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Archaeological Evaluation Report

Worsley Delph Basin,
Worsley, Salford

Client: Salford City
Council

Technical Report:
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Report No: 48/2014



Site Location: The study area (centred at SD 74811 00538) is located within the Worsley Delph scheduled monument area (Heritage Asset: 1001956) and is bounded to the east by School Brow, to the south by Worsley Road and wooded areas to the west and north (**Figure 1**).

NGR: (Centred at SD 74811 00538)

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Summary

In November 2014 the Centre for Applied Archaeology (CfAA) was commissioned by Salford City Council to undertake an archaeological evaluation on the 'island', which is part of the Worsley Delph Basin, a scheduled monument (HA: 1001956) located in Worsley, Salford (centred on SD 74811 00538). This was carried out as part of a larger regeneration scheme of the Bridgewater canal corridor between Barton and Boothstown, which includes a programme of archaeological investigations to inform wider interpretations of Britain's first commercial canal.

A Written Scheme of Investigation (WSI) was produced by the CfAA (Thompson 2014) in accordance with the archaeological brief for the work. The brief was provided by Norman Redhead (2014) the Heritage Management Director (Archaeology) at the Greater Manchester Archaeological Advisory Service (GMAAS) and approved by Andrew Davison, Principal Inspector of Ancient Monuments at English Heritage. This called for a total of three trenches measuring 6.00 x 2.00m to be excavated on the island to characterise the 20th century landscaping and to identify any 18th century archaeology. The aim was to gain a better understanding of how the island was used, particularly during the period when the canal and the underground tunnels were in operation and to inform any archaeological mitigation in relation to proposed landscaping works.

The evaluation at the island highlighted the presence of archaeological remains, possibly related to the 19th century sluice gate on the Western side of the island. The remains consisted of a possible brick floor surface with stone edging to the South. Deposits above this seemed to highlight a phase of disuse followed by several phases of landscape definition which are documented as having taken place during the 1960's and 1970's. A 20th century brick structure was also observed to the Western side of the island. At present, documentary and cartographic research have not been able to identify this structure.

1. Introduction

1.1 Background

In November 2014, the Centre for Applied Archaeology was commissioned by Paul Gill, on behalf of Salford City Council to undertake an archaeological evaluation on land that is now commonly referred to as the island, part of Worsley Delph Basin Worsley, Greater Manchester (centred on SD 74811 00538). The work was carried out as part of a scheme to regenerate five miles of canal between Barton and Boothstown (funded by HLF), of which Worsley Delph forms a part. (<http://www.hlf.org.uk/about-us/media-centre/press-releases/facelift-bridgewater-canal>). The main aim of the project is to improve and manage public access, as well as provide improved interpretation and educational resources. A Cultural Heritage Assessment (Frost 2011) has already been carried out to inform the regeneration programme and outlines the plan for the various schemes of work (2011, 6).

The first phase of work carried out by CfAA involved archaeological test pitting and laser scanning of the Delph workshops, beneath Worsley Road Bridge (Reader 2013). The second phase considered here was carried out in order to further understand the use of the island to enable future recommendations for the regeneration of the site.

The work was carried out with a Written Scheme of Investigation (WSI), compiled by Adam Thompson of the CfAA and was submitted October 2014. The WSI was written in accordance with the archaeological brief prepared by Norman Redhead, Heritage Management Director at GMAAS. The site is also a Scheduled Monument (HA: 1001956; HER GM17) and thus was also subject to Scheduled Monument Consent, which was granted on 15th October 2014, in accordance with the Ancient Monuments and Archaeological Areas Act 1979 (as amended); Section 2 control of works (Consent Number: S00095061 – see Appendix 3).

1.2 Location, Topography and Use

The excavation area is located within the metropolitan borough of Salford, within Worsley and to the north of Worsley road within the Worsley Delph basin (centered on SD 74811 00538). The island is bounded on three sides by Worsley Delph basin with a sheer vertical cliff to the north (**Figure 16**). The Bridgewater canal starts near the Packet House to the south of Worsley Road. The island is connected to a path by a foot bridge, running up to School Brow on the east side. The study area lies within the Worsley conservation area (designated 1969). The island and the tunnel entrances are protected as a Scheduled Monument (HA: 1001956; GM17). The Delph as a whole is not Scheduled but does contain four listed buildings, including the sluice gates to both

the west (HA: 1215082) and east (HA: 1215011) tunnel entrances, to either side of the island.

The island's ground surface is at approximately 31m AOD and the underlying solid geology comprises of middle coal measures of the carboniferous period, which run NW-SE interspersed with bands of sandstone. The coal measures are overlain by glacial boulder clays, the superficial geology (www.bgs.ac.uk; Frost 2011, 14).

1.3 Personnel

The project was conducted by professional archaeologists from the CfAA. On-site excavations were conducted by Andrew McGuire, Sarah-Jayne Murphy, John Roberts and Mandy Stanton. This report was compiled and written by Andrew McGuire and Rachael Reader. The project was managed by John Roberts.

1.4 Monitoring

In accordance with Scheduled Monument Consent (S00095061), Andrew Davison, of English Heritage and Norman Redhead of the Greater Manchester Archaeology Advisory Service, monitored the archaeological work. Paul Gill, Physical Regeneration Project Manager, monitored the works on behalf of Salford City Council.

2. Historical & Archaeological Background

2.1 Introduction

The Worsley Delph is currently inaccessible to the public; however with the aid of a Heritage Lottery Fund grant, the area will be regenerated and re-opened to the public. The Delph marks the start of the Bridgewater Canal corridor, arguably the first commercial canal developed in Britain. It also forms the terminus for a series of underground tunnels, which originally provided drainage for the coal mines but were then modified to transport coal from the mines in the Walkden and Farnworth areas and then onto the canal network. There is a wealth of contemporary accounts as well as maps and plans from the time the canal and underground system was in use, which are referred to in previous reports. The following historical background is a summary of the information presented in Fitzgerald and Clarke (2002) and Frost (2011). The Medieval and Post Medieval history of Worsley is also summarised from Farrer and Brownbill (1911, 376-392).

2.2 Historical Background

2.2.1 Prehistoric and Roman

Prehistoric activity is scarce within the study area, with the nearest Iron Age site at the SW edge of Chat Moss. Roman activity is evidenced at Worsley Moss, where the head of a man was found in 1958 (Hall *et al* 1995, 19). Roman roads are also thought to run through the parish, one of which connects Mamucium (Manchester) to Coccium (Wigan).

2.2.2 Medieval

The earliest record of Worsley is as *Werkesleia* in 1195 and the earliest known member of the family who owned the manor was Richard de Worsley, recorded in 1203. However in the 14th century, through marriage and inheritance, the Massey family of Tatton inherited the manor. Then in the 16th century, the title and lands passed to the Brereton family, who are thought to have built Worsley Old Hall on the site of an earlier house, of which there is no trace. Sir Richard Brereton, who died in 1598, passed the manor and estate to his illegitimate son, Sir Thomas Egerton.

2.2.3 Post Medieval Period

During the 17th century, the Egerton family earned the title ‘Earl of Bridgewater’ and it was during this time that Worsley is recorded as a reasonable sized settlement through the hearth-tax returns. Economically, Worsley was known for agriculture, coal mining

and the domestic cotton industry however quarrying must have also been another industry as the Worsley Delph sandstone is first mentioned as being exploited in 1676, however quarrying ceased and instead the area became part of the Bridgewater Canal network. The first Duke of Bridgewater, Scroop Edgerton was the first to extensively exploit the coal resources on his estate however it was the third Duke, Francis, who actively promoted the exploitation and management of the coal deposits. The turnpiking of the roads providing access to the Estate mines led to rising costs and the Duke had to seek alternatives.

In 1757, Egerton and Gilbert, the Estate Manager who had trained as an engineer under Matthew Boulton, lobbied parliament to pass a bill to create a canal linking Worsley to Manchester, which gained parliamentary assent in 1759. James Brindley oversaw the construction and the canal opened in 1761 to commercial traffic. The Delph was where the Bridgewater canal started, but it also formed the terminus for a series of underground tunnels. These were originally used for draining the coal mines into the Delph and the idea of making it a navigable system went hand in hand with the creation of the canal.

A sketch of Worsley Delph dating to 1769 shows that the Delph originally had one (eastern) entrance which was rectangular with two heavy wooden doors. The basin appears to have been narrower than it is today, with a platform along the west side. A wooden crane is also shown on the island, with a series of cables stretching across the Delph along the top. It was also described as a 'river-environ of London' (Young 1771; Aldred 1988) suggesting that the area was heavily used.

In around 1771, a second entrance had to be created to allow separate portals to enter and exit, which further suggests that the area was commercially successful. These marked the start of approximately 45 miles worth of underground tunnels which linked up to the coal mines in the Walkden and Farnworth area (although some sources put the total at around 52 – see Atkinson 2012). Accounts from the late 18th century refers to parts of the tunnel being brick lined and with varying dimensions, averaging 7 ½ foot wide and 5 foot high with air shafts providing ventilation. Due to the narrow dimensions, the boats that frequented these tunnels at this time were known as 'starvationers' because of their exposed ribs. The goods could then have been transferred by means of the crane in the Delph, to a larger vessel for transportation on the wider network. A reconstruction of one of these is partially submerged along the western side of the Delph.

The success of the canal network meant that a number of small businesses grew up in and around Worsley. The Lord Egerton during the mid 19th century constructed another hall (Worsley New Hall) and embarked on a building and repair programme within the village. However the village did not expand beyond the initial surge once the Bridgewater canal had been completed and the industrial interests of the estate slowed down during this period. The network continued to be used to transport coal

onto the Bridgewater canal network however the advent of rail travel meant production slowed further until 1887, after which the tunnels continued to function in a drainage capacity.

2.2.4 20th Century

Although the village changed little during the 20th century, the construction of the M60 along the west side of the village had a large impact upon this mostly rural landscape. However the Delph basin has changed little since the tunnels fell out of use. The Worsley Delph Island and the tunnel entrances were designated a scheduled monument and in 1966, the sluice gates and the entrances to the underground tunnels were Grade II listed (see p.5). A programme of restoration was undertaken by the local Civic Trust in the 1960s, which involved an extensive programme of desilting, restoration and landscaping, with further work undertaken in 1974/75. This involved dredging the canal, with the material subsequently being deposited in the workshop area beneath the Worsley Road Bridge. In addition, Worsley was designated a conservation area in 1969 and the village contains a number of grade II listed buildings. The area defined is the historic core of the Industrial village which grew because of the construction of the Bridgewater canal and the relationship of historic buildings, green spaces and canal network defines the unique character of this area.

2.3 Archaeological Background

Structural Perspectives carried out a survey of the Delph, as well as trial excavation on the island in order to inform a restoration and conservation programme by determining how much the restoration work in the 1970s had altered the island's topography. The evidence was inconclusive, however the works revealed that the made ground varied between 0.60 and 1.30m, with a red earthy material identified as the surface in use when the underground network became navigable (Fitzgerald and Clarke 2002).

A Watching Brief was carried out by the University of Manchester Archaeological Unit (UMAU) in 2003-2004, at the request of the Coal Authority during a programme of works to enhance the water quality of the canal system. This involved the excavation of three trenches, of which one revealed a timber revetment, possibly 19th century, to protect the canal bank from erosion and a stone flag floor, possible connected to the eastern sluice gate machinery (UMAU 2004, 9).

Both of the above investigations were published in Norman Redheads article '*The Archaeology of the Bridgewater Canal at Castlefield and Worsley: some case studies*' (Nevell & Wyke 2011: 63-77).

In preparation for the HLF bid for the restoration and regeneration of the Barton to Boothstown stretch of canal, a Cultural Heritage Assessment was produced by Castlering Archaeology to examine the impact, opportunities and mitigation related to

the heritage assets within the proposed area (Frost 2011). The report made a number of recommendations, referring to the scheme of work to support the funding application but also those which would need an appropriate archaeological planning condition. In particular, the works carried out (including this programme of work) are within nationally designated heritage assets and require the appropriate consent from English Heritage (Frost 2011).

The first phase of work recommended by the Cultural Heritage Assessment (Section 11.8; Frost 2011, 55) involved investigating the Delph workshops, which are located below the Worsley Road bridge (SD 7482 0050). CfAA carried out a programme of archaeological test pitting and 3D Laser Scanning in the Delph workshops. The test pitting revealed that there were several phases of activity, with floor surfaces preserved and later compartmentalisation of the area. The course of the tail race to a Corn Mill, which stood to the east of the Delph, was also partially traced. The deposition of the silt in the workshops had helped to preserve the surfaces and there was less than 0.10m of silt sealing the archaeology, particularly in the rear and middle workshops. More clearance is anticipated in the front workshop, especially if the tail race is to be opened up again as it is not clear what depth this reached (Reader 2013).

The second phase of work now focuses on the Worsley Delph island (Section 11.7; Frost 2011, 54) and is required to provide a better understanding of the use of the island, particularly during the time the canal was in operation. The main aim of this work is to confirm if the archaeological resource, as indicated from previous investigations, survives and what its extent, nature and significance is. The objectives are to identify the depth and character of the 20th century landscaping material and to identify the nature and extent of any surviving 18th century deposits. A total of three evaluation trenches were proposed, measuring 6.00 x 2.00m (Thompson 2014).

The Worsley Delph is a scheduled monument (HA: 1001956) and thus is protected by law, under the 1979 Ancient Monuments and Archaeological Areas Act. In accordance with Section 2 of the Act, an application for SMC (Scheduled Monument Consent) was placed with English Heritage on 3rd October, with permission being granted on 15th October 2014 (SMC: S00095061).

3. Methodology

3.1 Excavation Methodology

Due to restricted access it proved impossible to utilise a mechanical excavator for this work on the island. Therefore the excavation of the evaluation trenches had to be conducted by hand. This required a re-assessment of the size of the trenches that could be excavated. After consultation with all involved parties a modified trench plan was agreed which allowed for trenches 1 and 2 to be shortened and for trenches 3 and 4 to be shortened and repositioned slightly.

All excavation was conducted by hand, by professional archaeologists with excavated overburden placed at least 1.00m away from the trench edges. Trenches were excavated down in 100mm spits until archaeological features or natural geology was revealed or if the trench posed a health and safety risk, due to depth and/or unstable section edges. During excavations and until the works were completed, the area was surrounded with barrier fencing which was located no less than 2.00m from the edge of the island and the trenches. Following the removal of overburden, the trenches were cleaned using appropriate hand tools and the archaeology was recorded (see below). The trenches were reinstated with the excavated material upon completion of the fieldwork. By agreement, to facilitate future landscaping work, the large numbers of bricks excavated from the trenches were kept aside and not re-used for back-filling.

The evaluation trenching was carried out in accordance with the IfA standards and guidance for undertaking archaeological fieldwork (*Institute for Archaeologists, Standards and Guidance for Archaeological Fieldwork* 1994, revised 2008).

3.2 Recording Methodology

Separate contexts were recorded individually on CfAA pro-forma context sheets (Appendix 1 – Context List), plans and sections were recorded on permatrace drawing sheets at an appropriate scale (1:10, 1:20 or 1:50), depending on the complexity of the data and features encountered. All drawings were individually identified and cross referenced, contexts enumerated and principal layers and features annotated with AOD level information.

Photography of all relevant phases and features were undertaken with digital formats. General photographs were taken during the archaeological programme; to provide illustrative material covering the wider aspects of the archaeological work undertaken (Appendix 3 – Photographic Archive).

All fieldwork and recording of archaeological features, deposits and artefacts were carried out to acceptable archaeological standards. All archaeological works carried out by the CfAA are carried out to standards set out in the Code of Conduct of the Institute for Archaeologists.

4. Archaeological Descriptions

For the evaluation trench locations please refer to the Trench Location Plan (**Figure 2**). Due to the presence of paving in the proposed area of excavation, Trench 3 was divided into Trenches 3 & 4. These were opened to the North (T3) and South (T4) of the original location to catch as much of the archaeological footprint as possible.

It should also be noted that the Ordnance Survey AOD levels highlight a discrepancy for the Worsley Bridge Benchmark between 32.05m in 1904 and 31.86m in 1963. A more recent reading of 31.90m was published at www.bench-marks.org.uk/bm34099 in 2010 and this was used to calculate the levels during the Evaluation.

Trench 1 (dimensions: 5.00m x 2.00m):-

Trench 1 was orientated roughly West-East and was located 2.00m to the South of the Eastern edge of the cliff face. The close proximity of substantial tree rooting and spatial limitations meant that the full 6.00m could not be excavated. For a detailed plan of T1 refer to **Figure 3**.

The general stratigraphic sequence for T1 (*see* **Figure 12**) consisted of; **(001)** a 0.10m deep dark Brown/Black loam /topsoil deposit observed across much of the site. This lay above **(002)**; a loosely compacted, light-Grey/White hardcore deposit with abundant sub-angular inclusions <0.05m which was observed for 0.05m. Below **(002)** was **(003)**; a loosely compacted, mid-Orange/Brown silty sand with a depth of around 0.15m that sealed **(004)** a 0.10m deep deposit comprised of a compact, dark-Blue/Black silty sand with abundant clinker & coal dust inclusions. Beneath **(004)** was **(005)**; a compact, mid-Grey/Brown clay silt with abundant red, full brick inclusions. A majority of these were marked 'NCB Gadbury' (*see* **Figure 11**). **(005)** was observed to have a depth of around 0.20m below which was **(006)**; a compact dark-Blue/Black silty sand similar to that of **(004)**.

The upper deposits of **(001)**-**(006)** formed a fairly unbroken sequence throughout the whole of T1 (*see* **Figure 7**). The deposits encountered below were; **(008)** a compact, mid-White/Grey silty clay with frequent coal/shale and occasional sandstone inclusions. This deposit was observed throughout most of the trench and lay above **(007)**, **(009)**, **(011)** and **(014)**. Towards the centre of T1 **[010]** was noted to cut through **(008)**. The cut was roughly square in plan extending 0.80m North from the Southern section and 1.00m wide. **[010]** was not observed to cut through the stratigraphic sequence above **(008)**. The fill within was made up of 20th century refuse.

In the South East corner of T1, below **(006)** and **(008)** was **(007)**, a compact mid-Yellow/Grey silty clay. This deposit was only observed in the Eastern section and

gradually increased in depth to the South East corner of T1 where it reached 0.40m. (007) lay above (009), a loosely compacted mid-Red/Brown clay sand with abundant sub-angular sandstone inclusions <0.15m. (009) had an average depth of 0.14m and was mainly observed in the Eastern section. However, this context did extend West into the Northern section for 0.76m, below (008).

Due to the presence of [010], excavation at the centre of T1 was halted at (008) and continued to the West in the form of a sondage roughly 0.65m wide (*see Fig 3*). In this area (008) was observed to lie above (011); a loosely compacted Red-Brick rubble layer. This deposit was similar to (005) but contained older hand-made bricks. (011) was observed for 0.24m. Below (008), (009) & (011) was **(015)**, a compact dark-Brown/Black silty sand with an average depth of 0.10m. This deposit seemed to seal (014) to the East and West of the trench. (014) was a compact mid-Brown/Pink silty clay layer containing abundant <0.15m sandstone inclusions. The depth of (014) varied between 0.08m to the West and 0.36m to the East. Below (014), at a depth of around 1.05m from the surface **(013)** was observed. (013) was a loosely compacted mid-Brown/Red sandy clay with abundant sandstone inclusions <0.15m. Upon reaching this context excavations were halted.

Trench 2 (*dimensions: 4.50m x 2.00m*):-

Trench 2 was orientated roughly North-South and was located 8.00m to the West of the access bridge steps. Spatial limitations caused by paving and the edge of the island meant that a length of 6.00m could not excavated. For a detailed plan of T2 refer to **Figure 4**.

The general stratigraphic sequence for T2 was much the same as T1 (*see Figure 13*) and consisted of; **(018)** a 0.10m deep dark Brown/Black loam /topsoil deposit similar to (001) below which was **(019)** a loosely compacted, light-Grey/White hardcore similar to (002) and observed for 0.02m. Beneath (019) was **(020)**, a loosely compacted, mid-Orange/Brown silty sand similar to (003). (020) increased gradually from 0.10m to 0.20m at the Southern end of the trench. **(021)** was the next deposit in sequence and virtually identical to (005). This deposit gradually decreased in depth from 0.30m to 0.20m in the South of the trench. Below (021) was (022) a fairly compact, light-Brown/Orange silty clay with a depth of 0.07m. At the interface between (021) and **(022)** a substantial amount of green wire fencing of probable 20th century origin was encountered. **[023]** was observed to cut through (022) exiting the Western section at 2.00m from the Northern trench edge. This cut was observed as triangular in plan, extending 0.16m to the South East where it turned 90 degrees and ran South West 0.50m continuing through the baulk. **[023]** was observed to cut through all of the layers above (029) in the South facing section.

The stratigraphic sequence below (021) was only observed within the final 1.30m at the Southern end of T2. In this area (017) was encountered directly below (021). (017) was a loosely compacted, dark-Brown/Black clay silt similar to (001). This deposit had suffered from heavy bio-turbation and ranged in depth from 0.16m to 0.26m at the Southern trench edge. (017) lay above (024); a loosely compacted mid-Orange/Brown silty sand with frequent brick and stone inclusions. This deposit was observed for 0.15m above (025) and (026). (025) was a loosely compacted mid-Grey/Brown sandy silt with a depth of 0.12m. In the Eastern section, after 0.60m, (025) was observed to peter out.

Beyond this depth the stratigraphy took on similarities to the lower sequence of T1 (see **Figures 7 & 8**). (026) lay beneath (024) and (025) with a depth of 0.10m. (026) was virtually identical to deposit (008). Below (026) was (027); a clay deposit similar to that of (014) but containing far less sandstone inclusions. This was observed for 0.10m depth and lay over (028); a deposit similar to that of (015). This was observed in section to have a depth of 0.01-2m sealing (029) below. (029) was identical to (013) and was observed at 1.20m below the current ground level. As in T1, upon reaching this context excavations were halted.

Trench 3 (dimensions: 3.60m x 1.50m):-

Trench 3 was orientated roughly North-South and was located 11.50m West of the Eastern edge of the cliff face and roughly 5.00m West of T1. For a detailed plan of T3 refer to **Figure 5**.

The general stratigraphic sequence for T3 (see **Figure 14**) was much the same as T1 & 2 and consisted of; (030) a topsoil identical to deposits (001) & (018), above (031) a hardcore deposit similar to (002) & (019) with (032) beneath, being similar to sandy deposits (003) & (020). Below (032) was (033), a deposit that shared similar characteristics to that of (004). However, in T3 this deposit was noted as having a depth of around 0.20m, thinning towards the cliff face (see **Figure 9**).

The next deposit in sequence was (034), similar to that of (005) but containing less brick and therefore less compact. (034) lay above (035) a deposit that was very similar to (022) in T2. (034) was 0.20m in depth and contained a T-shaped iron frame at the base of the cliff face. This structure was observed to continue East and West into the baulk. Beneath (035) was (036); a loosely compacted dark-Brown/Grey silty sand measuring 0.05m. Below (036) was (037) a 0.02m compact mid-Brown/Pink silty sand with abundant sandstone inclusions <0.01m. This sealed (038) a deposit similar to (015) & (028) in T1 & 2. Below (038), at a depth between 0.90m and 1.00m from the surface (039), a deposit identical to (013) & (029) was observed. Excavations were halted upon reaching this context.

Trench 4 (dimensions: 4.10m x 2.70m):-

Trench 4 was orientated roughly West-East and was located on the Western side of the island over the alignment of the western sluice gate and roughly 12.50m West of the access bridge steps. For a detailed plan of T4 refer to **Figure 6**.

The general stratigraphic sequence for T4 (*see Figure 15*) consisted of; **(040)** a topsoil deposit similar to (001), (018) & (030) beneath which lay hardcore deposit **(041)**. (041) shared the same characteristics as (002), (019) & (031) and lay over **(042)**. (042) was a sandy deposit much the same as (003), (020) and (032) but with frequent brick inclusions at the interface with **(043)** below. (043) was a compact mid Brown/Pink clay with abundant brick demolition material. To the northern edge of the trench, (043) was observed to abut the southern face of **(044)** a machine-made brick wall, 3 courses wide and 2 courses high with a foundation of mortared hardcore. The wall was observed to be aligned E-W and 4.00m in length with a Northern return at either end. Stratigraphically, (044) was observed below (042) and the kerb stones that delineate the Western canal embankment. It was also observed to lie above **(045)** a deposit similar to (022) and (035) in T2 & 3. (045) varied in depth from 0.20m to 0.35m in the Western section and contained pockets of decaying organic material and 20th century refuse.

The next deposit in sequence was **(046)** a loosely compacted dark-Brown/Black sandy silt with frequent sub-angular inclusions of industrial material (e.g. brick/glass/shale/coal). (046) was observed for 0.10m and lay above **(047)**, a compact mid-Grey/Brown sandy silt, 0.08m deep and containing occasional pockets of Pink clay. Below this was **(048)** a compact mid-Brown/Grey silty clay with frequent sub-angular inclusions of clinker & stone <0.05m. (048) continued for 0.28m where it lay above **(049)** a deposit similar to (008) & (026) in T1 & 2. (049) was 0.06m deep and seemed to contain more shale than seen in (008) & (026).

Below (049) were three contexts. **(050)** was a possible brick floor surface roughly aligned East-West and constructed using un-mortared hand-made bricks, with no common bond/pattern (*see Figure 10*). To the South of (050) was **(051)**; a compact light-Grey/Brown silty clay. (051) seemed to contain **(052)**; a series of similar sized, square shaped stones <0.10m. The stones seemed to be aligned with the brick floor to the North possibly delineating the area. (050), (051) & (052) all seemed to lie above **(053)**, a deposit made from loosely compacted crushed red sandstone and possibly similar to (037) in T3. Excavations were halted upon reaching (050) which occurred at a depth roughly 1.20m from the current ground surface.

5. Discussion

The discussion aims to interpret the stratigraphic sequence in order to contextualise any archaeological remains. The evidence has been evaluated on a trench by trench basis with subsequent conclusions drawing any observations together in an attempt to characterise deposition events across the site.

All four trenches seemed to observe a fairly consistent pattern of general deposition. The initial contexts of (001), (002) and (003) were observed across the whole of the site with the grade of material and depth of topsoil probably classifying a deposition/levelling event dating to the late 20th century.

T1 observed three deposits of note below (003). These were (004), (005) and (006). (004) was only identified again in Trench 3 suggesting that it may have been contained within the northern half of the site. However, (005) was observed in T1-3 and possibly T4. (005) was a very compact layer of brick and mortar that took considerable effort to remove. A large amount of bricks within this deposit were marked 'NCB Gadbury' (**Fig 11**) a majority of which were observed in T1-2 but also seen in T3-4. Current research suggests that the Gadbury brickworks were associated with the Gibfield Colliery in Atherton roughly 10km to the West of Worsley. The National Coal Board (NCB) was established in 1947/8 and Gadbury and Gibfield closed in 1963 suggesting that the bricks in (005) were manufactured over this 15 year period.

In terms of contextual significance (004) and (006) were very similar in composition and can probably be classified as the coal dust deposits observed in the trial pit excavations of 2002. Documentation highlights that the NCB were involved in the 1966/7 phase of landscaping (Frost, 2011:32) and may have provided permeable levelling material such as (004), (005) & (006). The fact that these deposits share a direct stratigraphic relationship in T1 & T3 would support a single deposition event.

Deposits (022), (035) & (045) were all identical in terms of composition and were all observed to a depth of around 0.60m from the current ground level in T2, 3 & 4. Natural processes were ruled out due to observations in T4. (045) was noted as a mixed deposit with no silting horizons. All three deposits contained pockets of 20th century refuse and organic detritus. The 1966/7 works involved the large scale removal of silt from the basin around the island (Ibid). The variations in depth for (035) & (045) in T3 & 4 would certainly suggest that silt may have been dredged up from the basin to form the edge of the island with more permeable material deposited above. One issue with this interpretation was the presence of a 20th century structure (044) in T4. This was clearly overlain by sand (042) and hardcore (041) and sat above the silt (045). This would suggest that the building was built after 1966/7 and demolished before the upper deposits were laid down (probably during landscaping in 1974/5). The presence of demolition rubble at the interface between (042) and (043) would certainly suggest this.

However, previous research states that the stone slopes, presently defining the edges of the island, were put in place during the 1966/7 works. During excavation the kerb stones that define the interior edge of this boundary were observed to run above the alignment of the (044). This presents the potential for (044) to predate 1966/7 and therefore (045). Documentary and cartographic material were consulted but no structure was been clearly identified within the study area at present.

Below 0.60m the next most common context was (008)/(026)/(049). This was interpreted at an early stage as being the 'puddled clay' observed during the 2002 excavations (Ibid: 34). In T4 this clay was observed to seal the archaeology below. The puddle clay was observed to contain shale and coal and was quite friable once penetrated, suggesting that compressive forces (e.g. trampling) may have been involved during deposition. Any additional deposits that were observed above (008) were generally very mixed but did contain material culture associated with the 19th century which had been absent from the deposits above.

Below (008) T1, T2 & were excavated to a depth between 1.12 and 1.30m. Deposits (013), (029) & (039) were observed at termination depth and noted as identical in terms of composition. (013) was almost certainly the lowest deposit that was identified in the 2002 excavations. Attempts were made in T3 to establish whether the deposit was a continuation of the bedrock from the northern cliff face. Excavations revealed that the cliff face continued below 1.12m so the original interpretation that this deposit was quarrying material, deposited during the construction of the mine may still be applied.

The only archaeological feature that was encountered across the whole site was observed in T4 at a depth of 1.12m. This consisted of a series of hand-made bricks laid in an orderly fashion. They were not mortared together so suggestions for a wall or similar structure may be dismissed. The feature was laid upon a deposit that may have been similar to (013) and seemed to be bounded, roughly 0.10m to the south by a line of stones. The whole feature was orientated roughly East-West towards the sluice gate and may have been the result of attempts to establish a working surface for the management of the gate mechanism.

In conclusion the evaluation results would suggest that much of the islands character was correctly defined during the 2002 excavations. The presence of a 20th century structure on the Western side of the island is fairly recent but does highlight questions about the origin and function of the building. Finally it may be assumed that the historic ground surface for the island itself lies between 1.12 and 1.30m with archaeological remains identified at 1.12m to the western half of the island.

In terms of mitigation, the proposed regeneration scheme for the Delph incorporates a phase of landscaping that would reduce the current ground level by roughly 1.00m presenting a chance to fully realise the nature and extent of the archaeological features

identified in this report. This could take the form of an archaeological watching brief during the initial phase of landscaping with a view to recording any observed features or further, targeted excavation. Further consultation with GMAAS would be required should the client wish to pursue additional avenues of investigation or if the proposed scheme is deemed to have an impact upon the fragility of the archaeological resource.

6. Sources

Bibliography

Atkinson, G. 2011: Underground Worsley. In *Bridgewater 250: The Archaeology of the World's First Industrial Canal* Eds. Nevell, M. and Wyke, T. Salford: University of Salford Applied Archaeology Series 1: 47-54

Brownbill, J. and Farrer, W. Eds. 1911: A history of the county of Lancaster *Victoria Country History* 4: 376-392 (www.british-history.ac.uk)

Fitzgerald, R. and Clarke, M. 2002: *Report on the Worsley Delf Basin* Unpublished Structural Perspectives Client Report

Frost, P. 2011: *Worsley Delph Environmental Restoration Cultural Heritage Assessment* Unpublished Castlering Archaeology Client Report

Nevell, M. and Wyke, T. 2011: *Bridgewater 250: The Archaeology of the World's First Industrial Canal* Salford: University of Salford Applied Archaeology Series 1.

Reader, R. 2013: *Worsley Delph Workshops, Worsley, Salford: Archaeological Test Pitting and 3D Laser Scan Survey* Unpublished CfAA Client Report

Redhead, N. 2014: Brief for archaeological evaluation trenching at Worsley Delph Basin Scheduled Monument. GMAAS: February 2014.

Redhead, N. 2011: The Archaeology of the Bridgewater Canal at Castlefield and Worsley: some case studies. In *Bridgewater 250: The Archaeology of the World's First Industrial Canal* Salford: University of Salford Applied Archaeology Series 1: 63-77

Thompson, A. 2014: *Written Scheme of Investigation for a Proposed Scheme of Archaeological Evaluation at the Site of Worsley Delph, Salford, Greater Manchester*. Unpublished CfAA Client Report.

UMAUI, 2004: *The Delph, Worsley, Archaeological Watching Brief*. July 2004

Web Sources

AOD information for Worsley Road Bridge www.bench-marks.org.uk/bm34099 (Viewed 12/12/14).

British Geological Survey (www.bgs.ac.uk) (Viewed 12/12/14).

National Coal Board, historic documentation <http://www.nationalarchives.gov.uk/>
(Viewed 12/12/14)

7. Archive

The archive consists of; a written archive in the form of an Archaeological Evaluation Report; and an accompanying disk containing all site photography. This archive is currently held by the Centre for Applied Archaeology and a copy of this report will be forwarded to Paul Gill of Salford City Council following the publication of the evaluation report.

A copy of this report will be also be forwarded to Norman Redhead, Director of Heritage Management at Greater Manchester Archaeology Advisory Service (GMAAS).

Appendix 1: Context List

Site: Worsley Delph Island, Worsley, Salford		Site Code: WDI14
Context Number	Location	Context Description
(001)	T1	Dark Brown/Black Loam observed as topsoil across site.
(002)	“	Loosely compacted, light-Grey/White Hardcore with abundant sub-angular inclusions <0.05m. Lies below (001).
(003)	“	Loosely compacted, mid-Orange/Brown silty sand below (002).
(004)	“	Compact dark-Blue/Black Clinker and coal dust below (003).
(005)	“	Compact, mid-Grey/Brown clay silt with abundant red brick inclusions. Bricks marked ‘NCB Gadbury’.
(006)	“	Compact dark-Blue/Black Clinker and coal dust similar to (004). Below (005).
(007)	“	Compact mid-Yellow/Grey silty clay. Observed in SE corner of T1, below (005) & above (008).
(008)	“	Fairly compact, mid-White/Grey silty clay with abundant coal and occasional sandstone inclusions. Below (006). Seen above (009), (011) & (014).
(009)	“	Loosely compacted mid-Red/Brown clay sand with abundant sub-angular sandstone inclusions <0.15m. Below (008).
[010]	“	Possible cut of pit through (008) with modern refuse contained within. Seen to centre of T1 and possibly running south. [010] not observed above (008) in southern section.
(011)	“	Loosely compacted Red-Brick rubble layer beneath (012). Bricks here seem older than in (005).
(012)	“	N/A Duplicate number.
(013)	“	Loosely compacted mid-Brown/Red sandy clay with Abundant sandstone inclusions <0.15m. Lowest deposit observed.
(014)	“	Compact mid-Brown/Pink clay layer seen below (008), (009) & (015). Contains Frequent <0.15m sandstone deposits.
(015)	“	Compact dark-Brown/Black coal dust seen above (014). Seems to fade out to east of south facing section but present in west and north facing sections.
(016)	“	N/A Duplicate number
(017)	T2	Loosely compacted dark-Brown/Black clay silt. Heavy bio-turbation below (022).
(018)	“	Topsoil as (001)
(019)	“	As (002)
(020)	“	As (003) increases in depth to south of trench.
(021)	“	As (005) depth decreases to south
(022)	“	Compact light-Brown/Orange silty clay below (021)
[023]	“	Cut from previous test-pit. Observed to cut all layers below (018).

(024)	T2	Loosely compacted mid-Orange/Brown silty sand with freq. Brick and stone inclusions. Below (017).
(025)	“	Loosely compacted mid-Grey/Brown sandy silt below (024).
(026)	“	As (008)
(027)	“	As (014) but with less sandstone inclusions.
(028)	“	As (015).
(029)	“	As (013).
(030)	T3	As (001) & (018).
(031)	“	As (002) & (019).
(032)	“	As (003) & (020). Thins out towards cliff face.
(033)	“	As (004). Thins out towards cliff face. Above (034).
(034)	“	Similar to (005) but contains less brick and as a result slightly less compact. Above (035).
(035)	“	As (022) but more dense. Seems to seal layers below. Metal Frame observed in this context, probably C20 th .
(036)	“	Loosely compacted dark-Brown/Grey silty sand. Above (037).
(037)	“	Compact mid-Brown/Pink silty sand with abundant sandstone inclusions <0.02m. Lies below (036).
(038)	“	As (015) & (028). Thin horizon covering (039)
(039)	“	As (013) & (029).
(040)	T4	As (001), (018) & (030).
(041)	“	As (002), (019) & (031).
(042)	“	Similar to (003) but contains modern brick at interface with (043) below.
(043)	“	Compact mid Brown/Pink clay with brick inclusions. Below (042) and abutting (044) to north.
(044)	“	Modern (C20th) brick wall. 3 courses wide, 2 high sits on mortared hardcore above (045). Wall observed to be aligned E-W and 4.00m in length with N return at either end. Lies below (042) and abutted to S by (043) & (045). Also noted to run below canal edging stones to W.
(045)	“	As (022) & (035) but significantly deeper. Contains pockets of decaying organic material as well as C20th industrial and domestic refuse. Lies below (043) and (044).
(046)	“	Loosely compacted dark-Brown/Black sandy silt with freq. Sub-angular inclusions of demo/industrial material (brick/glass/shale/coal). Below (045).
(047)	“	Compact mid-Grey/Brown sandy silt with occasional Pink clay inclusions. Below (046) & above (048).
(048)	“	Compact mid-Brown/Grey silty clay with freq. Sub-angular inclusions of clinker & stone <0.05m.
(049)	“	Similar to (008) & (026) but thinner and containing more shale. Lies above (050).
(050)	“	Possible brick floor surface aligned E-W below (049). Constructed using hand-made bricks, un-mortared with no

		common bond/pattern. Lies above (053). Cont N, E & W into Baulk
(051)	T4	Compact light-Grey/Brown silty clay abutting (050) to S edge. Contains (052). Lies above (053). Cont. S, E & W into Baulk.
(052)	“	Possible laid stone edging adjacent to (050) lies within (051). Cont. E into Baulk
(053)	“	Loosely compacted crushed red sandstone layer below (050) & (051).

Appendix 2: Figures




Figure 1: Site Location Map

Centre for Applied Archaeology
College of Science and Technology
Adelphi House,
Adelphi Street,
Salford
M3 6EN


Title:

Trench Location Plan

Key:

 = Evaluation
Trench

T00 = Trench
Number

 = Tree

Orientation:



Site Name: Worsley Delph Island
Site Code: WDI14
Drawing Ref: Eval-WDI-14-2
Date Drawn: 18.12.2014
Drawn By: A.McGuire

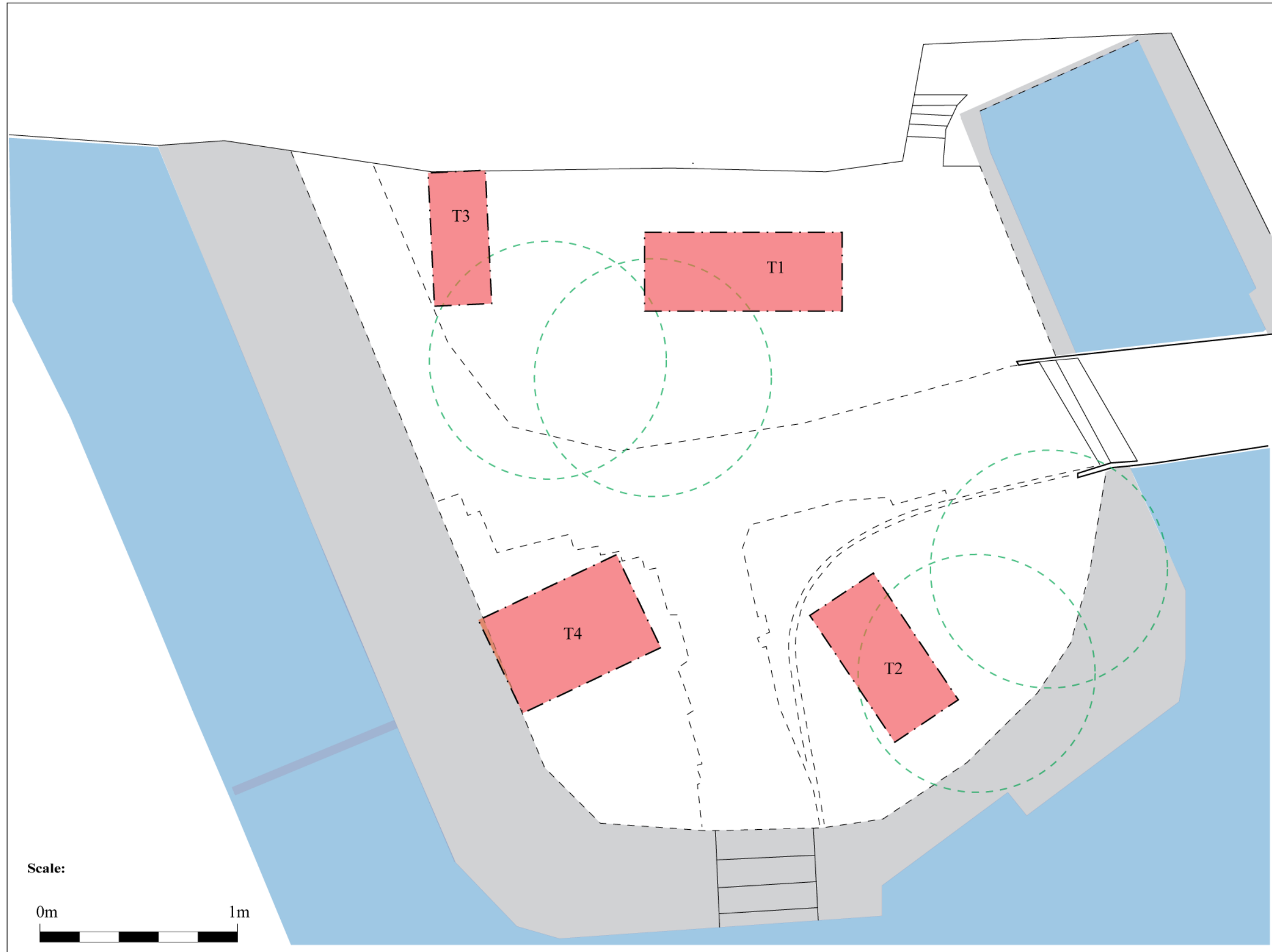


Figure 2: Evaluation Trench Location Map

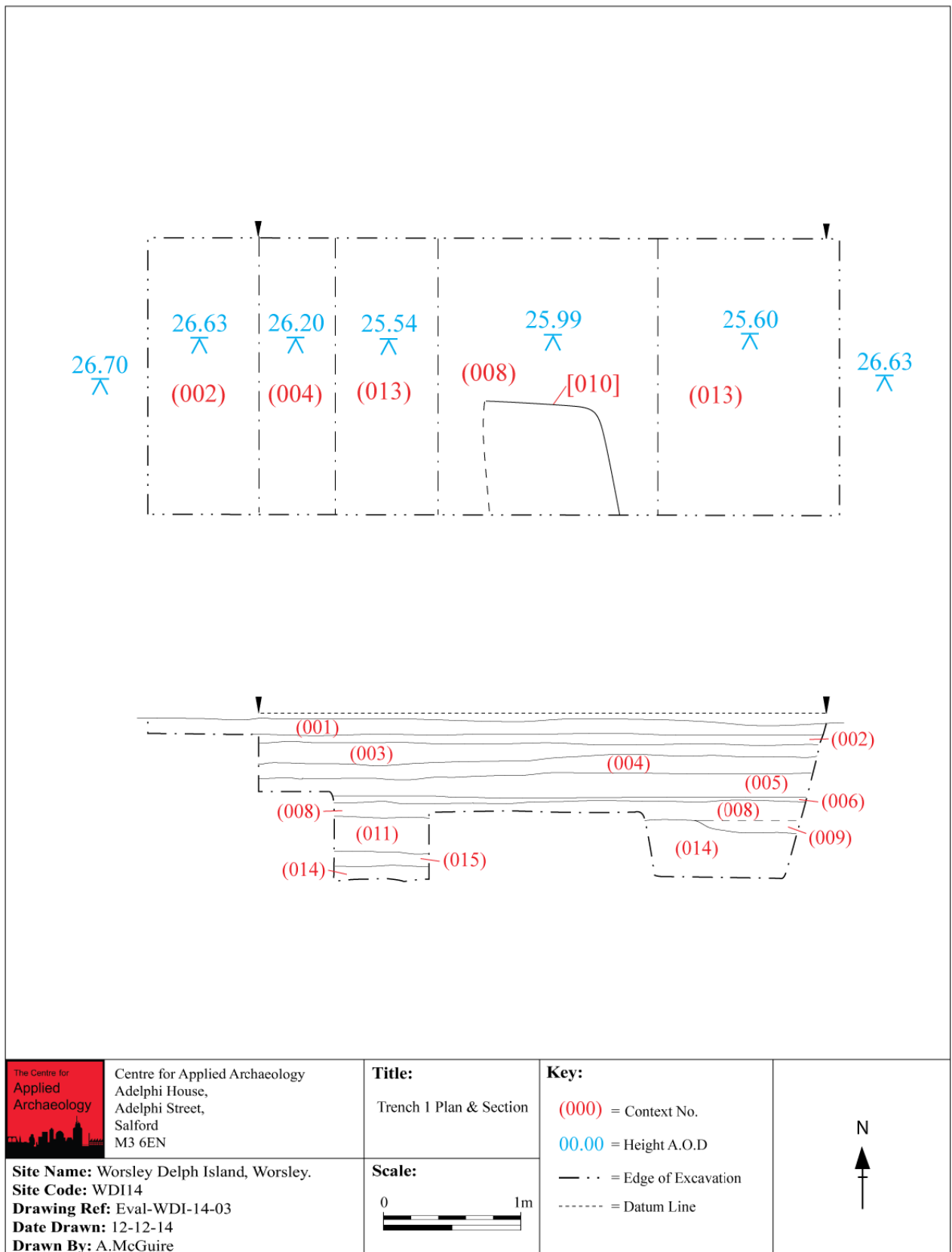


Figure 3: Trench 1 Drawings

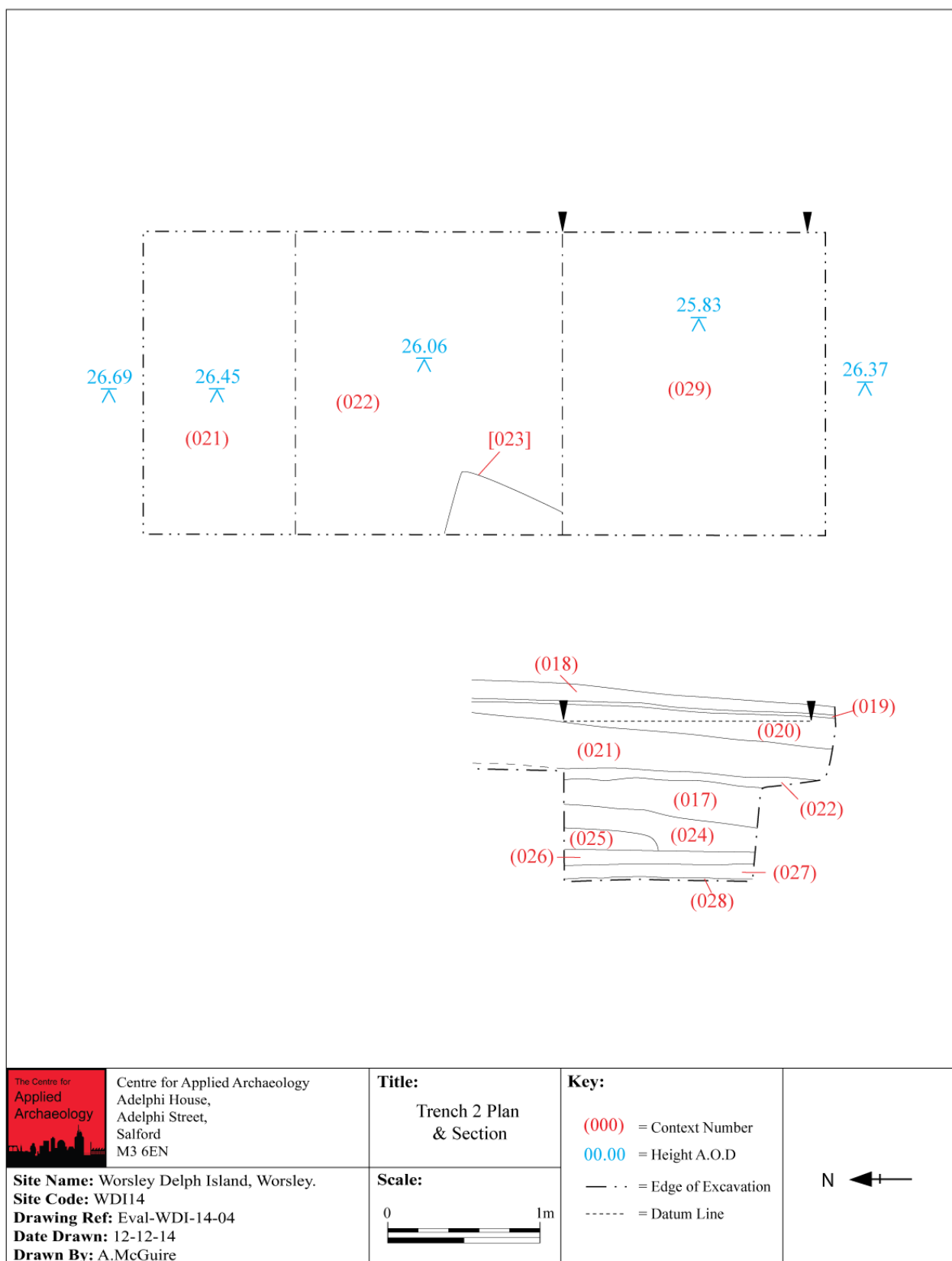


Figure 4: Trench 2 Drawings

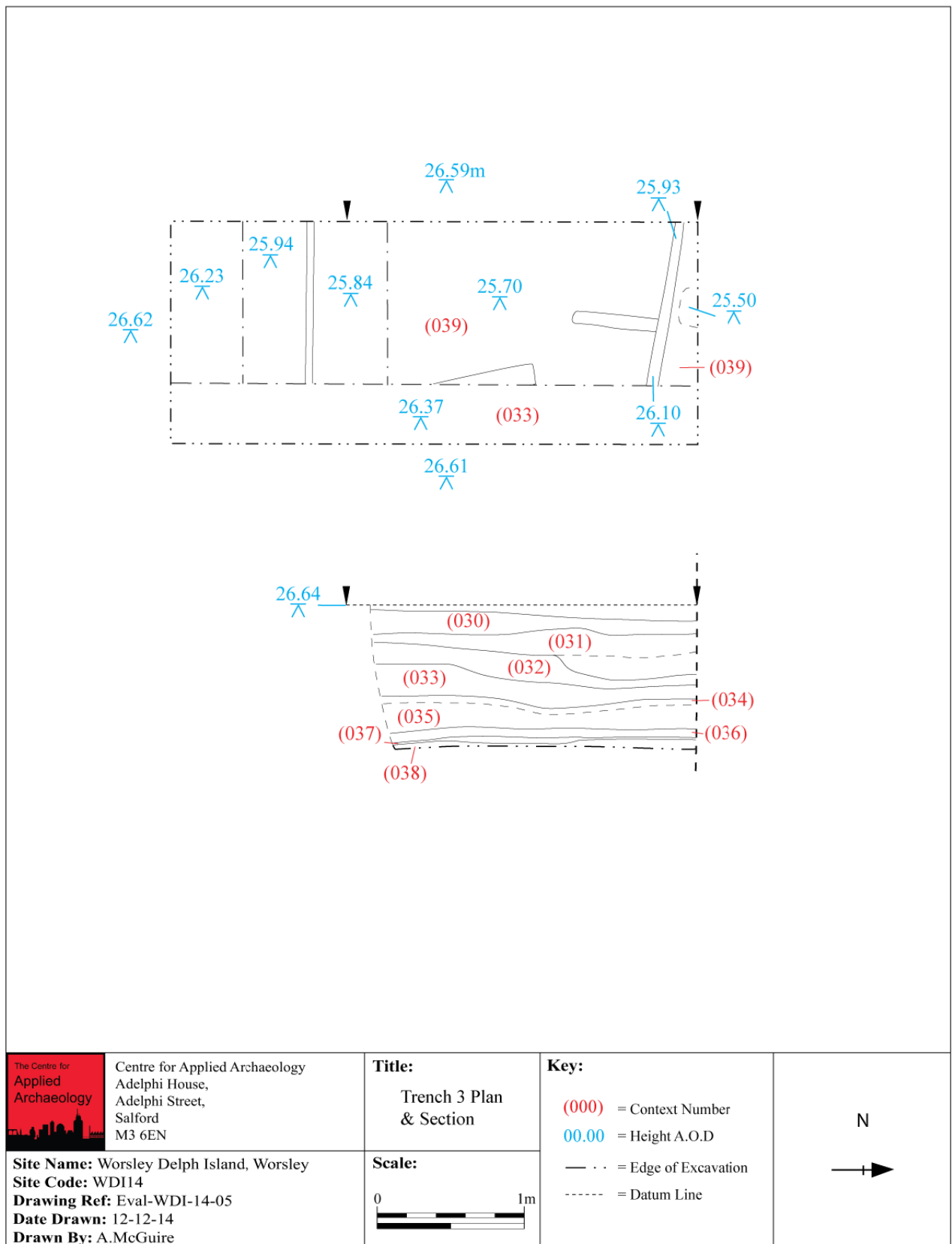


Figure 5: Trench 3 Drawings

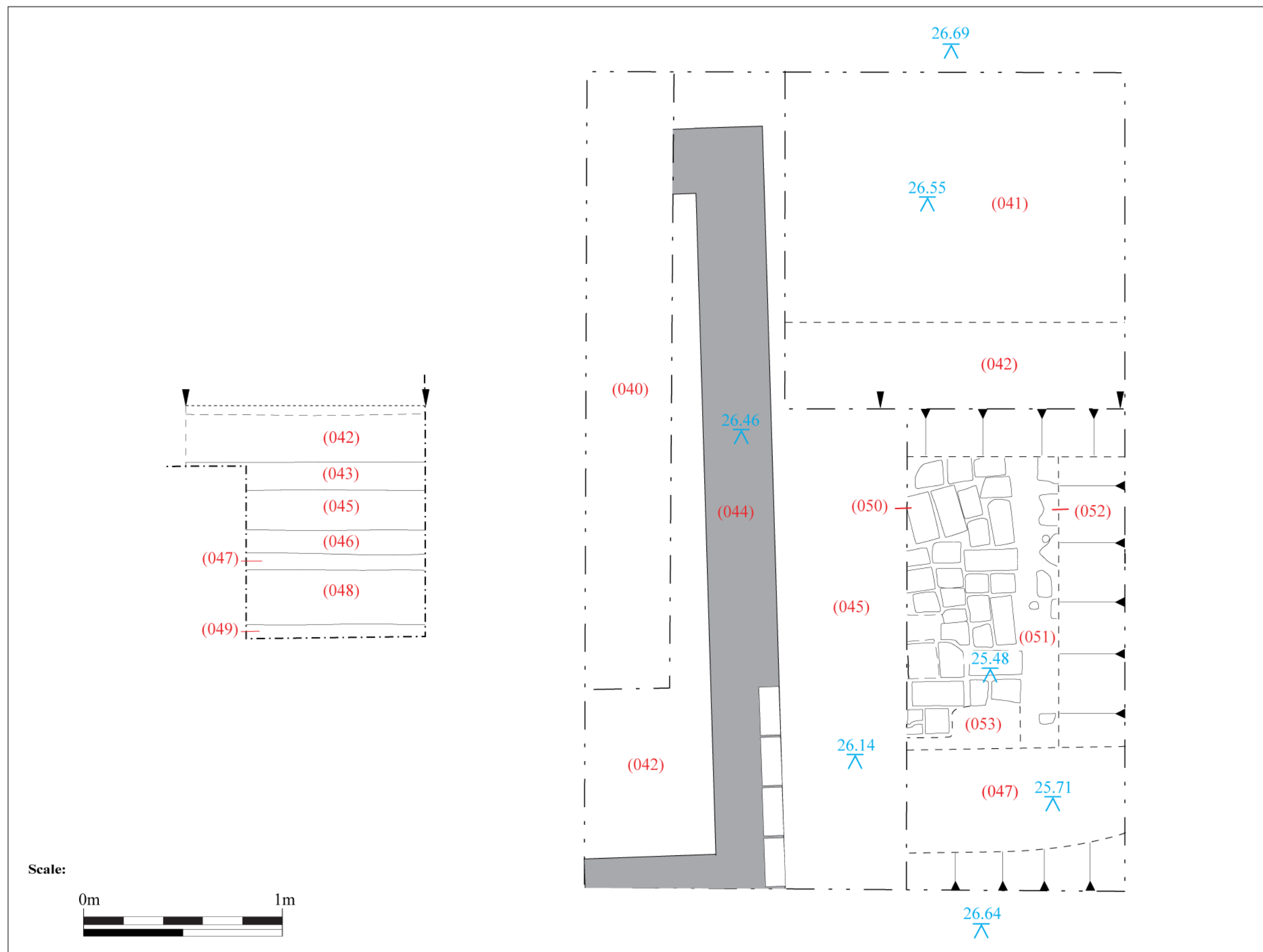


Figure 6: Trench 4 Drawings



Above Figure 7:
Eastern end of
Trench 1
showing (013).



Left Figure 8:
Post excavation
shot of Trench 2
showing (029)
to South.



Above Figure 9:
East facing
section in
Trench 3.



Left Figure 10:
General shot of
Trench 4 with
sluice gate in
background.



Above Figure 11:
Bricks marked
'NCB Gadbury'



Left Figure 12:
General shot of
South facing
section in T1



Above Figure 13: General shot of West facing section in T2

Below Figure 14: East facing section in T3



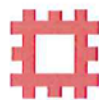


Left Figure 15:
West facing
section in T4
with brick floor
to bottom of
frame.

Below Figure 16:
General shot of
the 'Island' from
Worsley Road
Bridge.



Appendix 3: Scheduled Monument Consent



ENGLISH HERITAGE
NORTH WEST OFFICE

Ms Vicky Nash
Centre for Applied Archaeology
Room 303 Adelphi House
Adelphi Street
Salford
Greater Manchester
M3 6EN

Direct Dial: 01612421421
Direct Fax: 01612421401

Our ref: S00095061

15 October 2014

Dear Ms Nash

**Ancient Monuments and Archaeological Areas Act 1979 (as amended); Section 2
control of works
Application for Scheduled Monument Consent**

**CANAL TUNNEL ENTRANCES AND WHARF AT WORSLEY DELPH, WORSLEY,
SALFORD**

Scheduled Monument No: SM GM 17, HA 1001956

Our ref: S00095061

**Application on behalf of Salford City Council and The Centre for Applied
Archaeology (Salford University)**

1. I am directed by the Secretary of State for Culture, Media & Sport to advise you of the decision regarding your application for Scheduled Monument Consent dated 3 October 2014 in respect of proposed works at the above scheduled monument concerning excavation of trial pits and archaeological trenches on the island at Worsley Delph. The works were detailed in the following documentation submitted by you:

Written Scheme of Investigation for a proposed scheme of archaeological investigation at the site of Worsley Delph, Salford, Greater Manchester (reference CfAA/035/2014)

2. In accordance with paragraph 3(2) of Schedule 1 to the 1979 Act, the Secretary of State is obliged to afford you, and any other person to whom it appears to the Secretary of State expedient to afford it, an opportunity of appearing before and being heard by a person appointed for that purpose. This opportunity was offered to you by English Heritage and you have declined it.

3. The Secretary of State is also required by the Act to consult with the Historic Buildings and Monuments Commission for England (English Heritage) before deciding



SUITES 3.3 AND 3.4 CANADA HOUSE 3 CHEPSTOW STREET MANCHESTER M1 5FW

Telephone 0161 242 1400 Facsimile 0161 242 1401
www.english-heritage.org.uk

English Heritage is subject to the Freedom of Information Act 2000 (FOIA) and Environmental Information Regulations 2004 (EIR). All information held by the organisation will be accessible in response to an information request, unless one of the exemptions in the FOIA or EIR applies.

English Heritage will use the information provided by you to evaluate your application for Scheduled Monument Consent. Information contained in this application and any information obtained from other sources will be retained in all cases in hard copy form and/or on computer for administration purposes and future consideration where applicable.



ENGLISH HERITAGE
NORTH WEST OFFICE

whether or not to grant Scheduled Monument Consent. English Heritage considers the effect of the proposed works upon the monument to be archaeological evaluation necessary to assess the extent, depth and nature of archaeological deposits in order to provide information to underpin decisions on the management of the monument, its conservation and presentation to the public.

I can confirm that the Secretary of State is agreeable for the works to proceed providing the conditions set out below are adhered to, and that accordingly Scheduled Monument Consent is hereby granted under section 2 of the 1979 Act for the works described in paragraph 1 above, subject to the following conditions:

- (i) The works to which this consent relates shall be carried out to the satisfaction of the Secretary of State, who will be advised by English Heritage. At least 2 weeks' notice (or such shorter period as may be mutually agreed) in writing of the commencement of work shall be given to Mr A P Davison, English Heritage North West, Canada House, 3 Chepstow Street, Manchester, M1 5FW (telephone 0161 242 1412, e-mail andrew.davison@english-heritage.org.uk) in order that an English Heritage representative can inspect and advise on the works and their effect in compliance with this consent.
 - (ii) The works to which this consent relates shall be carried out only by Ms V Nash and her nominated excavation team.
 - (iii) This consent shall cease to have effect on 31 December 2014.
 - (iv) The excavation shall be backfilled within one month (or such other period as may be mutually agreed) of the completion of the excavation, to the satisfaction of the Secretary of State, who will be advised by English Heritage.
 - (v) A report on the archaeological recording shall be sent to the Greater Manchester Historic Environment Record and to Mr A P Davison at English Heritage within 3 months of the completion of the works (or such other period as may be mutually agreed).
 - (vi) The contractor shall complete and submit an entry on OASIS (On-line Access to the Index of Archaeological Investigations - <http://oasis.ac.uk/england/>) prior to project completion, and shall deposit any digital project report with the Archaeology Data Service, via the OASIS form, upon completion.
4. By virtue of section 4 of the 1979 Act, if no works to which this consent relates are executed or started within the period of five years beginning with the date on which



SUITES 3.3 AND 3.4 CANADA HOUSE 3 CHEPSTOW STREET MANCHESTER M1 5FW
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English Heritage will use the information provided by you to evaluate your application for Scheduled Monument Consent. Information contained in this application and any information obtained from other sources will be retained in all cases in hard copy form and/or on computer for administration purposes and future consideration where applicable.



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NORTH WEST OFFICE

this consent was granted (being the date of this letter), this consent shall cease to have effect at the end of that period (unless a shorter time period is set by a specific condition above).

5. This letter does not convey any approval or consent required under any enactment, bye law, order or regulation other than section 2 of the Ancient Monuments and Archaeological Areas Act 1979.

6. Your attention is drawn to the provisions of section 55 of the 1979 Act under which any person who is aggrieved by the decision given in this letter may challenge its validity by an application made to the High Court within six weeks from the date when the decision is given. The grounds upon which an application may be made to the Court are (1) that the decision is not within the powers of the Act (that is, the Secretary of State has exceeded the relevant powers) or (2) that any of the relevant requirements have not been complied with and the applicant's interests have been substantially prejudiced by the failure to comply. The "relevant requirements" are defined in section 55 of the 1979 Act: they are the requirements of that Act and the Tribunals and Inquiries Act 1971 and the requirements of any regulations or rules made under those Acts.

Yours sincerely

Gillian Laybourn

Business Officer

E-mail: gillian.laybourn@english-heritage.org.uk

For and on behalf of the Secretary of State for Culture, Media and Sport



SUITES 3.3 AND 3.4 CANADA HOUSE 3 CHEPSTOW STREET MANCHESTER M1 5FW

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English Heritage will use the information provided by you to evaluate your application for Scheduled Monument Consent. Information contained in this application and any information obtained from other sources will be retained in all cases in hard copy form and/or on computer for administration purposes and future consideration where applicable.