) dates from the twelfth century, although a thirteenth-century tower and a fourteenth-century spire are the oldest extant elements, and perhaps relate the aggrandisement of the structure when it became the church for the newly-formed parish of Weston in the thirteenth century (Cockin 2000). Other surviving structures of medieval date within the village and lying close to the proposed development site comprise a fifteenth- or sixteenth-century cruck-framed building (SHER 05810) and the Grade II-listed 'Manor House' (SHER 08179) (Waterman CPM 2005). Medieval, or possibly later, agriculture and water meadow management is indicated by the presence of ridge and furrow earthworks along the Trent Valley in the vicinity of the site (SHER 20404), of which the closest (SHER 20405) lies some 400m from the south-western site boundary. A deer park at Ingestre Hall (SHER 02022), south-west of the River Trent, is known from documentary sources (*ibid*).

- 1.3.4 **Post-medieval:** Weston's post-medieval occupation is evidenced by several historic building, including a (sadly now-demolished) seventeenth-century timber-framed cottage with an eighteenth century extension (SHER 04927) and the Grade II-listed vicarage, designed by Sir George Gilbert Scott in 1858 (SHER 50246) (Waterman CPM 2005). Significant transport links around the development area demonstrate increased industrialisation and include the Trent and Mersey Canal (now a conservation area) (SHER 05229), a late eighteenth-century road bridge (SHER 02862) together with an associated canal lock and bridge (SHER 02863). Built by the engineers James Brindley and Hugh Henshall between 1766 and 1771, the canal defines the south-west fringe of the development site, which is subdivided by a northward canal spur. The former course of the Stafford to Uttoxeter Railway (SHER 50735) runs in an arc less than 100m north of the proposed development site; constructed in

around 1867, the line had closed to passengers by the 1930s, with the last freight running in 1951 (*ibid*).

- 1.3.5 ***The Weston Salt Works and former usage of the eastern development area:*** the earliest known activity on the eastern plot of the present development site dates to 1821 when Lord Talbot built The Weston Salt Works (SHER 50732) (Waterman CPM 2005). James Trubshaw's plan of Lord Talbot's salt works, dated 1820 and at that time Staffordshire's only other salt works, shows that the original works was located at the southern end of the eastern land parcel and contained eight pans for evaporating brine. This brine derived from a borehole located on the south-western side of the River Trent, around 200m to the south, and thus had to be pumped under both the river and the canal, before being stored in the brine pit located at the northern end of the complex (*ibid*). This Open Pan Salt Production (Barford, Fielding, Penney 1998, 31), relying on evaporation, seems fairly typical of Staffordshire salt works.
- 1.3.6 The Weston Salt Works were founded to provide competition to Staffordshire's earliest salt works, Shirleywich, which was founded in the late seventeenth century 1.5km to the south of Weston and owned by the Lords Ferrers. The expansion of the salt industry into Staffordshire, albeit on a lesser scale, was a direct result of the seventeenth-century decline of the long-standing industries in neighbouring Cheshire and Worcestershire, known since the Late Iron Age and Roman periods (VCH 1967; Morris 1985; Woodiwiss 1992). These centres tapped brine springs that ran through rock salt-bearing strata, which in England chiefly comprise Keuper Marls of Upper Triassic age
- 1.3.7 Within three years, production at the Weston Salt Works matched that of the long-established Shirleywich Works and, in 1827, a second set of eight pans was constructed on the northern part of the site (VCH 1967). A steam engine, to accelerate the pace of brine pumping, was added during the 1830s (Waterman CPM 2005). The 1847 Weston tithe map indicates the extent of the works, which were then tenanted by Vernon Poole and Company. On the accompanying tithe award, the works are described as "...Weston Salt Works with stables, offices, other buildings, yards and road from Weston Green to these works". The map depicts the salt works complex as comprising two large south-east/north-west-aligned rectangular buildings separated by a rectangular pond or tank (the brine pit), itself flanked by small structures; two further small buildings are shown within the north-western corner, close to the track to Weston Green.
- 1.3.8 The salt works were closely integrated into the local transport network and the previously landlocked Weston owed its industrial expansion to the inception of the Trent and Mersey canal in 1777. The 1847 tithe map indicates the presence of a long arm of the Trent and Mersey Canal flanking the western edge of the principal salt works structures, together with a shorter east/west aligned spur running to the south of the buildings. By the time of the survey for the 1890 first edition Ordnance Survey (OS) 1:10560 map, this latter spur had been infilled, but the main canal arm seems to have either terminated at, or perhaps fed directly into, a building at the north-west corner of the site. This structure seems to have been demolished by 1901, since it is not shown on the second edition OS 1:10560 map of that year. By 1890 the salt works were linked to

the Stafford to Uttoxeter Railway via a branch line (SHER 50734) that by 1901 ran along the eastern side of the site (OS 1890; 1901). Accommodation for the salt workers is likely to be represented by structures shown on the 1847 tithe map as located on the western side of the canal arm and linked to the works by a footbridge. These include a terrace of somewhat variably-sized buildings (outside of the present development area) and a detached building now known as 'The Birches' (within the development area).

1.3.9 By 1854 the supply of brine from the existing borehole had dried up and a new borehole was sunk in the middle of the site. Unfortunately, this made little difference and the Weston Salt Works went into decline (VCH 1967), the original southern site being sold in 1872 whilst that to the north was retained (Waterman CPM 2005). In 1888, the northern remnant was acquired by the newly-formed Salt Union, a consortium of Cheshire-based salt manufacturers. Deterioration of the brine source and competition from the more modern salt works at Stafford Common, which was built in 1893 and tapped a brine well discovered in 1877 (Watkin 1980), meant that the Weston Salt Works ceased to operate regularly after 1893. Weston eventually closed in 1901 at the same time as the Shirleywich works, whilst Stafford Common, the last of the Staffordshire salt works, continued to operate until 1971 (Waterman CPM 2005). The Weston works were demolished some time before 1923, since they are not shown on the OS 1:2500 map of that date. The only structure shown within this northern part of the site is a rectangular building adjoining the eastern site boundary, the construction of which is likely to post-date the demolition of the salt works.

1.3.10 **The Manure Works:** the southern part of the former salt works site was taken over by the Shrewsbury Estates Manure Company in 1872 (VCH 1967) and their works (SHER 50733) are clearly depicted on the 1890 OS map. By the time the manure works are depicted on the second edition Ordnance Survey 1:10,560 map of 1901, the single structure is shown as occupying a much reduced area and, although the shape of the southern wall remains consistent with that of the previous salt works, the remainder of the building is shown as 'L'-shaped and much shorter. These works were not particularly long-lived and by the time the site is shown on the 1924 third edition OS 1:10560 map, the manure works have been replaced by an alabaster bowl works. The change in function is associated with further modification to the structures on site through what is likely to have been a westward extension of the existing manure works building to produce a much squarer structure retaining the southern and eastern walls of the manure works. The alabaster works was demolished by 1964, by which time the buildings occupied, until recently, by Select Plant Limited were constructed (Waterman CPM 2005).

1.3.11 **Former usage of the Western development area:** the 1847 tithe map and award record the undeveloped western land parcel as incorporating elements of two separate pasture fields, both owned by Earl Ferrers, and one being described as 'Bastards Flat and Croft (lying together)'. By 1890, development within this parcel of land was restricted to a small rectangular structure, immediately inside the site boundary on the eastern side. The purpose of this structure is unclear, but it is very similar to another structure on the south-west

side of the canal, which is believed to have housed a borehole for obtaining brine (Waterman CPM 2005). This interpretation is supported by the 1901 OS map which records a 'Brine well' in this area; however, the label in question could equally refer to a circular feature likely to fall just outside of the proposed development area. By 1901, the second edition Ordnance Survey map shows a series of four small allotments at the north-eastern end of the field. There is little evidence for any significant development of this area until the construction of the recently-vacated scaffold yard and associated buildings in the 1970s.

2 METHODOLOGY

2.1 PROJECT DESIGN

- 2.1.1 Except where detailed below, the fieldwork was conducted in adherence with the SCC-approved OA North project design (*Appendix 2*). All works were consistent with the relevant standards and procedures of the Institute of Field Archaeologists, and generally accepted best practice.

2.2 WATCHING BRIEF

- 2.2.1 Close liaison was maintained between OA North staff and the site contractors during the watching brief. The reinforced concrete slab covering most of the site was broken-out using a 20-ton 360° mechanical excavator fitted with a breaker. The programme of field observation accurately recorded the location, extent, and character of any surviving archaeological features. This work comprised observation during the groundworks, the examination of any horizons exposed and the recovery, processing and storage of artefacts according to current standard practice based on guidelines set by the Institute of Field Archaeologists
- 2.2.2 The recording comprised a description and preliminary classification of features or structures revealed on OA North *pro-forma* sheets, and their accurate location in plan. In addition, an indexed photographic record was also created, comprising monochrome prints, colour-slides, and digital photographs for presentation purposes.

2.3 ARCHIVE

- 2.3.1 A full professional archive has been compiled in accordance with the project design (*Appendix 2*), and in accordance with current IFA and English Heritage guidelines (English Heritage 1991). The archive will be deposited in the Potteries Museum, Stoke on Trent, and a copy of the report will be sent to the Staffordshire Historic Environment Record, also in Stoke on Trent, on completion of the project.

3 RESULTS

3.1 INTRODUCTION

- 3.1.1 The following section provides a brief description of the archaeological remains recorded within each of the areas under observation.

3.2 WESTERN AREA

- 3.2.1 The western plot of the development site was triangular in shape and approximately 1.6 ha in area (Fig 2). Prior to the monitored demolition works, the whole area was surfaced with reinforced concrete slabs and, towards the centre of the plot, the concrete foundations of recently demolished buildings. The concrete was approximately 0.25m thick and was broken up prior to removal. Lifting of the concrete rubble revealed a 0.1m deep levelling layer of limestone chippings, which in turn sealed a second make-up layer of various materials, including ash, clinker and crushed brick (Plate 1). The majority of this lower layer was left *in situ* across much of the site, except for a small area in the north-west corner of the plot where it was removed to reveal alluvial material (Fig 2; Plate 2)).
- 3.2.2 An east/west aligned narrow gauge railway was revealed at the north end of the plot running almost parallel with the northern boundary (Fig 2; Plate 3). This railway ran from the east plot boundary for approximately 140m, before being truncated. It had a gauge of 0.68m with the rails laid on pressed steel sleepers, bedded on the lower rubble horizon (Plate 4).

3.3 EASTERN AREA

- 3.3.1 The eastern plot of the site was rectangular in shape and approximately 1.65 ha in area (Fig 2). Prior to monitoring, all except the very southern tip of the plot was covered by reinforced concrete slabs, together with the foundations of several later twentieth-century buildings. These comprised two large structures towards the northern and central parts of the plot, and two smaller structures located just inside the north-west boundary of the plot.
- 3.3.2 The breaking-out and removal of the concrete surface by 25 ton machine revealed underlying make-up layers generally similar to those recorded on the western area, although within the south-west corner of the monitored area there was a 0.15m layer of loose crushed quartz below the concrete. As within the western area, the demolition works did not remove the lower horizon of made ground, and neither archaeological nor natural deposits were revealed.

4 DISCUSSION

4.1 DISCUSSION

- 4.1.1 The limited depth of intrusion during this first phase of groundworks means that significant archaeological deposits that are known to survive at shallow depth on the site were not revealed; as such, the present phase of watching brief could not add to the understanding of the historic industrial sites gained from the earlier evaluation (OA North 2007). Finds were limited to very modern features, such as the narrow gauge railway revealed in the western plot. Although this was not recorded on any available maps, the fact that it was bedded on made ground similar to that which covered the entirety of the western plot would suggest that it related to the twentieth-century use of this western area, and is not particularly significant.
- 4.1.2 The alluvial deposit encountered within the north-western part of the western plot is very similar to material identified during the evaluation, where it was found to overlie the natural geology and was interpreted as being late in date (OA North 2007). Within the eastern plot, the layer of crushed quartz revealed in the south-west corner of the monitored area is perhaps of some interest within the context of the use of this area as an alabaster works. However, given the redeposited state of this material, there is no provable link that a deposit of earlier twentieth-century working waste was utilised for levelling.

4.2 CONCLUSION

- 4.2.1 The vast majority of stratified archaeological remains demonstrated by the evaluation as surviving within the eastern plot of the development site have potential for the understanding of the arrangement, organisation and workings of one of Staffordshire's oldest salt works. These remains on site have the potential to aid the understanding of the historical and structural expansion of the site, together with its development and diversification into other industrial usage. These regionally significant remains must now lie just below the remaining horizon of made ground, and will thus be affected by the second phase of development groundworks within this part of the site. Archaeological monitoring will be undertaken, as appropriate to the nature of future groundworks, in accordance with the planning condition.

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6 ILLUSTRATIONS

6.1 LIST OF FIGURES

Figure 1: Site Location

Figure 2: Site plan showing the extent of archaeological monitoring, historic industrial buildings shown on the 1890 Ordnance Survey First Edition 1:10560 map, and the location of features identified in the watching brief

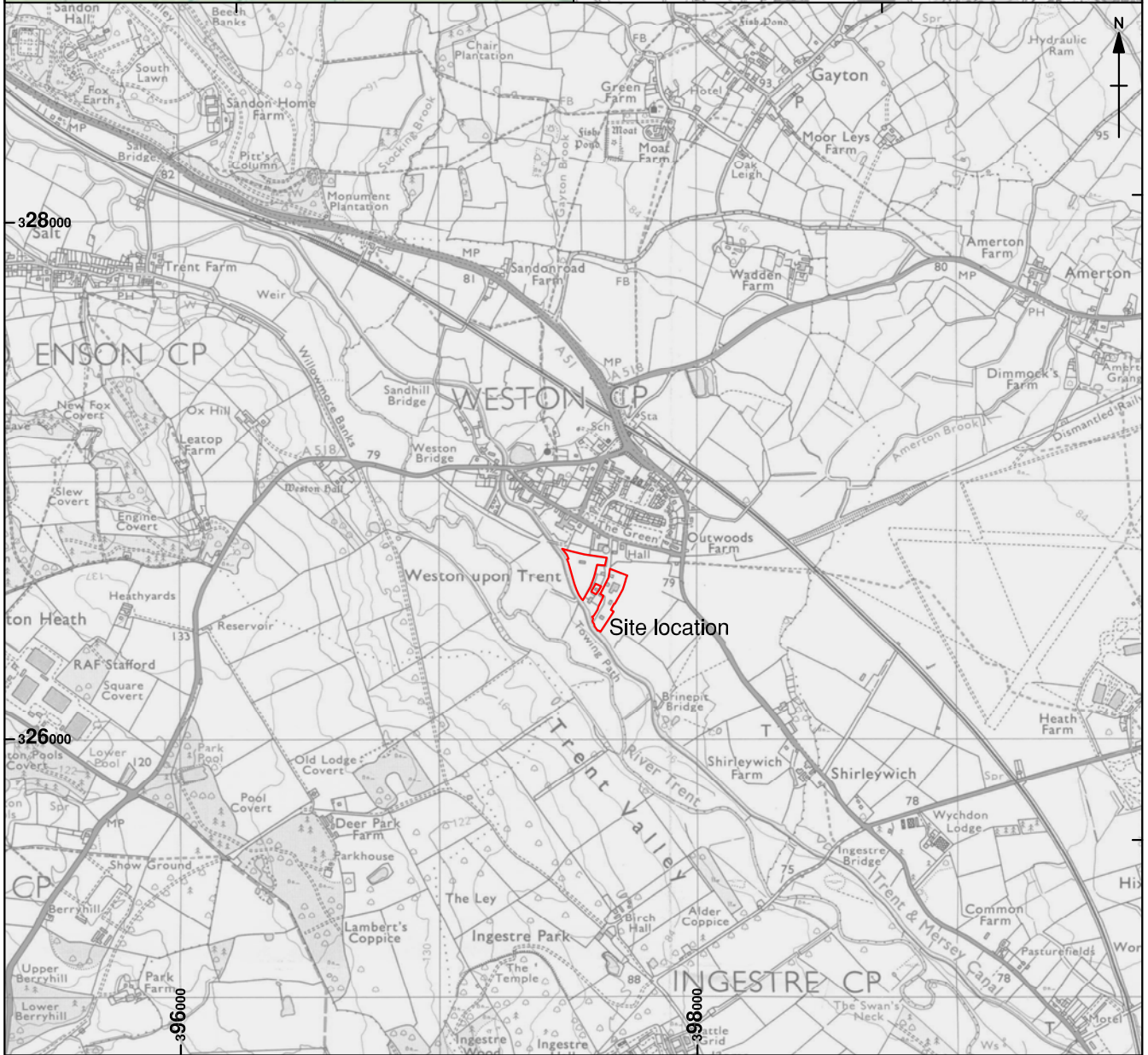
6.2 LIST OF PLATES

Plate 1: Concrete surface removed from western plot

Plate 2: North-west corner of west plot, showing alluvium revealed by concrete removal

Plate 3: Narrow gauge railway at north end of West Site

Plate 4: Part of tracks and sleepers of narrow gauge railway



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Figure 1: Site location

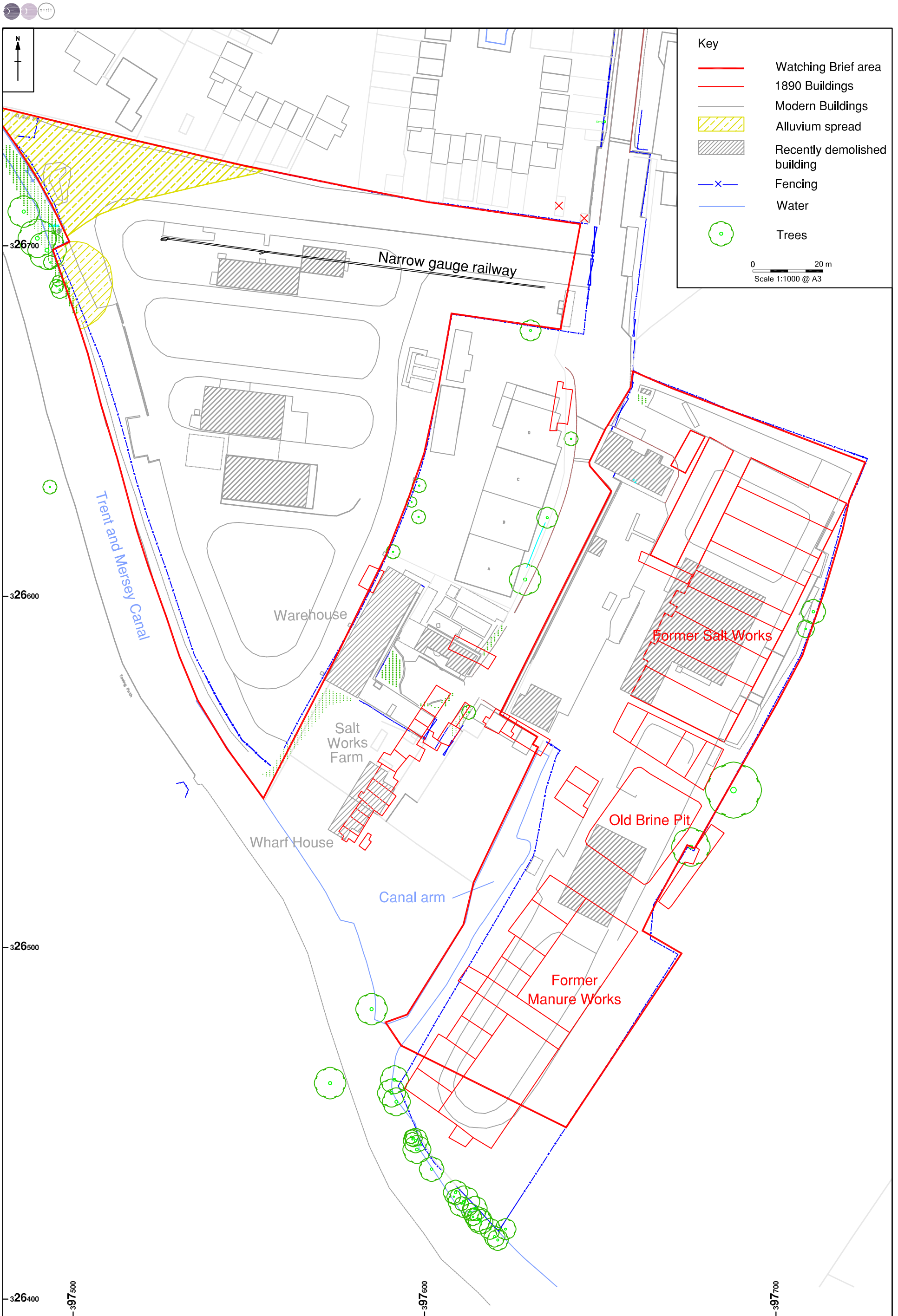


Figure 2: Site plan, showing the extent of archaeological monitoring, historic industrial buildings shown on the 1890 Ordnance Survey First Edition, 1:10560 map, and the location of features identified in the Watching Brief



Plate 1: Concrete surface removed from western plot



Plate 2: North-west corner of west plot, showing alluvium revealed by concrete removal



Plate 3: Narrow gauge railway at north end of West Site



Plate 4: Part of tracks and sleepers of narrow gauge railway

APPENDIX 1: SPECIFICATION

**SPECIFICATION FOR AN
ARCHAEOLOGICAL WATCHING BRIEF**

SALT WORKS LANE, WESTON ON TRENT, STAFFORD BOROUGH

June 2007

Staffordshire
County Council

1.0 INTRODUCTION

- 1.1 An outline planning application (05/05368/OUT) was received in 2005 for the demolition of existing buildings and construction of a mixed use development on land at Salt Works Lane, Weston, Stafford Borough (NGR SJ7640 6548). The application site lies approximately 500m to the south east of Weston upon Trent and 70m to the south of the line of the dismantled Stafford and Uttoxeter Railway (PRN 50735).
- 1.2 An archaeological evaluation has been carried out across the site to determine the potential for remains associated with the Salt Works and Manure Works to survive, their date, nature and extent and the degree to which proposed works will impact upon these remains. The results of the evaluation are currently being prepared as a stand alone report. However monitoring discussions on site with the contractor and archaeological consultant have indicated the need for a further stage of works during groundworks across the site.
- 1.3 An archaeological watching brief has therefore been recommended as a final stage of investigation to record the scope and form of surviving remains. The evaluation also revealed areas of contaminated land and it is recognised that the details of the watching brief methodology will be informed primarily by Health and Safety issues. The objective of this Specification is to establish a framework which is acceptable to the Local Planning Authority (LPA), acting on the advice of the County Archaeological Officer (CAO), within which a watching brief may be carried out.
- 1.4 The watching brief will be conducted in accordance with this specification and will be carried out in accordance with the Institute of Field Archaeologists Standard and Guidance for Archaeological Watching Briefs (2001). All stages of the project will be carried out in accordance with the requirements established in the English Heritage volume entitled the 'Management of Archaeological Projects' (MAP2).
- 1.5 Any variation in the WSI will be agreed in advance by the developer and the LPA.

2.0 HISTORICAL/ARCHAEOLOGICAL BACKGROUND

- 2.1 Little is known about the historic development of the salt and manure works at Weston. They are depicted on the First Edition Ordnance Survey map for the area but their construction date is not clear. They were located close to existing methods of communication with the Trent and Mersey Canal (PRN 05229 and Conservation Area No.083) lying close by to the south west while the line of the Stafford and Uttoxeter Railway extends to the north of the site (PRN 50735).
- 2.2 The Trent and Mersey Canal was designed by James Brindley and Hugh Henshall in 1766 and was constructed in 1771 while the railway was constructed during the late nineteenth century. It is therefore possible that one or both of these industrial sites were constructed to take advantage of

canal transport before the construction of the railway. However, documentary records and field work have revealed no evidence to date to support this proposal. A branch line of the railway was extended through the Salt Works Lane site. Therefore, by the First Edition Ordnance Survey map of the area the branch line, Weston Salt Works with external brine pit (PRN 50732) and the Manure Works (PRN 50733) are clearly depicted. A footbridge is also depicted upon the map which presumably crosses over the branch line providing access to the western portion of the site which included a range of buildings and an area of trees in the northwestern corner of the site.

3.0 PROJECT OBJECTIVES

- 3.1 To ensure the archaeological monitoring of all aspects of the development programme likely to affect archaeological remains.
- 3.2 To secure the adequate recording of any archaeological remains revealed by the development programme. In this instance the minimum represents a site plan of surviving archaeological features and where possible the recovery of dating evidence for the salt and manure works
- 3.3 To secure the analysis, conservation and long-term storage of any artefactual/ecofactual material recovered from the site.

4.0 ARCHAEOLOGICAL REQUIREMENTS

- 4.1 The archaeological contractor is asked to design a programme of monitoring and recording to be carried out during those stages of development involving substantial ground disturbance. The project should include the following as appropriate:
 - 1. Soil and overburden stripping under archaeological supervision and to be carried out using a toothless bucket;
 - 2. Inspection of sub-soil for archaeological features;
 - 3. The rapid investigation and recording of any archaeological features/deposits;
 - 4. Sub-soil stripping under archaeological supervision;
 - 5. Examination of any service and foundation trenches and the subsequent recording of any exposed archaeological deposits;
 - 6. Examination of spoil-heaps for archaeological material;
 - 7. A programme of post-fieldwork analysis, archiving and publication.
- 4.2 A written record of the progress of the watching brief shall be maintained and supported by the production of plans and sections drawings (at appropriate scales). A Photographic record (monochrome prints and polychrome slides) will

also be maintained and supported by an index and site plan of shot locations.

- 4.3 If necessary, arrangements shall be made for development to be interrupted for reasonable periods in order that satisfactory records might be made.
- 4.4 If finds are located of a significance beyond that which might have been anticipated before the development began, development shall cease where they might be disturbed in order that provision for their adequate recording or preservation may be made in consultation with the LPA or personnel nominated by them. Contingency provisions should be made within the programme of work for this.
- 4.5 The developer shall afford access to the development site for the purposes of archaeological monitoring to officers of the LPA or personnel nominated by them at all reasonable times upon compliance with the requirements of health and safety.
- 4.6 The developer shall give the LPA or personnel nominated by them at least ten days' notice in writing of the commencement of the development, and shall keep them informed of the progress of the watching brief during the period in which it is carried out.
- 4.7 The project archive shall be compiled in accordance with the guidelines contained in Guidelines for the Preparation of Excavation Archives for Long-term Storage (UKIC, 1990), and Standards in the Museum Care of Archaeological Collections (Museum and Galleries Commission, 1992)
- 4.8 The archaeological contractor should agree all on-site working practices with the developer at the earliest opportunity and identify those elements of the construction programme requiring time for recording.
- 4.9 The archaeological contractors should comply with all Health and Safety requirements stipulated by the Main Contractor, ensure that their staff wear the correct PPE (Personal Protective Equipment) at all times and that a Risk Assessment for the work is prepared in advance and reviewed at regular intervals.
- 4.10 The project should also attempt to place the project findings into their historical and geographical context through cartographic and documentary research.
- 4.11 The project should be conducted by an archaeological organisation working in accordance with the By-laws of the Institute of Field Archaeologists. Archaeologists working on the project should not attempt tasks outside of their areas of competence.
- 4.12 Any articulated human remains which are encountered must initially be left in situ until a licence to excavate has been granted by the Department of Justice. The provisions for analysis, assessment and reburial of any human remains encountered during groundworks should be discussed with the developer and the LPA Archaeologist.

4.13 Any material recovered which would be regarded as Treasure under the terms of the Treasure Act should be reported to the coroner.

5. PRESENTATION OF RESULTS AND DEPOSITION OF ARCHIVE

5.1 A report on the results obtained should be submitted to the Local Planning Authority and personnel nominated by them within 8 weeks of the completion of site work. This should include consideration of:

1. non-technical summary
2. the aims and methods adopted in the course of the recording
3. the nature, location, extent, date, significance and quality of any archaeological and environmental material uncovered
4. the anticipated degree of survival of archaeological deposits and structures on the site not disturbed by development - surviving areas of archaeological potential should be indicated on the site plan
5. appropriate illustrative material including maps, plans, sections, and drawings at an appropriate scale and photographs. All plans, sections, etc., created during the watching brief will be related to Ordnance Survey datum levels and their relation to the National Grid referencing system shall be made clear.
6. summary of results
7. description of the archive and the location for its long-term deposition

5.2 If significant remains are recorded during the project, then it may be necessary to undertake a full programme of analysis and publication in accordance with the guidelines contained in English Heritage's Management of Archaeological Projects 2. If this is the case, then a timetable and programme of work for this aspect of the project will need to be submitted to the Local Planning Authority for agreement.

5.3 The post excavation work shall be carried out immediately on completion of site investigations. The site archive shall be prepared in accordance with established professional guidelines.

5.4 The written and illustrated report of the watching brief shall be copied to:

- i) the client
- ii) the County Council
- iii) the National Monuments Record

5.5 The copy of the report sent to the County Council should be accompanied by a completed copy of the Activity and Source Submission Form (see appendix 1).

5.6 The archive and finds, including a copy of the watching brief report, shall be deposited at an appropriate museum, such as the Potteries Museum and Art Gallery at Hanley, Stoke-on-Trent. The museum guidelines regarding the acceptance of such material should be taken into account. The recipient

museum shall be informed in advance of the date when the watching brief is to commence.

- 5.7 The written report will become publicly accessible, as part of the Staffordshire Sites and Monuments Record, within six months of completion. The AFC shall also submit a short summary report for inclusion in the next edition of the journal West Midlands Archaeology within 6 months of the completion of the fieldwork.

If you wish to comment on the contents of this brief or require additional information, then please contact Stephen Dean at the address below:

Environment and Countryside Unit
Staffordshire County Council
Development Services Dept,
Riverway, Stafford ST16 3TJ

Tel. (01785) 277290 - Fax (01785) 277364

Appendix 1.

Staffordshire County Council Sites and Monuments Record
Activity and Source Submission Form.

Submission date -

Site Activity or Event

Name of event (eg. Watching Brief at The Blue Boar, Ipstones.)

Location of event (eg. The Blue Boar P.H. Overton Lane, Ipstones.)

NGR

Civil Parish

Brief Description of event (eg. Watching brief during cellar alterations and renovation, prior to conversion to residential use.)

“Activity Type(s)” (highlight as appropriate) Air Photography / Evaluation-trial excavation /
Field Walking / Measured survey-drawing / Geophysical survey / Archaeological excavation-full / Archaeological excavation-part / Field survey / Photogrammetric survey / Rectified photo survey / Photographic record / AP interpretation / Salvage-rescue excavation / Watching brief / Environmental sampling / Post-excavation analysis / Documentary research
Commencement date (eg. 01-May-1978)

Completion date (eg. 02-Sept-1983)

Organisation or contractor details (organisation name, address, telephone, e-mail etc.)

Report Details

Date

Type of document (highlight as appropriate) Written / Photographic / Cartographic / Drawn

Title

Author(s)

Brief summary of contents

Brief description of document (eg. Written text with illustrations, bibliography and references. Appendices dealing with environmental sampling. 32 pages. etc.)

Cross references to Staffordshire SMR (if applicable please list Primary record numbers)

APPENDIX 2: PROJECT DESIGN

**SALT WORKS LANE,
WESTON,
STAFFORDSHIRE**

**Archaeological Watching
Brief
Project Design**



Oxford Archaeology North

June 2007

WATERMAN CPM AND G EORGE
WIMPEY LTD

OA North JOB NO: L9859
NGR: SJ 97640 26548
Planning ref: 5/05368/OUT

1 INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 Waterman CPM, on behalf of George Wimpey Ltd (hereafter the 'client') has requested that Oxford Archaeology North (OA North) submit proposals for an archaeological watching brief to be undertaken on land at Saltworks Lane, Weston, Staffordshire (NGR SJ 97640 26548). The proposed redevelopment (planning reference 05/05368/OUT) would involve the demolition of the existing structures on the *c* 3.2 ha brownfield site, together with considerable disturbance of subsoil deposits during and in advance of construction. The site is divided into two separate parcels, a roughly triangular area to the north-west, and a rectangular area to the south-east. A desk-based assessment (Waterman CPM 2005) identified that the south-eastern portion of the split site was formerly occupied by post-medieval industries, structural evidence of which was encountered during an evaluation undertaken by OA North in May 2007. Accordingly, the Staffordshire County Council Archaeologist issued a specification for an archaeological watching brief to be maintained during the removal of floor slabs and the undertaking of any negative groundworks as part of the proposed development. The following document represents a project design for such a scheme of works and has been compiled in accordance with English Heritage *Management of Archaeological Projects* (2nd edition, 1991b) (hereafter MAP 2) to meet the requirements of the SCA specification and IFA standards.

1.2 HISTORICAL AND TECHNICAL BACKGROUND

1.2.1 Much of the south-eastern rectangular parcel of the proposed development site is known to have been occupied by the nineteenth-century Weston Salt Works. By 1890, when the site is first depicted cartographically, the Salt Works had contracted into the northern part of the parcel, with the southern portion becoming a manure works. By the 1920s, the site of the manure works was in use as an alabaster bowl factory, whilst structures to the north appear to have been demolished. In May 2007, a series of ten trial trenches, covering some 836 square metres, were excavated on the proposed development site. The majority were placed in the south-eastern parcel of land, located to target specific elements of the Weston Salt Works and manure works as depicted on the 1890 first edition Ordnance Survey map. The remaining three trenches on the north-western part of the development site were more speculatively placed, since this area has only recently been the site of structural activity. These three trenches did not encounter archaeological remains.

1.2.2 Extensive evidence of former industrial activity was found. To the south of the south-eastern parcel, well-preserved *in-situ* walls and floors were found at a depth of *c* 0.8m below ground level, extending across an area approximately 10m east/west by 60m north/south, adjacent to the spur of the Trent and Mersey canal. The infilled remains of the canal feature, likely to have formed an important element of the works, were exposed towards the centre of the site. In places, structural remains existed to at least four courses in height, with potential for further courses to be exposed; internal structural features can also be expected. It is likely that these remains extend from the edge of the canal spur directly across the site to its eastern boundary, where previous site investigation works have indicated high levels of contamination (including heavy metals and hydrocarbons), both contemporary to the Salt Works, and of a more recent origin. Similarly, the very southern part of the site was thought to be quite heavily contaminated with heavy metals.

1.2.3 A trench close to the central part of the site was located in order to investigate the Salt Works brine pit. Despite the fact that this feature is likely to have originally measured *c* 30m x 20m, and 9m in depth, no archaeological deposits could be identified within the area of the evaluation, which encountered natural deposits *c* 0.3m below ground level, immediately beneath the modern concrete slab. The northern part of the parcel was investigated by two trenches which encountered structural remains at a depth of *c* 0.3m below ground level, although the northern-most trench was effected by particularly high levels of hydrocarbon contamination.

1.3 OXFORD ARCHAEOLOGY NORTH

1.3.1 OA North is a Registered Archaeological Organisation with the **Institute of Field Archaeologists (no 17)**. OA North has considerable experience of sites of all periods, having undertaken a great number of small and large scale projects throughout Northern England during the past 25 years. Evaluations, assessments, watching briefs and excavations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables.

2 AIMS AND OBJECTIVES

2.1 **Introduction:** the following programme has been designed to mitigate the impact of the proposed demolition and development through the identification and preservation by record of any archaeological deposits or features that are present on site, both within and outside of the discrete areas investigated during evaluation. The Weston Salt Works represents a relatively unusual type of archaeological site, which the local research agenda considers to be of high research priority. The information will initially be disseminated through a report issued to the client and to the Staffordshire Historic Environment Record and, if of sufficient significance through publication within an appropriate format. The finds archive will be deposited with an appropriate local museum, and the archive of original records with the Staffordshire County Record Office. and. The work will be carried out in line with current IFA guidelines and in line with the IFA Code of Conduct.

2.2 **Archaeological Watching Brief:** to maintain a permanent and active archaeological presence during the lifting of existing concrete slabs, the grubbing-out of existing foundations and the reduction of any ground levels, either locally (for service runs etc), or more widespread (for building rafts etc). The purpose of the watching brief is to identify, investigate (within the parameters of a safe system of works) and record any archaeological remains, in accordance with the Staffordshire County Council Archaeologist's specification, and in so doing provide:

- As detailed a site plan as possible, showing the location, OD height and extent of the archaeological remains revealed by the programme of groundworks;
- a detailed photographic record of individual features;
- a detailed written and drawn record of the nature of the remains and their specific relationships;
- recovery of a stratified finds assemblage where contamination levels allow.

2.3 Specific research objectives include:

- the characterisation, identification, mapping and dating of separate structures, features and phases of construction relating to the Salt Works, Manure Works and Alabaster Bowl Works;
- the presence of internal and external features and artefacts indicating the specific use of structures, intra-site relationships and overall site processes within the context of the above industries;
- the relationship between the canal arm and the north-western-most structure of the Salt Works;
- the extent, date and function of the 'compact mortar jetty' previously identified in Trench 9, together with its relationship with the canal;
- the location, extent and character of the former Salt Works brine pit, together with any associated ancillary features;
- the location and extent of the branch railway line at the north-eastern corner of the site, together with any associated sidings;
- the presence of any pre-industrial activity on either side of the development area.

- 2.4 Where such remains cannot be adequately recorded under watching brief conditions it will be necessary to undertake consultation with The Staffordshire County Archaeologist and Waterman CPM to determine the scope and implementation of an appropriate programme of mitigation.
- 2.5 **Post-excavation pro gramme and reporting:** the results of the fieldwork and any post-excavation assessment and analysis will culminate in a final report to be submitted as a draft to Waterman CPM. A final report will follow comment/suggestions for amendment from the client. The post-excavation report will make recommendations for further analysis and publication of the results, as appropriate.
- 2.6 **Archive:** the site records, finds and any samples from the excavation programme outlined below will form a checked and ordered site archive as outlined in MAP2.

3. METHOD STATEMENT

3.1 HEALTH AND SAFETY

- 3.1.1 A full health and safety project plan has been provided to accompany this project design, and also includes an outline risk assessment. However, for brevity a summary is provided below.
- 3.1.2 **Risk as sessment:** OA North provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). OA North will liase with the client to ensure all health and safety regulations are met. The outline risk assessment to accompany these proposals will be updated in advance of any on-site works, with continuous monitoring during the fieldwork.
- 3.1.3 All project staff will be CSCS qualified. Archaeological contractors have not yet been recognised for the receipt of CSCS cards. However, proof of qualification can be provided.
- 3.1.4 **Contamination:** a summary of ground conditions and potential contaminants was undertaken by Wardell Armstrong, on behalf of Waterman Environmental in 2007. The evaluation trial trenching confirmed, as far as could be established, that the reported ground contamination was present and the report accurate. OA North will ensure that adequate PPE can be supplied prior to commencement of the works. Should any presently unknown contamination be discovered during excavation, it may be necessary to halt the works and reassess the risk assessment. Any specialist safety requirements may be costed as a variation.

3.2 ARCHAEOLOGICAL WATCHING BRIEF

- 3.2.1 **Introduction:** a programme of field observation will accurately record the location, extent and character of any surviving archaeological features and deposits during the demolition of the existing on-site structures and surfaces together with any negative ground works associated with demolition, site preparation and redevelopment construction. These groundworks will be carried out under constant archaeological observation unless, with consultation and agreement of the client, Waterman CPM and the Staffordshire County Council Archaeologist it is identified that a more targeted archaeological investigation would be more appropriate. It is imperative that close liaison is maintained between the groundwork contractors and OA North.
- 3.2.2 The watching brief will comprise archaeological observation during the afore-mentioned groundworks, the systematic examination of any subsoil horizons exposed during the course of the groundworks, cleaning and investigation of any such structures, features and horizons where contamination allows, and the accurate recording of all archaeological features and horizons, and any artefacts, identified.

- 3.2.3 Discovery of archaeological remains may require stoppage of the clearance/construction work. Investigation and recording of such remains will be carried out as efficiently as possible in order to minimise disruption. Depending on the deposits revealed, it is anticipated that the average time for the suspension of works will be approximately 2-4 hours, but delays can be minimised by the deployment of additional archaeologists to monitor temporarily relocated groundworks. Groundworks could proceed once the archaeologist is satisfied either that no archaeological remains are present, or that they have been adequately recorded, or that the level of impact will not disturb any deeper remains that can be preserved *in situ*. Waterman CPM (who will keep the client informed) and the Staffordshire Council County Archaeologist will be informed of progress and the nature and significance of archaeological findings.
- 3.2.4 **Complex or extensive remains:** should any identified archaeological remains prove too complex or extensive to be investigated and recorded under watching brief conditions, the area in question will be fenced-off with netlon-type fencing and the client and County Archaeologist will be immediately contacted in order to determine the requirements for further investigation. All further construction works within the marked area will cease until clearance is given to proceed. All further works would be subject to a variation to this project design.
- 3.2.5 **Investigation and recording:** putative archaeological features and/or deposits identified by the machining process, together with the immediate vicinity of any such features will be cleaned and investigated in a manner allowed by the existing contamination conditions. Staff should favour shovel scraping for cleaning and avoid any close trowel work except in those areas that the Site Investigation report indicates are free of all contamination (even that which is not held to be hazardous to human health). In areas where there are hydrocarbon fumes, staff should limit recording to photography and hand-written notes undertaken from a distance, with any planning undertaken as sketches rather than measured.
- 3.2.6 Where conditions allow, recording will comprise a fully-indexed photographic record in colour slide and monochrome print formats together with written descriptions and preliminary classification on *pro-forma* recording sheets of features or materials revealed. Where time allows, individual features and deposits will be drawn in plan and in section at an appropriate scale and will be located in three dimensions (with reference to ordnance datum) as accurately as site survey equipment and staffing levels allow onto a large-scale site plan. Regardless of the presence of archaeology, this site plan will show the location and extent of ground disturbance associated with demolition and construction; for the sake of compatibility, it would be helpful if plans of such works could be provided by the client/groundworks contractor.

3.3 GENERAL PROCEDURES

- 3.3.1 **Environmental Sampling:** due to the aforementioned ground contamination of the south-eastern part of the site, the normal practice of environmental sampling will be unsuitable in this area; whilst the ground contaminants can be sensed they are not visually observable. Environmental samples of c 40 litres would be taken from any secure, stratified contexts from the north-western part of the site for the recovery and assessment of charred and waterlogged plant macrofossils, faunal remains, uncontaminated industrial residues and for dating. Larger samples for bulk-sieving for recovery of artefacts and zooarchaeological remains would be taken where appropriate.
- 3.3.2 **Human Remains:** any human remains uncovered will be left *in situ*, covered and protected. No further investigation will continue beyond that required to establish the date and character of the burial. The client, curator and the local Coroner will be informed immediately. If removal is essential the exhumation of any funerary remains will require the provision of a Department of Constitutional Affairs license, under section 25 of the Burial Act of 1857. An application will be made by OA North for the study area on discovery of any such remains and the removal will be carried out with due care and sensitivity under the environmental health regulations. Any delays caused by unforeseen and complex excavation of inhumations may be subject to a variation to the cost of the contract and will be agreed with the client.

3.3.3 **Finds:** all finds recovered from uncontaminated contexts during the watching brief will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds*, 1998 (new edition) and the recipient museum's guidelines. Large objects, such as mechanical or structural fittings, or any object that would represent a risk to carry or closely examine will be recorded onsite using *pro-forma* recording sheets before being left on site. Finds from contaminated contexts would not be handled, but their presence, character and rough quantity as revealed by machining would be noted. All contaminated finds would be left on site for disposal with arisings. Where possible, spot dates will be obtained on pottery and other finds recovered from the site. Artefacts will be examined and commented upon by OA North in-house specialists. Initial artefact dating shall be integrated into the site matrix.

3.3.4 **Treasure:** any gold and silver artefacts recovered during the course of the watching brief will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft.

4.4 REPORT

4.4.1 **Final Report:** following the completion of all fieldwork an interim statement on the provisional results of the works can be submitted to the client upon request. Following the completion of the assessment of the finds, the digitisation of plans and the analysis of the stratigraphy, together with any supporting documentary research, a draft report will be issued to Waterman CPM, which should be returned to OA North with comments and required amendments. The finalised report issued to Waterman CPM for dissemination to the client, the LPA and the County Archaeologist will include six bound copies, one unbound copy, and a digital copy.

4.4.2 **Confidentiality:** all internal reports to the Client are designed as documents for the specific use of the Client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.

4.5 ARCHIVE

4.5.1 **Museum contact:** the Potteries Museum and Art Gallery, Stoke-on-Trent, will be contacted to inform them of the work and to obtain agreement for the acceptance of the uncontaminated finds archive.

4.5.2 **Content:** the results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, Appendix 3, 2nd edition, 1991). This archive will be provided to the Staffordshire County Record Office in the English Heritage Centre for Archaeology format and will contain all original site and post-excavation records, specialist reports and the final report on the fieldwork; a synthesis (the index to the archive and a copy of the report) will be submitted to the Staffordshire HER. OA North will deposit the material archive (artefacts, ecofacts, and samples) with the Potteries Museum and Art Gallery, Stoke-on-Trent.

4.5.3 **Publication:** the results of the fieldwork may warrant publication of a summary report in an appropriate academic journal. A proposal, timetable and budget for the preparation of a publication draft and any required additional research and illustration, will be included in the final report but will not be enacted upon without instruction from the client.

5. OTHER MATTERS

5.1 **Project Monitoring:** whilst the work is undertaken for the client, monitoring will also be undertaken by the County Archaeologist for Staffordshire County Council and by Waterman CPM. It is understood that all liaison with the SCC Archaeologist would be undertaken through

WCPM. Monitoring visits will be allowed to the client or representatives, including the curator, who will be afforded access to the on site records.

5.2 **Access:** it is assumed that the groundworks contractor will allow the onsite archaeologist full access to all areas of groundworks unless health and safety considerations dictate otherwise.

5.3 **Site Welfare Facilities:** it is understood that the the attending OA North staff will be able to use the groundworker's welfare facilities, including access to hot water for hand washing, storage for tools, finds and any environmental samples, shelter for messing and table space for writing notes and checking records etc.

6. WORK TIMETABLE

6.1 **Archaeological Watching Brief:** the duration of the archaeological presence for the watching brief is as yet not fully known, being dictated by the schedule of groundworks. It is understood that demolition of the site will be undertaken over a period of four to six weeks; the schedule for groundworks associated with construction has yet to be established.

6.2 **Report:** the draft client report will be completed within approximately six weeks following completion of the fieldwork, subject to any outstanding specialist reports.

6.3 **Archive:** the archive will be deposited within six months of the submission of the final report.

7 STAFFING

7.1 THE PROJECT TEAM

7.1.1 The project will be under the direct management of **Stephen Rowland** (OA North Project Manager) to whom all correspondence should be addressed. He will provide strategic project management, financial and resource management. It will be the SPM's responsibility to manage the project from design and delivery of the fieldwork component through to report production. The OA North Director, **Rachel Newman**, will provide an academic overview.

7.1.2 The watching brief will be maintained by a member of OA North field staff experienced in such matters. All OA North project officers and supervisors are experienced field archaeologists capable of carrying out projects of all sizes. Scheduling considerations and the relatively long duration of the watching brief may mean that several members of staff may be assigned to the fieldwork at varying points, although OA North will make every effort to maintain consistency. Additional staff can be deployed on request to speed-up investigative and recording works. The designated OA North archaeologist will be responsible for basic liaison with the site contractors, Waterman CPM and the County Archaeologist with regards to on-site work and procedures. Any changes to the project design, to staffing levels or to health and safety would need to be established through the OA North project Manager.

7.1.3 Site staff will be supported by specialist staff based at offices in Oxford and Lancaster, but who can make site visits as required. Finds management will be undertaken by **Christine Howard-Davis** who will also provide specialist input on certain finds categories. A supervisor will co-ordinate on-site and off-site finds processing, finds data entry and data feedback to the site teams.

7.1.4 Environmental management will be undertaken by **Elizabeth Huckerby**, who will also provide specialist input on charred remains and pollen. Elizabeth will advise on site sampling procedures and co-ordinate the processing of samples and organise internal and external specialist input as required.

7.1.5 IT support will be supplied by OA North's IT co-ordinator **Jo Cook**. Once the site archive has been prepared by the relevant field staff, any further requirement for long term storage and/or deposition will be undertaken by OA North's in house archives co-ordinator, **Joanne Levey**.

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