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Phase 7, New Broughton, Salford (Meadow Road).
July 2015
V 1.0

Archaeological Evaluation
Project Code: A0058.2
Report no. 0064

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Archaeological Evaluation

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Project Code: A0058.2
Date: 24/07/2015
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1.0 NON-TECHNICAL SUMMARY

Aeon Archaeology in partnership with Nexus Heritage was commissioned by Countryside Properties (UK) Ltd to carry out a programme of archaeological evaluation of a proposed residential development located on approximately c2.69 ha of land located off Meadow Road, in the Lower Broughton area of Central Salford M7 1PA.

The excavation of trenches 1 and 2 targeted the site of the early 20th century former Salford Dyeing and Finishing Works in the north of the site. The trench results showed that the potential for the preservation of buried remains related to the Works differs across the area where the L-shaped range of buildings once stood. In the most north-western corner where trench 1 was located the remains exist close to the surface in the form of a flagstone surface and inspection chambers for the cast-iron steam pipes. The level of preservation at this part of the site is relatively high and although the remains could not be attributed to the dyeing process itself, they did survive as a good example of an ancillary part of the works associated with providing heat to the dyeing vats and power to the steam engine.

Trench 2 however showed that the remains had been removed beyond the floor level and existed merely as wall foundations and the bases of concrete anchor pads. Indeed, ground intrusive excavations carried out on site by the appointed groundworks contractor (ADM) showed that in the area between trenches 1 and 2 the remains of the lift shaft of the former Salford University campus building had removed all trace of the Dyeing Works and it is accepted that the level of preservation of much of the former site is either destroyed in its entirety or demolished beyond floor level as shown in trench 2.

Trench 2 did albeit produce a well-preserved stoneware bottle from the well known Antoine & Fils producers of ink. This artefact was unstratified but was almost certainly from the Dyeing Works, having been used to refill smaller ink wells and bottles with copying ink.

The excavation of trenches 3 and 4 targeted the site of the late 19th century Pumping Station that stood between the former reservoir in the east and the River Irwell in the west. The trenches showed that the majority of the former Pumping Station actually lies further to the west and not within the development site boundary. The exception to this was the discovery of a small isolated patch of laid red-brick floor that extended into trench 4 by 0.72m before having been cut away by a series of modern utilities. The only other archaeological remains uncovered in trenches 3 and 4 were the backfilled cut of the western bank of the former reservoir.

Trench 5 targeted the site of the former Windmill shown on the historic Ordnance Survey map of 19807-1910 but had to be relocated to the immediate east due to the presence of live utilities. The trench did not produce any remains related to the former Windmill structure and showed that the modern University building had removed all earlier stratigraphic deposits on to the natural glacial substrata. Moreover, the presence of live utilities to the immediate west of the trench are expected to have removed any foundation remains of the building.

Although every attempt was made to contribute to the ambitions of the North West England Regional Research Agenda the preservation of remains across the site were discovered to be low and no new information regarding aspects of the industrial and modern periods in New Broughton could be gained. Moreover, although remains of the Salford Dyeing and Finishing Works were uncovered and recorded, these did not provide any additional information to contribute to the ambitions of the Regional Research Framework concerning the technological form and function of the textile mill and its role as a place of work in the wider landscape.

The archaeological evaluation can be seen as having fulfilled the spirit and intent of the archaeological condition through confirmation of the level of disturbance across the site. Considering the results of the archaeological evaluation trenches the potential for the preservation of preserved

remains at the site is considered low and as such no recommendations for further archaeological mitigatory works are proposed and it is recommended that the archaeological condition be discharged.

2.0 INTRODUCTION

Aeon Archaeology in partnership with Nexus Heritage was commissioned by Countryside Properties (UK) Ltd to carry out a programme of archaeological evaluation of a proposed residential development located on approximately c2.69 ha of land located off Meadow Road, in the Lower Broughton area of Central Salford M7 1PA, approximately 1.5km northwest of Manchester City Centre (**NGR: SJ 82330 99090**) (figure 1).

The archaeological evaluation was undertaken as a condition of full planning permission (**14/65591/FUL**) for the construction of 93 low-rise dwellings and associated works including gardens, driveways, access roads, and adoptable infrastructure. This residential scheme constitutes Phase 7 of a wider transformation of Lower Broughton which aims to create a sustainable new community of up to 3,500 mixed-tenure homes and a full range of easily accessible community facilities and services including shops, leisure, employment, education and training.

Salford City Council considers the site of potential archaeological interest and wishes to secure satisfactory treatment of the archaeological remains, as required by the *National Planning Policy Framework* and Policy CH51 (Archaeology and Ancient Monuments) of the *City of Salford Unitary Development Plan 2004-2016.* Accordingly, a condition relevant to archaeology has therefore, been applied to the permission for the development by the Council:

Condition 7.
No development shall take place until the applicant or their agents or their successors in title have secured the implementation of a programme of archaeological works. The programme is to be undertaken in accordance with a Written Scheme of Investigation (WSI) submitted to and approved in writing by the local planning authority.

A written Scheme of Investigation (WSI) (ref: 3233.RO1) (appendix III) was undertaken by Nexus Heritage in April 2015 which outlined the principle aims of the evaluation and the methods by which they would be met. This formed the basis of a method statement submitted for the work. The archaeological evaluation trenching was undertaken in accordance with this document and included the trench array as reproduced in figure 2.

An archaeological assessment (ref: 43/2014) (appendix IV) was undertaken by the Centre for Applied Archaeology University of Salford in April 2014 and provided to Aeon Archaeology. The assessment collated valuable data on remains dating from the late 17th century through to the mid 20th century. These remains were primarily associated with industrial activity relating to a reservoir and windmill constructed around 1848; a pumping station built in the latter part of the 19th century; and the Salford Dyeing and Finishing Works constructed in the first decade of the 20th century and expanded between 1907 and 1923.

The assessment of the site through five archaeological evaluation trenches was deemed adequate for the purposes intended and a review of the data suggested that there was no requirement to reposition, re-orientate or re-size any of the evaluation trenches and the trench array as presented in the WSI. The aim of this programme of archaeological evaluation was to establish the archaeological significance of the site, to assess the impact of the development proposals on surviving monuments or remains, and to help inform future decision making, design solutions and further potential mitigation strategies. This report includes an assessment of the potential for further investigative work if required, and where relevant give recommendations for an appropriate mitigation strategy.

This report conforms to the guidelines specified in the *CIfA Standard and Guidance for Archaeological Evaluation* (Chartered Institute for Archaeologists 2014).

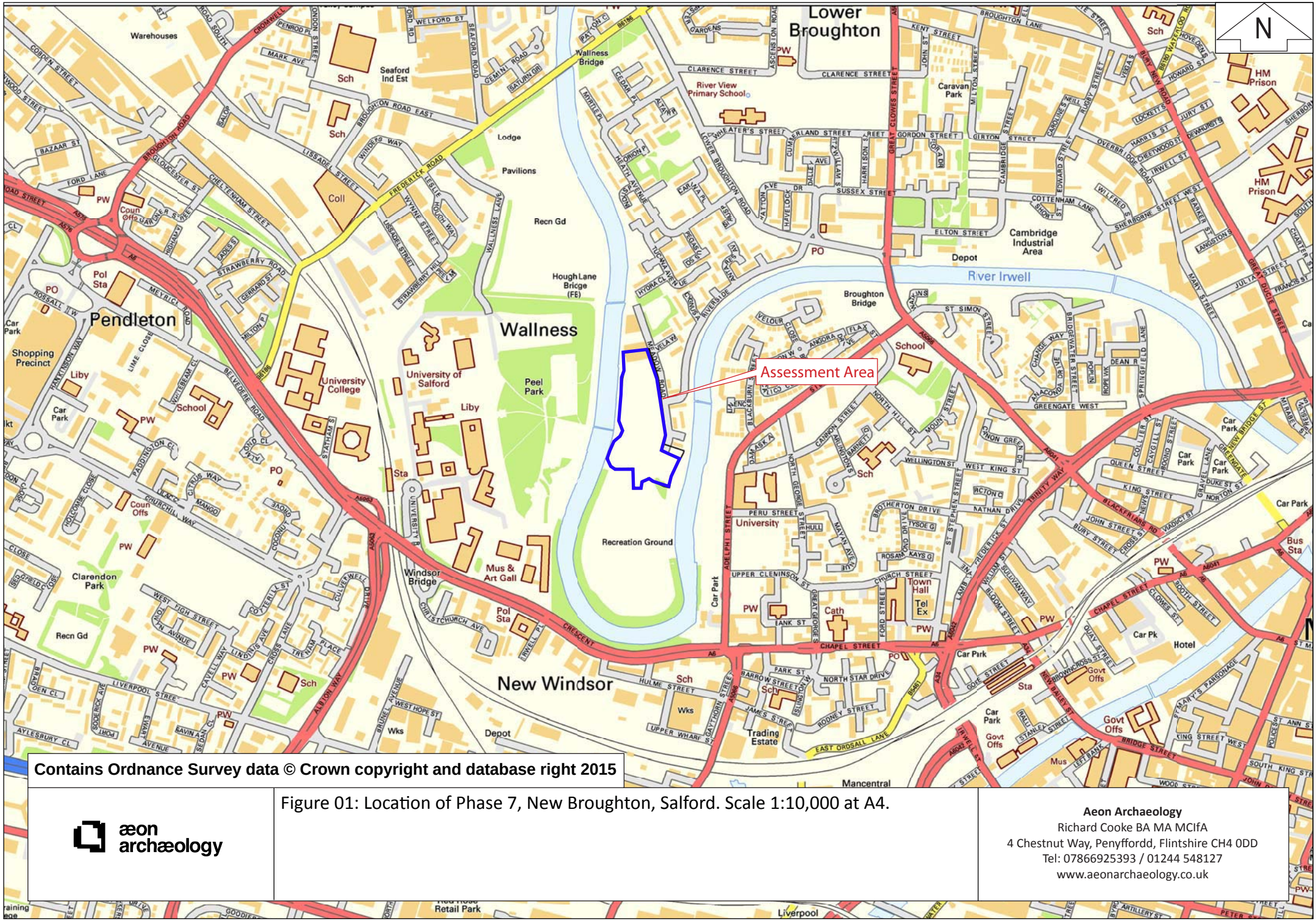

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Figure 01: Location of Phase 7, New Broughton, Salford. Scale 1:10,000 at A4.

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Figure 02: Location of archaeological evaluation trenches at Phase 7, New Broughton, Salford. Scale 1:2,000 at A4.

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3.0 PROJECT AIMS

The aim of the evaluation works was to characterise the known, or potential, archaeological remains uncovered during the excavation of the archaeological evaluation trenches.

The broad aims of the archaeological evaluation trenches were:

- To determine, as far as is reasonably possible, the location, extent, date, character, condition, significance and quality of any surviving archaeological remains on the site, the integrity of which may be threatened by development at the site.

- To establish the nature and extent of existing disturbance and intrusion to sub-surface deposits and, where the data allows, assess the degree of archaeological survival of buried deposits of archaeological significance.

- To enable the client to establish a schedule for archaeological risks.

- To report on the work and determine the need, if any, for further archaeological mitigation. This may consist of attempts to preserve significant remains in situ or, if this is not possible, more extensive excavation work and reporting. Less sensitive remains may require a watching brief. Any such further work may be secured by amendment to the condition.

The detailed objectives of the archaeological evaluation trenches were:

- Insofar as possible within methodological constraints, to explain any temporal, spatial or functional relationships between the structures/remains identified, and any relationships between these and the archaeological and historic elements of the wider landscape.

- Where the data allows, identify the research implications of the site with reference to the regional research agenda and recent work in Greater Manchester.

The broad characteristics of the number, size, orientation and distribution of the trenches were considered to be appropriate and were agreed with the Heritage Management Director (Archaeology) at Greater Manchester Archaeological Advisory Service (GMAAS) (Mr N. Redhead). The trench array was proposed in response to the assessment prepared by the Centre for Applied Archaeology University of Salford and was designed to determine feature presence/absence, with a contingent trenching facility designed for site characterisation should features be present, the characteristics of which are insufficiently resolved within the core trenching provision. Contingent trenching was optional, upon the discovery of archaeological artefacts, deposits, features or structures the characteristics of which could only be sufficiently determined upon further spatial investigation.

The basic targeted objectives of the trenches were as follows:

Trench 1 - targeting the north-western part of the Salford Dyeing and Finishing Works (25.0m x 2.0m)
Trench 2 - targeting the south-eastern part of the Salford Dyeing and Finishing Works (10.0m x 2.0m)
Trench 3 - targeting the northern part of the Pumping Station (10.0m x 2.0m)
Trench 4 - targeting the eastern part of the Pumping Station (10.0m x 2.0m)
Trench 5 – targeting the site of the Windmill (10.0m x 2.0m)

The management of this project has followed the procedures laid out in the standard professional guidance *Management of Archaeological Projects* (English Heritage, 1991), *Management of Research Projects in the Historic Environment Project Manager's Guide* (English Heritage 2006), and in the

CIFA Standard and Guidance for Archaeological Evaluation (Chartered Institute For Archaeologists, 2014). Five stages are specified:

Phase 1: project planning
Phase 2: fieldwork
Phase 3: assessment of potential for analysis and revised project design
Phase 4: analysis and report preparation
Phase 5: dissemination

The current document reports on the phase 4 analysis and states the means to be used to disseminate the results. The purpose of this phase is to carry out the analysis identified in phase 3 (the assessment of potential phase), to amalgamate the results of the specialist studies, if required, with the detailed site narrative and provide both specific and overall interpretations. The site is to be set in its landscape context so that its full character and importance can be understood. All the information is to be presented in a report that will be held by the Greater Manchester Historic Environment Record and the OASIS database so that it can be accessible to the public and future researchers. This phase of work also includes archiving the material and documentary records from the project.

4.0 METHODOLOGY

Before the evaluation trenching commenced an agreed programme of excavation timing, siting, duration, surface re-instatement and health and safety protection measures were agreed with the Client, Nexus Heritage and the GMAAS.

4.1 Evaluation trenches

The evaluation trenching array was designed to investigate areas that may contain archaeological features. There was latitude on the location of each trench and slight repositioning to take account of buried services and other constraints was acknowledged as a possibility within the WSI.

A tracked excavator with conventional toothed bucket was utilised to break through areas of modern reinforced concrete, after which a toothless ditching bucket was used to open the trenches under constant archaeological supervision. Topsoil and overburden were to be removed by machine in spits down to archaeological deposits or natural sub-soils, whichever were encountered first. All uncovered archaeological features were to be excavated by hand.

A written record of the deposits and all identified features in each evaluation trench was completed via Aeon Archaeology pro-formas. All subsurface remains were to be recorded photographically, with detailed notations. The photographic record was completed using a digital SLR camera (Canon Eos 550D) set to maximum resolution.

Contingency provision was made for the following:

- Additional excavation of up to 100% of any given feature should the excavated sample prove to be insufficient to provide information on the character and date of the feature.

- Expansion of trench limits, to clarify the extent of features equivalent to an additional 20% of the core area.

The archaeological works were surveyed with respect to the nearest Ordnance Survey datum point and with reference to the Ordnance Survey National Grid. The trenches and archaeological features within them were accurately located on a site plan prepared at the most appropriate and largest scale. All excavations were backfilled with the material excavated and upon departure the site was left in a safe and tidy condition.

4.2 Data Collection from Site Records

A database of the site photographs was produced to enable active long-term curation of the photographs and easy searching. The site records were checked and cross-referenced and photographs were cross-referenced to contexts. These records were used to write the site narrative and the field drawings and survey data were used to produce an outline plan of the site.

All paper field records were scanned to provide a backup digital copy. The photographs were organised and precisely cross-referenced to the digital photographic record so that the Greater Manchester Historic Environment Record (HER) can curate them in their active digital storage facility.

4.3 Artefact Methodology

All artefacts were to be collected and processed including those found within spoil tips. Finds numbers would be attributed and they would be bagged and labelled as well any preliminary identification taking place on site. After processing, all artefacts would be cleaned and examined in-

house at Aeon Archaeology. If required, artefacts would be sent to a relevant specialist for conservation and analysis.

The recovery policy for archaeological finds was kept under review throughout the evaluation trenching. Any changes in recovery priorities would be made under guidance from an appropriate specialist and agreed with the Client, Nexus Heritage and the GMAAS. There was a presumption against the disposal of archaeological finds regardless of their apparent age or condition.

4.4 Environmental Samples Methodology

The sampling strategy and requirement for bulk soil samples was related to the perceived character, interpretational importance and chronological significance of the strata under investigation. This ensured that only significant features would be sampled. The aim of the sampling strategy was to recover carbonised macroscopic plant remains, small artefacts particularly knapping debris and evidence for metalworking.

Advice and guidance regarding environmental samples and their suitability for radiocarbon dating, as well as the analysis of macrofossils (charcoal and wood), pollen, animal bones and molluscs would be obtained from Oxford Archaeology if required.

4.5 Report and dissemination

A full archive including plans, photographs and written material resulting from the project was prepared. All plans, photographs and descriptions were labelled, and cross-referenced.

Upon approval from the Client copies of the report will be sent to the Greater Manchester Historic Environment Record, the GMAAS, and the OASIS online database.

5.0 SITE LOCATION

The Site extends over *c.* 2.69ha and is located on land off Meadow Road, Broughton, Salford, M7 1PA (Figure 1), centred, approximately at SJ 82330 99090.

The Site is located to the west of Meadow Drive and the current surface treatment is predominantly concrete hard standing associated with the relic floor slabs from the historical buildings that occupied the Site. The Site is bound by steel fencing to the eastern side, an adjacent gable end to an industrial unit to the north, mature and semi mature trees to the west with the River Irwell beyond and a public park to the south. The Site is located on a relatively level aspect with an elevation of *c.*36m AOD on the southern boundary and *c.* 33m AOD in the south-western corner.

The British Geological Survey (BGS) charcaterises the bedrock of the Site as Chester Pebble Beds Formation – Sandstone. The overlying superficial deposits comprise Alluvium composed from clay, silt, sand and gravel.

An intrusive Ground Investigation was undertaken at the Site in July 2014 (E3P 2014) in the form of 14 Window Samples and 20 Trial Pits. Made Ground was encountered within all exploratory hole locations and generally comprised a granular black clayey gravel or a sandy gravel overlain by asphalt or concrete. Made Ground was encountered from ground level to in excess of 3.30m below ground level. Extensive obstructions in the form of concrete boulders and sub-structures have been identified within the positions of the former buildings and the former reservoir.

6.0 HISTORY OF THE SITE

The planning application was accompanied by an Archaeological Desk-Based Assessment (Centre for Applied Archaeology University of Salford 2014) and the details of the assessment need not be rehearsed here. However, the following summary provides a concise outline of the broad archaeological and historic context.

Prior to the early 19th century the Site exhibited rural characteristics, extending over enclosed fields, owned by Samuel Clowes Esq. By 1848 a Reservoir and Windmill had been constructed within the Site. By the late 19th century a Pumping Station had been constructed adjacent to the Windmill.

During the first decade of the 20th century a large 'L' shaped building identified by the Ordnance Survey as the Salford Dyeing & Finishing Works had been built along the west side of Meadow Road and to the south of the reservoir, a bowling green and club house had also been constructed. Between 1907 and 1923 the Salford Dyeing and Finishing Works were extended to the north and south and by the mid-20th century the southern half of the Salford Dyeing and Finishing Works had been demolished and the land was occupied by an enclosed yard.

An important part of the production of textiles was the process of bleaching, dyeing and printing of the cloth, known collectively as textile finishing. The process required large quantities of water and as such many of the dyeing and finishing works were located next to rivers and man-made lakes or reservoirs. The associated machinery of the works was on the whole fairly simple, with several large slate-lined vats containing the dyes and an arrangement of wooden rollers suspended over the vats which would have drawn the cloth through the dye. In addition cast-iron pipes carried steam to heat the dyeing vats as well as providing power for a steam engine to drive the process. Steam pipes were also utilised to heat a textile drying room at the end of the process (Redhead, N. 2015).

The Ordnance Survey map published in 1954 indicates that in the post-war period the reservoir and pumping station had been labelled 'Disused' and the land to the south of the bowling green had been converted into a playing field, and a small block of dressing rooms had been constructed within the south-east corner of the Site. By 1972 the reservoir and bowling green had been cleared to make way for the construction of Meadow Road Campus which was occupied by Salford Universities Civil Engineering Department. The Site appears unaltered until the first decade of the 21st century when the academic buildings were demolished (The Centre for Applied Archaeology, report 43/2014).

It is anticipated that the Site may contain known and potential archaeological remains dating from the late 17th century through to the mid- 20th century. The archaeological works will therefore, be implemented with reference to research imperatives which reflect the ambitions of the North-West England Regional Research Agenda (Brennand 2007), specifically relating the Industrial and Modern periods (McNeil and Newman 2007a and b). With respect to the Salford Dyeing and Finishing Works the North-West England Regional Research Framework (Brennand, 2007) states that the role of the textile mill should be examined, where opportunities permit, with reference to its technological form and function and also as an element of wider landscapes and as places of work, utilised by a labour force.

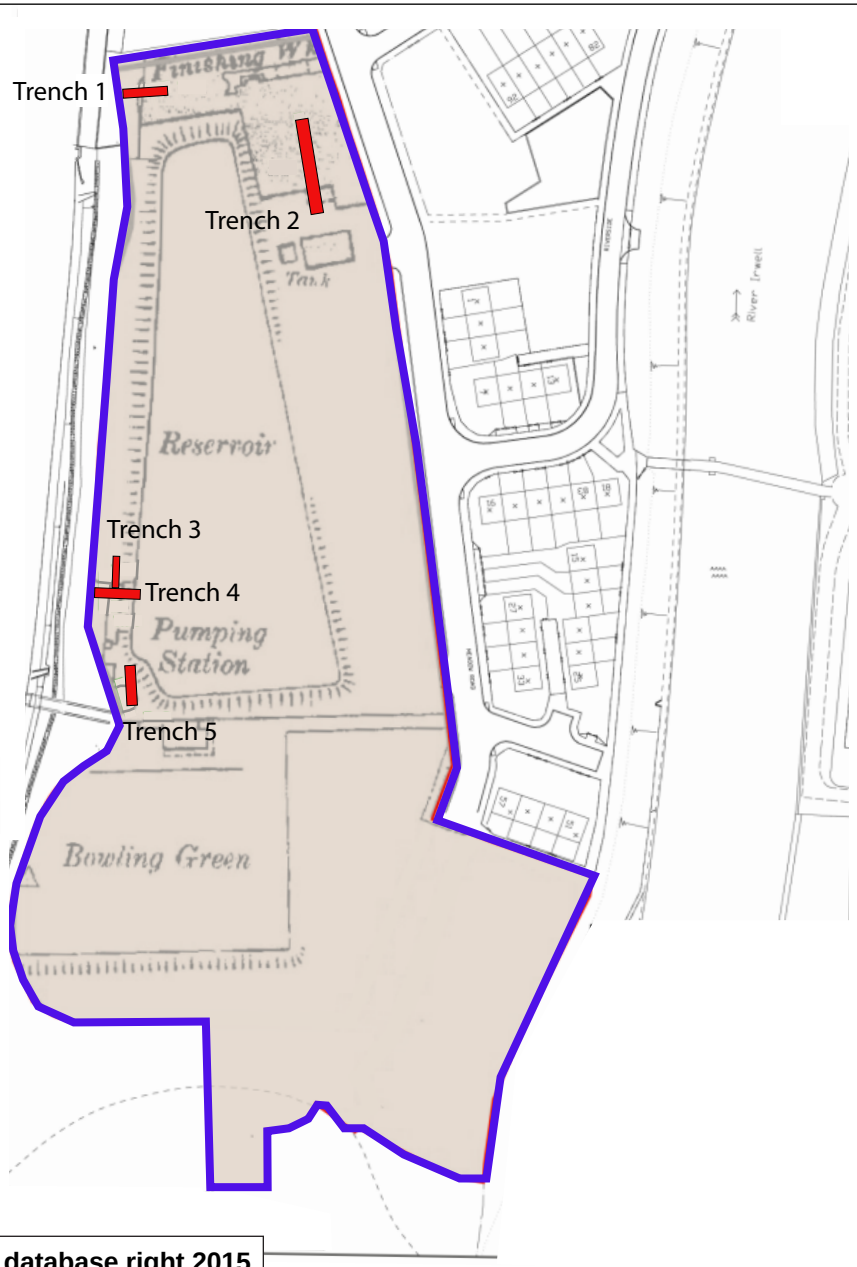

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Figure 03: Location of archaeological evaluation trenches at Phase 7, New Broughton, Salford overlain on the historic Ordnance Survey map of 1907-1910. Scale 1:2,000 at A4.

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7.0 QUANTIFICATION OF RESULTS

7.1 The Documentary Archive

The following documentary records were created during the archaeological evaluation trenching:

Trench sheets	5
Digital photographs	60
Context Sheets	20
Drawings	2 on 2 sheets

7.2 Environmental Samples

No environmental samples were taken as part of the evaluation trenching as no suitable deposits or fills were encountered.

7.3 Artefacts

A single stoneware cylindrical spouted ink bottle with a liquid brown 'treacle' glaze was recovered unstratified from trench 2. The bottle measures 25.0cm in height by 9.0cm in diameter and weighs 1125g. On its lower face it is stamped with '*Encre Japonaise*' (Japanese Ink) '*Antoine & Fils*' (plate i). The bottle was supplied filled with writing or copying ink and was used to dispense into smaller ink wells or bottles.

In the 1800's, many experiments were performed in pursuit of the perfect permanent ink. Improvements in the quality of pigments & dyes allowed for a finer quality of coloured ink, however fading over time when exposed to sunlight, they were a certain improvement over their predecessors.

The company Antoine was established in Paris by Antoine Francois Narcisse in 1840 and manufactured writing inks, being well known as the creators of French copying inks, a violet-black colour made of logwood, which was first put on the market in 1853 under the name of *Japonaise Encres*. In 1860 an agency was established in New York and later had a London branch at Prior Street in Greenwich by the 1870s. From 1866-1890 Antoine's son (Leon Narcisse) directed the company. By 1906 the company employed 120 people in their Paris branch and by 1908 had launched carbon 'papyrus' paper followed by the invention of instantly drying ink in 1924. Production slowed after the Second World War and had ceased entirely by 1960 (www.canalsquare.fr).

8.0 RESULTS OF THE ARCHAEOLOGICAL EVALUATION TRENCHES

The evaluation trenches were designed to evaluate and characterise the known, or potential, archaeological remains. Each trench is described and discussed separately. The location of the trenches can be found on figure 2 and are overlain on the Ordnance Survey 25" County Series map of 1907-1910 on figure 3. The location and orientation of photographs is shown on figure 4.

Where relevant context numbers have been assigned and enclosed within brackets. Details of all contexts used can be found in appendix I.

Trench 01 (Plates 1 to 4, figures 1 to 5)

Discussion

Trench 01 was located towards the northwest of the site and centred on NGR SJ 82313 99170. The trench measured 10.0m in length by 2.0m in width orientated east to west and was targeting the north-western part of the early 20th century Salford Dyeing and Finishing Works.

The trench was excavated through a 0.2m – 1.17m deep mixed demolition deposit of mid/dark grey-brown silt-clay with frequent red-brick, concrete and stone fragment inclusions (1007). At the western end of the trench this deposit immediately overlaid a surface of light/mid grey stone flagstones (1008) measuring >5.5m in length by >2.0m in width by 0.07m in depth and lying 0.2m below current ground level. The individual slabs measured on average 0.82m in length by 0.72m in width by 0.07m in depth and continued north, south and west beyond the limits of excavation.

The flagstone surface butted up against a red-brick wall (1009) on its northern edge which measured >6.8m in length by 0.5m in width by 1.93m in height (maximum) and ran from east to west, forming the northern limit of excavation. This wall was constructed from unfrogged red-brick bonded by mortar, with individual bricks measuring 0.24m in length by 0.11m in width by 0.07m in depth and standing to a maximum of 23 courses in height recorded within an inspection chamber located towards the centre of the trench. This chamber measured 2.12m in length by 1.58m in width formed by a concrete wall (1010) running east to west on its southern edge, and a second red-brick wall (1011) running north to south and forming the eastern edge. The chamber carried a single cast-iron pipe measuring 0.3m in diameter running from east to west and continuing beyond the eastern limit of excavation.

Wall (1010) was of light-grey concrete with frequent red-brick fragment inclusions and measured >0.56m in width by >3.46m in length by >0.5m in height. The wall formed the southern limit of excavation and continued south beyond the trench limits. Wall (1011) was of unfrogged red-brick bonded by mortar and measured >2.22m in length by 0.48m in width by 1.2m in height, standing to at least 15 courses and 3 courses wide. The red-bricks individually measured 0.24m in length by 0.11m in width by 0.07m in depth.

To the west of the inspection chamber a red-brick manhole (1012) measuring 0.67m square and supported on iron girders butted up against flagstones (1008) and provided access to the cast-iron pipe.

Interpretation

The remains uncovered in trench 1 are of the north-western part of the former Salford Dyeing and Finishing Works that once stood upon this part of the site. The trench results have shown that the structural remains in the form of a flagstone floor are located near the surface and are revealed almost immediately once loose rubble is cleared away. This surface almost certainly represents an interior floor of the dye works.

The width of the red-brick wall marking the northern limit of excavation appears to denote the northern external boundary of the mill proper. This however does not match the cartographic evidence which shows the external boundary wall lying approximately 10.0m further to the north (figure 3). This may suggest that the wall in fact represents a division in the dyeing process with possibly recessed vats lying in the area to the immediate north. Another hypothesis is that the wall is actually that of an earlier range of buildings shown on the Ordnance Survey map of 1892 which may have been incorporated into the Dyeing and Finishing Works rather than being demolished.

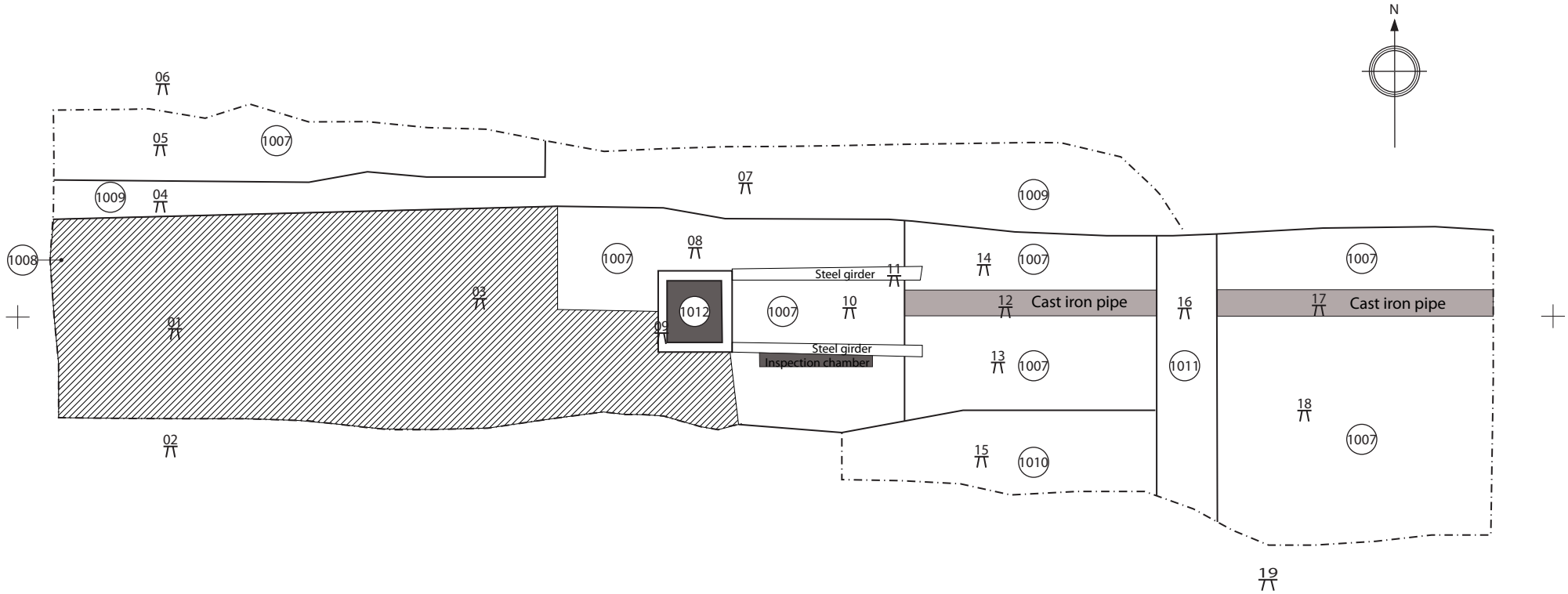
The discovery of the cast-iron pipe and its inspection chambers is almost certainly linked with the use of steam heating of the dye vats and also likely supplied energy to a steam engine to power the machinery in the works. This would suggest that this part of the Dyeing and Finishing Works was concerned more with the mechanical rather than the dyeing process itself.

Plate 01: Trench 1 showing flagstones (1008) and wall (1009), from the west. Scale 1.0m.

Plate 02: Trench 1 showing remains of the Salford Dyeing and Finishing Works, from the east. Scale 1.0m.

Plate 03: Trench 1 showing flagstones (1008) and wall (1009), from the south. Scale 0.5m.

Plate 04: Trench 1 showing inspection chamber, from the south. Scale 2.0m.



0 1 2m

1:50 at A4

Located on figure 02

Levels OD (m)		
1 = 27.56	8 = 27.59	15 = 27.27
2 = 27.89	9 = 27.61	16= 27.17
3 = 27.64	10 = 27.48	17 = 26.63
4 = 27.59	11 = 27.43	18 = 26.61
5 = 27.64	12 = 26.65	19 = 27.83
6 = 27.96	13 = 26.67	
7 = 27.59	14 = 25.57	

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Figure 05: Plan of trench 01 showing remains of the Salford Dyeing and Finishing Works. Scale 1:50 at A4.

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Trench 02 (Plates 5-12, figures 1 – 4, and 6)

Discussion

Trench 02 was located towards the northeast of the site and centred on NGR SJ 82357 99152. The trench measured 25.0m in length by 2.0m in width orientated north to south and was targeting the south-eastern part of the early 20th century Salford Dyeing and Finishing Works.

The trench was initially excavated through a 0.5m deep layer of reinforced concrete (1005) of the former University building that stood upon the site. This required a ground-breaker and conventional toothed bucket to remove on to a 0.15m deep demolition deposit of friable, mid/dark black-grey silt-clay with frequent concrete and red-brick fragments inclusions (1003). At the southern end of the trench this deposit immediately overlaid two cast-iron pipes running east to west across the trench and measuring 0.2m in diameter.

Situated 1.7m north of the pipes a wall (1001) constructed from unfrogged red-bricks bonded by mortar was uncovered running east to west across the trench. The wall measured >2.0m in length by 0.66m in width by 1.4m in height, standing to 17 courses. It was at least three courses in width with individual bricks measuring 0.24m in length by 0.11m in width by 0.07m in depth and had a buttress on its northern side to one brick's width in size, and a stepped base of bricks at least four courses in height. The wall appeared to sit directly upon a natural glacial substrata of mid red-brown clay (1004) however it is more likely that it sat within a foundation trench cut into the natural clay that was simply not visible.

Located 5.0m north of wall (1001) three concrete anchor blocks (1006) were uncovered, each measuring 1.44m square by 1.2m in depth and all equally spaced by 4.0m. All contained high quantities of broken red-brick fragments as inclusions. Again these features appeared to lie directly upon the natural glacial substrata (1004) although no clear cut could be discerned in any of the visible trench sections. All of the blocks were overlain by demolition deposit (1003) which also filled the areas between them down to the natural substrata.

A single well-preserved stoneware ink bottle was recovered unstratified from the northern part of the trench during machine excavation and a live gas utility was discovered running east to west across the northern end of the trench.

Interpretation

The excavation of trench 2 confirmed that the high level of preservation of the Salford Dyeing and Finishing Works uncovered in trench 1 did not continue into the south-eastern range of the works. The trench did not produce any preserved floor surfaces and the built remains were fairly limited.

The cast-iron pipes uncovered at the southern end of the trench are again indicative of the steam heating used in the dyeing process as well as also power for the steam engine. The east-west aligned red-brick wall clearly represents the southern external elevation of the mill building and is confirmed through the historic Ordnance Survey map of 1907-1910 (figure 3) which depicts the southern return at this location.

The concrete blocks are likely to be anchor points or pads for the mill machinery, possibly for supporting the wooden rollers used to carry the cloth ropes through the dyeing vats.

The well preserved ink bottle found at the northern end of the trench may indicate that this part of the dyeing works was utilised as an office or printing room, although as the bottle was recovered unstratified from a demolition deposit there is the distinct possibility that it is a residual artefact or has

been moved some distance. However, the bottle must have been produced between 1853 and 1960, with the fabric of the vessel suggesting a date no later than the first decade or so of the 20th Century. As such it is almost certain that the ink bottle dates to the time of the dyeing works and is likely to have been utilised within the works itself, not as part of the dyeing process but as a sundry item related to the everyday record keeping of the works.

Plate 05: Trench 2, from the south. Scale 1.0m.

Plate 06: Trench 2, from the north. Scale 1.0m.

Plate 07: Trench 2 showing cast iron pipes (1002), from the east. Scale 0.5m.

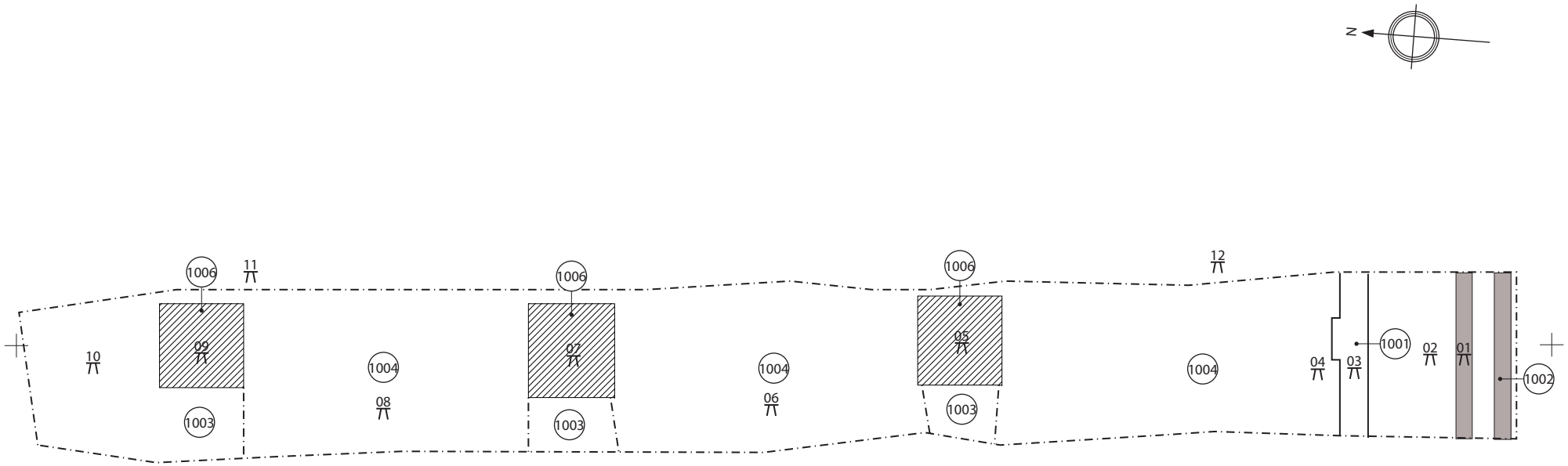
Plate 08: Trench 2 showing red brick wall (1001) of Dyeing and Finishing Works, from the north. Scale 1.0m.

Plate 09: Trench 2 showing red brick wall (1001) of Dyeing and Finishing Works, from the east. Scale 0.5m.

Plate 10: Trench 2 showing concrete anchor block (1006) of Dyeing and Finishing Works, from the east. Scale 0.5m.

Plate 11: Trench 2 showing concrete anchor block (1006) of Dyeing and Finishing Works, from the north. Scale 1.0m.

Plate 12: Trench 2 east facing section, from the east. Scale 1.0m.



0 5m

1:100 at A4

Located on figure 02

Levels OD (m)	
1 = 27.86	7 = 27.44
2 = 27.84	8 = 26.29
3 = 27.69	9 = 27.45
4 = 26.00	10 = 27.24
5 = 27.46	11 = 27.83
6 = 26.25	12 = 26.82

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Figure 06: Plan of trench 02 showing remains of the Salford Dyeing and Finishing Works. Scale 1:100 at A4.

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Trench 03 (Plates 13-16; Figures 1-4, and 7)

Discussion

Trench 03 was located towards the west of the site and centred on NGR SJ 82306 99041. The trench measured 10.0m in length by 2.0m in width orientated north to south and was targeting the northern part of the late 19th century Pumping Station.

The trench was excavated through a 0.25m deep deposit of dark brown-grey silt-clay topsoil (1015) on to a firm, light orange-yellow natural clay substrata (1016). The cut of the former reservoir [1013] was located running north to south along the centre of the trench and cut into the natural clay. A fill of firm brown-grey clay with occasional red-brick fragments and charcoal fleck inclusions (1017) was recorded as being visible throughout the eastern half of the base of the trench.

The trench was excavated by mechanical excavator to a depth of 1.8m without the base of the reservoir cut being encountered. As such the mechanical excavator was utilised to excavate an exploratory sondage along the eastern limit of excavation. This encountered the natural clay and base of the reservoir cut at approximately 2.5m below current ground level however due to the extreme depths involved the cut could not be cleaned and so no information relating to its profile was obtained.

No evidence relating to the former Pumping Station was uncovered within the trench and no artefacts were produced.

Interpretation

The trench did not produce any structural evidence of the former Pumping Station and it appears likely that marginal errors between the historic ordnance Survey maps and the site boundary resulted in trench 3 being situated 1.0-2.0m east of its intended location. This caused the trench to fall to the east of the location of the former Pumping Station and across the site of the western reservoir edge.

Upon scanning the area to the immediate west of the trench with an electronic cable avoidance tool (CAT) it became clear that several electrical cables and utilities traversed the narrow corridor of land between the trench edge and site boundary on a north to south orientation. These made any attempt to open the area to the west of the trench impossible and suggested that the area had been heavily disturbed in modern times.

Plate 13: Trench 3 showing cut of former reservoir [1013], from the north. Scale 2.0m.

Plate 14: Trench 3 showing cut of former reservoir [1013], from the south. Scale 2.0m.

Plate 15: Trench 3 east facing section, from the east. Scale 2.0m.

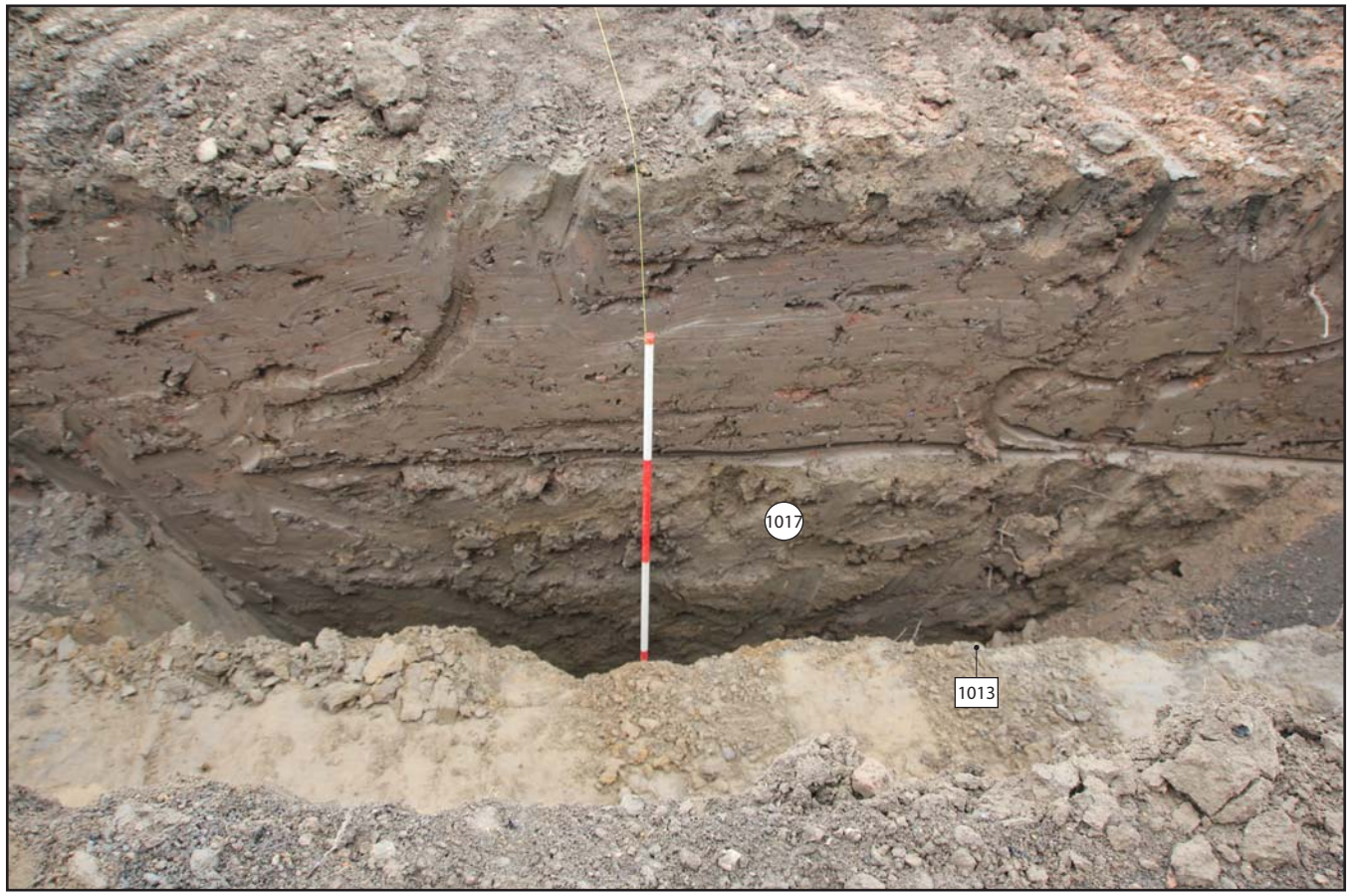


Plate 16: Trench 3 showing sondage across cut of former reservoir [1013], from the west. Scale 2.0m.

Trench 04 (Plates 17-20; Figures 1-4, and 7)

Discussion

Trench 04 was located towards the west of the site and centred on NGR SJ 82306 99036. The trench measured 10.0m in length by 2.0m in width orientated east to west and was targeting the northern part of the late 19th century Pumping Station.

The trench was excavated through a 0.6m deep deposit of dark brown-grey silt-clay topsoil (1015) on to a firm, light orange-yellow natural clay substrata (1016). At the western end of the trench a surface of laid half red-bricks (1014) was uncovered measuring >2.0m in length by 0.72m in width and orientated north to south lying beneath topsoil deposit (1015). This surface continued north, west and south beyond the limits of excavation and had been cut away on its eastern edge by a series of modern utilities including two large armoured cables and a concrete cable duct.

The reservoir cut [1013] observed in trench 3 was also seen in the eastern half of the trench although the base of the cut was not reached.

Interpretation

The red-brick floor surface uncovered at the western end of the trench is almost certainly that of the former pumping station that once stood at the site and continued westward towards the River Irwell. It is apparent from the trench results that only 0.72m of the floor surface lies preserved within the site boundary, the rest of it continuing outside of the development area to the west and having been cut away by modern utilities to the east.

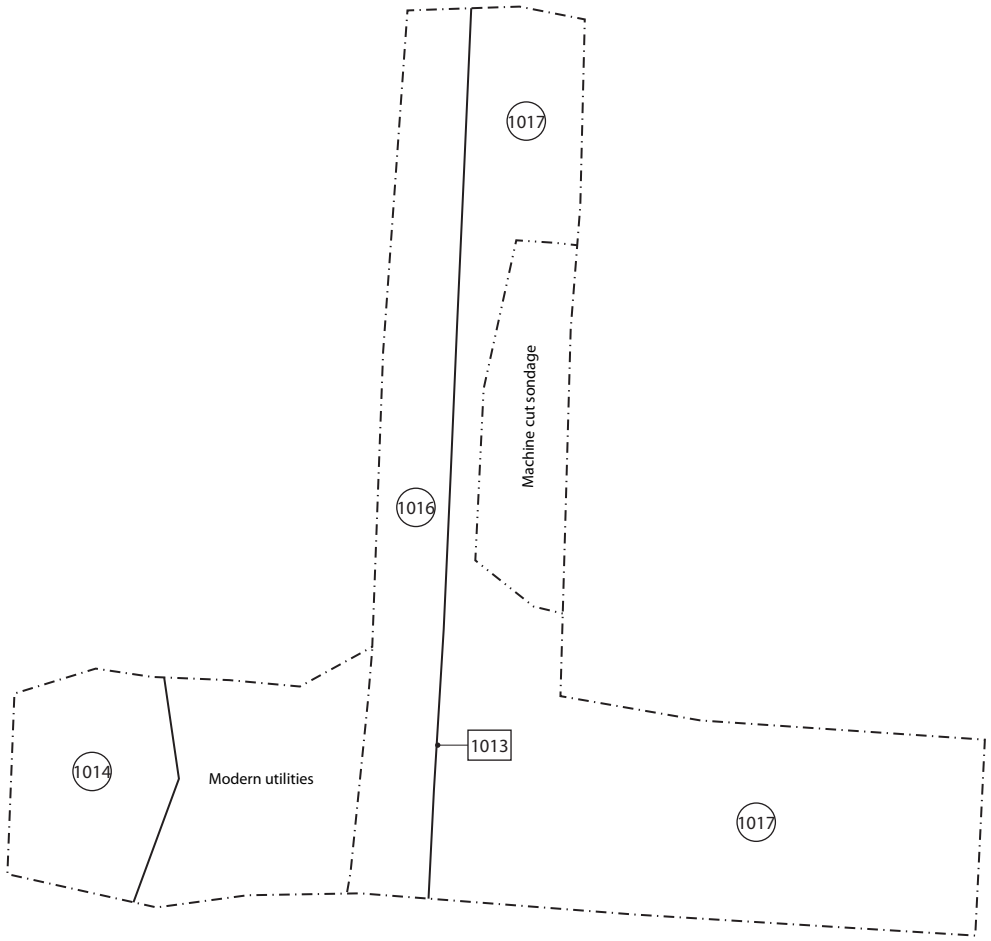
With the exception of the western edge of the former reservoir cut no other archaeological remains were uncovered within the trench limits.

Plate 17: Trench 4, from the west. Scale 1.0m.

Plate 18: Trench 4, from the east. Scale 1.0m.

Plate 19: Trench 4 showing remains of Pumping Station red brick floor surface (1014), from the west. Scale 0.5m.

Plate 20: Trench 4 showing fill of former reservoir (1017), from the south. Scale 2.0m.



0 5m

1:100 at A4

Located on figure 02

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Figure 07: Plan of trenches 03 and 04 produced from site survey. Scale 1:100 at A4.

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Trench 05 (Plates 21-23; Figures 1-4)

Discussion

Trench 05 was located towards the west of the site and centred on NGR SJ 82310 99013. The trench measured 10.0m in length by 2.0m in width orientated north to south and was targeting the site of the mid 19th century Windmill. The trench location was relocated approximately 1.5m to the east as the originally intended location was found to be over live utilities.

The trench was initially excavated through a 0.2m deep layer of reinforced concrete (1018) of the former University building that stood upon the site. This required a ground-breaker and conventional toothed bucket to remove on to a 0.3m deep demolition deposit of crushed fragments of red-brick and concrete (1019). The crushed sub-base laid directly above a fairly soft mid blue-grey silt-sand natural substrata (1020) which had been cut away at the southern end of the trench by a modern utility drain.

Interpretation

The trench did not reveal any preserved remains of the former windmill and it can be surmised that the installation of modern utilities to the west of the trench and indeed within the southern part of the trench, as well as the construction of the former University building at the site had removed all trace of the windmill foundations.

Plate 21: Trench 5, from the south. Scale 1.0m.

Plate 22: Trench 5, from the north. Scale 1.0m.

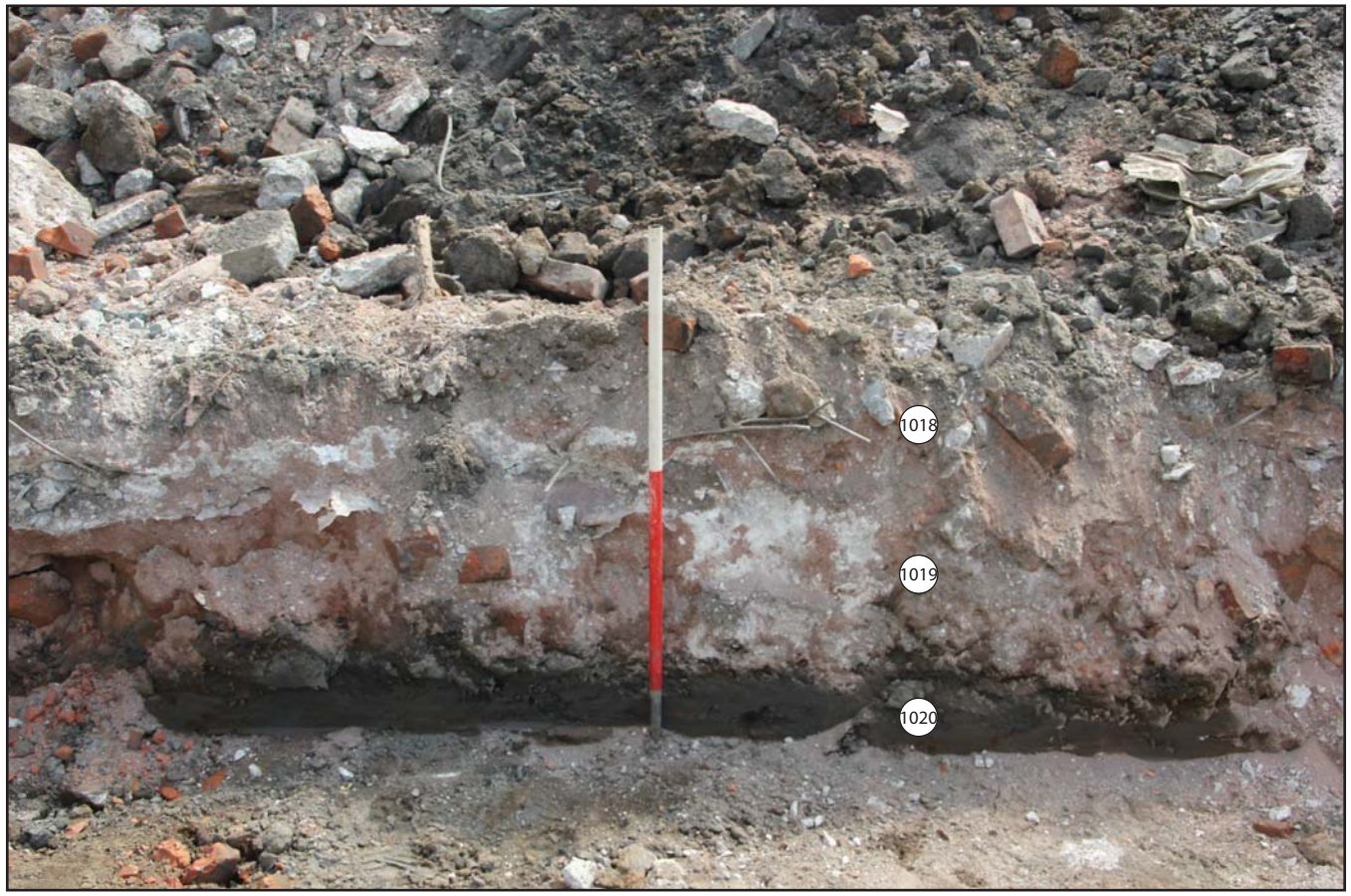

Plate 23: Trench 5 west facing section, from the west. Scale 1.0m.

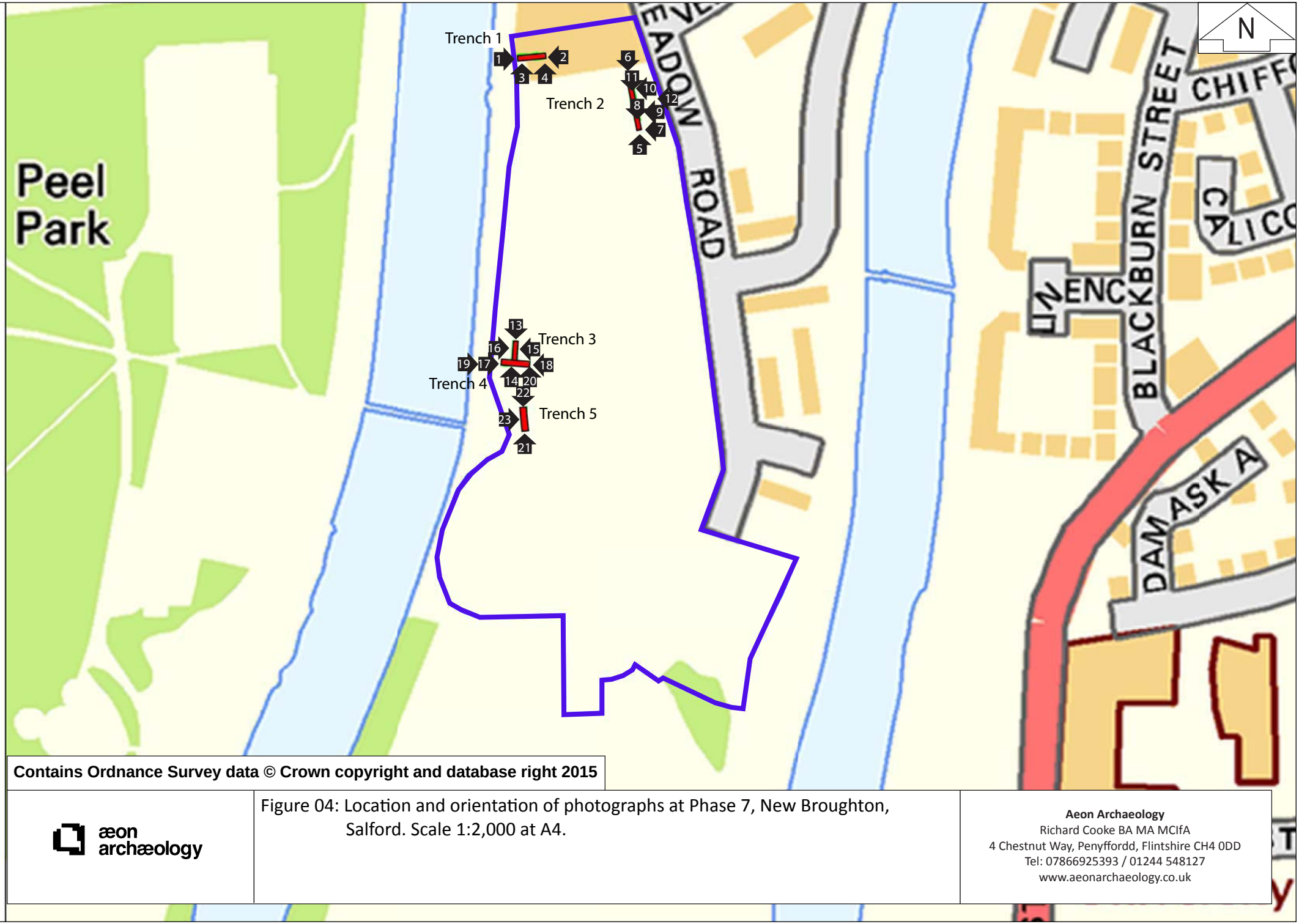

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Figure 04: Location and orientation of photographs at Phase 7, New Broughton, Salford. Scale 1:2,000 at A4.

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Plate i: Stoneware spouted ink bottle with a liquid brown 'treacle' glaze stamped with 'Encre Japonaise' 'Antoine & Fils' dating to early 20th Century unstratified from trench 02. Scale 5.0cm.

9.0 CONCLUSION AND RECOMMENDATIONS

The excavation of trenches 1 and 2 targeted the site of the early 20th century former Salford Dyeing and Finishing Works in the north of the site. The trench results showed that the potential for the preservation of buried remains related to the Works differs across the area where the L-shaped range of buildings once stood. In the most north-western corner where trench 1 was located the remains exist close to the surface in the form of a flagstone surface and inspection chambers for the cast-iron steam pipes. The level of preservation at this part of the site is relatively high and although the remains could not be attributed to the dyeing process itself, they did survive as a good example of an ancillary part of the works associated with providing heat to the dyeing vats and power to the steam engine.

Trench 2 however showed that the remains had been removed beyond the floor level and existed merely as wall foundations and the bases of concrete anchor pads. Indeed, ground intrusive excavations carried out on site by the appointed groundworks contractor (ADM) showed that in the area between trenches 1 and 2 the remains of the lift shaft of the former Salford University campus building had removed all trace of the Dyeing Works and it is accepted that the level of preservation of much of the former site is either destroyed in its entirety or demolished beyond floor level as shown in trench 2.

Trench 2 did albeit produce a well-preserved stoneware bottle from the well known Antoine & Fils producers of ink. This artefact was unstratified but was almost certainly from the Dyeing Works, having been used to refill smaller ink wells and bottles with copying ink.

The excavation of trenches 3 and 4 targeted the site of the late 19th century Pumping Station that stood between the former reservoir in the east and the River Irwell in the west. The trenches showed that the majority of the former Pumping Station actually lies further to the west and not within the development site boundary. The exception to this was the discovery of a small isolated patch of laid red-brick floor that extended into trench 4 by 0.72m before having been cut away by a series of modern utilities. The only other archaeological remains uncovered in trenches 3 and 4 were the backfilled cut of the western bank of the former reservoir.

Trench 5 targeted the site of the former Windmill shown on the historic Ordnance Survey map of 19807-1910 but had to be relocated to the immediate east due to the presence of live utilities. The trench did not produce any remains related to the former Windmill structure and showed that the modern University building had removed all earlier stratigraphic deposits on to the natural glacial substrata. Moreover, the presence of live utilities to the immediate west of the trench are expected to have removed any foundation remains of the building.

Although every attempt was made to contribute to the ambitions of the North West England Regional Research Agenda the preservation of remains across the site were discovered to be low and no new information regarding aspects of the industrial and modern periods in New Broughton could be gained. Moreover, although remains of the Salford Dyeing and Finishing Works were uncovered and recorded, these did not provide any additional information to contribute to the ambitions of the Regional Research Framework concerning the technological form and function of the textile mill and its role as a place of work in the wider landscape.

The archaeological evaluation can be seen as having fulfilled the spirit and intent of the archaeological condition through confirmation of the level of disturbance across the site. Considering the results of the archaeological evaluation trenches the potential for the preservation of preserved remains at the site is considered low and as such no recommendations for further archaeological mitigatory works are proposed and it is recommended that the archaeological condition be discharged.

10.0 SOURCES

OS Maps

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APPENDIX I – DETAILS OF ARCHAEOLOGICAL CONTEXTS

Context	Dimensions	Trench	Description
1001	>2.0m L x 0.66m W x 1.4m H	2	Wall, unfrogged red brick bonded by mortar, runs E-W, 17 courses high and at least 3 courses wide. Sits on natural substrata (1004). Southern external elevation of Dyeing Works.
1002	>2.0m L x 0.2m diameter	2	2 x cast-iron pipes, run E-W, overlain by (1003). Steam pipes for former Dyeing Works.
1003	>25.0m L x >2.0m W x 0.15m D	2	Friable, mid/dark black-grey silt-clay with frequent concrete and red-brick frags.
1004	Unknown	2	Firm, mid red-brown clay natural substrata.
1005	>25.0m L x >2.0m W x 0.5m D	2	Reinforced concrete layer of former Meadows Campus building.
1006	1.44m sqr x 1.45m D	2	3 x concrete anchor blocks, light grey concrete with red-brick frags.
1007	>10.0m L x >2.0m W x 0.2-1.17m D	1	Friable, mid/dark grey-brown silt-clay with frequent red-brick and stone frags. Demolition layer.
1008	>5.5m L x >2.0m W x 0.07m D	1	Light/mid grey stone flagstone surface, butts wall (1009).
1009	>6.8m L x 0.5m W x 1.93m H.	1	Wall, red-brick unfrogged bonded by mortar. Stands 23 courses high and 3 courses wide, runs E-W. Northern external wall of textile mill?
1010	>3.46m L x >0.56m W x >0.5m H	1	Wall of light-grey concrete with frequent red-brick frag inclusions. Runs E-W along southern LOE.
1011	>2.22m L x 0.48m W x 1.2m H	1	Wall of unfrogged red-brick bonded by mortar. Runs N-S, 15 courses high and 3 courses wide. Internal wall forming eastern wall of inspection chamber.
1012	0.67m sqr x 0.3m D	1	Manhole of unfrogged red-brick bonded by mortar. Forms manhole hatch into inspection chamber of textile mill.
1013	>10.0m L x >2.0m W x 2.5m D	3	Cut of former reservoir. Concave sides, base appears flat, runs N-S. Filled by (1017).
1014	>2.0m L x 0.72m W	4	Floor surface of half red-bricks, unfrogged bonded by mortar. Floor surface of former Pumping Stn.
1015	0.25m D	3 and 4	Friable, dark brown-grey silt-clay with occasional small red-brick frags. Topsoil horizon in trench 3 and 4.
1016	Unknown	3 and 4	Firm, light orange-yellow clay. Natural substrata in trench 3 and 4.
1017	>10.0m L x	3 and 4	Firm, brown-grey clay with occasional

	>2.0m W x 2.5m D		red-brick fragments and charcoal flecks. Backfill of former reservoir [1013].
1018	>10.0m L x >2.0m W x 0.2m D	5	Light grey reinforced concrete of former Meadows Campus building. Overlies (1019).
1019	>10.0m L x >2.0m W x 0.3m D	5	Hardcore rubble of crushed red-brick frags and concrete fargs. Sub-base for (1018).
1020	Unknown	5	Fairly soft, mid blue-grey silt-sand natural substrata in trench 5.

APPENDIX II – DETAILS OF ARCHAEOLOGICAL ARTEFACTS

Find no.	Context	Dimensions	Trench	Description	Plate
01	Unstratified	25.0cm H x 9.0cm diameter x 1125g	2	Stoneware cylindrical spouted ink bottle with a liquid brown 'treacle' glaze, stamped '*Encre Japonaise*' (Japanese Ink) '*Antoine & Fils*'. Producers between 1840 and 1960, likely early 20th century in date.	i