

# An archaeological evaluation of land east of Ward Street, Bilston, Wolverhampton



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## **An archaeological evaluation at land east of Ward Street, Bilston, Wolverhampton**

Peter Lovett

With a contribution by C Jane Evans

Illustrations by Carolyn Hunt

### **Summary**

An archaeological evaluation was undertaken at land east of Ward Street, Bilston, Wolverhampton (NGR SO 936 966). It was undertaken on behalf of Persimmon Homes, who intends to construct a residential development for which a planning application has been submitted.

The evaluation was to ascertain the level of preservation of potentially important archaeological aspects of the site. These included 18<sup>th</sup> century bell pits, 19<sup>th</sup> century workers cottages, canal basins and tramways. These features pre-dated. The majority of the trenches were targeted on specific features shown on the 1<sup>st</sup> edition Ordnance Survey of 1888.

The original scheme of investigation required the excavation of twelve evaluation trenches. Due to contamination of the ground with asbestos, five of the trenches were not excavated. Two further trenches were affected by difficult ground conditions. As such, the canal basin and gas holders, as well as some outbuildings, could not be evaluated. Previous non-archaeological test pitting had encountered structural remains that would suggest that the canal basin was indeed preserved, and to a lesser degree of certainty, the gas holders.

Two trenches contained the footings of walls associated with the gas works, though one of the buildings does not appear on any plan of the site seen during this study. The two trenches that were targeting the possible squatters' cottages in the north-east of the site revealed instead backyard surfaces associated with Victorian terraces. These would seem to have replaced the earlier structures, though no physical evidence for the preceding cottages was found during the evaluation.

Colliery activity on the site before the construction of the gas works is similarly based on cartographic and documentary evidence. The stratigraphy of made ground identified during the evaluation consisted of large amounts of vitrified slag and ore stone alongside colliery waste, all used as levelling and possibly for the sealing of mine shafts. It was upon this material that the later buildings are constructed.

Certain levels of remedial work have been undertaken since the demolition of the gas works, to decontaminate the site, but the precise extent of this work, and the disturbance involved, is unclear.



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## Report

### 1 Background

#### 1.1 Reasons for the project

An archaeological evaluation was undertaken at land east of Ward Street, Bilston, Wolverhampton (NGR SO 936 966). It was undertaken on behalf of Persimmon Homes, to allow discharge of condition 12 (ref O15) of an outline planning permission (ref: 12/00385/FUL) for a residential development. The archaeological work was supervised by the Mott MacDonald Archaeology and Heritage Practice, acting as heritage advisors to the client.

The proposed development site is considered to include heritage assets and potential heritage assets, the significance of which may be affected by the application.

The project conforms to a written scheme of investigation (MM 2016b). This was approved by City of Wolverhampton Council.

The project also conforms to the *Standard and guidance: Archaeological field evaluation* (ClfA 2014).

### 2 Aims

- To establish the presence and extent of modern truncation or disturbance across the development area; and determine the stratigraphy to establish the depths below present ground levels of early mining evidence from bell pits, the industrial remains from the Bilston Gas Works, and the 18<sup>th</sup> century squatter's cottages.
- To establish the existence of peat deposits recorded in a geotechnical survey (WSP 2008).

### 3 Methods

#### 3.1 Personnel

The project was led by Peter Lovett (BSc (hons)), who joined Worcestershire Archaeology in 2012 and has been practicing archaeology since 2004, assisted by Elspeth Iliff (BA (hons); MSc). The project manager responsible for the quality of the project was Tom Vaughan (BA (hons); MA; ACIfA). Illustrations were prepared by Carolyn Hunt (BSc (hons); PG Cert; MCIfA), and C Jane Evans (BA, MA, MCIfA) contributed the finds report.

#### 3.2 Documentary research

Prior to fieldwork commencing a search was made of the Historic Environment Record (HER) and the results used in the preparation of a desk-based assessment (MM 2016a), itself used in the preparation of a written scheme of investigation (MM 2016b). There also exists an earlier desk-based assessment (WSP 2008).

#### 3.3 List of sources consulted

*Selected cartographic sources (available in MM 2016a; WSP 2008)*

- Transcription of Lord Dudley colliery plan, 1812
- Wolverhampton Borough Plan, 1831
- Cholera map, 1832
- Timmis map of Bilston 1839
- 1<sup>st</sup> edition Ordnance Survey 1888 25 Inch
- 1903 Ordnance Survey
- 1938 Ordnance Survey

- 1947 Ordnance Survey
- 1964 Ordnance Survey

#### *Documentary sources*

Published and grey literature sources are listed in the bibliography.

### **3.4 Fieldwork strategy**

A detailed specification has been prepared by Mott MacDonald (MM 2016b). As a result of the documentary search, adjustments were made to the fieldwork strategy, in order to avoid known areas of contamination and very deep areas of made ground.

Fieldwork was undertaken between 5 December and 10 December 2016.

Twelve trenches, amounting to just over 432m<sup>2</sup> in area, were intended to be excavated over the site area of 14ha (MM 2016b). The location of the trenches is indicated in Figure 2. All of the trenches were located as described in the WSI (MM 2016b, table 1.1).

Prior to fieldwork commencing Trenches 5 and 10 were moved to lie at a safe distance from a gas main.

During fieldwork, adjustments were made to certain trench locations. Trench 9 was moved c15m south due to its proximity to an existing building; Trench 8 was realigned to place it between previously unrecorded spoil heaps; Trench 11 was moved c10m south-west due to an existing fence.

Deposits considered not to be significant were removed using a 360° tracked excavator, employing a toothless bucket and under archaeological supervision. Subsequent excavation was undertaken by hand. Clean surfaces were inspected and selected deposits were excavated to retrieve artefactual material and environmental samples, as well as to determine their nature. Deposits were recorded according to standard Worcestershire Archaeology practice (WA 2012). The risk of contaminated material in the trenches required the wearing of specialist personal protective equipment, including personal gas monitoring devices. On completion of excavation, trenches were reinstated by replacing the excavated material.

A site meeting with Josh Williams of Mott Macdonald and Eleanor Ramsey (City of Wolverhampton Council) was held on 9 December 2016 to review progress. After reviewing an asbestos test pit report (WAC, forthcoming), Trenches 1, 2, 3, 5, and 6 were found to be located within contaminated ground and were, therefore, not excavated. Trench 1 was relocated to the north of the site to test an otherwise blank area. This was discussed and verbally agreed at the site meeting.

### **3.5 Structural analysis**

All fieldwork records were checked and cross-referenced. Analysis was effected through a combination of structural, artefactual and ecofactual evidence, allied to the information derived from other sources.

### **3.6 Artefact methodology, by C Jane Evans**

#### **3.6.1 Artefact recovery policy**

Recovery of artefacts was undertaken according to standard Worcestershire Archaeology practice (WA 2012).

#### **3.6.2 Method of analysis**

All hand-retrieved finds were examined. They were identified, quantified and dated to period (Table 1), with all information recorded on a *pro forma* database table. The pottery was recorded by broad

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fabric type, with reference to the Worcestershire online fabric reference series (Hurst and Rees 1992; <http://www.worcestershireceramics.org>).

### **3.7 Environmental archaeology methodology**

#### **3.7.1 Sampling policy**

Sampling was undertaken according to standard Worcestershire Archaeology practice (WA 2012). In the event no deposits were identified which were considered to be suitable for environmental analysis.

### **3.8 Statement of confidence in the methods and results**

The methods adopted allow a high degree of confidence that the aims of the project have been achieved.

## **4 The application site**

### **4.1 Topography, geology and archaeological context**

Desk-based assessments (DBAs) were carried out for areas including the present development area 2008 and 2016, and give a detailed background of the site's archaeological context (WSP 2008 and MM 2016a). A summary of the archaeological context is given below (extracted from MM 2016a):

This desk based assessment has concluded that the development area has low potential for surviving remains of any prehistoric and Romano-British activity. As the development area lies within the agricultural hinterlands of the Anglo-Saxon and medieval settlements of Wolverhampton, Bilston and Ettingshall it is considered that there is a low potential for archaeological remains from these periods to exist within the development area.

The entire development area was subject to coal mining from the 18<sup>th</sup> century onwards and colliery spoil heaps would have existed, which were removed or levelled by the mid-19<sup>th</sup> century when the Bilston Gas Works were established. The gas works were demolished in the late 20<sup>th</sup> century and the site subsequently cleared and remediated which would have caused significant damage to any underlying deposits.

An archaeological trial trench evaluation is recommended to establish whether there is any surviving evidence of earlier buildings adjacent to Ward Street; 18<sup>th</sup> century bell pits which may survive close to the railway corridor; canal arm/basins; and early tram roads in the area serving the ironworks and collieries linking with the Birmingham Canal.

Bilston Canal Corridor is a conservation area located on the edge of the red line boundary, but the section of the canal adjacent to the site is not considered to contribute to the significance of the conservation area.

The site lies on relatively flat land at approximately 142m AOD. It is bisected by a large cutting for the now defunct Oxford, Worcester and Wolverhampton Railway line, which runs north-west to south-east. The focus of the evaluation is on the western side of this cutting. The western edge of site is defined by Ward Street, the northern side by the Great Western Railway line, and the east by Albany Crescent and Bilston Church of England Primary School. The southern boundary is defined by what was the Millfields Iron and Steel Works, and the Birmingham Mainline Canal.

The natural geology of the site is Pennine Middle Coal Measures Formation - mudstone, siltstone and sandstone, with overlying superficial deposits of Devensian - Diamicton Till (BGS 2016).

### **4.2 Current land-use**

The site is currently wasteland, with all buildings demolished, and vegetation recently removed. Large spoil heaps lie along the western edge of the site.

## 5 Results

### 5.1 Structural analysis

The trenches and features recorded are shown in Figures 2-8. The results of the structural analysis are presented in Appendix 1.

#### 5.1.1 Phase 1: Natural deposits

No natural deposits were observed in any of the trenches, due to the great depth (generally at least 2m – see below) of made ground across the site.

#### 5.1.2 Phase 2: Pre-gas works deposits

The earliest observed deposit was a dirty brown sandy clay, with occasional charcoal and ceramic building material mixed throughout (909). This was seen in Trench 9 at 1.2m below (138.84m OD) the current ground level.

In Trenches 7, 8, 9, and 12 were deposits of vitrified slag and possible ore stone, dumped as a make-up material. In places this was 1.2m (138.57 OD) below the current ground surface (Trench 9; Plate 1), whilst in others it was as high as 0.35m (143.07m OD; Trench 8; Plate 18). Further examples of made ground were identified, with a soft grey shale material in Trench 8 at a depth of 0.8m (142.62m OD) below the current ground surface, and extending to at least 1m in thickness. In Trenches 1 and 11, it could be discerned from the tip lines that the made ground was laid down from the west to the east, and was still extant to a depth of 2m (c 141m OD) below the current ground surface (Plates 19–20).

#### 5.1.3 Phase 3: 19th century terrace deposits

External yard surfaces were revealed in Trench 7 (Fig 3; Plates 4-12). These consisted of two blue brick surfaces, with associated drainage and walls. The surfaces were aligned to Ward Street to the west, and when plotted against the 1<sup>st</sup> edition Ordnance Survey, corresponded well with the mapped buildings there. The surfaces represented the back yard areas of houses that fronted onto Ward Street, though the house structures themselves were not within the footprint of the evaluation trenches. The walls that were associated with the surfaces were generally of brick, though occasionally dressed or roughly hewn stone was interspersed amongst the bricks. A greyish pink mortar with shell inclusions was the predominant bonding material, used in walls and surfaces (710, 713, 714, 715, 723, and 724). These structures were between 140.37–140.90m OD.

A partially truncated rectangular brick structure (716) was built up against wall 715, and was probably a cess tank. A similar structure was located just to the north (724; Plate 9). Dividing them was a remnant of burnt wood and demolition material that was left in due to a change in level of the surviving structures. A level of terracing was observed in the trench between yard surfaces 718 and 708, with 708 up to 0.3m higher than 718. A possible path, 714, bisected the surfaces (Plate 8).

Two sondages were dug within this trench. The first was hand excavated through a modern truncation of surface 708, allowing for observation of a 'window' into the underlying stratigraphy without removing the extant structures. This revealed a deposit of made ground of at least 0.45m thick, with no evidence for earlier structures (Plate 10). The second sondage was immediately south of surface 708, and extended to a depth of 1.8m below the current ground level (140m OD). This too consisted of made ground, including inclusions of the vitrified slag and (iron) ore stone that elsewhere had been observed in discrete deposits (Plate 11).

In Trench 9, a yard surface of blue bricks was observed in the western section; it did not extend far into the trench (Figs 4 and 7; Plate 1). This was set into a cinder and mortar bedding layer, which in turn was laid upon a mortar and red brick layer. This was likely to have been a combination of

levelling and bedding for the surface above, rather than a structure in its own right. The blue brick surface was 0.6m below the current ground surface (139.47m OD).

In the eastern section of Trench 9 was a small rectangular brick structure, filled with sherds of domestic pottery in a silty soil (Fig 7; Plate 2). This was probably a cess tank or similar, like those observed in Trench 7. The structure is at a comparable height to the surface opposite, at around 139.60m AOD. Two further rectangular brick structures were identified in the southern half of the trench (Plate 3).

#### **5.1.4 Phase 4: Gas works deposits**

Trench 11 had in it at its southern end a north-east to south-west wall with returns at both ends to the south-east (Fig 5; Plates 13-14). It was constructed of an orange red brick and was bonded with a hard grey cement with charcoal inclusions. It was not represented on the 1<sup>st</sup> edition Ordnance Survey, and was also absent from the 1947 and 1964 editions, so was possibly only short-lived between map editions. The wall survived to two courses high, with the top course being 142.52m AOD.

Trench 12 contained four walls. The most substantial and best surviving was 1203 (143.70m OD) in the southern end of the trench, aligned east to west (Fig 6; Plate 15). This seemed to relate to a building that appeared on the 1947 map, and was bonded with a cement rather than mortar. A small T-shaped wall emerged from the eastern section of the trench, about half way along (Plate 16). It was probably part of an internal division, and fitted inside a building plotted on the 1<sup>st</sup> edition Ordnance Survey. Similarly, walls 1210 and 1211 (143.67mOD), which ran east to west in the northern third of the trench, were likely to be internal (Plate 17). They ran parallel to each other, and were bonded with mortar.

The five trenches (1, 2, 3, 5, and 6) which could not be excavated due to asbestos contamination were all targeting aspects of the gas works as mapped on the 1<sup>st</sup> edition Ordnance Survey (Trench 1 was relocated). This asbestos contamination was recorded as part of a test-pitting exercise undertaken by Wardell Armstrong on behalf of the Client (prefixed 'TP' and 'TT' below; WAC forthcoming; see Fig 8). Where trenches were not excavated the description of deposits below relies on the results of the Wardell Armstrong test-pitting. During the test pitting, walls were identified at various depths, and so provide evidence of surviving structures.

Trenches 1 and 2 had been targeted on the canal basin in the south-west corner of site; here test pit TT-16-2 revealed a wall 0.4m below the ground surface in this location, suggesting the canal walls still exist. Trench 3 was located over the southern of the two original gas holders in the south-east corner of the site. Test pits TT-16-4 and TT-16-5 were both positioned over the gas holder, but neither records having encountered any structure. Trench 4 was positioned to target the northern of the two gas holders, but due to a thick, heavily compacted rubble layer, it was not possible to dig it to a suitable depth (Plate 21). However, TT-16-6 and TT-16-7 were located across the gas holder, and identified a concrete slab at 1.4m and 0.7m deep respectively. Trench 10 was similarly impenetrable, and had been located to test the survival of a building (Plate 22). However, TP-16-3 contained 3.4m of made ground, and was itself within the footprint of the building. Trench 5 had also targeting a building, but no test pit was located close enough to inform its level of survival. Trench 6 was not targeting any known structures, but TP-16-11 just to the west of it recorded made ground to a depth of 3.4m.

#### **5.1.5 Phase 5: Modern deposits**

Trenches 1 and 11 contained a soft dark grey silty sand with clinker, overlying in Trench 11 some demolition rubble. Trench 4 contained the same thick compacted rubble layer in its northern end, but also revealed the edge of some recent remediation works. This consisted of a layer of colliery waste overlying grey engineering clay. Trench 10 also contained the compacted hardcore made ground, 0.45m below current ground level.

The buildings revealed in Trench 7 are covered with demolition debris and general made ground. Trench 9 contained a soft dark brown silty sand deposit with frequent large boulders of concrete directly on top of the surface surfaces. This was up to 0.72m thick. The structures in Trench 12 were covered with two layers of dark silty sand and occasional rubble, up to 0.5m in combined thickness.

Every trench, and hence probably the whole site, was covered in a thin grey silty clay and angular pebble levelling layer, up to 0.38m thick but usually between 0.1–0.2m thick.

## 5.2 Artefact analysis, by C Jane Evans

The artefactual assemblage recovered is summarised in Tables 1 and 2.

The only finds comprised eight fragments of pottery, all found in the fill of a Victorian feature (context 910). The pottery included types dating from the late 18<sup>th</sup> to 19<sup>th</sup> century, but could represent a contemporary 19<sup>th</sup> century group.

period	material class	object specific type	count	weight (g)
post-medieval	ceramic	pot	2	108
modern	ceramic	pot	6	289
total			8	397

*Table 1: Quantification of the assemblage*

The assemblage comprised three sherds from a transfer-printed, willow pattern serving platter, and another rim from a blue and white, transfer-printed plate (Fabric 85); part of a lid with a brown, manganese streaked glaze and the rim of a bowl with a pale yellow glaze (Fabric 91); a flange rim from a large stoneware bowl (Fabric 81.4); and the base of a small, mould-made porcelain vase.

broad period	fabric code	fabric common name	count	weight(g)
post-medieval	91	post-medieval buff wares	2	108
post-medieval/modern	83	porcelain	1	43
modern	81.4	miscellaneous late stoneware	1	154
	85	modern china	4	92
total			8	397

*Table 2 Quantification of the pottery by fabric*

## 6 Synthesis

The documentary evidence for the early industrial use of the Ward Street site suggests coal exploitation; two shafts are indicated on an 1812 map detailing the mines of Lord Dudley (WSP 2008, fig 4). These coal mines and associated spoil heaps would have been closed and levelled prior to the construction of the Bilston Gas Works in 1877. The depth of made ground and the presence of vitrified slag and ore stone at lower levels in the stratigraphy confirms the nature of this earlier activity, but the shafts were not located in the evaluation trenches.

The squatters' cottages facing onto Ward Street (formerly Gibbet Lane) in the north-west corner of the site were present by at least 1816 as indicated on the Ordnance Survey surveyors map (MM2016a, 8 and reproduced here as Figure 9 but with the revised site boundary added, please



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note that the registration of the present development site is a best fit with the canal, Wolverhampton Street and Wellington Road, which are common to both maps, the buildings depicted may have lain within the site boundary). They are again shown in 1831 (WSP 2008, fig 5). Both these maps indicate a marked curve in the then Gibbet Lane and it is possible that what is now Ward Street has been straightened and the site of these buildings lies along the present road line, alternatively this simply reflects improvements in surveying. These buildings would likely have developed as miners' cottages in the 18<sup>th</sup> century, with the increase in colliery production in the area. Though not seen archaeologically it is suggested that these dwellings would have been of slight construction (ie small, roughly built, and single story; WSP 2008, 7).

By 1888 when the 1<sup>st</sup> edition Ordnance Survey was published, the land was part of a larger settlement, with defined plots. The 1903 Ordnance Survey had the settlement annotated as a 'New Village', and had not changed noticeably since 1888, suggesting that the area had been extensively redeveloped prior to 1888. As such the original squatters' cottages would have been replaced. Certainly, the blue engineering bricks that made up the backyard surfaces in Trenches 7 and 9 were of a mid-19<sup>th</sup> century date at the earliest. In the two sondages excavated through the yard surfaces, no earlier structural evidence was discovered, though the evaluation trench was probably not close enough to the road to fall within the footprint of these new buildings. The pottery assemblage recovered from the brick tank in Trench 9 was 19<sup>th</sup> century as well. These buildings were still present on the 1938 Ordnance Survey, but had been razed by the 1964 edition. Nothing in the demolition material sealing the structures could allow for a more accurate time-frame for their destruction.

The walls in Trench 12 likely relate to a long rectangular building that is present on the 1<sup>st</sup> edition Ordnance Survey. The three northern-most walls are probably internal features, and do not appear to be cut deep into the stratigraphy. The southern-most wall may belong to a later building that appeared on the 1947 Ordnance Survey, immediately south of the earlier structure. Potential discrepancies in overlaying the survey plan to historic mapping makes such distinctions difficult, however. An extant boundary wall that divided the gas works from the Millfield Iron and Steel Works was immediately east of Trench 12. This suggested that the current ground level was similar to the historic level during the time of the gas works.

The building revealed in Trench 11 does not appear on any of the historic mapping. Given the detail in the mapping, it is unlikely that it was missed, so it could have been a very short-lived structure. It was located close to where a tramline was known to have run, so may have had an association with that. No evidence for the tramlines was found during the evaluation.

The presence of the canal basin was confirmed during the test pitting exercise carried out by Wardell Armstrong and following discussion with the environmental geologist who undertook that work. Whilst the test pitting was less conclusive in ascertaining the presence of the gas holders, it was noted during the test pitting that the material within the location of the gas holders was different to that which lay beyond their positions. As such their position should be discernible from the sediment on the surface (Daniel Hassall, pers comm), as well as the mapping.

The development site has clearly undergone various levels of industrial use, both in its early coal mining and subsequent levelling, and in the construction, use, and ultimately the demolition of the Bilston Gas Works. Added to this may be added as a complicating factor, the remediation works that have been undertaken in order to decontaminate the ground. This has resulted in large areas of engineering clay in place of 19<sup>th</sup> century made ground, though the precise scope of these works is unclear.

The terrace of buildings revealed in the north-west corner of the site was the final incarnation of settlement that had begun with some squatter dwellings in the late 18<sup>th</sup> century. As the population of the area increased with the industrial revolution, so it seems did the organisation of settlement. Simple coal workers' cottages had been replaced by a "New Village", the remains of which lie under their own demolition.

## 7 Significance

The site consists, in simplified terms, of made ground following 18<sup>th</sup> and 19<sup>th</sup> century colliery waste, with a canal basin and a late Victorian gas works constructed on top. Residential dwellings in the north-west corner of the site developed from an 18<sup>th</sup> century squatter settlement associated with the coal mining into planned Victorian terraces. The gas works developed through the early to mid-20<sup>th</sup> century before both it and the houses were demolished in the latter half of the century.

The 0.4m to 1m thick material overlying the various structures represents the landscaping of the site since demolition. These deposits generally consisted of demolition material, and sat directly above the structural remains. The buildings were often cut into cinder-rich made ground, below which lay industrial waste.

There were few artefacts recovered from the site; no internal occupation deposits were encountered, and the only intact assemblage came from a small brick-lined tank in the back yard area of the Victorian terrace. This consisted of a typical range of material given the context and period. The small size of the artefact assemblage confirmed the otherwise industrial waste character of the main deposits.

Evidence for colliery activity on the site is limited to documentary evidence and supposition based on levelling deposits identified in the evaluation trenches. Depth constraints during the evaluation meant that the bottom of the archaeological sequence was not accessible (excavation was specified to cease at a depth of 1.8m). The surviving industrial structures were identified in the main by non-archaeological test pitting. As such, there is still some uncertainty as to the level of preservation, but the canal basin and at least one of the gas holders would appear to be intact. The remaining buildings of the gas works in the southern half of the site remain untested.

The importance of the Victorian terrace must be considered in relation to the existence of surviving contemporary terraces in the vicinity, and these buried deposits are less well preserved. That they contain assemblages of artefacts is of interest, but these will also be a common occurrence in the area. The earlier coalminers' cottages would have had more importance in the social history of this area of the Black Country (WSP 2008, 14; they are also listed amongst the features to be investigated in the WSI, MM2016b, table 1.1), though their survival was not established by any material remains during the evaluation (either through structural remains or residual artefacts), and the later buildings are likely to have had a significant adverse impact on any buried remains, which may even be located outside of the site, the cartographic evidence demonstrating that both phases of development fronted on to Ward Street, which may have been realigned).

The preservation of the gas works and canal basin have not been fully understood due to the limitations of trenching during the evaluation, however there is evidently a good potential for structures to survive. The "peat" identified in earlier ground investigation works has not been investigated further but attention is drawn to its location indicating its likely association with the canal. The survival of deposits has been compromised by remediation works as suggested in the desk-based assessment (WSP 2008), though parts do survive as buried remains. The evidence from the evaluation has demonstrated that remains of the gas works survive, albeit that the modern remediation has also removed substantial areas. These include structures that are not recorded on maps. There are, however very few artefacts. The potential for the site to contribute to research is therefore considered to be limited (as originally concluded in the WSI, MM 2016b, table 1.1).

Areas where there are the remains of structures of archaeological interest are indicated in Figure 8, and spot heights for these remains are indicated in red on Figures 3-6 and 8.

## 8 The impact of the development

### 8.1 Impacts during construction

The detailed design for the development is not yet available as Persimmon Homes is awaiting the final Site Investigation Report from Wardell Armstrong. However, Wardell Armstrong has indicated that piling will be necessary across the site. It is our understanding that Alastair Stewart

(Persimmon Homes) has agreed that piling is an acceptable approach with Eleanor Ramsey (WCC Archaeologist) and no further archaeological work is required for either the detailed design stage or in association with construction. Attention is also drawn to the particular health and safety concerns with regards to ground conditions and the low significance of the deposits investigated, which in any case will be largely preserved.

## 9 Publication summary

Worcestershire Archaeology has a professional obligation to publish the results of archaeological projects within a reasonable period of time. To this end, Worcestershire Archaeology intends to use this summary as the basis for publication through local or regional journals. The client is requested to consider the content of this section as being acceptable for such publication.

*An archaeological evaluation was undertaken on behalf of Persimmon Homes and their advisors (Mott MacDonald Archaeology and Heritage Practice) at land east of Ward Street, Bilston, Wolverhampton (NGR SO 936 966). The evaluation was to ascertain the level of preservation of potentially important archaeological aspects of the site. These included 18<sup>th</sup> century bell pits, 19<sup>th</sup> century workers cottages, canal basins and tramways. These features pre-dated. The majority of the trenches were targeted on specific features shown on the 1<sup>st</sup> edition Ordnance Survey of 1888.*

*The original scheme of investigation required the excavation of twelve evaluation trenches. Due to contamination of the ground with asbestos, five of the trenches could not be excavated. Two further trenches were hampered by difficult ground conditions. As such, the canal basin and gas holders, as well as some gas works outbuildings, could not be evaluated. However, previous non-archaeological test pitting had encountered structural remains suggesting that the canal basin was indeed preserved, and to a lesser degree of certainty, the gas holders.*

*Two trenches contained the footings of walls associated with the gas works, though one of the buildings does not appear on any plan of the site seen during this study. The two trenches targeting the possible squatters' cottages in the north-east of the site revealed instead backyard surfaces associated with Victorian terraces. These apparently replaced the earlier structures, though no physical evidence for the preceding cottages was found during the evaluation. Instead, their presence is conjectured from cartographic evidence.*

*Colliery activity on the site before the construction of the gas works is similarly based on cartographic and documentary evidence. The stratigraphy of made ground identified during the evaluation consisted of large amounts of vitrified slag and ore stone alongside colliery waste, all used as levelling and possibly for the sealing of mine shafts. It was upon this material that the later buildings are constructed. Certain levels of remedial work have also been undertaken since the demise of the works, to decontaminate the site, but the extent of this work is presently unclear.*

## 10 Acknowledgements

Worcestershire Archaeology would like to thank the following for their kind assistance in the conclusion of this project: Alastair Stewart and Daniel Hassall of Persimmon Homes, Josh Williams and Katie Luker of Mott MacDonald, and Eleanor Ramsey, the Archaeology and Historic Environment Officer for City of Wolverhampton Council. Derek Hurst (WA) edited this report.

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MM 2016a Land east of Ward Street, Bilston, archaeological desk-based assessment, Mott MacDonald, unpublished document dated March 2016

MM 2016b Land east of Ward Street, Bilston, archaeological written scheme of investigation, Mott MacDonald, unpublished document dated November 2016

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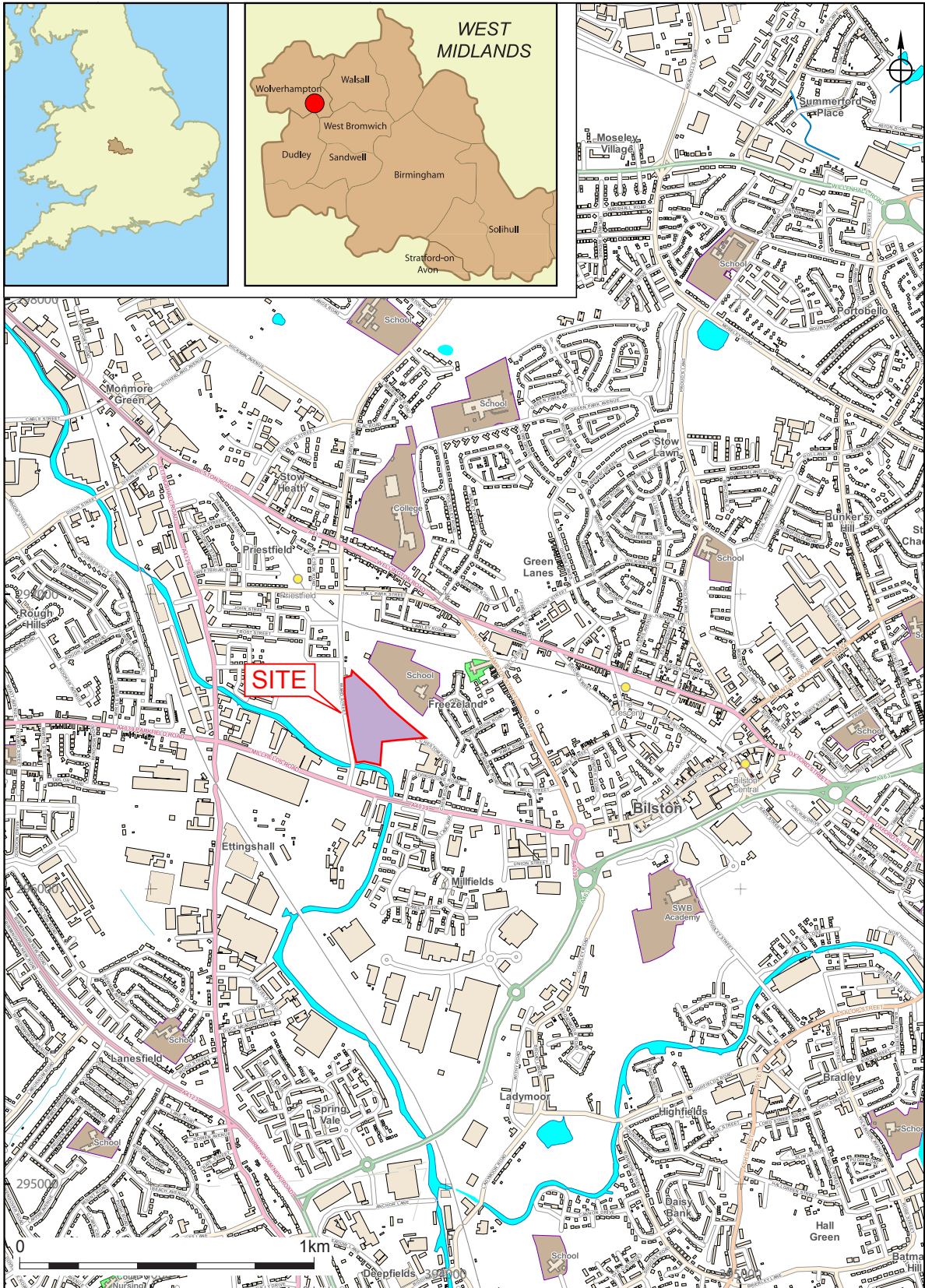
WAC forthcoming Trial pit report, land east of Ward Street, Bilston, Wardell Armstrong

WSP 2008 An archaeological desk-based assessment of land at Ward Street, Wolverhampton. WSP Environmental UK, unpublished document dated March 2008

**Figures**

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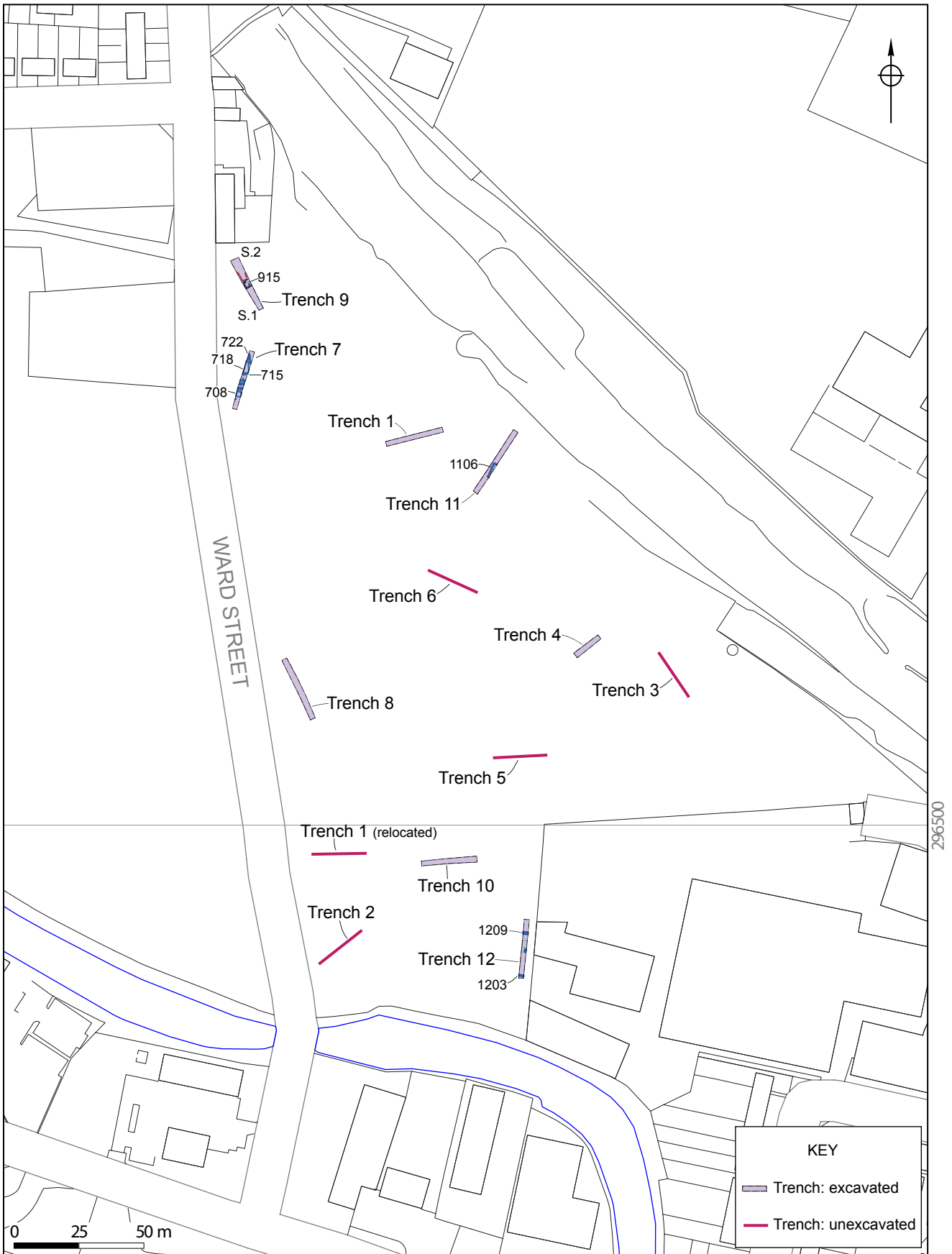


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Location of the site

Figure 1

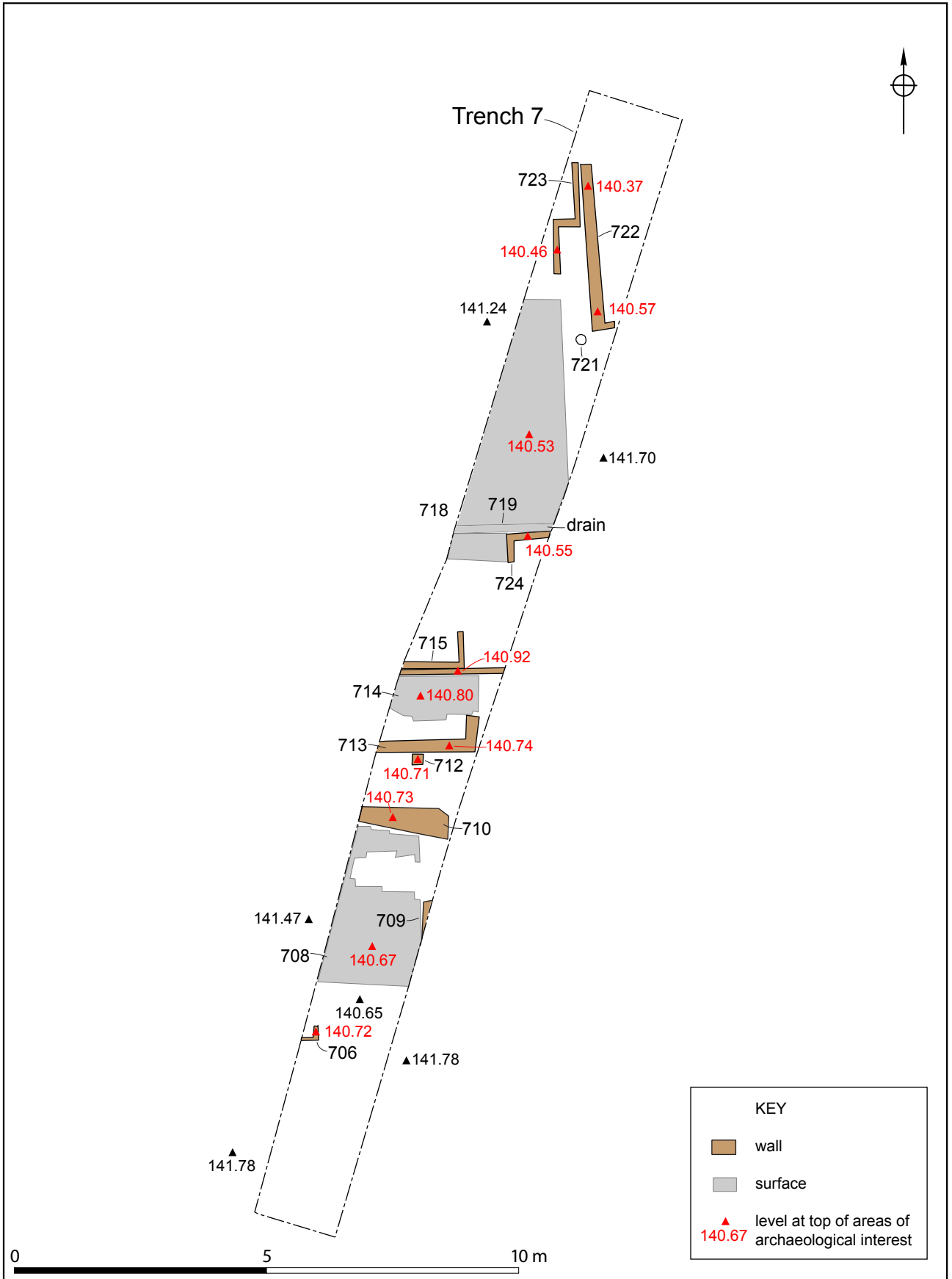




Trench location plan

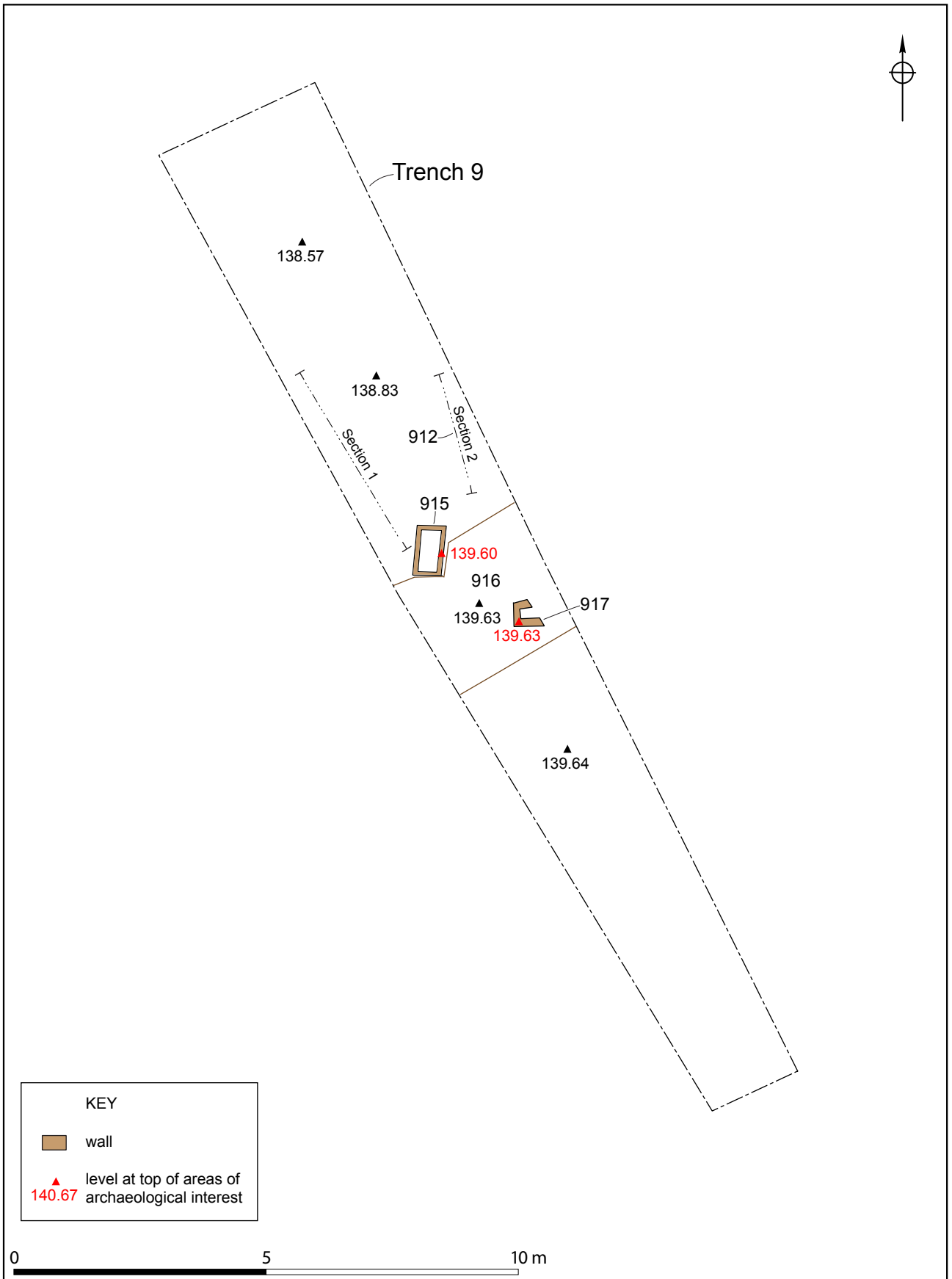
Figure 2





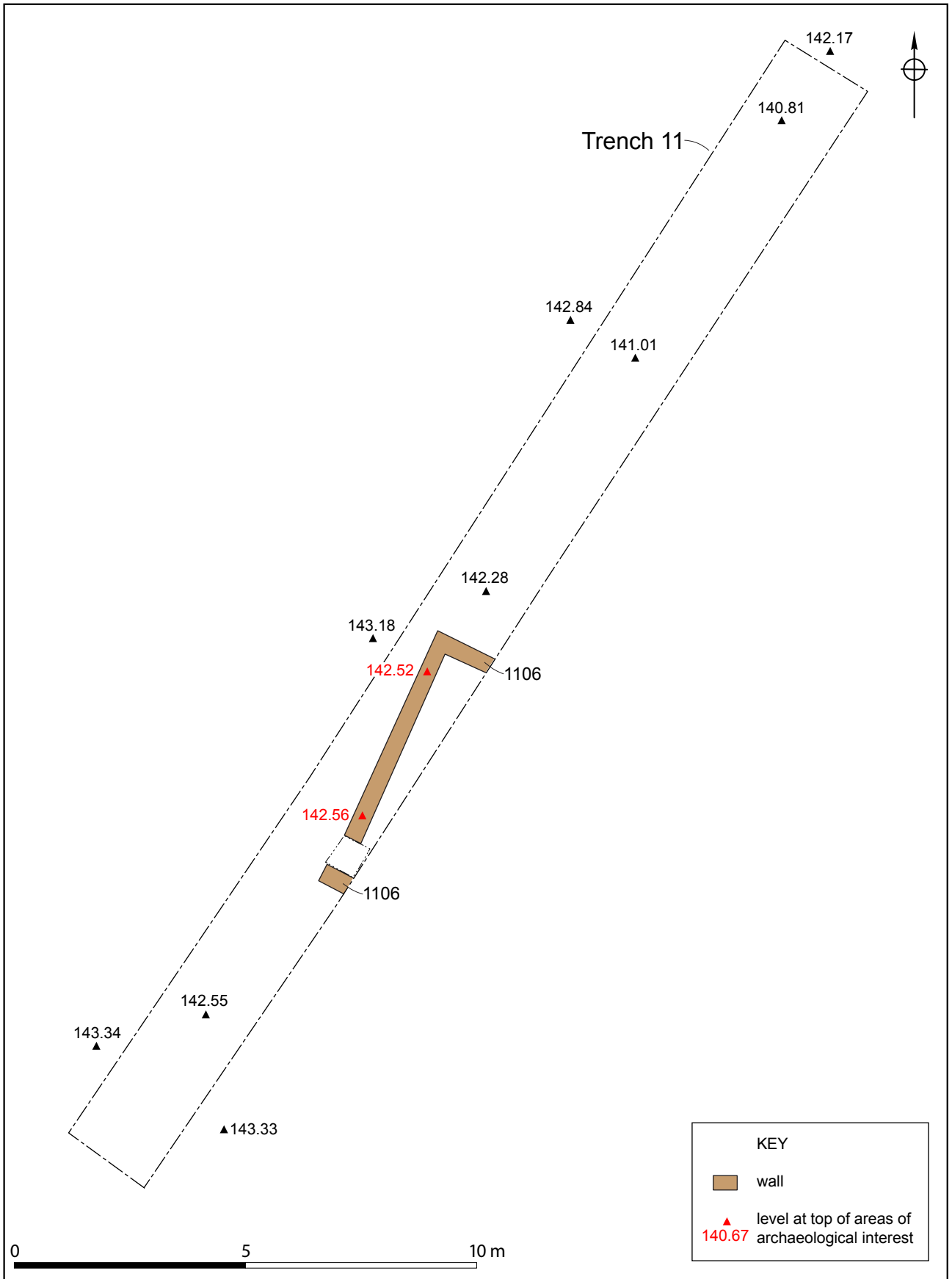
Plan of Trench 7

Figure 3



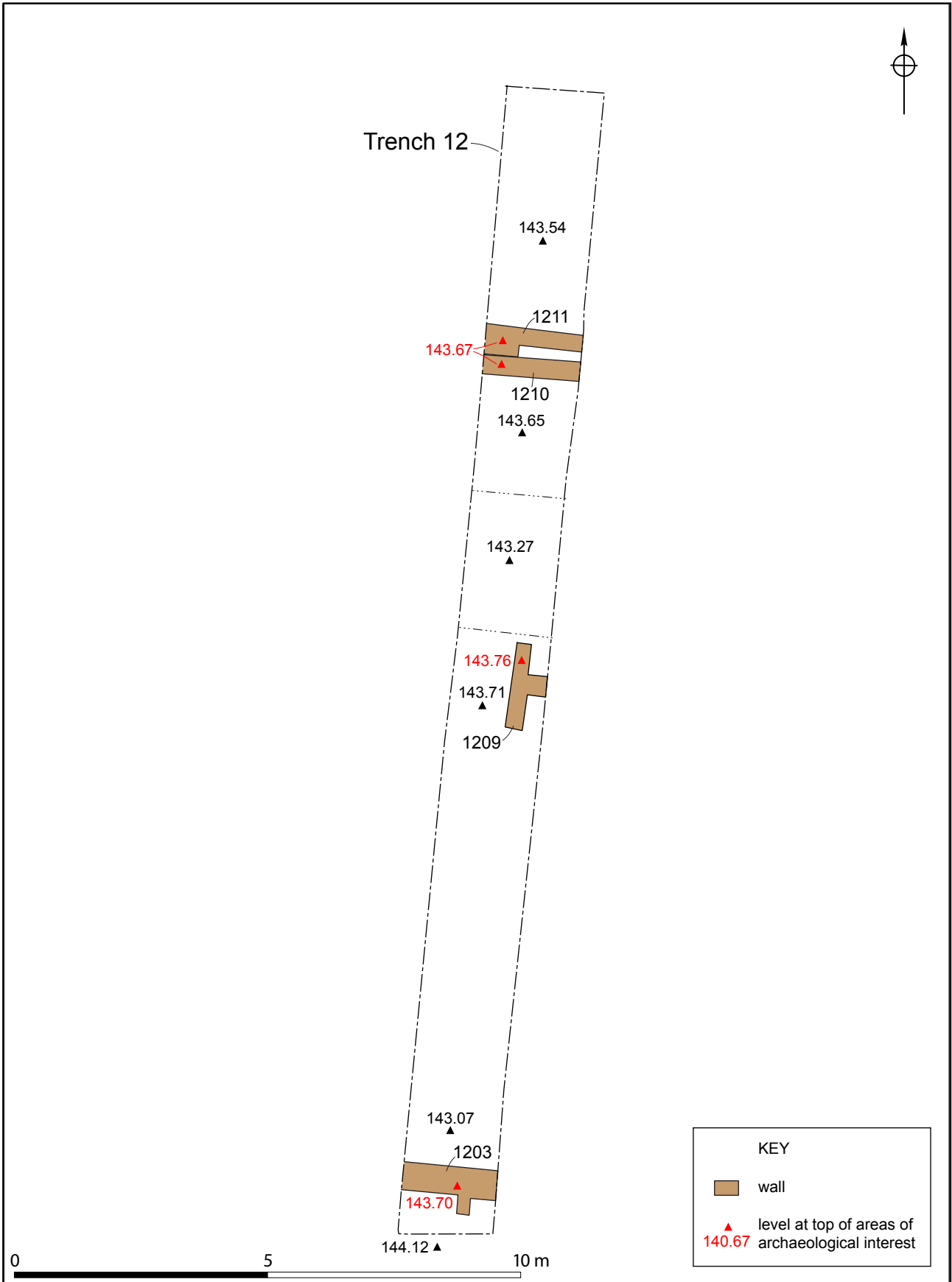
Plan of Trench 9

Figure 4



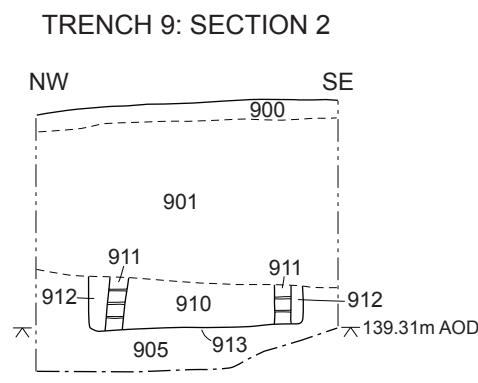
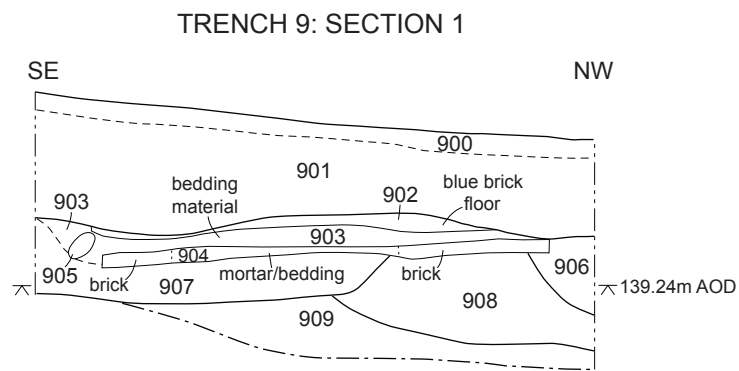
Plan of Trench 11

Figure 5



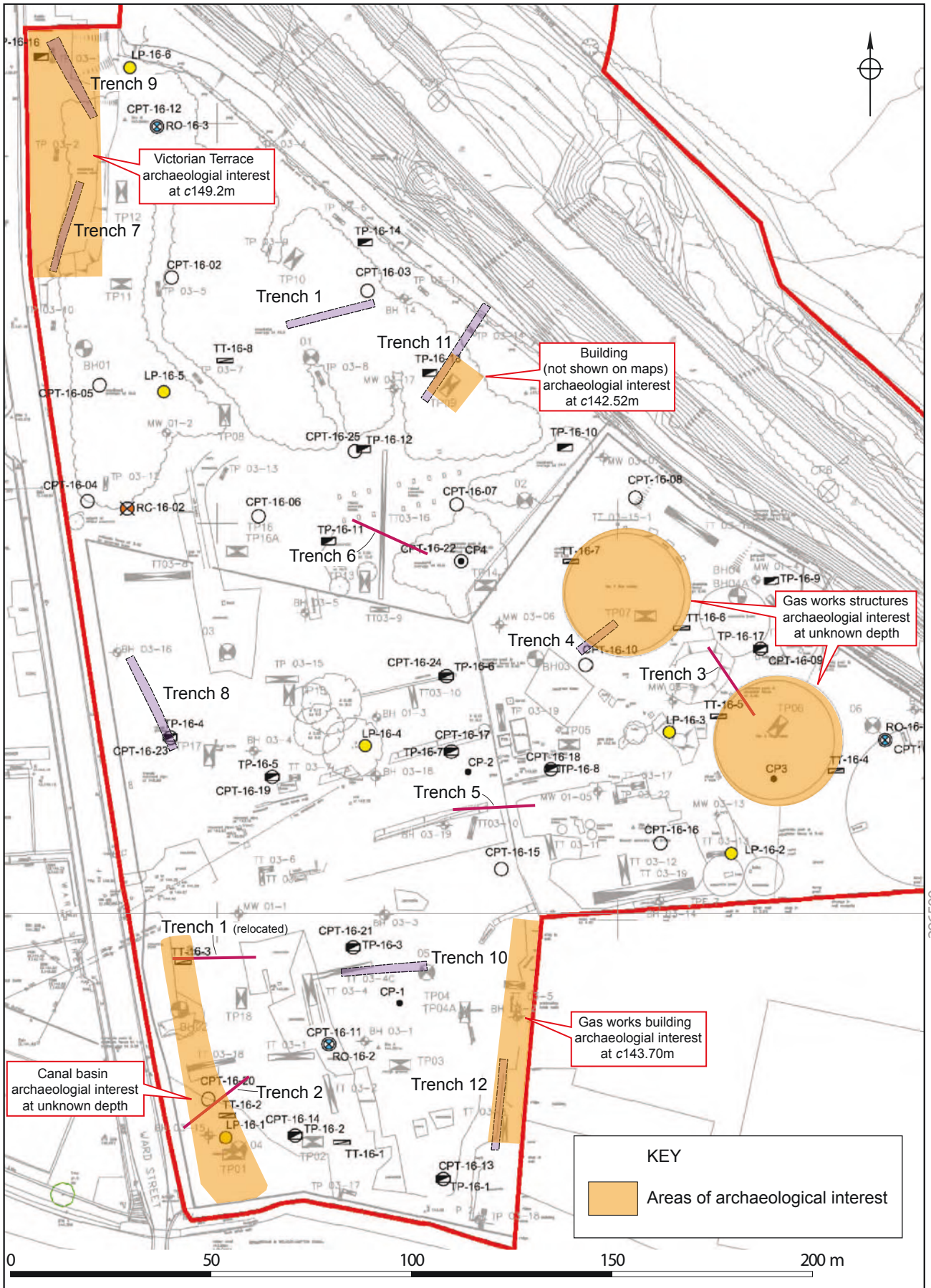
Plan of Trench 12

Figure 6



Trench 9 sections

Figure 7



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Archaeological trenches in relation to Test Pits (after WALLP forthcoming)

Figure 8





1816 OS Surveyors Map

Figure 9



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## Plates



*Plate 1 Brick surface 902 in Trench 9, looking west (1m scale)*



*Plate 2 Brick-lined tank 911 in Trench 9, looking north-east (1m scale)*

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*Plate 3 Brick structure 915 in Trench 9, looking west (1m scale)*



*Plate 4 Trench 7 looking south-west (1m scales)*

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*Plate 5 Trench 7 looking north-east (1m scales)*



*Plate 6 Surface 708 in Trench 7, looking north-east (1m scale)*





*Plate 7 Section of Trench 7 showing material overlying surface surfaces, looking north-west (1m and 0.5m scales)*



*Plate 8 Brick path 714 and wall 713 in Trench 7, looking north-east (1m scale)*

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*Plate 9 Brick surface 718 in Trench 7, looking north-east (1m scales)*



*Plate 10 Sondage through surface 708 in Trench 7, looking south (0.5m scale)*





*Plate 11 Sondage through deposits in Trench 7, looking west (1m scales)*



*Plate 12 Cleaning surface in Trench 7*

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*Plate 13 Section in Trench 11 showing wall 1106 and overlying material, looking south-east (1m and 0.5m scales)*



*Plate 14 Wall 1106 in Trench 11, looking south-west (1m scales)*





*Plate 15 Wall 1203 in Trench 12, looking south (1m scales)*



*Plate 16 Wall 1209 in Trench 12, looking east (1m scale)*

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*Plate 17 Walls 1210 and 1211 in Trench 12, looking south (1m scale)*



*Plate 18 Trench 8, looking south-east (1m scales)*





*Plate 19 Trench 1, with tip lines visible in section, looking north-west (1m scales)*



*Plate 20 Sondage through deposits in Trench 1, looking north (1m scales)*

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*Plate 21 Trench 4, looking east (1m scales)*



*Plate 22 Trench 10, looking east (1m scales)*



## Appendix 1 Trench descriptions

### Trench 1

Length: 20m      Width: 1.8m      Orientation: East to west

#### Context summary:

Context	Feature type	Context	Description	Height/ depth	Interpretation
100		Layer	Soft blueish grey	0.06	Silty hardcore- recent levelling layer
101		Layer	Loose dark black silty sand	0.3	Lens of pink brick rubble in middle of trench
102		Layer	Loose dark black	1.3	Sandy cinder. Sharp tip line at the east end of trench, towards railway cut in east
103		Layer	Soft blueish grey clay silt		Clay silt and stone rubble. Made ground, tipped over 104 from west to east, 1.5m deep in middle of trench, 0.45m BGS
104		Layer	Moderately Compact dark black		Cinder/ sand, tipping from west to N.east, Max thickness 1.1m, not bottomed, 0.4BGS at western end

### Trench 4

Length: 11.7m      Width: 1.8m      Orientation: North-east to south-west

#### Context summary:

Context	Feature type	Context	Description	Height/ depth	Interpretation
400		Layer		0.14	Same as 100
401		Layer	Loose mid reddish brown silty sand	0.34	Levelling layer
402		Layer	Firm	0.4	Hardcore rubble- levelling layer
403		Layer			Remediation work- coal waste over engineering clay to depth of 1.8m+

### Trench 7

Length: 20m      Width: 1.8m      Orientation: North-east to south-west

#### Context summary:

Context	Feature type	Context	Description	Height/ depth	Interpretation
700		Layer	Loose dark black		Sandy cinder
701		Fill		0.4	Stoney rubble at NE end
702		Layer		0.274	Burnt wood layer
703		Layer		0.23	Yellow hardcore levelling at SW end- lenses of black

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			and green. BGS 0.36m
704	Layer		0.3 Demolition layer, BGS 0.51m
705	Layer		0.35m Cinder waste- levelling, demolition material at SW end, BGS 0.54m
706	Layer		Corner of small structure, Bricks 230x70mm. No coursing or bonding, NS alignment 10.35x0.3m
707	Fill	Compact dark brownish black sand	
708	Structure		Blue brick, 260x130x50mm, Stretcher, Surface, NS aligned, 1.04BGS, 3.15x1.9m. Yard surface, lipped at S edge with some bricks standing
709	Structure		Yellow brick, 230x110x80mm, Single course, Wall, NS aligned, 0.8x0.18m. Wall at east edge of yard surface 708
710	Structure		Orange brick and stone, Bricks incomplete, Roughly hewn stone, Wall (mostly removed), EW aligned, Greyish-pink mortar with shell inclusions, 1.9x0.5m. Wall at N end of yard surface 708
711	Fill	Compact dark brownish red silty sand	
712	Structure		Square ceramic drain, 210x210mm. Positioned directly next to wall 713 on south side
713	Structure		Blue brick, 230x100x70mm, Single course, Header on edge, Wall, EW, Greyish pink mortar with shell inclusions, Single large hewn stone positioned at rightangle to brickwork 76x26cm- possible threshold, 1.9x0.7m
714	Structure		Red brick, 230x110x70mm, single course surface stretcher on N, S and E sides, yard surface, NS aligned, greyish pink mortar with shell inclusions, 1.6x0.9m, 0.58 BGS
715	Structure		Yellow brick, 230x110x70mm, Two course surviving but some

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			mortar on top suggests more previously, Stretcher, Wall, EW aligned, Grey mortar, 2x0.11m, 0.12m depth
716	Structure		Red brick, 240x110x80mm, Only one course visible but more on top, Wall of possible square structure truncated at northern end, EW aligned with NS return, Yellowy grey mortar, 1.2x0.7m, Filled by 717
717	Fill		Fill of square brick structure 716, rubble with bricks loose, possibly from 716 and 715
718	Structure		Blue brick, 230x110x70mm, Surface stretcher, Yard surface with drain 719 running EW at S end, NS aligned, Orange mortar, Lipped at eastern edge, 4.7x1.9m, 1.1m BGS
719	Structure		Semi circular drain running EW across yard surface 718, 1.9x0.5x0.05m
720	Fill		Fill of 724, Compact whitish patches, orangey patches, Rubble, Some broken stone/brick
721	Structure		Ceramic downpipe, closed, 0.2m diameter, Located by yard surface 718 by north end, possible outhouse
722		Structure	Stone and
brick, Stones-			220x180mm, Brick-240x120x60mm, Hewn stone, Single course of stone with possible course of brick on top- may be later, Wall, NS with EW return, Yellowy grey mortar, 3.3x0.24m
723	Structure		Yellowy brick, 240x110mm, Single course, Wall or other structure shape, NS with EW return, Pinkish grey mortar, 2.25x1m. Possibel wall or edge of two rectangular areas for storage
724	Structure		Red brick, 230x110mm but very degraded, single course with mortar remaining on top, Rectangular brick structure,

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not visible to E and S,  
Filled by 720, NS with EW  
return, Grey mortar,  
Located at S end of yard

725                      Cut                      Cut through 703 and 705

### Trench 8

Length: 20m              Width: 1.8m              Orientation: North-west to south-east

#### Context summary:

Context	Feature type	Context	Description	Height/ depth	Interpretation
800	Layer			0.26	As 1100. Recent levelling layer
801	Layer		Soft dark black	1.14	Cinder made ground in tip lines from south to north
802	Layer			0.8	Vitrified slag boulders and ore waste made ground
803	Layer		Soft mid blueish grey	1	Silty shale, made ground at south end of trench 0.8m BGS

### Trench 9

Length: 20m              Width: 1.8m              Orientation: North-west to south-east

#### Context summary:

Context	Feature type	Context	Description	Height/ depth	Interpretation
900	Layer			0.12	As 1100, recent levelling layer
901	Layer		Loose dark greyish brown silty sand	0.72	Silty sand and rubble, large concrete boulders, Demolition and levelling directly above yard surface
902	Structure			0.12	Blue engineering brick surface, 2.3m across in west section of trench. Yard surface for cottage off Ward
903	Layer			0.15	Soft cinder and mortar bedding material for surface 902
904	Layer			0.09	Mortar bedding material with red bricks at N&S ends, probably as extra levelling rather than structure
905	Structure				Ceramic drain pipe, associated with surface 902
906	Layer		Loose dark greyish brown silty sand	0.8	Tip line of levelling
907	Layer			0.3	Loose cinder and silty sand levelling material under yard

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				surface bedding. Made ground
908	Layer		0.6	Loose boulders of vitrified slag and waste ore. Levelling/Made ground
909	Layer	Firm mid yellowish brown clay	0.4	Redeposited dirty clay, made ground
910	Fill	Compact silty sand		Orange and brown fill of cess tank. Frequent charcoal and glass
911	Structure			Brick wall defining sides of tank. 75x110mm, Soft pinkish white mortar, single brick thick, no base
912	Fill	Loose mid greyish brown silty sand		Backfill of construction cut 913
913	Cut			Construction cut for wall 911
914	Fill	Firm dark brown silty sand		Brick rubble, fill of small brick tank
915	Structure			Red brick rectangular tank, 230x115x80mm, Soft white mortar
916	Layer			Moderately compact cindery occupation layer
917	Structure			Brick tank like 915

## Trench 10

Length: 20m      Width: 1.8m      Orientation: East to west

### Context summary:

Context	Feature type	Context	Description	Height/depth	Interpretation
1000	Layer			0.16	As 1100, levelling layer
1001	Layer		Soft dark reddish brown loamy silt	0.29	Levelling
1002	Layer				As 402, levelling/capping

## Trench 11

Length: 20m      Width: 1.8m      Orientation: North-east to south-west

### Context summary:

Context	Feature type	Context	Description	Height/depth	Interpretation
1100	Layer		Moderately Compact light blueish grey silty clay		And hardcore, recent levelling layer
1101	Layer		Loose mid grey brown silty sand	0.3	Rubble, Levelling layer
1102	Layer		Moderately Compact dark black	0.18	Cinder and rubble levelling layer



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1103	Layer	Moderately Compact light whiteish yellow	0.12	Mortar and rubble demolition layer
1104	Fill			Fill of modern cut 1105. As 1102, 0.6x0.6x0.7m
1105	Cut			Modern cut through overburden, cuts 1102, filled by 1004
1106	Structure			Yellow brick wall, EW with NW returns at both ends heading south, 6.1m EW. 235x115x75mm, Firm mid pinky red cement, Bottom course on edge headers, 2 bricks wide, second course 1 1/2 bricks wide, headers, side, stretcher on other side
1107	Cut			Construction cut for 1106, c.0.6m width
1108	Layer	Moderately Compact dark black	1	Cinder, made ground

**Trench 12**

Length: 20m      Width: 1.8m      Orientation: North to south

**Context summary:**

Context	Feature type	Context	Description	Height/depth	Interpretation
1200	Layer			0.38m	As 1100, recent levelling layer
1201	Layer		Moderately Compact mid reddish brown silty sand	0.26	Brick rubble, levelling layer
1202	Layer		Moderately Compact dark greyish brown silty sand	0.22	Frequent sub angular cobbles, levelling layer
1203	Structure				EW orange brick wall, 1.8x0.36x0.5m, 3 lowest courses stepped foundations with 3 courses above of 1 1/2 brick wide HSH, Bonded with hard mid grey cement with charcoal, small brick rectangular build adjoining south side into baulk, 225x110x70mm
1204	Cut			0.7	Construction cut for wall 1203
1205	Fill		Loose dark greyish brown silty sand		Rubble, backfill of 1204
1206	Layer		Compact	0.42	Cement and hardcore
1207	Fill		Loose dark greyish brown silty sand		Fill of cut 1208
1208	Cut				EW cut, 1.1x1.8x0.7m
1209	Structure				Red brick wall, footing,

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		forming T shape, 235x115x80mm, 1.7m NS and 0.77m EW at biggest
1210	Structure	Red brick wall EW, 240x115x90mm, 1.8x0.38m, 2 courses high, 1 1/2 brick wide
1211	Structure	Yellow brick wall, poorly preserved, EW, 240x115x65mm, 1.8x0.48m, One course high on white mortar bed

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## **Appendix 2 Technical information**

### **The archive**

The archive consists of:

- 4 Field progress reports AS2
- 3 Photographic records AS3
- 170 Digital photographs
- 1 Drawing number catalogues AS4
- 2 Scale drawings
- 11 Trench record sheets AS41
- 1 CD-Rom/DVDs
- 1 Copy of this report (bound hard copy)

The project archive is intended to be placed at:

Wolverhampton Arts and Museums Service  
Wolverhampton City Council  
Wolverhampton Art Gallery  
Lichfield Street  
Wolverhampton  
WV1 1DU  
Tel 01902 552055