



University of
Salford
MANCHESTER

Archaeological Evaluation

Downley Drive, Ancoats,
Manchester

Client:

Rowlinson Constructions Ltd

Planning Ref:

130390/FO/2021

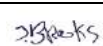
Technical Report:

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Report No:

SA/2022/89



Location:	Downley Drive, Ancoats, Manchester		
NGR:	NGR 385370 398740		
Project:	Downley Drive, Ancoats, Manchester		
Planning reference:	130390/FO/2021		
Internal reference:	SECL2236		
Report number:	SA/2022/89		
Prepared for:	Rowlinson Constructions Ltd		
Document:	Archaeological Evaluation		
Version:	1		
Author:	Dave Lavery		
Position:	Project Officer		
Date:	01/08/23		
Approved by:	Joe Brooks	Signed:	
Position:	Post-excavation manager		
Date:	02/08/23		
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SUMMARY

This report details the results of an archaeological evaluation and excavation at Downley Drive, Ancoats, Manchester (centred on NGR: 385370 398740). The work was undertaken by Salford Archaeology and was commissioned by Rowlinson Constructions Ltd. who have secured planning consent (130390/FO/2021) and intend to erect 23, 3-storey dwelling houses (Use Class C3a) and the erection of a 4-storey building to form 45 residential apartments (Use Class C3a) (68 new homes in total) with associated car and cycle parking provision, hard and soft landscaping, access, servicing, and other associated works. As such, the construction works will necessitate the removal of all buried archaeological remains existing within the proposed development area. In April 2021, Salford Archaeology was commissioned by Great Places Housing Association to undertake an archaeological desk-based assessment (Cole 2021).

This document revealed the potential of the site to contain the remains of a number of 19th- and 20th-century domestic and industrial properties, including the former Titanic Steelworks. This building was the centre for a number of ground-breaking innovations in the field of metallurgy during the 19th century. Any surviving buried remains of the steel works would be of high local significance.

Greater Manchester Archaeological Advisory Service (GMAAS) in their role as advisors to the Local Planning Authority recommended that an initial programme of archaeological investigation via a 'strip and plan' area evaluation, followed by the production of an evaluation report and archive take place on the site, along with a Historic Building Survey. Consequently, an archaeological investigation was conducted over 15 days between 20th June and 8th July 2022 which comprised the excavation of two separate areas.

The investigation ascertained that there were five phases of activity on site. Only two walls dating to the late 19th-century (Phase 1) Titanic Steel Works were uncovered during the evaluation. However, structures relating to St Vincent's Home, built in the early 20th century (Phase 2), and remains dating to the mid-20th century (Phase 3) and the late 20th century (Phase 4) were extant. Phase 5 dated to the late 20th century and comprised a series of demolition made ground levelling deposits evident across the site.

The archaeological remains recorded were deemed to be of local importance. A summary of the results of the investigation will be submitted for inclusion in *Post-medieval Archaeology*. No further on-site work is merited.

1. INTRODUCTION

- 1.1.1 Salford Archaeology were commissioned by Rowlinson Constructions Ltd. to undertake an Archaeological Evaluation Downley Drive, Ancoats, Manchester (centred on NGR: 385370 398740; Figure 1), herein referred to as ‘the site’. The site is bounded by St. Vincent Street and the Rochdale Canal to the north, edges of existing dwellings on Woodward Place to the west, Downley Drive to the south and Kingham Drive to the east (Plate 1). The western portion of the site was vacant and secured by fencing, comprising predominantly of overgrown shrubland with a limited number of trees. An unadopted path cut through the site from St. Vincent Street to the north to Downley Street to the south. The site lies at a height of approximately 50m above Ordnance Datum (aOD).



Plate 1: Recent aerial view looking north across the site

- 1.1.2 Full planning permission (130390/FO/2021) was granted by Manchester City Council on 13th May 2021 for the erection of 23, 3-storey dwelling houses (Use Class C3a) and the erection of a 4-storey building to form 45 residential apartments (Use Class C3a) (68 new homes in total) with associated car and cycle parking provision, hard and soft landscaping, access, servicing, and other associated works. The construction

works necessitated considerable earth-moving works, which would impact any buried archaeological remains.

- 1.1.3 Therefore, following consultation with the Greater Manchester Archaeological Advisory Service (GMAAS), which provides planning advice to Manchester City Council, the development was subjected to a planning condition which required the submission of a Written Scheme of Investigation, and subsequent implementation of a programme of archaeological works prior to the commencement of any demolition, development or development related groundworks. The programme of archaeological works comprised an initial programme of archaeological investigation via a 'strip and plan' area evaluation, followed by the production of an evaluation report and archive. The condition attached to planning reference 130390/FO/2021 stated:

6) No development shall take place until the applicant or their agents or successors in title has secured the implementation of a programme of archaeological works. The works are to be undertaken in accordance with a Written Scheme of Investigation (WSI.) submitted to and approved in writing by the City Council, as Local Planning Authority. The WSI shall cover the following:

1. A phased programme and methodology of investigation and recording to include: i) an evaluation through a 'strip, map and record' excavation; ii) dependent on the above, more detailed excavation (subject to a separate WSI).

2. A programme for post-investigation assessment to include:

- production of a final report on the investigation results.

3. Deposition of the final report with the Greater Manchester Historic Environment Record.

4. Dissemination of the results of the archaeological investigations commensurate with their significance.

5. Provision for archive deposition of the report and records of the site investigation.

6. Nomination of a competent person or persons / organisation to undertake the works set out within the approved WSI.

Reason: To record and advance understanding of heritage assets impacted on by the development and to make information about the heritage interest publicly accessible pursuant to policy EN3 of the Manchester Core Strategy (2012) and saved policy DC20 of the Unitary Development Plan for the City of Manchester (1995).

1.1.4 Thus, in May 2022, Salford Archaeology was commissioned by Rowlinson Constructions Ltd. to undertake a written scheme of investigation (Mottershead 2022), which along with a Desk Based Assessment (Cole 2021) gave a brief historical background to the site. These documents identified that the site had the potential to contain the remains of a number of 19th and 20th century domestic and industrial properties, including the former Titanic Steelworks. This building was the centre for a number of ground-breaking innovations in the field of metallurgy during the 19th century. Any surviving buried remains of the steel works would be of high local significance.

1.1.5 On the 20th of June 2022, archaeological mitigation of the site, comprising the strip and plan evaluation of the proposed development area (Figure 2). This programme of archaeological evaluation recorded two walls dating to the late 19th century Titanic Steel Works, along with extant remains of St Vincent's Home which had been extended and modified throughout the 20th century.

2. AIMS AND OBJECTIVES

2.1.1 The main aims of the evaluation were to establish the presence or absence of buried archaeological remains on the site and, if present, characterise the level of preservation and significance, and provide a good understanding of their potential.

2.1.2 Following the results of the desk-based assessment (DBA) (Cole 2021), and in consultation with GMAAS, it was recommended that the evaluation comprised the excavation of two 'strip and plan' areas as indicated in figures 2 and 3. The 'strip and plan' areas were targeted on the main production areas of the former Titanic Steelworks. This approach to devising proposals to mitigate the impact of development on the archaeological resource of the development area is in accordance with national guidelines set out in the National Planning Policy Framework: Section 16.

2.1.3 The principal objectives of the archaeological investigation were:

- to record, as far as is reasonably possible, the location, extent, condition, significance, and quality of any surviving archaeological remains observed;
- to provide sufficient information to enable an informed decision to be made about the need for any additional archaeological mitigation; and
- to make available the results of the work.

2.2 Development of Aims

2.2.1 Further, more detailed research aims may be generated and developed from the results of the archaeological evaluation, with specific reference to the North West Regional Research Framework (NWRRF). It is envisaged that the evaluation may potentially improve our understanding of the following research questions:

- **Ind53: What can archaeology tell us about the production and use of consumer products and their typologies from the late 18th to early 20th centuries?**
- **Ind55: What is the evidence for the development of power production?**
- **Ind56: How can we improve our understanding of 20th century factory organisation?**
- **Ind58: How have industrial buildings adapted to new technology and processes?**
- **Ind59: What is the evidence for academic research and innovation in technology and production?**
- **Ind60: How can we make sense of the relative significance of historic industrial processes and building types perceived as poorly understood and recorded?**

3. LOCATION, GEOLOGY & TOPOGRAPHY

3.1.1 The site lies within Downley Drive, Ancoats, Manchester (centred on NGR: 385370 398740) The site was broadly irregular in shape changing to sub-rectangular towards the south-west and was bounded by St. Vincent Street and the Rochdale Canal to the north, edges of existing dwellings on Woodward Place to the west, Downley Drive to the south and Kingham Drive to the east (Figure 1). The western portion of the site was vacant and secured by fencing, comprising predominantly of overgrown shrubland with a limited number of trees. An unadopted path cut through the site from St. Vincent Street to the north to Downley Street to the south. The site lies at a height of approximately 50m above Ordnance Datum (aOD).

3.1.2 Topographically, the Manchester conurbation as a region lies within an undulating lowland basin, which is bounded by the Pennine uplands to the east and to the north. The region as a whole comprises the Mersey River valley, whilst the rivers Irwell, Medlock, and Irk represent the principal watercourses in Manchester (Countryside Commission 1998, 125).

- 3.1.3 According to the British Geological Survey (BGS 2022) the underlying solid geology of the site is comprised of Sandstone of the Collyhurst Sandstone Formation formed approximately 272 to 299 million years ago in the Permian Period (*ibid*). Within a local environment previously dominated by wind-blown deposits (*ibid*). The superficial deposits are composed of Devensian - Diamicton Till formed up to 2 million years ago in the Quaternary Period within a local environment previously dominated by ice age conditions (*ibid*).

4. HISTORICAL BACKGROUND

- 4.1.1 The following information is derived from an archaeological desk-based assessment produced by Salford Archaeology (SA 2021), along with other sources listed in the bibliography. The research of Christopher Tombs has also been integrated.

4.2 Prehistory (Pre-AD 43)

- 4.2.1 The current understanding of any human activity in the Manchester region during the prehistoric period is poor, although it is reasonable to suggest that several areas in the centre of the city, such as Castlefield and Ardwick, may have been conducive for late prehistoric settlement on account of the natural topography and the abundance of natural water sources (i.e., rivers) (Gregory 2007). The site is located near to the River Medlock, which makes the area favourable for early activity (Arrowsmith 2010).
- 4.2.2 Physical indications of human activity are provided by a small number of residual finds. A Neolithic flint flake was found at Spinning Field, near Deansgate, and reported in the Transactions of the Lancashire and Cheshire Antiquarian Society in 1892 (HER 414.1.0; Sutton 1892). A Neolithic stone hammer and arrowhead, for instance, were unearthed in the Castlefield area of Manchester in 1845 (HER 119.1.0), whilst excavations at 77-83 Liverpool Road (HER 13944.1.0) produced two Mesolithic flints, one Neolithic/Bronze Age waste flake and a single sherd of late Bronze Age/Iron Age pottery. These finds complement a growing regional body of finds representing prehistoric activity, known to be concentrated on well-drained sand and gravel sites in proximity to watercourses and moss lands.
- 4.2.3 Cartographic evidence from Green Map of Manchester and Salford (1787 - 94) shows the site was bisected on its eastern boundary by Shooters Brook. The location of the site near the River Medlock and Shooters Brook make the area favourable for any possible prehistoric activity.

4.3 Romano-British Period (AD 43-410)

- 4.3.1 The first military occupation of Manchester was established during the governorship of Agricola (AD 77-84), and commenced with a five-acre wooden fort, known as *Mamucium* (Bruton 1909), situated c. 2km south-west of the site. The fort underwent several phases of development, the earlier defences being deconstructed and improved (*ibid*). The military complex evolved in response to the on-going military campaigns, from a purely defensive site to an established supply depot, essential to the expansion and consolidation of control in the region (*ibid*).

4.3.2 The maturation of the military complex can be seen in the growing body of evidence for a military annexe, occupying an area to the north and east of the fort (Arrowsmith 2016, 9-12). Evidence pertaining to this annexe is relatively scant and thus the exact nature of early settlement is unclear (*ibid*). As this military complex developed, a grid of roads was laid out and a substantial extramural settlement, or vicus, grew around these roads (*ibid*). This settlement was made up of civilians, attracted by the security and commercial benefits of the nearby fort (*ibid*). Based on archaeological excavations and the distribution of Roman finds, the limits of this civilian settlement appear to have extended south-eastwards along Chester Road, terminating somewhere in the vicinity of Great Jackson Street, northwards from the fort to approximately Quay Street, westwards along Liverpool Road for c. 100m from the north-west corner of the fort, and eastwards across Deansgate to the area now occupied by Beetham Tower (*ibid*).

4.3.3 Roads from the fort linked Manchester with Buxton to the south-east, Chester to the south, Wigan to the north-west, Ribchester to the north, and Castleshaw and York to the north-east (*ibid*). The Roman Road from Manchester to Castleshaw likely followed the course of the present Old Mill Street, which is located approximately 390m to the south of the site (*ibid*). The settlement was well connected in terms of trade and consequently lasted until the late third century AD (*ibid*).

4.4 Medieval Period (AD 410-1540)

4.4.1 There is very little archaeological evidence in the region as a whole that represents the period between the end of the Roman occupation and the Norman Conquest of 1066. The area around Manchester came under the control of several kingdoms during this period. In AD 620, Edwin occupied Manchester, and it may have been at this time that settlement in the town was established around the cathedral (Farrer and Brownbill 1908).

4.4.2 In AD 919, the Anglo-Saxon king, Edward the Elder, established a fortified base, or burh, at Manchester, which was then part of Viking Northumbria (*ibid*). It has been suggested that the burh lay within the area around the cathedral, which had become a focus for settlement by the late-11th century (*ibid*). The site occupied presently by Chetham's School is also thought to have been the site of a castle founded by Manchester's Norman barons (*ibid*).

4.4.3 Following the Norman Conquest, William I assigned most of the land between the Ribble and Mersey rivers to Roger of Poitou, who retained the manor of Salford demesne (Tupling 1962, 116), but divided his other newly acquired land into several

fiefdoms (Kidd 1996, 13). The largest of these was the landholding centred on Manchester, created by the grant of extensive lands in the hundreds of Salford, Leyland and West Derby to Albert Grelley (Tupling 1962, 116).

- 4.4.4 By the 13th century, the Grelley family had established a manor house at the confluence of the rivers Irwell and Irk and the medieval town grew up around it (Hartwell *et al.* 2004, 256). It was from this hall that they governed both the manor and the extensive barony (*ibid*). In 1222 Manchester was granted an annual fair, and in 1301 Thomas Grelley was granted the Great Charter of Manchester by Edward I, and thus it became a free borough (*ibid*).

4.5 Post-medieval and Industrial Period (AD 1540-1914)

- 4.5.1 During the 18th century, south-east Lancashire as a whole was predominantly an agricultural area of isolated settlements and market towns, with the burgeoning town of Manchester at its heart (Williams with Farnie 1992, 3). By the 1780s, the national demand for textiles and concomitant mill building transformed Manchester into a centre of the factory-based cotton-manufacturing industry (Baines 1835). The industrialisation of Manchester was greatly facilitated by an expansion of the region's waterways and the introduction of the canal network, which provided an efficient means of transporting bulk loads of goods (*ibid*). This crystallised with an Act of Parliament that made the rivers Mersey and Irwell navigable from Warrington to Manchester, opening up trade to Manchester and Salford from the expanding port of Liverpool (*ibid*). The first true industrial canal in Britain was that built by the Duke of Bridgewater, which was completed from his mines at Worsley to Manchester in 1764, the terminus of which was at Castlefield (Hadfield and Biddle 1970). The success of this canal saw numerous other inland waterways being opening during the late 18th century.
- 4.5.2 The development of the site may be traced reasonably well from the sequence of available historic mapping (Cole 2021). Green's map of 1787-1794 (Plate 2) shows the proposed streets in Ancoats laid out in a grid pattern, creating series of regular plots, with development apparently focused on the Great Ancoats Street and Newton Lane (Oldham Road) area (*ibid*).
- 4.5.3 Green's survey indicates the site was still a field in 1794, bisected on its eastern boundary by Shooters Brook, and east to west by a field boundary (*ibid*). There is also an indication of the rapid expansion of Ancoats in the proposed extension to Prussia Street (*ibid*).

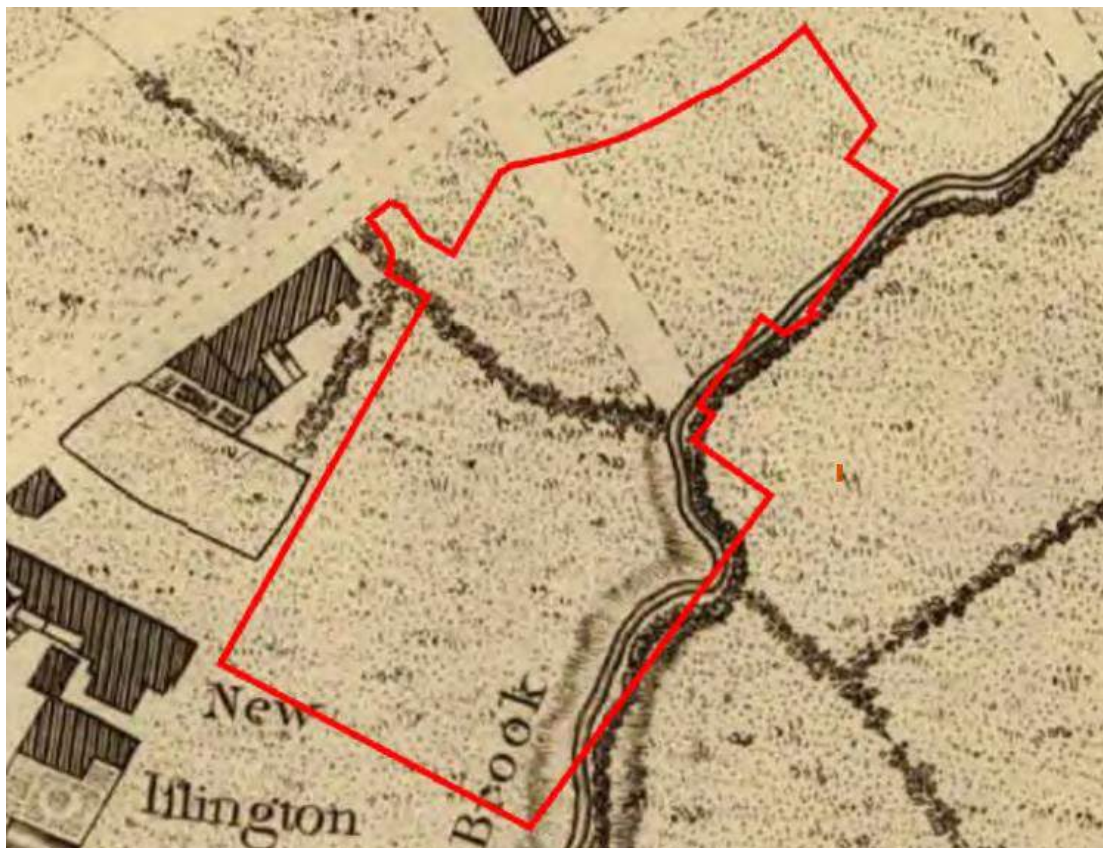


Plate 2: Site boundary superimposed onto Green's map of 1787-1794

- 4.5.4 Swire's map of 1824 (Plate 3) shows the arrival of the Rochdale Canal on the northern boundary of the site (*ibid*). The area around the edge of the site had seen some development since the turn of the 18th century, specifically the New Islington Mill on the southern boundary (*ibid*). Several water-powered mills had also been erected along Shooters Brook, situated to the south of Union (now Redhill) Street (*ibid*).

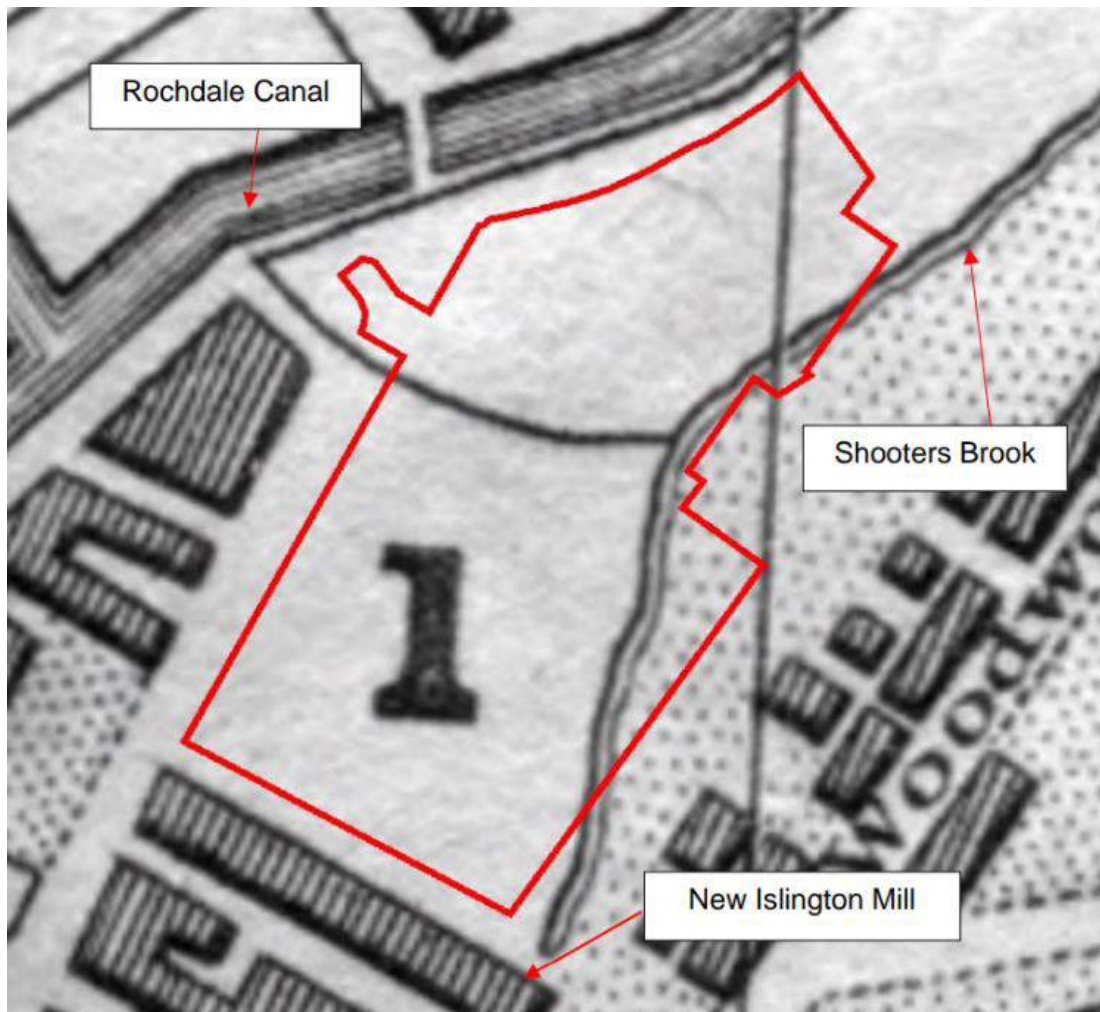


Plate 3: Site boundary superimposed on Swire's map of 1824

- 4.5.5 The line of the Rochdale Canal ran between Shooters Brook and the new focus of development, offering the potential of cheap and reliable transport for goods and materials (*ibid*). The completion of the canal in 1804 coincided broadly with the introduction of efficient steam engines capable of producing rotative power (*ibid*).
- 4.5.6 New Islington Mill appears to have been one of the earliest steam-powered mills to have been established within Ancoats, although it has been suggested that it originated as a water-powered spinning factory that was in operation by the late 1780s (Nevell 2003, 43). This suggestion was based on a survey of Arkwright patented water-frame mills in Britain, undertaken by Patrick Colquhoun in 1788.
- 4.5.7 The owners of New Islington Mill commissioned the construction of a small reservoir fed by Shooters Brook (Cole 2021). This was the first of many changes to the course of the brook (*ibid*). The area of the site itself, however, remained undeveloped.
- 4.5.8 The Banks & Co map of 1831 details the development that continued around the edge of the site with the creation of Pott Street, which ran along the western side of

the site, and Boons Row, which bordered the southern side (*ibid*). Dixon Street and Lawton Street ended at Shooters Brook on the eastern side of the brook (*ibid*). Running parallel to the brook a small new street of back-to-back housing called Woldens Strand was also built (*ibid*). The small reservoir built to provide water for New Islington Mill seen on the Bancks & Co's map of 1831 (Plate 4) was superseded and on the Ordnance Survey Town Plan of 1851 the brook was the most significant geographical feature on the site at this time (*ibid*).



Plate 4: Site boundary superimposed onto Bancks & Co.'s map of 1831

- 4.5.9 The documentary evidence provides an insight into the changing demographic composition of the district's inhabitants, during the process of industrialisation (*ibid*). In the late 18th century, the area remained semi-rural and sparsely populated with its residents being a mixture of businessmen, trades people and even gentlemen (*ibid*). By the 1820s however, there had been a huge demographic shift with a rise in the number of Irish surnames (*ibid*). By this point, the area is mainly occupied by spinners, weavers, and "Irishmen of the lowest description" (*ibid*). The Irish migration to Britain increased yet further during the 1830s and 1840s, accelerated by those fleeing the potato famine between 1845-9 (*ibid*).



Plate 5: Site boundary superimposed onto the 1:1056 Town Plan of 1851

- 4.5.10 The Ordnance Survey Town Plan of 1891 shows, for the first time, five houses in the south-western corner of the site fronting on to Pott Street, and in the south-eastern corner a series of buildings were also built (*ibid*). It is unclear if these were residential, as no record could be found in the census, and no street name is listed on the map (*ibid*). It is possible that they were an extension of the New Islington Mill or were part of the new industrial buildings on the site (*ibid*). The major change to the site by 1891 was the arrival of the Titanic Steel Works (*ibid*).



Plate 6: Site boundary superimposed onto the 1:500 Town Plan of 1891

- 4.5.11 Shooters Brook had also changed in its character by 1891. On the Ordnance Survey Town Plan of 1851 (Plate 5), the brook was still one of the most dominant geographic features of the site (*ibid*). By 1891 however, the brook appeared at the rear of the housing on Back Woldens Strand, with the rest of the brook seemingly being fully culverted underground (*ibid*).
- 4.5.12 The houses shown on the Ordnance Survey Town Plan of 1891 (Plate 6) show if they have steps going from floor level to the front door (*ibid*). This is a strong indication to the presence of cellars. Cellars were often sublet, and in Ancoats represented some of the worst type of housing available to the poorest residents, often refugees from the Irish potato famine of 1845 - 49 (*ibid*). The houses located on the site do not appear to have any cellars, with the exception of a property at the end of Lawton Street and at number 1 Woldens Strand (*ibid*).
- 4.5.13 By 1885 Mr Samuel John Hackney had met Mr Joseph Elton Bott. Together they formed a partnership, and bought a pre-existing iron and brass works which they renamed Titanic Steel Works. Joseph had already tried unsuccessfully to set up a steel foundry in Philadelphia, USA for the Titanic Steel Casting Company, the similar name being a coincidence (*ibid*). By 1884 he was back in England with a new idea for

a type of open-hearth furnace, which was a compromise between ‘the Bessamer and crucible method’ (*ibid*). This process used unbaked green sand moulds and received a patent in 1886 (*ibid*). New furnaces were installed on the site at the end of 1886; however, the company went into receivership at the end of 1887 (*ibid*). After the partnership was dissolved, Samuel continued the business on his own (*ibid*). Possibly due to the loss of his innovative and entrepreneurial founding partner the foundry went into liquidation in October 1893 (*ibid*).

- 4.5.14 The foundry that became the Titanic Steel Works is first shown on a map of 1891 suggesting it was constructed sometime between 1851 and 1891. It occupied the northern part of the site and likely fronted onto Pott Street (*ibid*). One main block with a courtyard has been established with several additional buildings constructed around the site (*ibid*). The purpose of a large building that bisects the site east to west, in the top half of the site, is not clear, but was undoubtedly part of the foundry, and could well be the site of the new furnaces installed in 1886 (*ibid*). The 1891 map also indicates that the Titanic Steel Mill was utilising water from the Rochdale Canal for use in the manufacturing process (*ibid*).



Plate 7: Site boundary superimposed onto the 1:2500 County Series map of 1908

- 4.5.15 By 1908, Ducie Sawmills, located to the north of the site, had expanded southwards (*ibid*). The timber stores of the sawmills were located within the site boundary (*ibid*).

The 1908 Ordnance survey map also shows the Titanic Steel Works had also been replaced by St Vincent's home (*ibid*). A plan of St Vincent's Home is held at the Manchester Archives (*ibid*). The entry in the archive for the plan, dated 1902, revealed that The Sisters of Charity were the owners of the site, and that the plans were for a Magdalen laundry that provided refuge for the destitute (*ibid*).

- 4.5.16 The Ordnance Survey map of 1908, as well as showing St Vincent's Home, also shows how Shooters Brook was by then completely culverted, with no above-ground record of the brook on the site (*ibid*). The houses on the corner of Woldens Back Strand seem to have been demolished, but the house at the end of Lawton Street and the houses at the end of Dixon Street were still extant (*ibid*). The New Islington Mill located on the southern boundary of the site on the Town Plan of 1891 was also no longer present and was replaced by engineering works (*ibid*). The houses located within the south-west corner of the site were still present (*ibid*).

4.6 Modern Period (Post 1914)

- 4.6.1 The Ordnance Survey map of 1922 (Plate 8) shows that little changed on the site from the 1908 Ordnance Survey map (*ibid*). The St Vincent's Home was still present as was number 90 to 98 St Vincent Street (*ibid*). The buildings located in the south-eastern corner of the site remained also the same (*ibid*). The lack of census data for these buildings indicates that they were probably industrial and/or related to the operation of the home (*ibid*).
- 4.6.2 In 1922, Number 1 Lawton Street was still extant as were the two properties at the end of Dixon Street (*ibid*). Numbers 90, 92, 94, 96, 98, St Vincent's Street were also still present at the time (*ibid*).
- 4.6.3 By 1937, Associated Technical Manufacturers had moved onto the St Vincent's Home site (*ibid*). The Associated Technical Manufacturers were shown as Vincent Wire Works and Vincent Works (Electrical) on the National Grid Map of 1948 (*ibid*). The footprint of the new industrial premises was smaller than that of St Vincent's Home (*ibid*). The buildings that could not be identified in the south-eastern corner of the site also appear to have been demolished by this time (*ibid*). Part of number 1 Lawton Street, and the properties at the end of Dixon Street first seen on the 1851 Town Plan were still present, as were numbers 90, 92, 94, 96, and 98 St Vincent's Street which were first seen on the Town Plan of 1891 (*ibid*).



Plate 8: Site boundary superimposed onto the 1:2500 County Series map of 1922

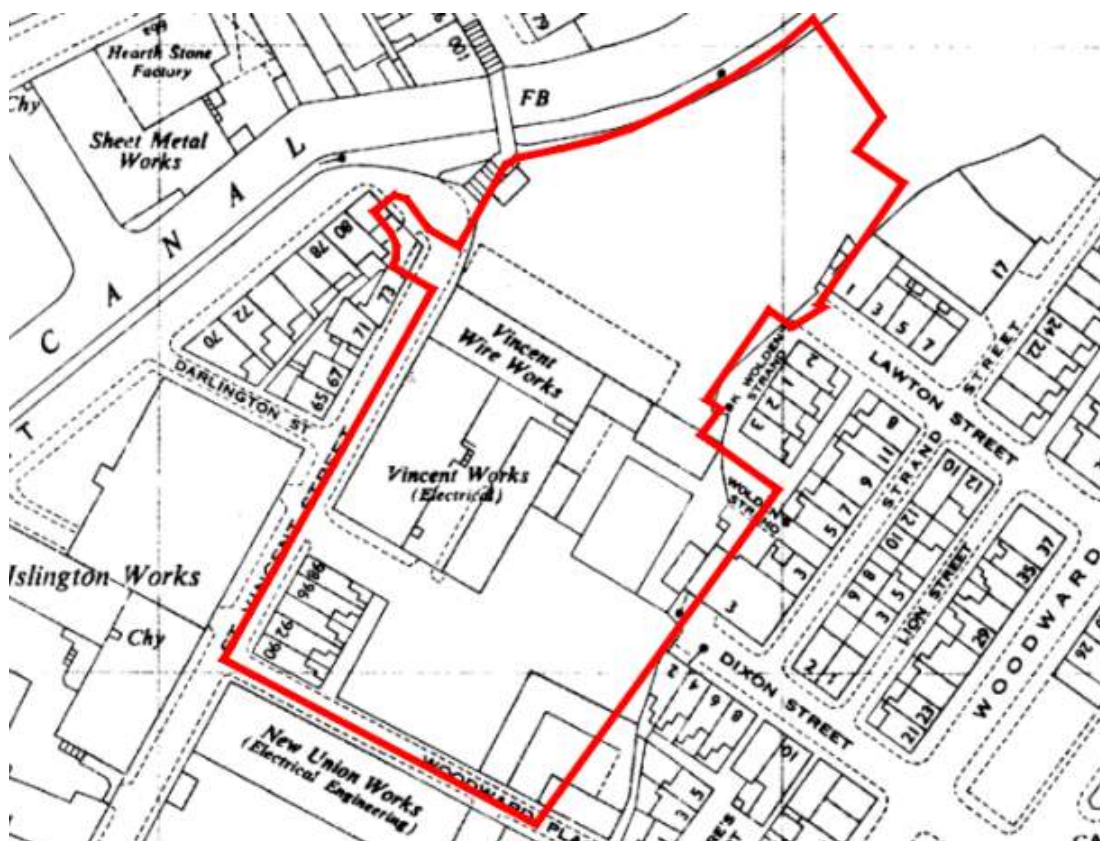


Plate 9: Site boundary superimposed onto the 1:1250 National Grid Map of 1948



Plate 10: Site boundary superimposed onto the 1:1250 National Grid Map of 1953

- 4.6.4 In 1954, Associated Technical Manufacturers changed their name to Permanoid Ltd, they continued to expand, eventually signing a lease on a new property in Hulme in 1975, they vacated the site shortly afterwards (*ibid*).
- 4.6.5 At some point between Permanoid Ltd changing their name in 1954 and vacating the site in 1975, the back-to-back and workers' housing located within and surrounding the site was demolished (*ibid*). The housing on St Vincent's Street was still present in 1953, however, these too were demolished between 1953 and 1968 (*ibid*). Lawton Street was renamed Kingham Drive and new development took place including a block of flats at the western end of Kingham Drive, within the site boundary (*ibid*).
- 4.6.6 At some time between 1972 and now, the footbridge was demolished, and replaced with another footbridge that now exits onto Stephen Hunt Street (*ibid*). The original footbridge that exited on to Rodney Street had been there since the Rochdale Canal was built and can be seen on Swire's map of 1824 (*ibid*).

5. METHODOLOGY

5.1.1 **General Methodology:** all archaeological work was conducted following the Chartered Institute for Archaeologists' '*Standards and Guidance for archaeological field evaluation*' (CIfA 2020 [a]), and the Chartered Institute for Archaeologists' '*Standards and Guidance for archaeological Excavation*' (CIfA 2020 [b]). Prior to the commencement of any excavation works, the location of the area targeted for archaeological investigation was laid out accurately with respect to the Ordnance Survey national grid. The position of the areas was then scanned for any live services using a cable avoidance tool. The excavations were regularly scanned as work progressed.

5.1.2 **Machine Excavation:** Under the supervision of a suitably experience archaeologist, a 20-tonne, 360°, tracked, mechanical excavator with a toothless bucket was used to remove the overburden sealing the structural remains. Thereafter, remains were cleaned manually to define their extent, nature, form and, where possible, date. Once the extent of buried archaeological remains was established, they were then subject to detailed archaeological excavation and recording. Hand excavation was undertaken by trained professional archaeologists. All information identified in the course of the site works was recorded stratigraphically, utilising pro-forma context sheets, and was accompanied with sufficient pictorial record (plans, sections and photographs) to identify and illustrate individual features.

5.2 Archaeological Evaluation

5.2.1 The archaeological excavation involved the excavation of two separate areas in turn, culminating the proposed development area. The evaluation excavation targeted the main production areas of the former Titanic Steelworks. The rational for the open area excavation was to better understand the use, date, and phasing of the buildings uncovered during the archaeological evaluation.

5.2.2 A full and detailed photographic record of individual contexts was maintained and similarly general views from standard viewpoints of the overall site at all stages of the excavation was generated. Photography was undertaken in accordance with Historic England guidance, *Digital Image Capture and File Storage Guidelines for Best Practice* (Historic England 2015). All frames will include a visible, graduated metric scale. Photographs records will be maintained on photographic *pro-forma* sheets.

5.2.3 The precise location of all archaeological remains encountered was surveyed using a GPS unit. This process generated scaled plans within AutoCAD, which were then

subjected to manual survey enhancement. The drawings were generated at an accuracy appropriate for 1:20 scale but can be output at any scale required. All information was geo-rectified to the Ordnance Survey National Grid and all levels were tied into Ordnance Datum.

- 5.2.4 The finds recovery and sampling methodologies were undertaken in accordance with current Chartered Institute for Archaeologists' *'Standard and guidance for the collection, documentation, conservation and research of archaeological materials'* (CIfA 2020 [c]) and were subjected to expert advice in order to minimise deterioration. Finds storage during fieldwork and any site archive also followed the Chartered Institute for Archaeologists' *'Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives'* (CIfA 2020 [d]).

6. ARCHAEOLOGICAL RESULTS

- 6.1.1 The archaeological excavation took place over 15 days between 20th June and 8th July 2022. This comprised the excavation of two open areas targeting the 19th-century railway sidings observed on historic mapping. From the results of the archaeological evaluation, it has been concluded that there were five main phases of construction across the entire site.

6.2 Plot A (Figure 3)

- 6.2.1 Plot A was the southernmost of the two excavated areas and was targeting the remains of the Titanic Steel Works observed on historic mapping. Four phases of activity were recorded within Plot A.
- 6.2.2 The geological natural substrate (042) throughout Plot A comprised a mid-yellowish-brown clay.

6.3 Phase 1: late 19th century

- 6.3.1 The earliest phase of activity on site related to the remains of the foundry that became the Titanic Steel Works. Wall {001} was aligned north-west to south-east and measured a maximum of 6m long x 0.35m wide x 0.28m tall (Plate 11). It was constructed of handmade, unfrogged grey brick each measuring an average of 230mm long x 120mm wide x 90mm thick, laid stretcher and bonded with a sandy greyish-yellow lime mortar. Areas of this wall also showed evidence of being lime washed. A large arch was also present within wall {001} (Plate 11).
- 6.3.2 The south-eastern end of wall {001} was abutted on its south-western face by L-shaped wall {002} (Plate 12). Wall {002} was aligned north-east to south-west and measured a maximum of 1m long x 0.26m wide x 0.1m tall. This again was constructed of handmade, unfrogged grey brick laid header bond, and bonded with a sandy greyish-yellow lime mortar. Areas of this wall also showed evidence of being lime washed.



Plate 11: Shot of wall {001} looking north. Scale = 1 x 2m.



Plate 12: Shot of wall {002} looking south-east. Scale = 1 x 1m.

6.4 Phase 2: early 20th century

- 6.4.1 The second phase of activity on site was represented by later editions to the Phase 1 remains. Wall {004} abutted wall {001} on its south-western face, was aligned north-east to south-west and measured a maximum of 0.47m long x 0.22m wide x 0.09m

tall (Plate 13). Wall {004} was constructed of modern red brick laid stretcher bond and bonded with a modern cement mortar. This wall was heavily damaged with only a small section surviving.

- 6.4.2 However, wall {004} was likely the same wall as wall {009} as they were of the same construction and on the same alignment. Wall {009} was laid in construction cut [063] and measured a maximum of 11.5m long x 0.48m wide x 0.3m tall. This was later extended south-westwards with wall {020}, which measured 2.12m long x 0.5m wide x 0.47m tall. Wall {020} was constructed of handmade red brick laid header and bonded with a light brownish-grey mortar. Construction cut [063] was then filled with a demolition debris/ silt mix (064). Concrete foundations {017} were also observed north-west of wall {009} which likely date to this phase of activity. However, it is unknown what these were for as the foundations were an irregular shape and no surviving remains were observed above them.



Plate 13: Shot of wall {004} and floor surface {005} looking north-west. Scale = 1 x 1m.

- 6.4.3 The remains of a concrete floor surface with a layer of bitumen upon it was observed as two separate areas {005} and {007} which were located south-west of wall {001} and north-west of wall {004} (Plate 14 and Plate 15). It is likely that these were originally one floor surface, however, it had been heavily truncated.



Plate 14: Shot of floor surface {005} looking north-east. Scale = 2 x 1m.



Plate 15: Shot of floor surface {007} looking north-west. Scale = 1 x 1m.

- 6.4.4 A north-west to south-east aligned wall {010} was observed abutting wall {009} on its south-eastern face. Wall {010} measured a maximum of 1.84m long x 0.24m wide, was laid stretcher bond and bonded with a black ash mortar. A stone lined drain {013} and a ceramic drain {014} were also observed to the south-west of this wall.



Plate 16: Shot of wall {009} and drains {013} and {014} surface {007} looking south-east. Scale = 1 x 1m.

- 6.4.5 Wall {019} was aligned north-west to south-east and abutted wall {009} on its north-western face at its south-western end. Wall {019} was constructed of handmade, unfrogged red brick laid both header and stretcher bond and bonded with a mid-greyish-brown lime mortar. The wall measured a maximum of 10.12m long x 0.93m wide x 0.94m tall.
- 6.4.6 A brick buttress {027} was added to the south-western face of wall {019} which was aligned south-west to north-east and measured a maximum of 0.39m long x 0.23m wide x 0.5m tall. This was constructed of handmade, unfrogged red brick laid stretcher and bonded with a dark blackish-brown mortar. A second buttress {025} was also added further south-east of buttress {027}. Buttress {025} was of the same construction of wall {019} and measured 0.44m long x 0.24m wide x 0.51m tall.
- 6.4.7 Wall {021} was located just south-west of the south-eastern end of wall {001}. Wall {021} was aligned north-west to south-east and measured 2.66m long x 0.26m wide x 0.41m tall and was constructed of handmade, unfrogged red brick laid stretcher bond and bonded with a brownish-grey lime mortar.

6.5 Phase 3: Mid-20th century

- 6.5.1 During the mid-20th century, further editions were added to the structures outlines in previous phases. Wall {003} abutted wall {001} on its south-western face, was aligned

south-west to north-east and measured a maximum of 0.36m long x 0.24m wide x 0.11m tall. It was laid in construction cut [057]. Wall {003} was constructed of modern frogged brick laid stretcher bond and bonded with modern cement mortar. Construction cut [058] was then filled by a demolition debris/ silt mix (057). This wall was heavily damaged with only a small section surviving.

- 6.5.2 Brick buttress {006} was added on the south-western face of wall {001} (Plate 17). Buttress {006} measured 0.25m long x 0.45m wide x 0.14m tall and was constructed of modern frogged red brick laid header bond and bonded with a modern cement mortar. A repair {008} to the concrete floor surface {007} located south-west of buttress {006} was observed that likely dates to this phase of activity. Repair {008} comprised modern white concrete that measured 0.8m long x 0.9m wide.



Plate 17: Shot of wall {001} with arch and buttress {006}, looking north. Scale = 1 x 1m.

- 6.5.3 Another brick buttress {022} was added to the north-western face of wall {009} at its north-eastern end during this phase of activity. Buttress {022} measured 0.46m long x 0.23m wide x 0.7m tall and was constructed of handmade, wire-cut red brick laid stretcher bond, and bonded with a modern cement mortar.
- 6.5.4 North-west of wall {009} a sub-rectangular construction cut [037] was observed which measured a maximum of 1.41m long x 0.84m wide x 1.03m deep. A concrete pad was

laid at the bottom of this cut which held an iron girder {056} vertically in place. Cut {037} was then filled by a demolition debris/ silty-sand fill (038).

- 6.5.5 A similar sub-rectangular construction cut [035] was observed south-west of cut [037]. Construction cut [035] measured 6.52m long x 2.93m wide. An iron girder {055} was also placed vertically in cut [035]. This was then filled by a demolition debris/ silty-sand fill (036). The south-western end of fill (036) was truncated by construction cut [033] which was sub-circular in shape and measured a maximum of 1.53m long x 1.3m wide. Another iron girder {054} was again placed vertically in this cut, which was then filled by a demolition debris/ silty-sand fill (034).
- 6.5.6 A brick buttress {026} was added to the north-eastern face of wall {019} during this phase of activity. Buttress {026} measured 0.46m long x 0.25m wide x 0.33m tall and was constructed of modern frogged red brick laid stretcher bond and bonded with a modern black cement mortar.
- 6.5.7 A brick buttress {023} was also added to the north-western face of wall {009} during this phase. Buttress {023} measured 0.45m long x 0.23m wide x 0.21m tall and was constructed of modern red bricks laid stretcher bond and bonded with a modern cement mortar.
- 6.5.8 A construction cut [015] was observed on the north-western face of wall {009} for the insertion of buttress {012}. Buttress {012} measured a maximum of 0.23m long x 0.45m wide x 0.09m tall and was constructed of modern red brick laid stretcher bond and bonded with a modern cement mortar (Plate 18). Cut [015] was then filled with a clay/ clinker mix (016). A deposit of modern concrete {011} was laid to the south-west of buttress {012} which measured 0.8m long x 0.86m wide x 0.1m thick (Plate 18). This was likely a repair to a floor surface that no longer survives.



Plate 18: Shot of buttress {012} and concrete {011}, looking south-west. Scale = 1 x 1m.

- 6.5.9 A large L-shaped concrete plinth was also added south-west and south-east of wall {021} during this phase of activity. Remains of the same type of concrete were also observed north-eastern face {029} of wall {010}, the south-eastern face {030} of wall {009}, south-west {031} of buttress {023}, and north-west {032} of wall {018}. It is likely that these areas of concrete represent the remains of a later floor surface that has since been heavily truncated.

6.6 Phase 4: Late-20th century

- 6.6.1 Z-shaped wall {018}, which abutted wall {019} on its north-eastern face, was aligned north-east to south-west and was constructed of handmade red brick laid header bond and bonded with a light greyish-white lime mortar (Plate 19). The wall measured a maximum of 2.36m long x 0.45m wide x 0.12m tall.



Plate 19: Shot of walls {018} and {024} abutting wall {009}, looking north-west.

- 6.6.2 Wall {024} was observed abutting wall {009} on its north-eastern face (Plate 19). Wall {024} was aligned north-west to south-east, measured a maximum of 0.84m long x 0.3m wide x 0.11m tall, and was constructed of modern red bricks laid both stretcher and header bond and bonded with a modern cement mortar.
- 6.6.3 A construction cut [043] for the installation of a modern ceramic drain was observed under the arch of wall {001}. Construction cut [043] was aligned north-west to south-east and measured 4.44m long x 1.2m wide x 0.06m deep. Once the ceramic drain had been laid the cut was filled by a demolition debris/ silt mixed fill (059).
- 6.7 Phase 5: late 20th century-present**
- 6.7.1 The final phase of activity in this area related to the demolition of the structures in Plot A. The evidence for this varied across the area. Throughout Plot A, the geological natural substrate (042) was overlaid by a 0.71m thick deposit of dark brownish-black sandy-clay (041) with sub-angular stone inclusions. This was then overlaid by a 0.99m thick deposit of dark greyish-black sand (040), which was in turn overlaid by a 1.04m thick deposit of modern demolition debris made ground (039).
- 6.7.2 However, around wall {009}, a 1.2m wide x 0.23m thick deposit of rusted iron (045) was observed above black sand deposit (040). Iron deposit (045) was then overlaid by a 0.64m thick deposit of black sand (044) was observed around, which was similar to deposit (040).

6.7.3 Furthermore, in the south-western corner of Plot A, between walls {019} and {020}, a 10.9m long x 0.75m thick deposit of demolition debris/ sand mix (046) was observed above sandy-clay deposit (041). The entirety of Plot A was then sealed by a 0.1m thick deposit of dark greyish-brown, silty-loam topsoil (060).

6.7.4 When the mitigation for the proposed development started on site Topsoil (060) was overlaid by a 0.76m thick deposit of sandy-clay/demolition debris mix (061). This was then sealed by a 1.77m thick deposit of demolition debris which created the modern levelled ground surface.

6.8 Plot B (Figure 4)

6.8.1 Plot B was the northernmost of the two excavated areas. Plot B had to be excavated in a northern half and a southern half due to the presence of a live service running through the area. The northern half of Plot B was aligned north-west to south-east and measured a maximum of 16.5m long x 12m wide x 1.33m deep. The southern half of Plot B was also aligned north-west to south-east and measured a maximum of 16.45m long x 7.5m wide x 3.4m deep. Two phases of activity were recorded within Plot B.

6.8.2 The geological natural substrate (050) throughout site comprised a mid-yellowish-brown clay.

6.9 Phase 4: Late-20th century

6.9.1 Geological natural substrate (050) was cut in the northern half, by an east to west aligned unknown linear feature [051], which measured 8.05m long x 5.05m wide. This was then filled by a distinctive half light brown and half orangey-brown coloured sand (052).

6.9.2 A series of modern reinforced concrete stanchions {047} were also observed to lie directly onto the geological natural substrate (050) in Plot B, that likely date to this phase of activity (Plate 20). They were aligned north-west to south-east and each measured an average of 0.85m long x 0.81m wide x 0.12m thick.



Plate 20: Shot of concrete stanchions {047}, looking south-east. Scale = 1 x 2m.

6.10 Phase 5: late 20th century-present

- 6.10.1 The final phase of activity in this area related to the demolition of any structures in Plot B. Concrete stanchions {047} along with geological natural substrate (050) was overlaid by a 0.5m thick deposit of re-deposited geological natural substrate (049). This in turn was overlaid by a 0.5m – 2.55m thick deposit of demolition debris made ground (048). The area was then sealed by a 0.35m thick deposit of dark greyish-brown, silty-loam topsoil (053).

7. DISCUSSION

7.1 Phase 1: foundry building (late 19th century) (Figure 8)

7.1.1 Cartographic evidence suggests that the foundry was constructed between 1851 and 1891 when it was first depicted cartographically on the Town Plan of that year (Figure 8).

7.1.2 The earliest structures recorded on site were a brick wall {001}, with built in brick arch, and wall {002}. These walls likely represent the remains of the foundry that became the Titanic Steel Works. When superimposed on the Town Plan of 1891 it is apparent that the wall with the brick arch {001} corresponds with the northern external wall of the foundry (Plate 6).

7.1.3 No other structures or features relating to this phase of activity were observed.

Titanic Steel Company (*after Christopher Tombs*)

7.2

7.2.1 Although archaeological findings made on the site were limited, a considerable amount of information relating to the Titanic Steel Company has been gathered by an external researcher. The following section describes the history of the two partners involved in the Titanic Steel Company and their ground-breaking contribution to the late 19th-century steel-making industry (the following text is taken from Christopher Tombs' research). Amongst the innovations they were responsible for were an improved crucible furnace (US patent of 1883), an improved gas generator based on the Siemen's principal (US patent of 1883) and then slightly improved versions of both that were patented in Britain in 1884. This was followed by a new type of cupola furnace that was patented in 1887. Central to their new process, however, was the use of green sand moulds, which they appear to have been using some six years prior to the 'earliest' documented use of such moulds.

7.2.2 The Titanic Steel Company was established by Samuel John Hackney (Plate 21) and Joseph Elton Bott in 1885. Hackney started life as a clerk, but in 1863 set himself up in an oil lamp business on China Lane just outside Ancoats. It was described in the Slater's Directory of 1876 as: "paraffin lamp manufacturers, wholesale and export, and dealer in all kinds of lamps, fittings, oils etc." His business continued to grow and, in about 1879, he moved to larger premises in the city on the corner of Rochdale Road and Swan Street.

7.2.3 JE Bott started off as manager of the Nottingham Malleable Iron Company and, in c. 1879, was despatched to work in the United States, seemingly to oversee the manufacture of improved versions of an injector and a condenser for steam engines that he had patented. A Wilmington-based company (J. R. Flinn & Co) was the sole

U.S. licensee for their manufacture and supply, and Bott was described as the works superintendent and a 'practical machinist' who made and tested the items (Edwards 1880, 95-8). Whilst in North America, Bott appears to have been experimenting with titanium steel alloys, and also patented an improved crucible furnace and an improved gas-generator for furnaces in 1883 (US Patents 285,214 and 285,561). Bott established a foundry in the Delaware town of Marcus Hook in 1883, which produced steel castings of agricultural equipment and other small items ('A Chance for Marcus Hook' *Delaware County Daily Times*, 26th November 1883). In April 1884, Bott filed patent specifications in Britain for what appear to have been improvements to his earlier crucible and gas-generator designs, which were both approved in January 1885 (Patent 6765 and Patent 6764 respectively).



Plate 21: A photographic portrait of Mr. Samuel John Hackney

- 7.2.4 An article printed in the *Delaware County Times* article in November 1883 reported that 'some of Mr. Bott's steel castings have been tested by experts and pronounced perfect, their tensile strength averaging 70,000 pounds, while they were found to be

free from blow-holes and shrinkage, and perfectly homogenous, and as soon as the new works are running in full blast, a new epoch in this “age of steel”, will be inaugurated’. A key component of the new process appears to have been the use of green sand moulds; the use of this type of mould was not patented by Bott, although he and Hackney did file an application entitled ‘moulding’ in 1884, which became void.

- 7.2.5 For some reason, Bott had returned to England to resume his post of manager at the Nottingham Malleable Iron Company by the end of 1884, although this was very short-lived as he moved to Manchester and formed the Titanic Steel Company in February 1885 with SJ Hackney, who was the brother of his brother-in-law and already established as a brush manufacturer in Ancoats. It looks like Bott had the ideas and Hackney had the cash. They bought an iron and brass foundry in Ancoats from P & J McGregor, which they re-named the Titanic Steel Works. Towards the end of 1885, several journalists were invited to the works to see for themselves the foundry’s capabilities. On the day of the visit, the assembled group were shown samples of castings, with demonstrations being laid on to prove their quality, and one account was published in *The Engineer*:

‘A new process of steel manufacture has recently been introduced...by Messrs. Bott and Hackney, who have opened works specially laid out for producing steel castings by what is termed a direct process, and which may briefly be described as a compromise between the Bessemer and the crucible processes. One of the chief advantages claimed for this process is, that baked moulds are dispensed with, the castings being made entirely in green sand, so that the many severe internal strains caused by hard moulds at the time of cooling are avoided. By their new process Messrs. Bott and Hackney are enabled to produce steel castings that are practically free from blow-holes and shrinkage... I had an opportunity of inspecting a number of steel castings produced by this process, some of which, under any ordinarily method, would probably have been considered practically impossible of production. Amongst these were mule sickles which had been twisted cold, then forged, and so hardened that they could be ground to a razor edge, while as a test of the intricate work the firm are prepared to undertake, they had successfully cast a pulsometer [a type of steam driven pump] with all its internal parts complete, which is probably the first time that a complicated apparatus of this description has been produced in a steel casting... The claim which Messrs. Bott and Hackney put forward, that by their process they are able to produce malleable steel castings which are perfectly sound and reliable, and which can be easily forged or hardened as required, either in water or oil, was certainly borne out by the sample castings I had shown to me. The process has only quite recently

been perfected as a practical system of steel casting; but already the inventors, Messrs. Bott and Hackney, have received a large amount of work, both from private firms and for Government requirements; and from the wide variety of castings..., from hammer heads to intricate machine parts....In connection with their works, Messrs. Bott and Hackney have put down a new gas furnace which has been built on a novel plan, requiring very little ironwork for outside stays or supports. The chief feature, however, is the roof, which is constructed of removable sections, by which means, in the event of any part burning away, it can be replaced without stopping the action of the furnace, owing to each section being at liberty to expand or contract freely. The heating is effected by small gas furnaces, by which the consumption of fuel has been very greatly reduced, whilst this system also secures a thorough combustion of the smoke, all the products from the fuel being burnt up in the furnaces, and no difficulty is experienced with tar or sooty deposits'(reproduced in *Manchester Weekly Times and Examiner*, 5th December 1885).

- 7.2.6 New furnaces were installed on the site at the end of 1886. The company started well, with adverts appearing in engineering magazines proclaiming the virtues of their innovative process. In 1887 they reserved a stand at the Royal Jubilee Exhibition, Manchester to promote their castings.
- 7.2.7 The Royal Jubilee Exhibition was probably the last investment in the partnership, as the company went into receivership at the end of 1887. After the partnership was dissolved, Samuel continued the business on his own. Possibly due to the loss of his innovative and entrepreneurial founding partner the foundry went into liquidation in October 1893. Samuel returned to his oil lamp enterprise and at the start of the twentieth century started to branch out into incandescent light fittings. Despite not making his fortune Samuel remained in business for many years. Joseph was not so lucky, the thirty patents he had to his name did not stave off bankruptcy and he died aged only 47 in 1908.

7.3 Phase 2: St Vincent's Home (early 20th century) (Figure 9)

- 7.3.1 Phase 2 represents the conversion of the Titanic Steel Works into St Vincent's Home, a Magdalene laundry for the destitute. This phase of activity was signalled by the construction of additional walls with associated construction cuts and fills {004}, {009}, {010}, {019}, {020}, and {021}. A concrete floor surface {005} and {007} was also added during this phase of activity. A stone-lined drain {013} along with a ceramic drain {014} were also installed during this period. A need to reinforce the older walls of the foundry was evidenced by brick buttresses {025} and {027}.

- 7.3.2 When superimposed with the County Series Map of 1908 (Plate 7) it is apparent that wall {009} corresponds with a northeast by southwest aligned internal wall within St Vincent's Home. It is likely that a northwest by southeast aligned wall {019} recorded in the southern part of the trench represents an internal wall within St Vincent's Home.
- 7.3.3 The Titanic Steel Works had been replaced by St Vincent's home around the turn of the century. Buildings of cooperation and philanthropy (Pevsner, 2004, 77) were a feature of the new industrialised city of Manchester and Ancoats. One of the consequences of industrialisation and rapid urbanisation coupled with cyclical trade depressions was a new class of urban poor. Provision of facilities such as parks, public baths, hospitals and so on earlier in the 19th century were followed later by buildings of a more specialist function, in the heart of the afflicted areas. In many cases they replaced pre-existing facilities in reused buildings. Such philanthropic buildings can be found in various locations, the last group survives in central Manchester and its industrial suburb of Ancoats (Pevsner 2004, 78). St Vincent's Home was one such philanthropic building. The earliest reference to the St Vincent's Home located was a newspaper article in the Manchester Evening News dated 17th April 1899. It records an opening of a sale of work by the Lord Mayor a Mr W. H. Vaudrey. A Mr. Armitage introduces the Lord Mayor by thanking the Sisters of Mercy (although in fact they were the Sisters of Charity) for their planned expansion into bigger premises on Vincent Street and the alterations they undertook to convert it to a Home and Night Shelter. The Lord Mayor refers to the 'poor and unfortunate women' that the home will accommodate saying such establishments are a necessity in a city as big as Manchester.
- 7.3.4 A plan of St Vincent's Home is held at the Manchester Archives. The entry in the archive for the plan, dated 1902, revealed that The Sisters Of Charity were the owners of the site, and that the plans were for a laundry. The architect employed to design the home was a Mr. Oswald Charles Hill. Oswald had an architecture practice in Albert Square Manchester, and unsurprisingly for the period favoured a gothic revival style. However, it is unlikely that the St Vincent's Home was anything other than utilitarian. This was one of several commissions he undertook for the Catholic Church, the Bishop of Salford seems to have favoured his practice.
- 7.3.5 The census return for 1901 gives further insight into the how the home was run and operated. A Catherine Holland from Ireland is listed as the Superioress, her occupation a 'Sister of Charity', she had a further six members of the community or Sisters to assist her in the care of 21 residents. Of those residents, 15 are listed as

'Servant', all of those with this occupation are employed as machinists. There are two residents described as 'inmates' and a further four are described as 'inmates of the night shelter'. The inmates of the night shelter are all described as being 'Servants out of place'. The reason for their unemployment is unknown. As established the home was for 'fallen women' a Magdalen laundry that provided refuge for the destitute. In 1901 little distinction was made in the eyes of many between single mothers and prostitutes. The census entry for St Vincent's Home of 1901 separates the occupations of those living in the home into Superioress, members of the community, servant and inmate.

- 7.3.6 The 1911 census lists the St Vincent's Home as an institution and gives a clearer picture than previous census data as to the occupation of residents. It was still a Magdalen Laundry and Catherine Holland was still in place as the 'Head Sister', alongside a further six sisters to help her in the care of 32 inmates. The census return shows that the inmates (listed as such) held positions of responsibility, Head Laundress, and Matron of the night shelter. There were also two nursery maids for the creche or day nursery. There was a cook and fourteen of the inmates work in the laundry, five were domestic servants waiting employment, four were servants of the institution, three worked in local mills and one 14-year-old was still at school.
- 7.3.7 In Ireland it is now well documented that the inmates in such institutions were forced labour, those working in the laundry never received any wages (*Irish Times* 2021), it is likely that this occurred at St Vincent's, and it is clear from the presence of nursery nurses that mothers were having babies within the walls of the institution. The babies if present are not listed on the census return.

7.4 Phase 3: Vincent Works (mid-20th century) (Figure 11 and 12)

- 7.4.1 By 1937 Associated Technical Manufacturers had moved onto the St Vincent's Home site. When the home closed is not clear but changing attitudes to unwed mothers in England probably contributed as would stricter employment laws. The Trade Board Acts of 1909 had encouraged fair wage agreements, these were backed up after World War I by the Ministry of Reconstruction. At the same time the Representation of the People Act 1918 gave universal suffrage to all women over the age of 28 in England.
- 7.4.2 Vincent Works was represented archaeologically by additions to the existing structures in the form of brick buttresses {006} {012}, {022}, and {023}, along with their associated construction cuts and fills, evidencing a need to further reinforce part of the older walls.

- 7.4.3 The remains of concrete foundations and plinths {011}, {017}, {028}, {029}, {030}, {031}, and {032}; along with brick walls {003}, {018}; construction cut with associated fill [058]; and iron girders with associated cuts and fills {054}, {055}, and {056}; evidence that the older structures were subject to extensive rebuilding and refurbishment. These alterations may have been associated with the repurposing of the buildings as an electrical and wire works.

7.5 Phase 4: late-20th century

- 7.5.1 A further remodelling of the old building during Phase 4 activity on site was represented by wall {024}, along with the installation of a further ceramic drain in cut [043]. A further need to reinforce the older external wall during this phase of activity was evidenced by the construction of brick buttress {026}.
- 7.5.2 In Plot B, Phase 4 was represented by a series of concrete stanchions {047}, along with a large unknown linear feature [051].
- 7.5.3 These structural additions may have been related to the continuing development of the electrical and wire works.

7.6 Phase 5: late 20th century-present

- 7.6.1 Phase 5 was represented by a levelling deposit of made ground which was later sealed by topsoil. The topsoil was then overlaid by further modern levelling deposits.

8. CONCLUSIONS

8.1 Key Results

- 8.1.1 The excavation at Downley Drive revealed five archaeological phases. The earliest phase recorded dated to the late-19th century and was represented by two walls associated with a foundry which had become the Titanic Steel Works.
- 8.1.2 Phase 2 was represented by the construction of new walls and floor surfaces along with the installation of drains and buttresses. This was associated with the conversion of the steel works into St Vincent's Home, a Magdalene laundry that provided refuge for the destitute.
- 8.1.3 Phase 3 dated to the mid-20th century and comprised further extensions and remodelling of St Vincent's Home including the reinforcement of the older external walls and a repair to the older concrete floor surface. This phase of development was likely associated with the conversion of St Vincent's Home into the Vincent Works.
- 8.1.4 Phase 4 dated to the late 20th century and comprised a further extension to the building, the insertion of another drain and further reinforcements being constructed on the older external wall.
- 8.1.5 In Plot B an unknown structure was constructed, evidenced by a series of brick stanchions. It was not possible to determine the function of this structure as no other related remains survived. A large linear feature was also exposed in Plot B relating to this phase of activity.
- 8.1.6 Phase 6 represented late 20th-century activity once Vincent Works had fallen out of use. This activity was represented by a series of demolition deposits and made ground deposited to level the site. This material had been sealed by a layer of made ground deposited during the current re-development works.
- 8.1.7 It was envisaged that the evaluation may potentially improve our understanding of six research questions within the North-West Regional Research Framework (NWRRF). Unfortunately, as just two walls of the Titanic Steel Works survived, none of these questions could be addressed.

8.2 Significance

- 8.2.1 The archaeological investigation has provided a detailed record of a limited range of buried archaeological remains of local significance. The investigation has demonstrated that little survives of the Titanic Steel Works. However, evidence of the extension, remodelling, and refurbishment of St Vincent's Home was extensive.

- 8.2.2 Two casting boxes retrieved during the excavation were analysed, alongside samples of sand and material from within the casting boxes. The analysis was intended to detect if levels of titanium were above naturally occurring levels. It was concluded that the levels were not higher than the natural crustal average.

9. ARCHIVE

- 9.1.1 The results of the archaeological investigation will form the basis of a full archive to professional standards and in line with current ClfA guidelines updated 2020. The project archive represents the collation and indexing of all the data and material gathered during the course of the project. The deposition of a properly ordered and indexed project archive in an appropriate repository is considered an essential and integral element of all archaeological projects by the ClfA in that organisation's code of conduct. As part of the archiving process, the on-line OASIS (*On-line Access to Index of Archaeological Investigations*) form will be completed. The site archive will be so organised as to be compatible with the other archaeological archives produced in Northwest Wales. All drawn records will be transferred to and stored in digital format and deposited with the ADS (Archaeological Data Service). The integrity of the site archive will be maintained upon completion of the archaeological works with the archive ultimately being offered for deposition with an appropriate repository.

10. ACKNOWLEDGEMENTS

- 10.1.1 Salford Archaeology would like to thank Rowlinson Constructions Ltd for commissioning the fieldwork and to Ian Miller of GMAAS for monitoring the work. The author would like to thank Oliver Cook for supervising the work, Andrew Coutts, Jennifer Addis, Richard Carter and Harrison Peters for their work on-site. Thanks are also given to Graham Mottershead for his project management. Thanks also to Dr Simon Hutchinson of Salford University School of Science, Engineering and Environment whom kindly commented on the results of the XRF analysis. Thanks are also given to Christopher Tombs, who conducted historical research into the history of the foundry, upon which most of the discussion has been based.

10.2 Dissemination

- 10.2.1 The project archive comprises site drawings, context sheets, matrix, digital scans and surveys and photographs. A copy of this report will be deposited with Greater Manchester Historic Environment Record. All drawn records will be transferred to a digital format and then a copy will be deposited with the Archaeological Data Service (ADS).
- 10.2.2 A short summary of the results of the investigation will be sent for inclusion in *Post-medieval Archaeology*.

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APPENDIX 1: CONTEXT INDEX

Context	Area	Type	Description	Building	Phase	Same As
001	Area A	Wall	North-west to south-east aligned wall	Titanic Steel Works	1	
002	Area A	Wall	North-east to south-west aligned wall	Titanic Steel Works	1	
003	Area A	Wall	North-east to south-west aligned wall	St Vincent's Home	3	
004	Area A	Wall	North-east to south-west aligned wall	St Vincent's Home	2	{009}
005	Area A	Surface	Concrete floor surface	St Vincent's Home	2	{007}
006	Area A	Buttress	Brick buttress	St Vincent's Home	3	
007	Area A	Surface	Concrete floor surface	St Vincent's Home	2	{005}
008	Area A	Surface	Repair to floor surface {007}	St Vincent's Home	3	
009	Area A	Wall	North-east to south-west aligned wall	St Vincent's Home	2	{004}
010	Area A	Wall	North-east to south-west aligned wall	St Vincent's Home	2	
011	Area A	Foundations	Concrete foundations	St Vincent's Home	3	
012	Area A	Buttress	Brick buttress	St Vincent's Home	3	
013	Area A	Drain	Stone lined drain	St Vincent's Home	2	
014	Area A	Drain	Ceramic drainpipe	St Vincent's Home	2	
015	Area A	Cut	Construction cut for brick buttress {012}	St Vincent's Home	3	
016	Area A	Fill	Clay/ clinker mix fill of cut [015]	St Vincent's Home	3	
017	Area A	Foundations	Concrete foundations	St Vincent's Home	3	
018	Area A	Wall	Z-Shaped wall	St Vincent's Home	3	
019	Area A	Wall	North-west to south-east aligned L-shaped wall	St Vincent's Home	2	
020	Area A	Wall	North-east to south-west aligned internal wall	St Vincent's Home	2	
021	Area A	Wall	North-west to south-east aligned internal wall	St Vincent's Home	2	
022	Area A	Buttress	Brick buttress	St Vincent's Home	3	
023	Area A	Buttress	Brick buttress	St Vincent's Home	3	
024	Area A	Wall	North-west to south-east aligned internal wall	St Vincent's Home	4	
025	Area A	Buttress	Brick buttress	St Vincent's Home	2	

026	Area A	Buttress	Brick buttress	St Vincent's Home	3	
027	Area A	Buttress	Brick buttress	St Vincent's Home	2	
028	Area A	Plinth	L-shaped concrete plinth	St Vincent's Home	3	
029	Area A	Plinth	L-shaped plinth	St Vincent's Home	3	
030	Area A	Plinth	L-shaped plinth	St Vincent's Home	3	
031	Area A	Plinth	L-shaped plinth	St Vincent's Home	3	
032	Area A	Plinth	L-shaped plinth	St Vincent's Home	3	
033	Area A	Cut	Construction cut for iron girder {054}	St Vincent's Home	3	
034	Area A	Fill	Demolition debris/ silty-sand mix fill of cut [033]	St Vincent's Home	3	
035	Area A	Cut	Construction cut for iron girder {055}	St Vincent's Home	3	
036	Area A	Fill	Demolition debris/ silty-sand mix fill of cut [035]	St Vincent's Home	3	
037	Area A	Cut	Construction cut for iron girder {056}	St Vincent's Home	3	
038	Area A	Fill	Demolition debris / silty-sand mix fill of cut [037]	St Vincent's Home	3	
039	Area A	Deposit	Modern demolition debris made ground covering site	-	5	
040	Area A	Fill	Black sand levelling deposit	-	5	(044)
041	Area A	Fill	Black clay levelling deposit	-	5	
042	Area A	Deposit	Geological Natural Substrate	-	-	(050)
043	Area A	Cut	Construction cut for ceramic drain below the arch of wall {001}	St Vincent's Home	4	
044	Area A	Fill	Black sandy fill around wall {009}	-	5	(040)
045	Area A	Deposit	Thin layer of iron working	-	5	
046	Area A	Deposit	Rubble fill behind walls {019} and {020}	-	5	
047	Area B	Foundations	Concrete stanchions	-	4	
048	Area B	Deposit	Demolition debris made ground deposit	-	5	(062)
049	Area B	Deposit	Re-deposited geological natural substrate	-	5	
050	Area B	Deposit	Geological natural substrate	-	-	(042)
051	Area B	Cut	Cut of unknown linear feature	-	4	
052	Area B	Fill	Fill of linear feature [051]	-	4	
053	Area B	Deposit	Topsoil	-	5	(060)
054	Area A	Iron girder	1 st iron girder in cut [033]	St Vincent's Home	3	

055	Area A	Iron girder	2 nd iron girder in cut [035]	St Vincent's Home	3	
056	Area A	Iron girder	3 rd iron girder in cut [037]	St Vincent's Home	3	
057	Area A	Fill	Fill between walls {006} and {008}	St Vincent's Home	3	
058	Area A	Cut	Construction cut for walls {006} and {008}	St Vincent's Home	3	
059	Area A	Fill	Fill of drain cut [043]	St Vincent's Home	4	
060	Area A	Deposit	Topsoil	-	5	(053)
061	Area A	Deposit	Sandy-clay/ demolition debris mix	-	5	
062	Area A	Deposit	Demolition debris levelling deposit	-	5	(048)
063	Area A	Cut	Construction cut for wall {009}	St Vincent's Home	2	
064	Area A	Fill	Fill of construction cut [063]	St Vincent's Home	2	

APPENDIX 2: FINDS REPORT

The Finds Evidence

Introduction

A small artefactual assemblage was recovered from the excavations at Downley Drive, Ancoats, comprising six artefacts, weighing 34067.9g. The assemblage consists of four complete and partially complete iron casting boxes, and two iron hand tools. The casting boxes are almost certainly finds associated with the late 19th century Titanic Steel works which occupied the site, whilst the two hand tools may derive from the steel works but were recovered from a modern deposit.

The aim of the finds report is to describe and quantify the material evidence recovered, along with some chronological interpretation, relating it as far as possible to other known finds from the same site or area, in line with Chartered Institute for Archaeologists (CIfA) guidelines (2022).

Methodology

The examination of the artefactual assemblage was carried out in accordance with the guidelines set out by the Chartered Institute for Archaeologists Standard and guidance for the collection, documentation, conservation and research of archaeological materials (2014). Reference has also been made to Medieval and Post-Medieval Research Agendas drafted by the North West Region Research Framework (2022).

The finds recovered from the excavation comprises a limited range of categories of material containing metalwork, industrial residues and pottery. The casting boxes were returned to the Salford Archaeology Finds Lab, where a micro excavation of their contents was carried out. For quantification and full contents of the assemblage, see Table A1.

All categories of finds were examined in full, with observations supplemented by the finds records generated during the course of the fieldwork. The finds were categorised according to type and class and have been entered onto a database in order to prepare a preliminary catalogue. The finds were then given a unique accession number (SF No.) and digitally photographed. Full details of all recovered material reside within the project archive held at Salford Archaeology.

Overview

Recorded Find No.	Context No.	Phase	Object count	Weight (g)	Description
-------------------	-------------	-------	--------------	------------	-------------

40.1	40	5	1	4100	Cylindrical casting box, L240mm x W100mm x T20mm
40.2	40	5	1	2448	half cylinder casting box, L 220m x W105mm x T45mm
40.3	40	5	1	3494	Cylindrical casting box, L220mm x W120mm x T35mm
40.4	40	5	1	23300	Square casting box, L330mm x W190mm x T70mm
45.1	45	5	1		Rectangular tapering file, L409mm x W37mm x thickness without corrosion: 6.5mm, thickness including corrosion: 14.5mm.
45.2	45	5	1	725.9*	Half-round file, L209mm x W31mm x thickness without corrosion: 3.5mm, thickness with corrosion: 11mm
Totals			6	34067.9	

*= combined weight of RFs 45.1 and 45.2

Table A1: all material recovered

Although the remains of the Titanic Steel Works were restricted to Phase 1 in Area A, the finds recovered relating to Titanic Steel Works were recovered from Phase 5, late 20th century demolition deposits. Casting boxes [040.1], [040.2], [040.3] and [040.4], were recovered from deposit [040], whilst the two metal hand tools were recorded in an iron rich deposit [045].

Casting boxes

Two complete and partially complete casting boxes were recovered from deposit [40]. Casting boxes 40.1, 40.2, and 40.3 were cylindrical, whilst 040.4 was square.

Casting box 40.1 (Plate A1): The object is cylindrical, with diameter of 240mm (9 ½ inches) and is 100mm (4 inches) high, the thickness of the casting box walls was 9mm (3/8 inch). The exterior and interior of the casting is coated in mixture of corrosion and slag deposits (*pers comm*, I Miller, 2023) which mask any original surface detail. The object was lifted from its context [40] complete with its contents and hand excavated in the finds laboratory. pre-excavation revealed a grey charcoal mottled deposit, below which was a cylindrical dark grey sand (sample 4) feature located in a central position. This filled by a dark brownish silty sand (Sample 1/2 and 2). Once sample 1/2 was removed, this revealed cylindrical feature,

approximately 70mm in diameter ($2\frac{3}{4}$ inches), formed of compact dark grey sand (Sample 3), with a smaller cylindrical depression (approximately 25mm across).

Casting box 40.2: this casting box survived as a half cylinder with diameter of 220mm ($8\frac{3}{4}$ inches) and 105mm high ($4\frac{1}{4}$ inches) with walls 14mm ($\frac{1}{2}$ inch) thick. Both the interior faces and exterior faces of the casting box were heavily coated in corrosion/slag deposits. However, it was possible to determine that the casting boxes were two-part vessels.

Casting box 40.3: is 220mm in diameter ($8\frac{3}{4}$ inches) and stands 120mm ($4\frac{3}{4}$ inches) high with walls 7mm ($\frac{1}{4}$ inch) thick. The exterior, and to a lesser extent the interior were coated with slag and/or corrosion deposits.

Casting box 40.4 (Plate A2): is square in plan measuring 330mm x 330mm (13 inches x 13 inches) x 190mm high ($7\frac{1}{2}$ inches), with walls approximately 20mm ($\frac{3}{4}$ inch) thick. Interior and exterior face are heavily corroded obscuring most surface detail. Protrusions on each exterior face may represent features to fasten the two sides of the boxes together.

The object was lifted from its context [40] complete with its contents and hand excavated in the finds laboratory. Pre-excavation revealed a friable grey sand (Sample 2), which encircled a cylindrical shaped area of heat affected, compact dark grey sand (Sample 3), within which lay friable, dark almost black, heat affected sand (Sample 1). When Sample 1 had been removed a cylindrical void was revealed, with a diameter of 80mm ($3\frac{1}{4}$ inches). The wall being formed by Sample 3 material.



Plate A1: Casting box 40.1 from deposit [40], partly excavated, 10cm scale



Plate A2: Casting box 40.4 from deposit [40], fully excavated, 10cm scale

Other finds

Two files were recovered from Phase 5 deposit [045], both were heavily corroded. Each file was given a unique identifier RF 45.1 and RF 45.2. Both files are double-cut or crosscut with two sets of parallel teeth crossing each other forming a diamond pattern. File RF 45.1 measures 409mm long x 37mm wide with a maximum thickness of 6.5mm. It is a tapered file with its width reducing from its heel toward the point with whittle tang at the other end. There are cutting surfaces milled on both wide and narrow faces of the file. Recorded find RF45.2 measures 209mm long x 31mm wide and is 3.5mm thick and is a half round with one flat and one convex surface. It is broken at one end with a whittle tang at the other with a crescent shaped area missing close to the whittle either the result of deliberate shaping or damage (Lye 1993; Henry Disston & Sons 1920). It is possible that both files were in use at the Titanic Steel works, equally, their recovery from a late 20th century demolition deposit in Phase 5, may also suggest that they may not relate to the steel works.

X-ray fluorescence (XRF)

Casting boxes 040.1, 040.3 and 040.4, plus four sand samples from within the casting boxes and three samples from material adhering to the insides of casting boxes (040.1, 040.3 and 040.4) were subject X-ray fluorescence analysis (see Table A2). This was in order to determine, not only if such XRF analysis is suitable for detecting the elemental composition from traces of molten metal that may be adhering to the side of the casting boxes, but also whether elevated levels of Titanium (Ti) could be observed. That is, above the levels of Ti found in the crustal average for this element in rocks (Simon Hutchinson *pers comm*, 31/05/2023). If elevated readings of Titanium can be demonstrated from the results of the XRF analysis, these might be associated with the 'improved' steel produced at the works, a key component of the 'recipe' being titanium (Ian Miller, *pers comm* 13/03/2023).

XRF reading No.	Sample
128	casting box 040.1 sand sample 4
129	casting box 040.4 sand sample 2
130	casting box 040.4 sample removed from interior wall of casting box
131	casting box 040.3 sample removed from interior wall of casting box
132	casting box 040.1 sample removed from interior wall of casting box
133	casting box 040.1 sand sample 3
134	casting box 040.4 sand sample 3
135	casting box 040.1 reading taken directly from interior of wall of casting box
136	casting box 0.40.3 reading taken directly from interior of wall of casting box (see attached image)

137	casting box 0.40.3 reading taken directly from interior of wall of casting box (see attached image) second reading
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Table A2: XRF sample reading numbers and sample descriptions

Methodology

Elemental analyses were made with a Niton XL3t handheld analyser fitted with a XRF50 kV x-ray tube housed in a portable SmartStand to allow for precisely positioned samples and repeated testing. Readings were taken of the surface of the mould in areas with and areas without the black residue. The spot size of the analyser was 3mm allowing for pinpointed areas of interest. The acquisition time for each measurement was 60s. The software Thermo Scientific™ Niton Data Transfer (NDT™) was used to obtain the results from the analysis.

Results

Doctor Simon Hutchinson from Salford University School of Science, Engineering and Environment kindly appraised the results. The results obtained from the XRF analysis are not conclusive and in retrospect Dr Hutchinson has questioned whether XRF analysis is the best approach for examining the various samples.

For samples 128, 129, 131-134 and 136-137 the Ti levels are around the crustal average for this element in rocks (see results table in Appendix 3). Although, without samples from other archaeological steel making sites for comparison it has not been possible to understand whether the levels of Ti produced from the Downley Drive samples are significant, or not. Steel making would also have introduced other elements including heavy metals, and therefore the levels of Chromium (Cr) and Vanadium (V) levels may be significant (Dr Simon Hutchinson, *pers comm* 01/06/2023).

Titanium is a naturally abundant element therefore (high) levels may not be significant. However, as it is not known what the casting boxes are made of and correspondingly, what levels of titanium might have been expected in 'clean' examples, such considerations need to be clarified. Further research into the composition of the contemporary casting boxes is required (Dr Simon Hutchinson, *pers comm* 01/06/2023).

Dr Hutchinson (*pers comm* 01/06/2023) notes that Ti is often alloyed with aluminium (Al), vanadium (V), copper (Cu) (to harden), iron (Fe), manganese (Mn), molybdenum (Mo), and other metals. There are no values for Al (He purge required) but V, Fe and Mn were relatively high (plus Chromium (Cr)) although not Mo. Manganese was another ingredient in the 'improved' steel recipe (Ian Miller, *pers comm* 13/03/2023).

Discussion

Evidence from casting box RF40.1, which was retrieved complete with its contents, demonstrates how such devices were used during the casting of crucible steel. The cylindrical object noted on the two upper images in Plate A1 is known as a draw ring that acted as a feeder reservoir when the 'melt' was poured. It held molten metal that was insulated by the sand such that it remained molten while the casting cooled. As the casting will have shrunk as it cooled, the reservoir provided molten metal to fill any gaps. This was a process known as 'drawing' (*pers comm*, I Miller, 13/03/2023). An indication of this procedure was depicted on a 1938 Crucible Steel Company of America debenture (Plate A3). The casting boxes, square in this instance, can be seen sitting on top of the crucible as the 'melt' is poured in.



Plate A3: Mid 20th century depiction of molten steel being poured into a square casting box (Artonpapers 2023)

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APPENDIX 3: FIGURES

Figure 1: Site location

Figure 2: Trench location superimposed onto modern mapping

Figure 3: Plan of Plot A

Figure 4: Plan of Plot B

Figure 5: Plan of Plot C

Figure 6: Results of the evaluation superimposed onto Green's map of Manchester and Salford 1787-94

Figure 7: Results of the evaluation superimposed onto the 1:1056 Town Plan of 1851

Figure 8: Results of the evaluation superimposed onto the 1:500 Town Plan of 1891

Figure 9: Results of the evaluation superimposed onto the 1:2500 County Series Map of 1908

Figure 10: Results of the evaluation superimposed onto the 1:2500 County Series Map of 1922

Figure 11: Results of the evaluation superimposed onto the 1:1250 National Grid Map of 1948

Figure 12: Results of the evaluation superimposed onto the 1:1250 National Grid Map of 1953

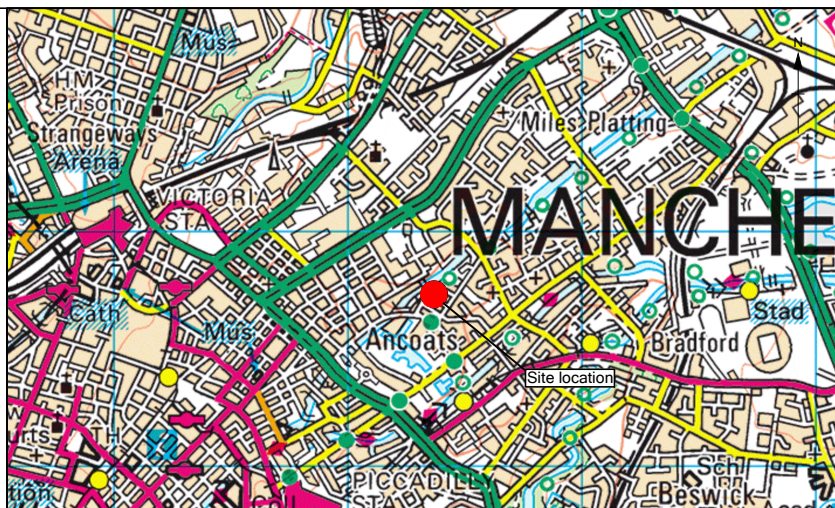
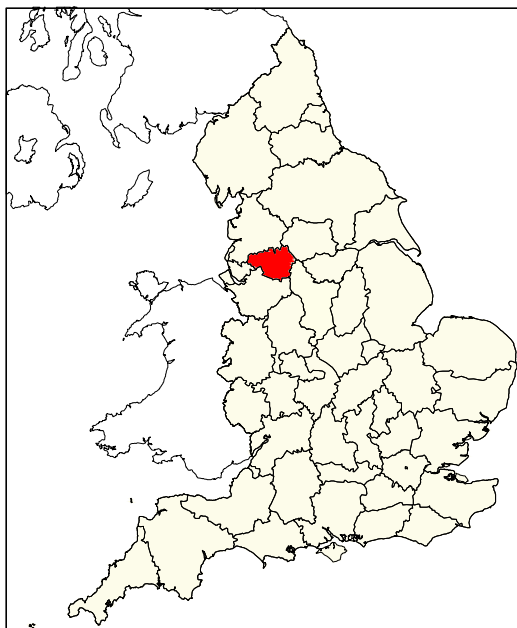


Figure 1:

Site Location

Contains Ordnance Survey data © Crown copyright and database right 2022



**SALFORD
ARCHAEOLOGY**

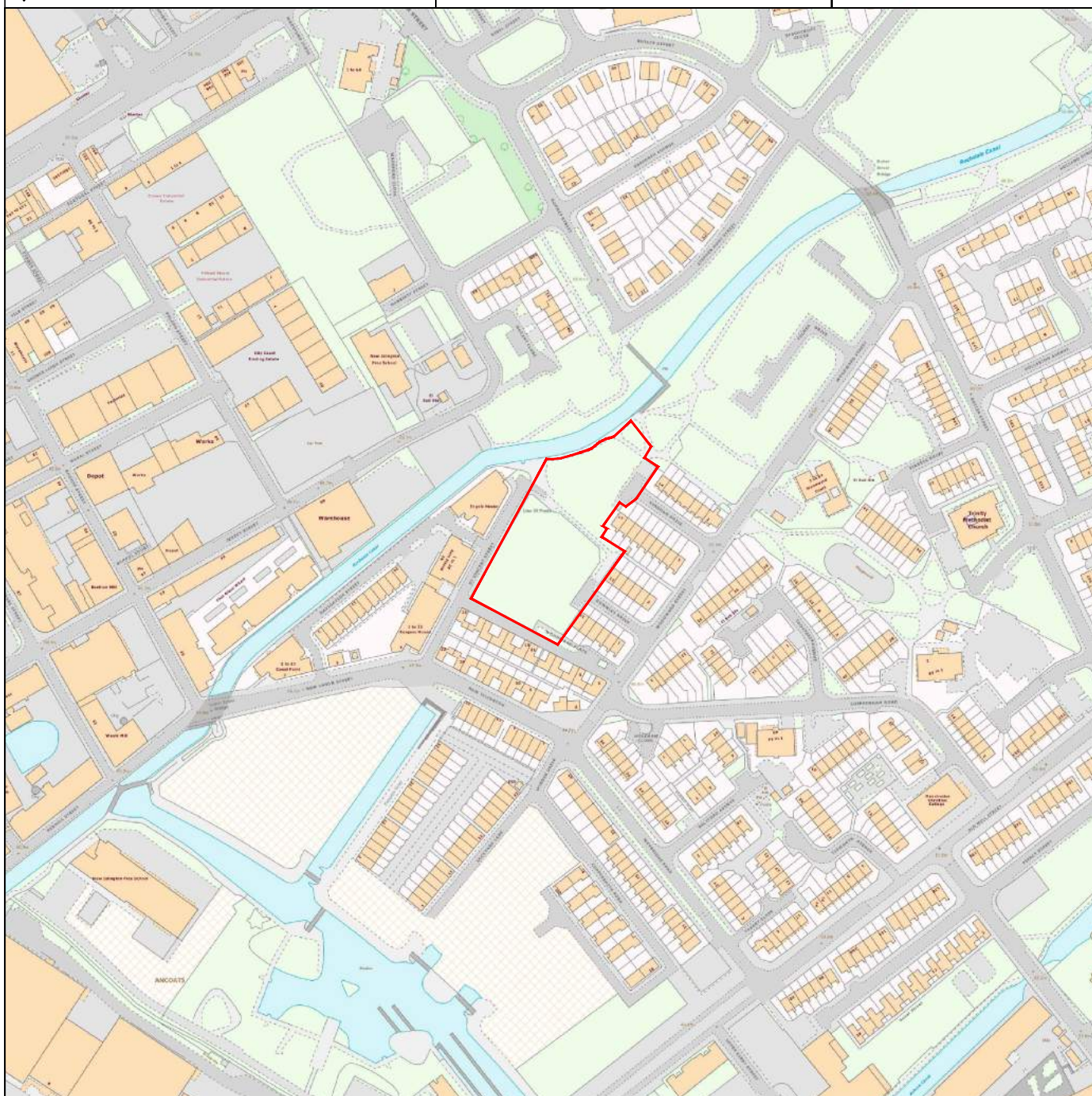




Figure 2:

Trench Location Superimposed onto Modern Mapping

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Key:

- Site Boundary
- Trench Locations


SALFORD
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0

50 m



Scale at A4 1:750

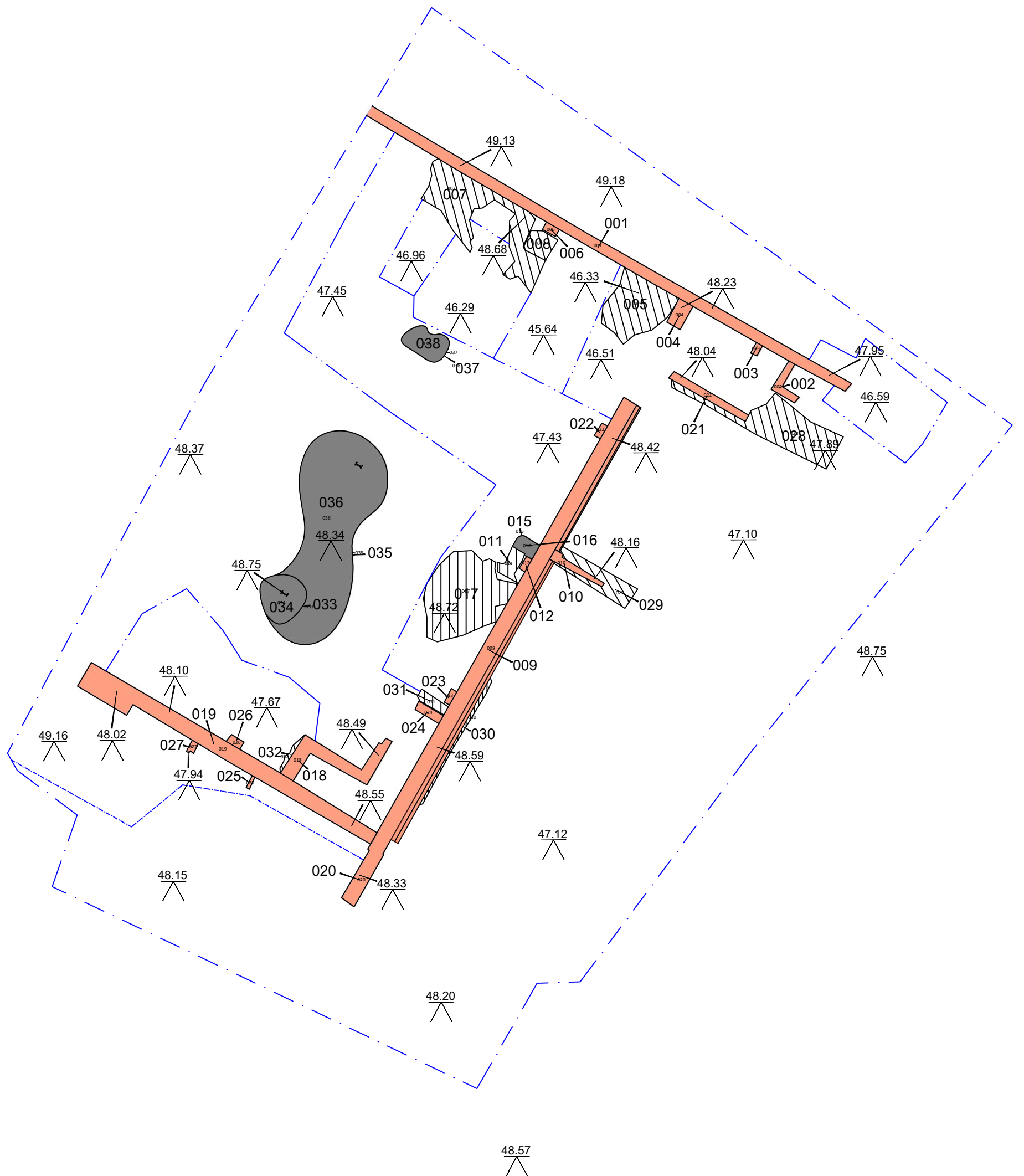


Figure 3:
Plan of Plot A



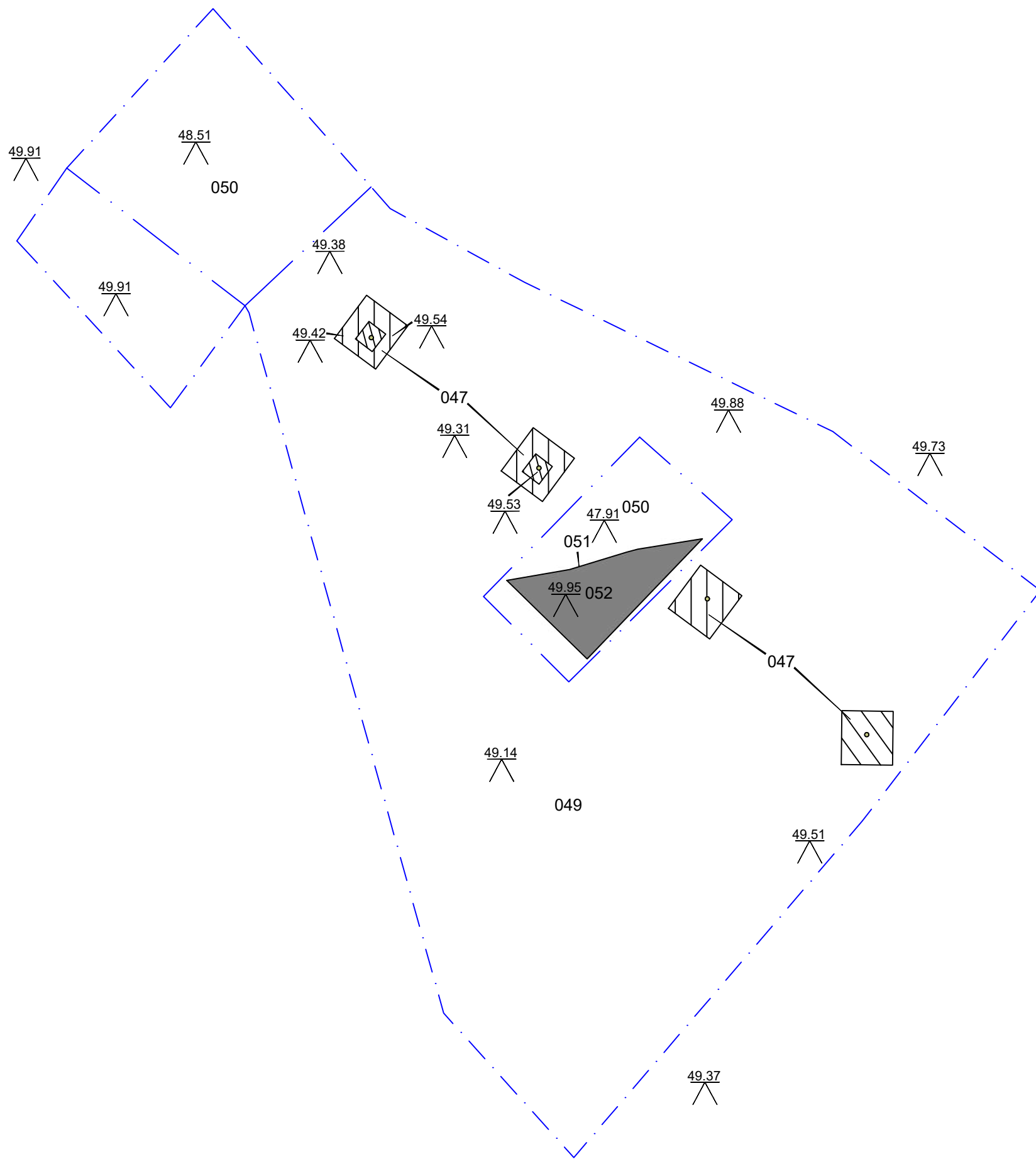


Figure 4:

Plan of Plot B

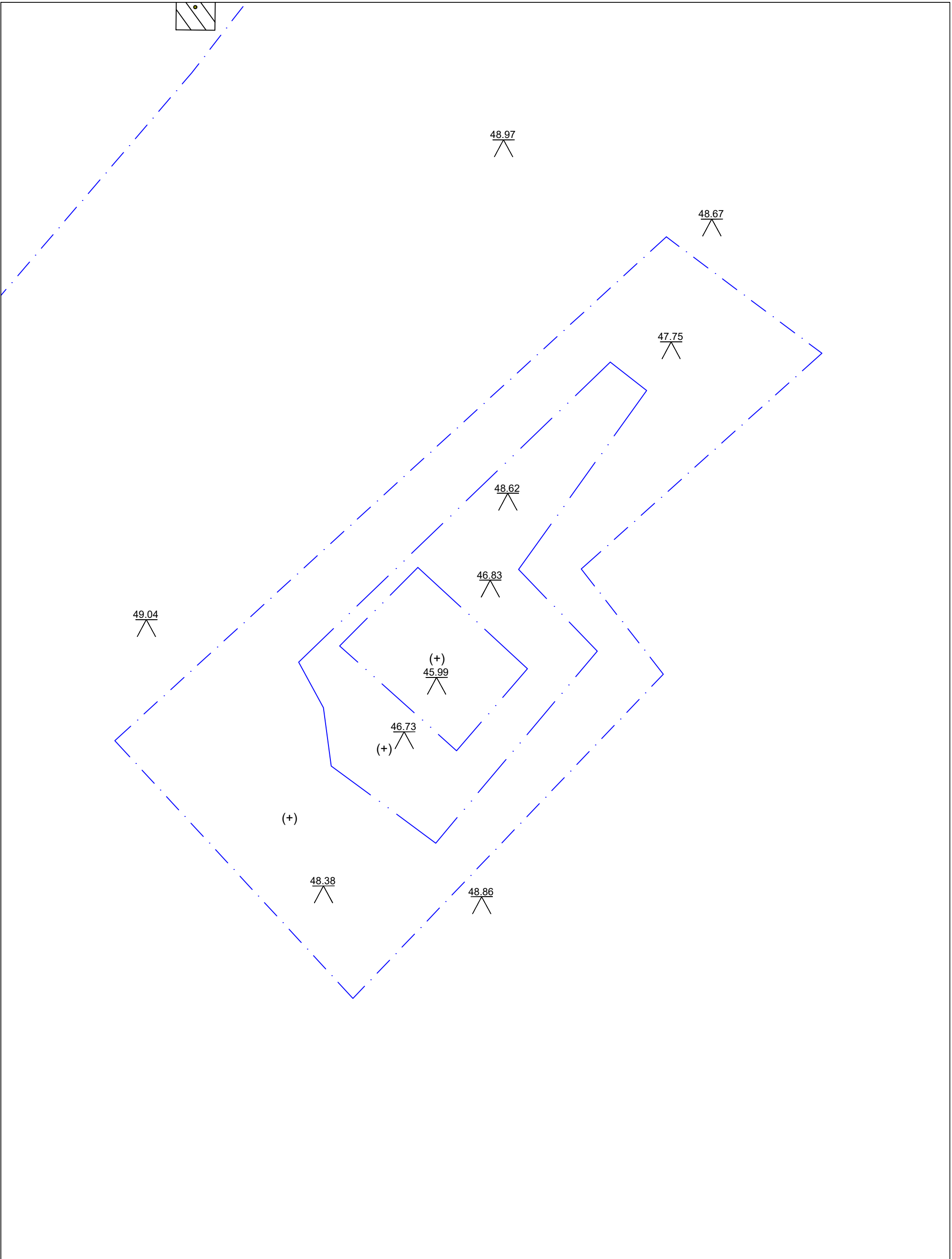


Figure 5:
Plan of Plot C





Figure 6:
Results of the Evaluation Superimposed onto Green's Map of Manchester & Salford 1787-94



Key:

- Brick Wall
- Feature
- Concrete
- Metal
- Sondage
- Limit of Excavation



**SALFORD
ARCHAEOLOGY**

0 20 m
Scale at A4 1:400

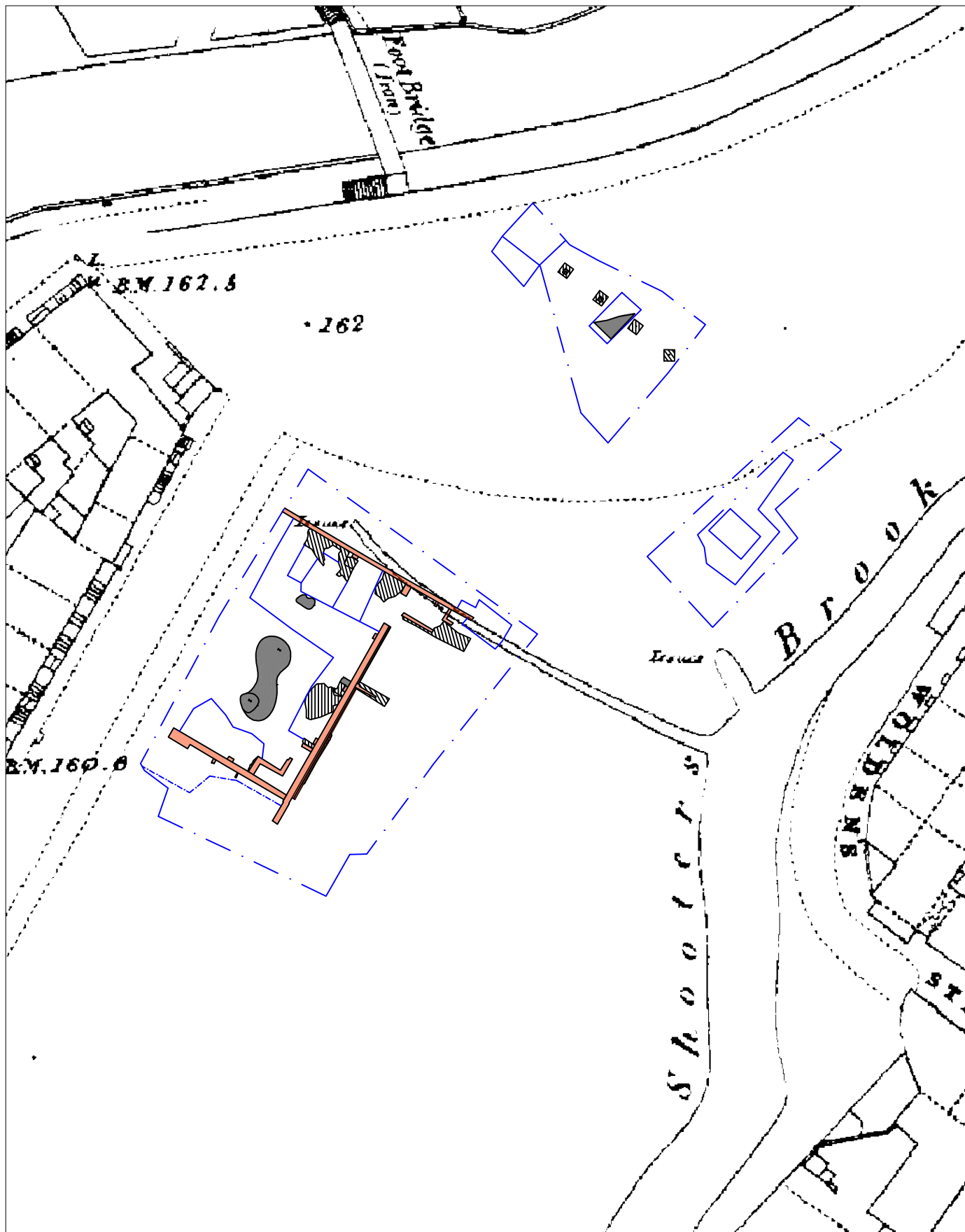


Figure 7:

Results of the Evaluation Superimposed onto the 1:1056 Town Plan of 1851

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SALFORD
ARCHAEOLOGY

0 20 m
Scale at A4 1:400

Key:

- Brick Wall
- Feature
- Concrete
- Metal
- Sondage
- Limit of Excavation



Figure 8:

Results of the Evaluation Superimposed onto the 1:500 Town Plan of 1891

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Key:

- Brick Wall
- Feature
- Concrete
- Metal
- Sondage
- Limit of Excavation



**SALFORD
ARCHAEOLOGY**

0 20 m

Scale at A4 1:400

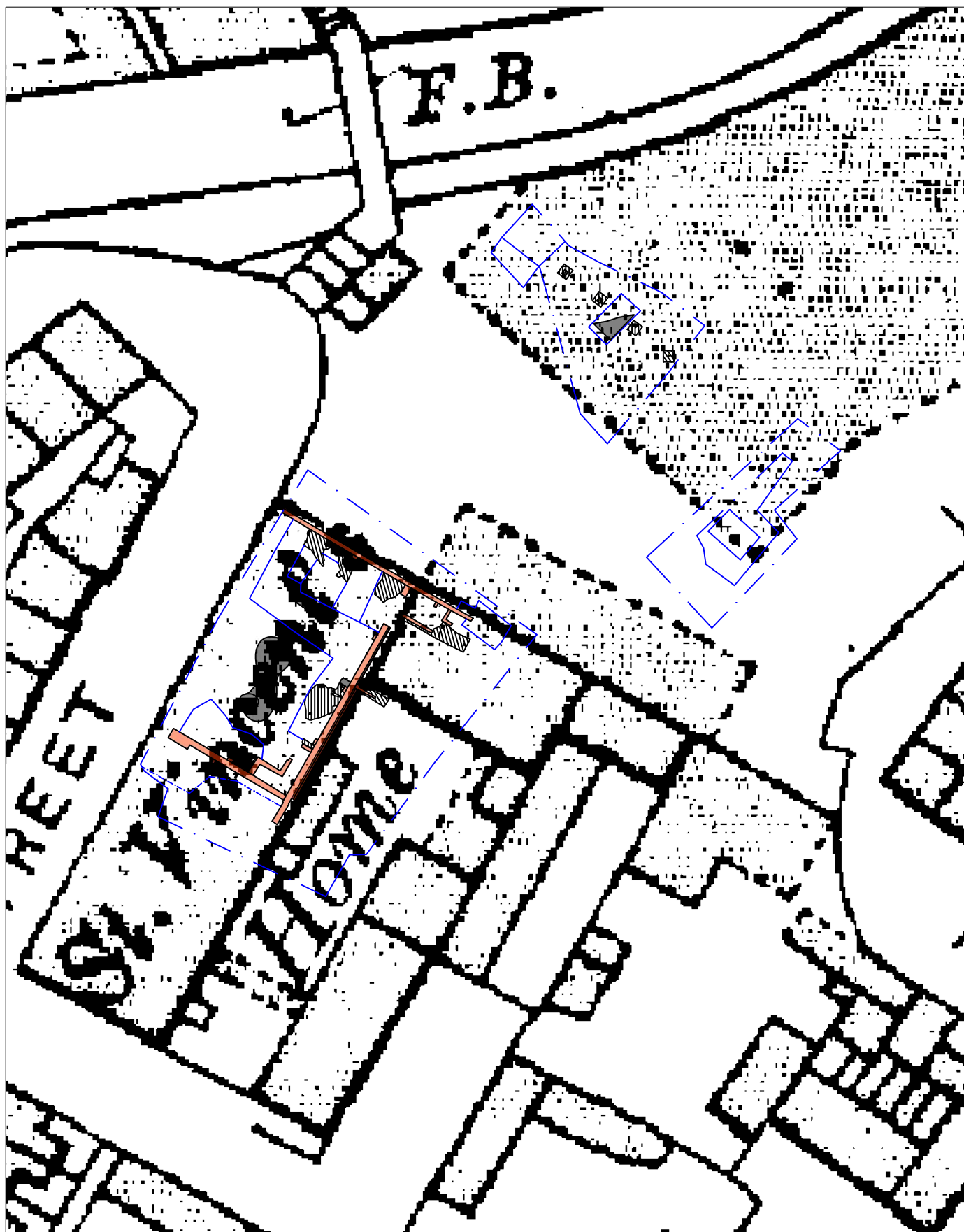


Figure 9:

Results of the Evaluation Superimposed onto the 1:2500 County Series Map of 1908

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Key:

- Brick Wall
- Feature
- Concrete
- Metal
- Sondage
- Limit of Excavation



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0 20 m



Scale at A4 1:400



Figure 10:

Results of the Evaluation Superimposed onto the 1:2500 County Series Map of 1922

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Key:

- Brick Wall
- Feature
- Concrete
- Metal
- Sondage
- Limit of Excavation



SALFORD
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0 20 m



Scale at A4 1:400

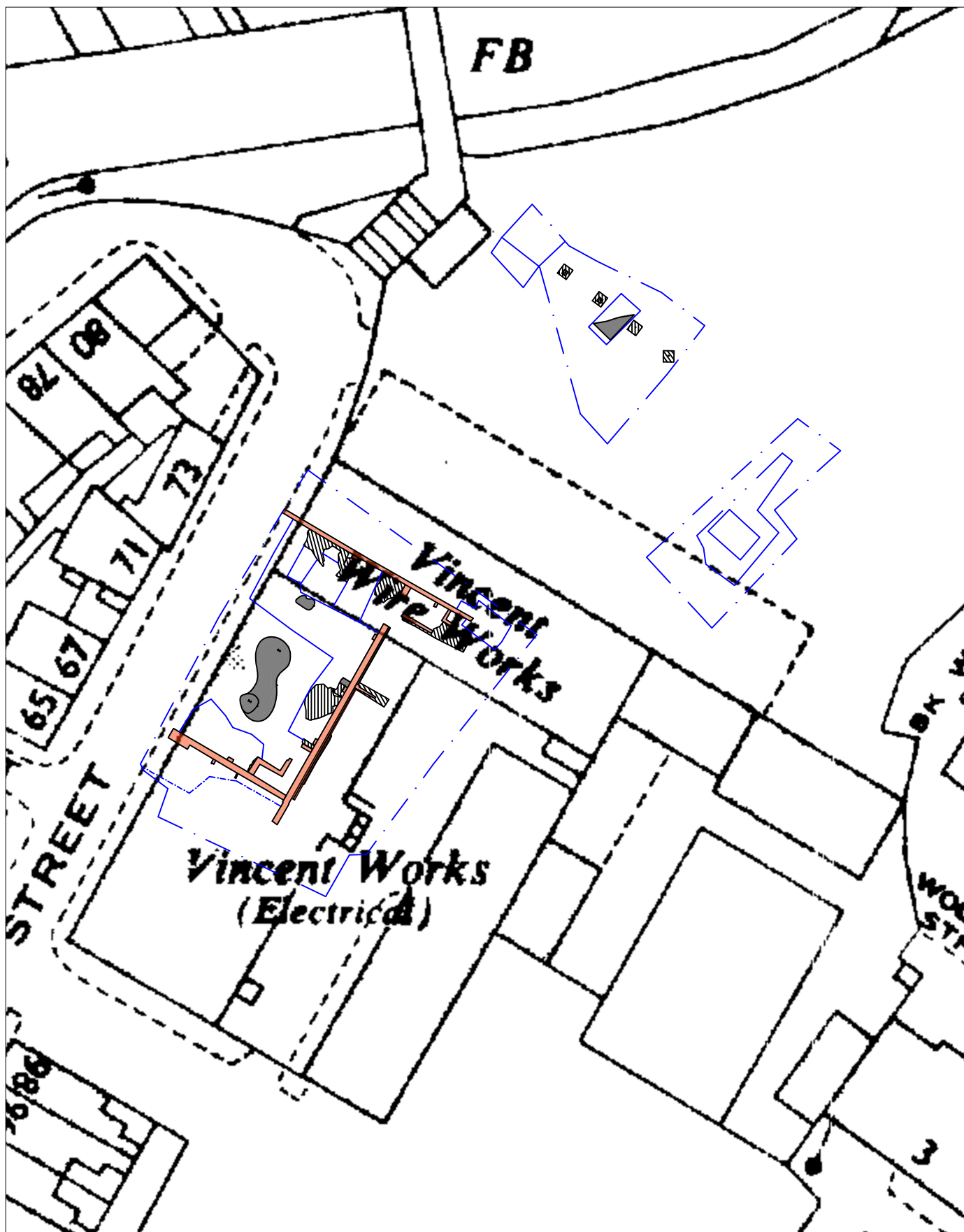


Figure 11:

Results of the Evaluation Superimposed onto the 1:1250 National Grid Map of 1948

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Key:

- Brick Wall
- Feature
- Concrete
- Metal
- Sondage
- Limit of Excavation



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0 20 m



Scale at A4 1:400

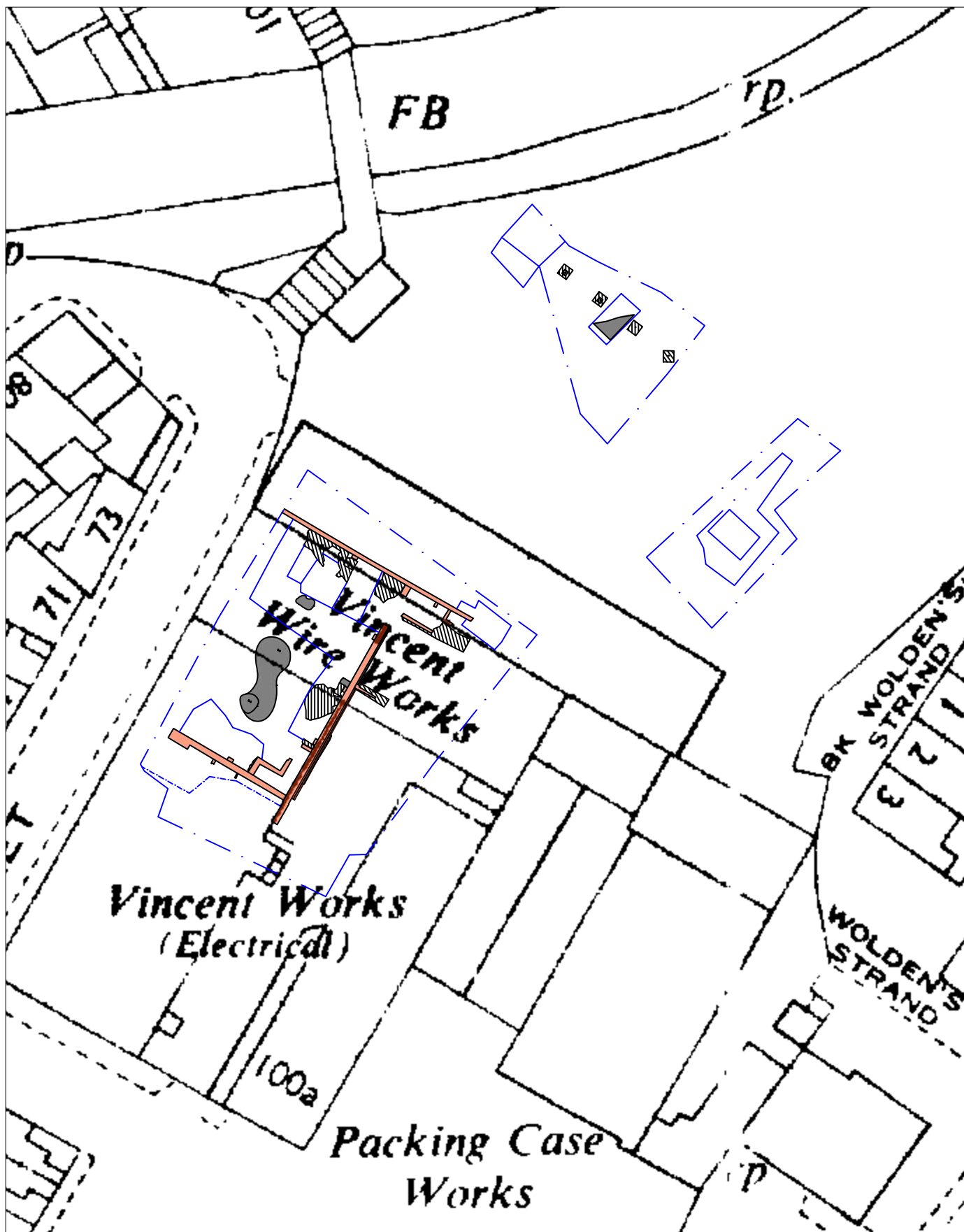


Figure 12:

Results of the Evaluation Superimposed onto the 1:1250 National Grid Map of 1953

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Key:

- Brick Wall
- Feature
- Concrete
- Metal
- Sondage
- Limit of Excavation



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0 20 m

Scale at A4 1:400