Bowring Park, Merseyside

Archaeological Watching Brief Report

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Prepared by: Helen Evans
Position: Project Officer
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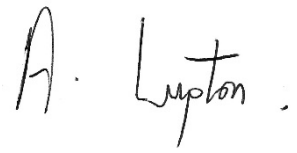
Approved by: Alan Lupton Signed



Position: Operations Manager
Date: July 2020

Oxford Archaeology North
Mill 3, Moor Lane Mills
Moor Lane
Lancaster
LA1 1QD
t: (0044) 01524 541000
f: (0044) 01524 848606

© Oxford Archaeology Ltd (2020)
Janus House
Osney Mead
Oxford
OX2 0ES
t: (0044) 01865 263800
f: (0044) 01865 793496

w: www.oxfordarch.co.uk
e: info@oxfordarch.co.uk

CONTENTS

FIGURES

PLATES

SUMMARY

Oxford Archaeology North (OA North) was commissioned by WSP, on behalf of Knowsley Metropolitan Borough Council (KMBC), to undertake an archaeological watching brief, monitoring building and groundworks undertaken during the HLF funded redevelopment of Bowring Park, formerly known as Roby Hall Estate, at Roby, Merseyside. This work took place following an historic building survey of standing buildings and garden features undertaken by OA North in 2018. Planning permission for refurbishment of the buildings and gardens was conditional on archaeological monitoring taking place during construction works between April 2018 and May 2019. The majority of monitoring was specified by WSP as a response to the potential significance of the remains; however, the works to the building east of the walled garden was part of a condition imposed by KMBC.

Roby Hall was a Georgian mansion, demolished in 1950-51, leaving its former Coach House, Stables and Walled Garden extant. Map regression analysis undertaken as part of the 2018 building survey illustrated the complexity of historic layouts of the remaining extant structures. Archaeological monitoring of works during the redevelopment of the site have largely provided additional detail pertaining to features identifiable in plan form on historic mapping and/or identified during the building survey.

In the north bay of the Stables, an eccentrically constructed chimney stack was identified, which had been built to create a symmetrical roofline whilst maintaining an open space below, and perhaps a tack room where a warm environment was required. The southern element of the original symmetrical double-hipped roof was later lost when a simple ridge was added, probably when the loft above the stables in the central part of the building was converted into two full floors. Although no archaeological monitoring took place within the roof of the southern arcade, it seems likely that the original building would have been symmetrical and there would have been a similar double-hipped roof at its south end.

In the south end of the Stables, a series of bricked-up arched fireplaces was identified, served by a chimney stack built against the western external wall, which blocked an earlier window pocket. The fireplaces may represent kitchens additional to those within the main house; a corridor and glass house are shown on the historic mapping. If not kitchens, then it is possible the flue and fireplaces were part of a laundry, or a heating system providing warmth to garden buildings.

The results derived from archaeological monitoring of works undertaken within the Coach House were relatively limited. The test pits and internal ground reduction revealed the sub-surface presence of walls identifiable on the historic mapping, and detail of former wagon doors. Externally, the identification of an underground cistern used for rainwater harvesting was also of interest, although not rare in nineteenth-century contexts.

Ground clearance within the Walled Garden and the Sunken Garden identified features present on the historic mapping: the demolished remains of a building partly overlying the Ha-ha on the eastern edge of the site, which was to the east of the walled garden, a wall demolished to make way for the Sunken Garden, and an underground cistern. Within the Sunken Garden, steps were revealed during ground clearance at the base of the flights already recorded by the building survey.

The archaeological monitoring gave a sense that it was changes in the second half of the twentieth century, when the site and presently-extant buildings were re-purposed, that have had the most significant effects on the historic fabric.

ACKNOWLEDGEMENTS

Oxford Archaeology North would like to thank Alastair Hancock of WSP for commissioning the project and for considerable support in the course of it, and also to James Towers (WSP). Thanks are also due to Ben Croxford and to Doug Moir of Merseyside Environmental Advisory Service for their assistance during the course of the watching brief.

Andy Phelps, Mike Birtles and Debbie Lewis undertook the watching brief and wrote sections of the report, which was edited by Helen Evans. The drawings were produced by Mark Tidmarsh and the project was managed by Jamie Quartermaine.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

1.1.1 In June 2016, planning permission (16/00346/KMBC1) was granted to Knowsley Metropolitan Borough Council (KMBC) for the regeneration of Bowring Park, a public park formerly known as Roby Hall Estate, at Roby, Merseyside (centred on NGR SJ 42731 90434). The works, which were the subject of a successful Heritage Lottery Fund (HLF) application, sought to restore and enhance the historic character and public amenity value of the park and include the refurbishment of two buildings known respectively as the Coach House and Stables and the regeneration of the Walled Garden. All three elements represent surviving aspects of Roby Hall, a Georgian mansion which was demolished in 1950-51. Planning permission was granted subject to the implementation of an historic building survey of the two buildings, which was undertaken by Oxford Archaeology North (OA North 2018) in accordance with a Written Scheme of Investigation, that was reviewed by Merseyside Environmental Advisory Service and recommended for approval by KMBC in May 2018 (*Appendix A*).

1.1.2 Subsequent watching briefs, which are the subject of the following report, were undertaken on several occasions between April 2018 and May 2019, at the request of WSP, and was undertaken to a specification prepared by WSP. However, subsequent monitoring/investigations at the footprint of the small building and section of Ha-Ha located to the east of the walled garden was undertaken in response to planning conditions on planning application approval 17/00772/KMBC, and was accordance with an addendum to the WSI, which was reviewed by Merseyside Environmental Advisory Service and recommended for approval by KMBC on 29/11/2018. The watching brief included the recording test-pits and archaeological monitoring undertaken during the reduction of floor levels at the Coach House and Stables, as well as in the environs of a Ha-ha and Sunken Garden to the south of the buildings.

1.2 LOCATION, TOPOGRAPHY AND GEOLOGY

1.2.1 Bowring Park is in Huyton with Roby, Knowsley, Merseyside, *c* 100m to the south-west of Roby (Fig 1). Topographically, the park descends gradually from 38m AOD at the north to 23m AOD at the south-west. The park, which is bisected by the M62 motorway, encompasses an approximate area of 31 hectares. The park is mostly surrounded by modern housing development except for an area of arable fields to the south-east.

1.2.2 The solid underlying geology is Wilmslow Sandstone Formation except for the eastern third of the site, which is Chester Pebble Beds Formation (BGS 2020). The drift geology is glacial till, characterised mainly by clay (*ibid*).

1.3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

1.3.1 A detailed background to the archaeology and heritage of Bowring Park has been presented in a desk-based assessment (Mouchel 2014). A subsequent historic building survey of the Coach House and Stables was undertaken (OA North 2018), and other documents exist, produced in support of application for Heritage Lottery

Funding. The historic background is briefly summarised here, but not reproduced in full.

1.3.2 The area of Bowring Park is believed to have been within a Medieval deer park. A Late Medieval manor house, Roby Old Hall, is shown on an 1829 estate map and was located at the north-eastern part of the estate. The Old Hall is believed to have been demolished in the late twentieth century.

1.3.3 A new hall was commissioned by John Williamson shortly after he acquired the estate in 1761. The new hall was constructed to the south-west of Old Hall and the grounds of the estate appear to have been remodelled in the English landscape style of the period. The northern façade of the new hall had an elaborate, four columned entrance portico and the southern façade had a central bay overlooking a lawn bounded to the south by a Ha-ha (Plate 1). The hall was subsequently extended to the west, and over the course of the nineteenth century, historic mapping indicates that many changes were made to the ancillary buildings located to its east and west (now the Coach House and Stables, respectively). East of the Coach House was a formal garden, pond and walled garden (Plate 2).

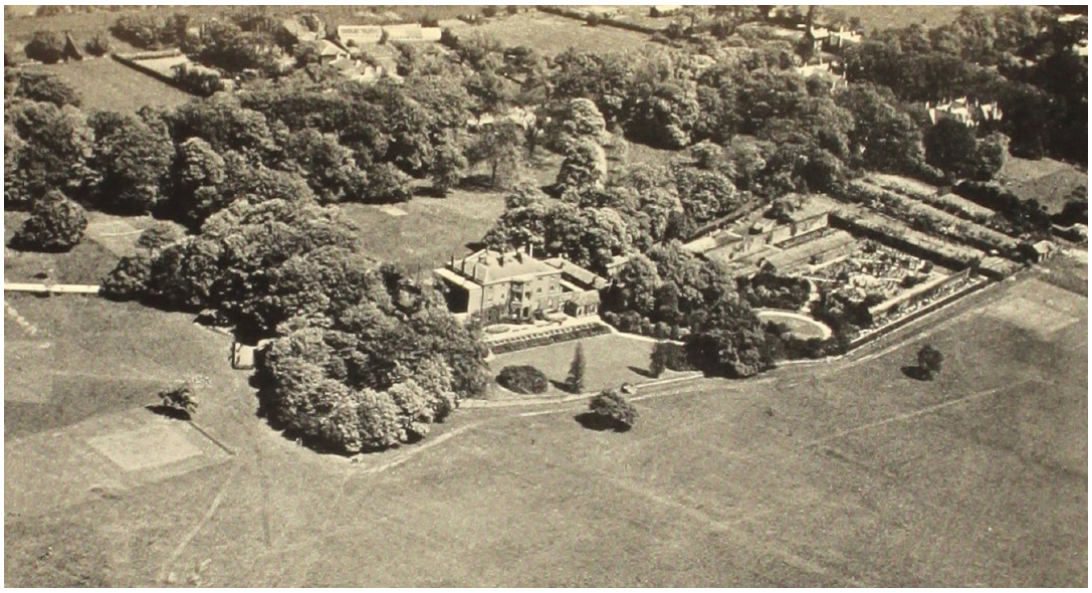


Plate 1: Roby Hall, c 1922 (from Mouchel 2016)

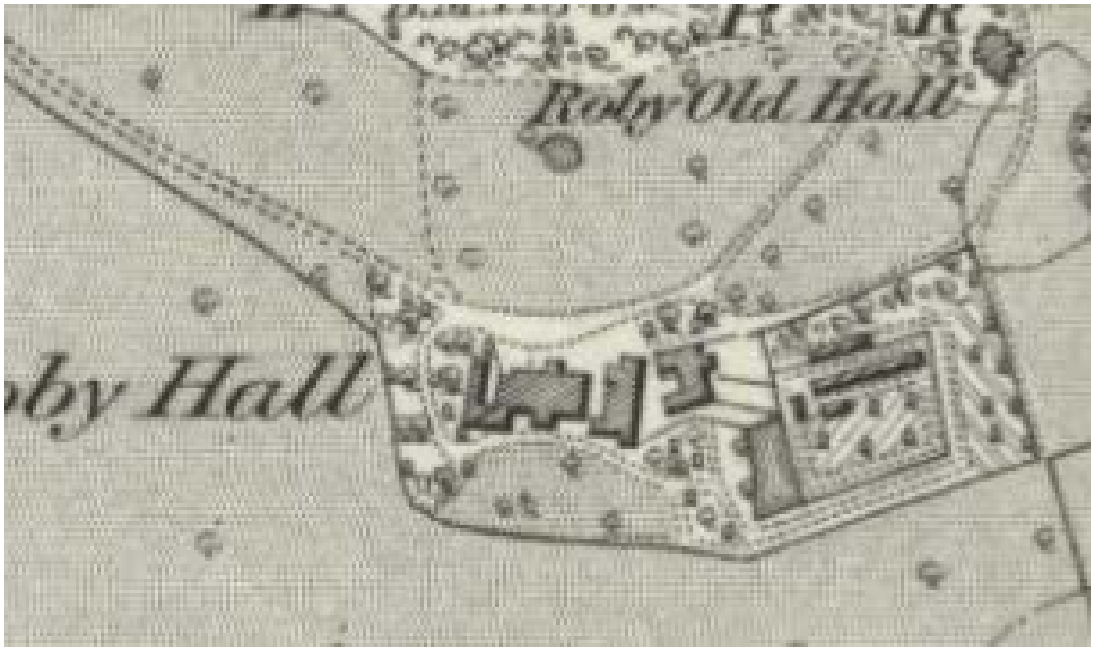


Plate 2: Excerpt from Ordnance Survey map of 1850 showing Roby Hall central to the Stables (left), Coach House buildings (right), and the walled garden and Ha-ha

1.3.4 The walled garden dates to at least the 1820s, and it underwent a series of significant alterations during the mid/late nineteenth century, notably with the development of the glasshouses across the northern third of the site and several phases of remodelling of the garden layout. This phase of works also seems to have included the construction of the sunken garden, not shown on the 1851 OS map, but illustrated on the 6" OS map of 1894 (Plate 3) and in more detail on the 25" of 1891 (OA North 2018, plate 7).

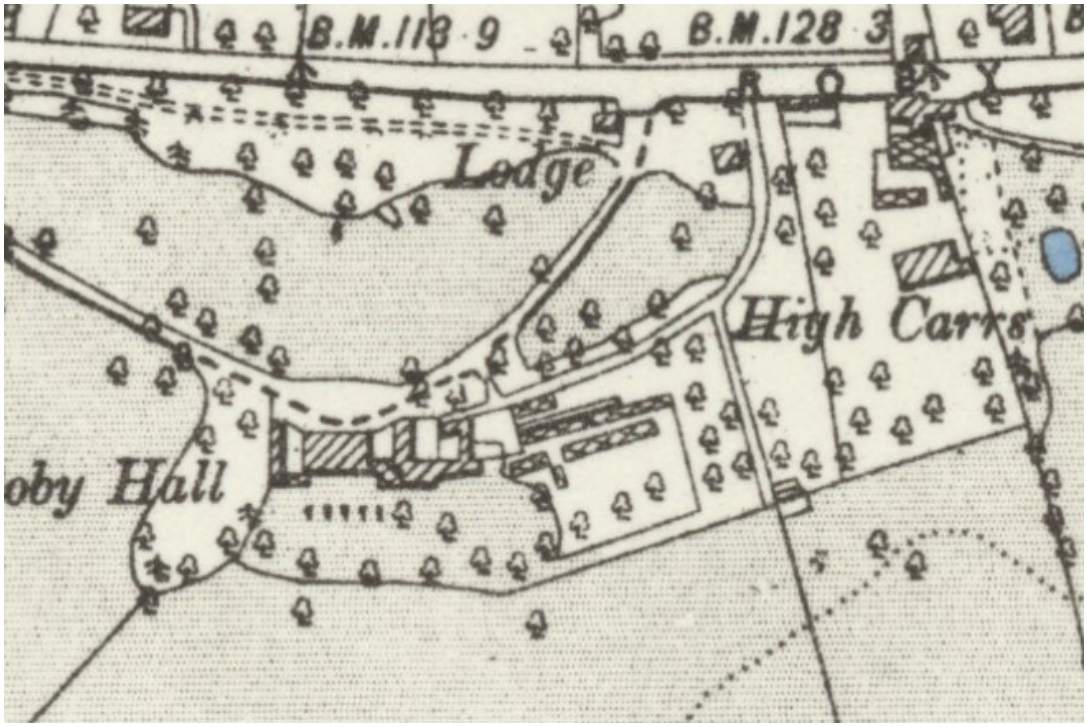


Plate 3: Excerpt from the 6" Ordnance Survey map of 1894 showing Roby Hall with the addition of Coach House buildings (right), the walled garden glass houses and the outline of the circular Sunken Garden

1.3.5 In 1906, the Roby Hall Estate was purchased and offered to the City of Liverpool as an area of parkland, at which point it was renamed Bowring Park. A nine-hole golf course was established in 1912 and was one of the first municipal golf courses. Roby New Hall was damaged by fire during the Second World War and was demolished in the 1950s.

1.3.6 The Stable Block and Coach House survived demolition and were converted to new uses. The former Stable Block is the oldest surviving structure on the site; probably dating to 1761, it formed the detached western wing of Roby Hall and represents the most substantial remnant of the Hall's original layout (OA North 2018; Plate 4). The Coach House, probably built a century later, has three building elements. These include a fragment of the original detached Eastern Wing of the Hall, the southern portion of a probably mid-nineteenth century L-shaped Coach House and Stable Block and a later western extension (Plates 5 and 6).

Plate 4: The eastern elevation of the former Stable Block

Plate 5: Northern elevation of the Coach House

Plate 6: Eastern elevation of the Coach House (Building B)

2. METHODOLOGY

2.1 INTRODUCTION

2.1.1 A Written Scheme of Investigation (WSI) and Addendum to the WSI (*Appendices A and B*) were prepared for WSP by OA North, in response to a request by the Merseyside Environmental Advisory Service. This was adhered to in full, the work being consistent with the relevant CIfA and Historic England guidelines (Chartered Institute for Archaeologists 2014a; 2014b; 2014c; Historic England 2015).

2.2 WATCHING BRIEF

2.2.1 Watching briefs and archaeological monitoring visits were undertaken during key stages of sub-surface works and periods of ground reduction. The purpose of the watching briefs was to identify, investigate and record any archaeological remains encountered.

2.2.2 A record of the nature, extent and depths of groundworks was maintained throughout the duration of the project. All archaeological contexts were recorded on OA North's *pro-forma* sheets, using a system based on that of the former English Heritage Centre for Archaeology. A digital photographic record was maintained throughout. No finds were recovered and no samples suitable for palaeoenvironmental analysis were collected.

2.3 ARCHIVE

2.3.1 A full professional archive has been compiled in accordance with the WSI and with current CIfA and Historic England guidelines (CIfA 2014b; Historic England 2015). The archive is purely digital and will be deposited with the Archaeology Data Service (ADS).

3. RESULTS

3.1 INTRODUCTION

3.1.1 The objective of the watching brief was to identify, investigate and record any archaeological remains encountered during the demolition and groundworks for the proposed development, and the following is a summary of the findings.

3.1.2 The areas investigated (illustrated on Figs 2-6) over 2018 and 2019 comprised the monitoring/recording of:

- Test-pitting around the exterior and interior of the Coach House, Stables and to the south of the Ha-ha (January 2018);
- A second series of test-pits to the south of the Ha-ha (November 2018);
- Ground clearance in the Storage Area, demolition within the Stables, and landscaping within the Sunken Garden (December 2018) (which was undertaken in accordance with the planning conditions – 17/00772/KMBC1)
- Test-pitting around the exterior and interior of the Coach House, and monitoring removal of ceilings in the central element of the Stables (January 2019);
- External groundworks and internal floor reduction at the Coach House (February 2019);
- External groundworks at the Coach House (March 2019);
- Sunken garden groundworks/landscaping (April 2019);
- Demolition and excavation works within and external to the Stables and Coach House (May 2019).

3.2 COACH HOUSE TEST PITS AND GROUNDWORKS

3.2.1 In January 2018 and January 2019, a total of 22 test pits were recorded, in order to characterise the building's foundations, identify internal and external surfaces and any sub-surface archaeological features. Several of these same areas were subject to groundworks in Spring 2019. In the following, after OA North 2018, the Coach House will be referred to in two parts; Building A is the large open-plan building at the western end of the range, and Building B is the three-bay building forming the eastern part of the range (Fig 3).

3.2.2 ***External Test Pits:*** there were 17 test pits at intervals around the external walls. Most of the external test pits (**TP 30**, **31**, **33**, **35**, **36**, **37**) exposed only the brick foundations of the extant Coach House walls (Plate 7). Although none of the external test pits were excavated below foundation depth, a maximum of six courses of brickwork were identified below the present ground surface. Where the basal course was identified, this was slightly wider than the main wall.

*Plate 7: Example of brick footings: **TP35**, southern elevation of the Coach House, 1m scale*

3.2.3 Several of the test pits exposed the remains of sub-surface features. In **TP29**, at the north-western corner of Building A, the brick foundations of a previous wall on a north/south alignment were identified below a modern brick wall forming an extension to the north-west of the present building (Plate 8). This indicates that the modern wall was constructed on pre-existing foundations. Photographs and historic mapping from 1891 and 1894 (*eg* Plates 1 and 3) show a north/south-oriented building to the north of the present Coach House.

*Plate 8: **TP29** against the north-western corner of the coach house, 1m scale*

3.2.4 **TP38**, situated against the south wall of Building B, in a corner formed between it and the former café (Building A) to its west, revealed a brickwork floor (Plate 9), which was six brick courses below the present external ground level. This probably relates to the floor surface of an earlier building which projected southwards from the present layout.

*Plate 9: **TP38** showing brick floor, 1m scale*

3.2.5 At the south-eastern corner Building B, **TP34** exposed the remains of the footings of a brick wall extending east from the presently extant east elevation (Plate 10). Excavation of the test pit revealed the presence of demolition rubble, presumably used as infill for the void. This material included brick rubble, faced sandstone blocks and what appeared to be a stone step or threshold.

*Plate 10: **TP34**, wall and footings, 1m scale*

3.2.6 The wall exposed by **TP 34** was exposed further during later ground reduction works (also recorded as wall **B5**; Fig 3; Plates 11 and 12). Although eight courses had been identified within **TP 34**, when it was exposed for a second time, its visible extents amounted to five stretcher courses of a double-skinned wall bonded with lime mortar. It ran on an east/west alignment for *c* 3m before turning 90 degrees to the north. The footings abutted those of the presently extant south-eastern corner of the building, but pre-dated the modern, twentieth-century addition or repair of the southern elevation. This wall (**B5**) appears to relate to a former extension to the eastern end of the building identified on historic mapping (OA North 2018) and demolished in the 1970s. Appended to the south-eastern corner of the brick wall was a curved stone garden wall which carries on along the southern elevation of the Coach House and remains extant further to the west.

*Plate 11: Close-up of south-east corner of uncovered brick wall, **B5** demonstrating relationship with Building B, south-west-facing*

*Plate 12: Brick wall, **B5**, on south-east end of Building B, south-west-facing with 1m scale*

3.2.7 Groundworks undertaken in May 2019 to the rear of the Coach House illustrated more detail of the southern elevation (Plate 13). The remainder of the stone-built garden wall had been demolished and the ground cleared around the base of the Building B to a depth of *c* 0.7m below the former ground level. This was in the location of earlier test pits (**23**, **24**, **35**, **36** and **37**) which had revealed only topsoil and brick foundations.

Plate 13: Southern elevation of the Coach House Building B

3.2.8 The wall to the east of the extant building butted up to the foundations of the southern elevation wall. The foundations were *c* nine bricks deep, and was a similar depth to foundations that identified within **TPs 41** and **44** inside the building (see below (*Section 3.2.11*).

3.2.9 As described by the building survey (OA North 2018, *Section 4.5*) there are two blocked apertures in the southern elevation of Building B, one close to the south-eastern corner of the building, blocked with modern brickwork, and another, *c* 2m to the west, that was originally a door, then half-blocked to make into a window, with the window also subsequently blocked (Plate 14). Also, there was a soldier course in the south-east corner, probably over another door; this again had relatively modern blocking, suggesting that it had, at some point, formed a window before the aperture was completely blocked. The basal part of the blocked aperture contains a modern air brick. There is a slight change in levels between the two former apertures, with the more modern aperture (to the east) being slightly higher, probably reflecting different contemporary ground levels inside the building (Plate 13).

Plate 14: Detail of southern elevation of the Coach House Building B

3.2.10 ***Internal Test Pits:*** six test pits were excavated by hand inside the Coach House (**TPs 39**, **40**, **41**, **42**, **43** and **44)**. Situated against the southern wall of the western bay of Building B, **TP 40** contained a brick floor surface, at a depth of *c* 0.2m below the present internal ground surface (Plate 15). Although it did appear to be constructed within the walls of the building, this surface may have been relatively localised as no surfaces were recorded within **TP 39**, located *c* 2m to the west, or TPs **41** and **42**, further to the north-east. It is possible that floor levels may have been removed or truncated by modern activity; the remainder of the test pits, although illustrating the presence of wall footings, contained mixed demolition material seemingly of twentieth-century date, below the modern concrete floor and damp proof membrane upon which this had been laid.

*Plate 15: **TP40** with brick floor, located against the south-facing elevation of the Coach House*

3.2.11 ***TP44***, against the northern wall of the eastern end of Building B, demonstrated that the wall foundations were nine courses of brickwork below the present floor surface (Plate 16). Below this, the material making up the present floor level comprised refuse and demolition material, including nineteenth-century glazed stoneware and building rubble, to a visible depth of *c* 0.75m. Below this level, the test pit was inundated with ground water.

*Plate 16: **TP 44**, against the northern exterior wall of the eastern bay of Building B*

3.2.12 Whilst the contents of most of the internal test pits contained little structural evidence, the walls against which they were placed had footings of different depths. Like that in **TP44** (against the northern wall of the eastern element of Building B), **TP41**, against the western wall, also had footings of at least nine courses below the present surface (Plate 17). These two walls belong to the easternmost north-to-south-oriented bay of the coach house, which is part of the Phase 1 former L-shaped range (1849-91). To its west, **TP42** illustrated that the internal dividing wall between the two western bays of Building B was of five stretcher courses, with a basal header course seemingly acting as a foundation (Plate 18).

*Plate 17: **TP 41** located to the west of an internal dividing wall within the Coach House*

*Plate 18: **TP 42** located to the east of an internal partition within the Coach House*

3.2.13 **TP 43**, located within the interior of the south-western end of the Coach House (Building A) had two phases of brick foundations (Plate 19). There were three courses beneath the present surface, with a header row acting as a foundation akin to that visible in **TP42**. Below this was more brickwork, for a minimum depth of 0.4m. This was set on a slightly different alignment, but this was difficult to characterise due to high groundwater levels. In the wall above the test pit was a large block of sandstone, which may relate to the row of sandstone blocks visible externally (OA North 2018, plate 30); which also illustrates the complexity of the construction sequence in the south-western corner of the building.

*Plate 19: Two phases of brick foundations within **TP43***

3.2.14 ***The Wagon Doors:*** in February 2019, the floor surface within the north-east corner of the central bay of Building B (OA North 2018) was reduced below the present wagon door, which exposed features associated with previous openings. An east/west- aligned wall foundation was exposed (**B1**) beneath the present wagon door (Plate 20). The wall comprised four stretcher courses of red handmade bricks, three bricks wide, bonded with lime mortar. The western extent of the wall was obscured by spoil forming a ramp for machine access (Plate 21); its observed extent was 1.70m long by 0.26m high and 0.36m wide. Its eastern extent butted up to the foundations of the north/south-aligned internal wall of the eastern bay of Building B.

*Plate 20: Wall foundation, **B1**, within north-east corner of Building B, 1m scale*

3.2.15 Partially overlying wall foundation **B1** was a makeup layer of grey-brown clay, 0.05m thick, above which was a makeup layer of a similar depth, containing small fragments of brick, charcoal, and lime. Sat upon the makeup layer was a stone threshold 0.25m high. It was made up of three visible lengths, one of which was fully exposed and was *c* 0.5m long; the remainder were obscured by a modern access ramp (Plate 20). The threshold was also identified externally, within **TP32**. Sitting on top of the stone threshold was a concrete slab associated with the extant wagon door and at the same height as the modern external surfacing.

3.2.16 Directly to the west of **B1** and the rubblestone ramp was a large block of worked sandstone which was 0.70m by 0.70m by 0.20m (Plate 21). It had chisel marks on its east and west faces. Its curved top appears to have been purposely shaped and a section within its top west corner had been cut out, to allow for the concrete surround associated with present wooden door. The stone block, situated close to what would have been the column separating the two external archways, was placed on top of the natural clay, and butted up to the brickwork foundations of the north external wall (**B1**). These foundations were of a different style and colour of brickwork compared with the presently extant wall which infills the former arched openings (Plate 22). This suggests that the sandstone formed a plinth for an earlier wagon door associated with the arched openings visible externally.

Plate 21: Sandstone plinth, thresholds and wall footings associated with a former wagon door entrance

*Plate 22: General shot of inside northern wall (**B1**) of Building B showing wall foundation, present wagon door and rubblestone ramp*

3.2.17 ***Building A Cistern:*** on the north-west external corner of western element of the Coach House (Building A; OA North 2018), groundworks revealed an arched brick structure below ground level (Plate 23). Although not fully exposed, laser-measurement of the underground extents of the void beneath (prior to the arrival of OA North staff) indicated that the feature extended *c* 2.5m north and 3.7m east from its southern end (Fig 3), and that it was over 2m deep. Photographs taken by

building contractors indicated that the feature was a large underground cistern, opening from an extant manhole located above the eastern extent of the cistern (Plates 24 and 25). The manhole, covered by a surface-visible iron cover, comprised four courses of what appeared to have been salt-glazed bricks, in a cylindrical formation, creating an opening to the void below. Two modern plastic drainage pipes were visible within the eastern side of the manhole, feeding into the cistern (Plate 24), and modern brickwork had been used to form a surface for the manhole cover flush with the present (modern) cobbled surface. The cistern was also fed by a downpipe extending from the northern elevation of the Coach House Building A.

Plate 23: Brick-arched roof of cistern and levelling layers, facing east, 1m scale

Plate 24: The interior of the cistern showing the location of the manhole, photo provided by WSP

Plate 25: Manhole into the roof of the cistern

3.2.18 The exposed arched cistern was constructed of handmade red bricks which appeared contemporary with those of the earliest phase of Building A. The visible arch consisted of a two-course layer of brick stretchers forming the curve, with rows of headers visible on the south side butting up against the arch (Plate 26). The exposed extent of the arch was *c* 1m wide and 0.75m long. Where not damaged, they butted up to a north/south-aligned brick wall which suggested its western extent. Above the cistern roof were levelling layers; three layers of red bricks, the lowest layer shaped to fit the curve of the arch, covered by a makeup layer of light pink compacted clay approximately 0.1m deep. Above this, the present-day cobbled yard surface had been laid.

Plate 26: The roof of the cistern, with 0.40m scale, and brickwork defining its western extent

3.2.19 The cistern suggests the presence of a substantial underground water management system. Cisterns were common during the nineteenth century, and less so in the eighteenth century. They were used to store and harvest groundwater, mainly to feed hand pumps and provide water for outdoor use. The salt-glazed bricks inside the manhole almost certainly date from the nineteenth century; the same ceramic waterproofing process was used for drain and sewer pipes in this period. With the addition of plastic pipes and modern brickwork to make good with extant drainage and surfacing, the structure remained in use and was added to on several occasions.

3.2.20 At its southern extent, the cistern extended beneath the present north wall of Building A. Analysis of the historic mapping suggests it may once have been situated in the south-western corner of an open yard partly visible within the complex layout of buildings and glass houses illustrated on the OS map of 1894 (Plate 3).

3.3 THE STABLES

3.3.1 In January 2018, two test pits (**TP20** and **TP21**; Fig 2) were excavated to the west (rear) of the stable block, in order to characterise ground makeup. Further monitoring of demolition of ground-floor wall coverings and first-floor ceilings exposed the roof structure in December 2018 and January 2019. In May 2019, archaeological monitoring of excavations in the floor of the stables for a lift shaft, and demolition

of the roof revealed the structure and makeup of the chimney stack at the northern, hipped, end of the building.

3.3.2 ***Test Pits 20 and 21***: two test pits were excavated adjacent to the rear of an ancillary building appended to the west wall of the Stables. These were close to an apparently sub-surface arched feature in the western elevation of the ancillary building. Both test pits revealed 0.1m of topsoil, overlying a deposit of loose dark-blackish-brown gritty silty material (0.12m). Below this was a deposit, 0.20m deep, of mid-yellow brown mixed silty clay, which contained brick fragments. Within **TP20**, these deposits appeared to continue beneath the visible arch (Plate 27). What appeared to be natural clay was reached at a depth of 0.5m below the present surface. The function of the arch is unknown, and the ancillary building was not accessed during the building survey (OA North 2018).

*Plate 27: **TP 8** excavated in the vicinity of an apparent sub-surface arched opening beneath an ancillary building west of the Stables*

3.3.3 ***Ground Floor Arched Openings:*** inside the southern element of the Stables, modern plaster had been stripped from the west wall in the location of a former utility area. This revealed a series of four brick arches resembling fireplaces, which had been infilled with brick. Each brick arch was sat on a supporting iron band, which met, along the length of the feature, at each arch spring (Plates 28 and 29). Apart from at the northern end of the range where a jamb was visible, there was no clear evidence (in the form of straight joints within the brick infill) for jambs between the remainder of the arched springs; these may have been set back from the arches, which were flush with the wall, or obscured by bitumen and bonding applied to the brickwork.

3.3.4 The bricks forming the arched features were red, handmade, and the brickwork was held together by an off-white lime mortar. Although it was not possible to identify any clear change in the character of the brickwork in the infill below the arches, due to later surface treatment, the mortar appeared to be of a greyer shade. Removal of individual bricks within the features indicated the presence of a cavity behind, a void which seems to have acted as a flue (Plate 28). The arches were located on the

internal side of the south-western elevation of the building, where the building survey had identified a large chimney stack partly blocking a window pocket which was part of the original eighteenth-century build (Plate 30). The thickness of the wall on either side of the original wall line suggests the presence of a void and indicates that the arches were part of an inner wall backing on to the line of the original wall line, with a cavity between (Fig 4).

Plate 28: Bricked-up fireplaces with the southern element of the Stables, showing the void behind, 1m scale

Plate 29: Iron straps supporting the brickwork arches

Plate 30: South-western external wall showing chimney stack, blocking window and southern arcade

3.3.5 In May 2019, archaeological monitoring took place on a previously excavated lift shaft in the same room as the fireplaces had been identified. The trench was located, in its entirety, up against the inner skin of the infilled arched wall; the inner skin is of uncertain date but likely to be of nineteenth century date. The trench had been excavated by contractors, and included the remains of a demolished brick wall, which the section illustrated had stood to just below the concrete raft which formed the modern floor (Plate 31). Steelwork for the lift shaft had also been installed, which partly obscured the relationship between the wall and the arched openings.

Plate 31: West/east-aligned wall exposed within lift shaft trench

3.3.6 The remains of the wall indicated that it was aligned west-to-east and would have

formed a cross-wall within the stables building. The wall was double skinned, 0.6m wide, with a rubble core. The bricks were soft and handmade, and the brickwork was bonded with off-white lime mortar. Either side of the wall was a brown silty clay, overlain with a layer of rubble 0.1m thick, which formed the hardcore base for a modern concrete floor. A second, narrower trench, a little to the north, exhibited the same sequence of deposits.

3.3.7 The relationship between the wall in the lift shaft trench and the fireplace wall at its western end was not clear, as its remains were demolished prior to archaeological monitoring taking place. It was partially extant during the 2018 building survey, as a stub extending from the south wall, used as the north end of a modern cubicle; the watching brief revealed that its northern extent at this time was sealed beneath a modern concrete floor and there was a modern studwork partition on its line. At variance with the building survey, however (*ibid*, fig 7), the extant wall cannot have been part of the eighteenth-century build as it abutted the fireplace wall which seems likely to have been a mid/late nineteenth-century addition (see below).

3.3.8 Demolition of the cross wall (exposed in the lift-shaft trench) revealed no evidence for any association with the fireplace wall (in the form of scarring), which it abutted in its extant form as recorded during the 2018 building survey. Although a slight difference in the character of the brickwork was visible, this seemed to be related to surface treatments above and below floor level, rather than illustrating anything of the cross wall (Plates 31 and 32).

Plate 32: Western wall of the southern element of the Stables, showing the series of arched fireplaces and lift shaft trench

3.3.9 The OS map of 1850 (Plate 2) shows the southern end of the Stables attached to the south-facing façade of the main house. The location of the probable fireplaces within a late phase of the southern end of the Stables suggests that this was a service wing and the fireplaces may have been an addition to kitchens or laundry facilities within the house. The OS map of 1894 (Plate 3) illustrates this layout more clearly, indicating an apparent corridor between the house and Stables wing, with a glass house appended to its south. The corridor would have entered the building in the

position of the present-day stair tower addition (a mid/late twentieth century addition) which corresponds broadly with the wall-line identified within the lift shaft trench. The southern extent of the wall appears to dissect the line of four fireplaces, so appears to post-date their use, or originally intended form. Modern wall coverings and the extant stairwell obscure any further evidence for the former layout of the building.

3.3.10 ***Stables Northern Chimney*:** at the northern end of the Stables, above a first-floor room not accessible during the 2018 building survey, the erection of scaffolding and the removal of the ceiling and roofing slates in May 2019 revealed the structure of the roof and chimney stack. Prior to the works taking place, externally, the stack was clearly visible at the apex of the hipped roof at the northern end of the building (Plate 4). During the building survey, a blocked fireplace was identified at ground floor level on the rear, western wall of the building's northern bay, a blind arcade which appeared to have been open to the roof before the first floor room was added (OA North 2018); the latter proved inaccessible, however, and was not recorded.

3.3.11 The brick-built chimney stack had been constructed in two parts; the vertical element visible above the roofline and a lateral element, supported by a pair of kingpost trusses, separated by *c* 0.9m (3ft), set below the extant hipped roofline (Plate 33; Fig 5). The lateral element was formed of eight courses of brickwork, following the angle of the trusses, and supported by timber planks set between them (Plate 34). The planks were *c* 0.36m wide (*c* 1 ft) and *c* 0.63m long (*c* 2 ft) and *c* 50mm thick (*c* 2in) and had circular pegs on their undersides indicating how they had been attached to the trusses. The first course of bricks was headers and the remainder were stretchers. The western end of the trusses were supported by a brick plinth formed by the flue rising from the ground floor and their eastern ends were built into the eastern elevation, approximately at the same level as the top of the arcade and the window headers visible externally (Plate 4).

Plate 33: The central chimney, set upon a pair of kingpost trusses, facing south (nb the scaffolding boards do not reflect a former floor level)

3.3.12 The trusses exhibited evidence of being formed of re-used timbers; an unused former peg hole was evident in the south-facing tie-beam of the southernmost truss. In addition, the trusses were sawn on one side (the 'fair face') and axe-hewn on the other. The fair faces of the king posts also had chamfered edges (the internal joints being only roughly rendered), as if these were meant to be seen. It seems likely, therefore, that the lateral element of the flue was constructed in order to retain a symmetrical chimney in the centre of the roofline, whilst also retaining an open area within the structure below.

3.3.13 The mid/late twentieth-century grey cement-based render visible below the trusses (Plate 34) indicates the top of the plaster height in the room below; brick pockets in the wall at the southern end of the bay (Plate 33 (annotated with an arrow)) indicate the ceiling joists. This indicates that the trusses' tie beams were, at some point in the mid/late twentieth century, used to support the ceiling of a first-floor room below.

Plate 34: View from the underside of the trusses supporting the lateral stack

3.3.14 The present configuration of the roof is that it is hipped only at its northern end. The timbers exposed within the roof illustrate that it was built to incorporate hips to both the north and south of the chimney, which were designed and built to be the highest,

central element of a symmetrical roofline. The hip rafters are wedged up against the chimney and support a purlin, which itself supports the common rafters; these oversail the brick wall at the same approximate height of the apex of the brick arcade and window headers externally. The roofline to the south of the chimney has been subsequently reconfigured; a new ridge beam has been added, its northern end butting the chimney stack, with short braces leaning on the former hips and a plate attached to the stack (Plate 35).

Plate 35: On the south side of the chimney a ridge (marked by an arrow) has been added, superseding the hipped roof structure

3.3.15 It seems likely that the brick wall separating the northernmost and central bays of the building was raised to the new ridge height at the same time; a crawl-through visible from the height of the chimney, also visible from below, was identified following the demolition of the ceiling of the former lounge bar adjacent and to the south (Plate 36). A bricked-up doorway is also visible. The roof structure above the former lounge bar (which is the central, two-storey element of the Stables building) is a simple ridged common rafter roof probably of mid-twentieth century date (Plate 37). The rafters, which incorporate nail holes from lathwork, appear to have been reused; modern tie beams supported an artex ceiling (OA North 2018, *Section 4.2.5*)

Plate 36: The roof structure of the former first floor lounge bar showing the crawl-through also visible in the Stables northern bay (Plate 33)

Plate 37: Detail of the roof within the central element of the Stables

3.3.16 The exposure of the chimney and roof structure in the northern element of the Stables casts doubt on any supposition that the present Stables roofline is as it was originally. Given that most classically-derived structures of the eighteenth-century were broadly symmetrical (*eg* Yorke 2008), it may be that the building originally had double-hipped roofs at either end, and a lower ridgeline at its centre. If so, then the first-floor rooms at the centre would have had lower rooflines than at present, and probably smaller windows. The original stables are likely to have had storage/food/ accommodation lofts above, probably accessed via ladders (Brunskill 1981).

3.3.17 Although this does not preclude an earlier date for the raising of the roof, the character of the roof timbers, plastering and décor in the former lounge bar illustrates significant construction work during the 1960s/70s. Although not identified within the brickwork in the central element of the building, the roof-raising also had implications for subsequent floor and ceiling heights within the formerly open

northern bay, directly below the lateral chimney structure.

3.3.18 During the 2018 building survey, the first-floor room in the northern bay was not accessible; a blocked doorway was noted within the lounge bar but no access was found into the space above the ground floor office (OA North 2018). Subsequent demolition of the ceiling structure in that room, however, indicated the presence of a former floor level and a continuation of the grey, twentieth-century plasterwork visible within the roof structure directly below the trusses supporting the lateral chimney stack (Plates 34 and 38). This plasterwork partially sealed the bricked-up doorway identified at the north end of the former lounge bar (Plate 36).

Plate 38: The wall between the northern and central bays of the Stables, facing south, with the southern truss, blocked doorway and the crawl-through visible

3.3.19 The height of the plaster did not reach the lintel of the blocked doorway and was *c* 1.5m above the level of the ground floor ceiling joists. This means that there had been a first floor, which had been accessed via the (full height) bricked-up doorway between the northern and central bays of the building. Subsequently this aperture was bricked up and sealed by plaster; there is no visible evidence for a first floor as the extant joists do not seem large enough to have formed a floor; neither is there any visible stairwell (the aperture visible in Plate 38 appears recent). As such, it may be that the room remained open to roof height with the ceiling for the present ground floor office (lit only by the two lower lights of the sash window within the blind arcade) being inserted later in an effort to help insulate the room.

3.4 GARDEN GROUNDWORKS AND LANDSCAPING

3.4.1 ***Northern lawn:*** in November 2018, an archaeological watching brief took place during topsoil stripping of an area of lawn immediately south of the site entrance and the A5080 Roby Road, in the location of a planned pond and secondary access road (Fig 2; Plate 39). This monitoring revealed no features of archaeological significance.

Plate 39: Archaeological watching brief of proposed pond and access road area

3.4.2 ***Ha-ha Test Pits:*** in January and November 2018, two series of test-pits were excavated up against the southern face of the Ha-ha, which were subject to archaeological monitoring. The Ha-ha, forming a low wall to the south of the Stables, Coach House and Walled Garden and defining the north edge of the park, is constructed from sandstone to the west (Plate 40), changing to brick construction (Plate 41), topped with sandstone copings to the east. The change in materials, which occurs at the south-western corner of the Walled Garden, mirrors a change in form and alignment illustrated on the first edition OS map (Plate 2). Its ditch has been infilled to the west but is visibly extant to the east, to the south of the Walled Garden (Plate 3).

3.4.3 Nine test pits along the Ha-ha were excavated along the south-facing elevation of the Ha-ha wall in January 2018 (**TP 9-17**), and a further six in November 2018 (**TP 1-6**) Two planned test pits at the eastern end of the wall (**TP 18** and **19**) were not excavated due to waterlogging. The test pits varied in depth between 0.5m and 0.7m, all being excavated into the humic topsoil fill and leaf litter of the Ha-ha ditch and revealing a continuation of building material and style to that visible above the surface.

3.4.4 The sandstone elements of the wall were strap-pointed in a pinkish twentieth-century cementitious mortar, which in most cases continued beneath the present ground surface (Plate 42). The brickwork was pointed (and bonded) with a hard, dark-grey lime-based mortar (Plate 43), the dark-grey colouring indicating the presence of charcoal/ash within the mix and suggestive of a Victorian date.

*Plate 40: Sandstone element of the Ha-ha wall, west of the Walled Garden (***TP13***)*

*Plate 41: Red brick Ha-ha wall, view west from (**TP 6**)*

*Plate 42: Representative illustration of test pits through the sandstone-built western part of the Ha-ha (**TP2**, 0.2m scale)*

*Plate 43: Brickwork Ha-ha wall, south of the Walled Garden (**TP15**)*

3.4.5 ***Storage Area**:* in December 2018, vegetation clearance in a proposed storage area south-east of the Walled Garden revealed the remains of a rectangular structure abutting the Ha-ha wall (Plates 44 and 45). This structure comprised a thin layer of concrete overlaying an un-mortared rowlock course red brick floor. To the north, east and west of the floor were the remains of red brick walls, built in stretcher courses upon the rowlock-coursed footing, and bonded with an off-white lime mortar.

Plate 44: Structure revealed in the Storage Area, 1m and 2m scale

Plate 45: Floor of the former structure, abutting to the Ha-ha wall, 1m scale

3.4.6 Map regression analysis undertaken as part of the building survey (OA North 2018) indicated the presence of a building (of unknown function) in this location, *c* 30m east of the walled garden adjacent to or straddling the Ha-ha, in the second half of the nineteenth century. The building was not shown on the OS map of 1851 but was present on that of 1894; this appears to have been demolished in the 1960s.

3.4.7 ***Walled Garden:*** groundworks in April 2019 revealed the remains of a double-skinned red brick wall at the western end of the southern range of the walled garden

(Plate 46; Fig 6). The bricks were bonded with lime mortar and were consistent with those used within the construction of the Walled Garden. The wall, revealed for a length of *c* 6m, ran on an east/west alignment to the north of and parallel to the Ha-ha wall (Plate 43). The historic mapping illustrates that both the west wall and a length of wall appended to the south-western extent of the Walled Garden was removed between 1850 and 1894, seemingly to facilitate access to the Sunken Garden, the eastern steps of which are visible on Plate 46 below.

Plate 46: remains of brick wall, between the Ha-ha and the Sunken Garden, west of the Walled Garden's south wall (facing north-east). The arrow shows the sunken garden steps.

3.4.8 A sunken brick-built tank was also uncovered *c* 2m north of the wall; for safety reasons this had been covered prior to archaeological monitoring, but a manhole was still exposed (Plate 47; Fig 6). The tank was constructed of red brick, and nine visible stretcher courses created a rectangular tank/chamber. The depth of the tank was not ascertained, as the bottom contained standing water (Plate 48).

Plate 47: Modern manhole with brick tank, and Sunken Garden in the background (facing west)

Plate 48: detail of brick-built water tank between the Sunken Garden and south-western extent of the Walled Garden

3.4.9 ***Sunken Garden:*** prior to large-scale groundworks within the Walled Garden and Sunken Garden taking place in March/April 2019, exploratory hand digging adjacent to both flights of steps revealed extra steps that were not recorded during the building survey (OA North 2018). These had been hidden below the pathway surface on both the eastern and western access slopes. The lower step on the eastern access was 3.5m

long, 0.3m wide and 0.9m deep and comprised three stone slabs, 0.9m, 1.9m and 0.70m long (Plate 49). The lower step on the western flight was a single stone slab, 3.7m long, 0.3m wide and 0.16m deep (Plate 50).

Plate 49: Lower steps on the eastern flight to the Sunken Garden, 2m scale

Plate 50: Lower steps on the western flight into the sunken garden, 2m scale

4. CONCLUSION

4.1 DISCUSSION

4.1.1 Map regression analysis undertaken as part of the earlier building survey (OA North 2018) illustrated the complexity of historic layouts of the remaining extant structures at Bowring Park. Archaeological monitoring of works during the redevelopment of the site have largely provided additional detail pertaining to features identifiable in plan form on historic mapping and/or identified during the building survey (*ibid*).

4.1.2 ***The Stables Chimneys:*** archaeological monitoring of building works within the Stables building have revealed detail additional to that of the plan form illustrated on the historic mapping. The eccentric construction of the lateral chimney at the northern end of the building appears to have been constructed to cohere to a specific external architectural design, to retain a central stack within a symmetrical hipped roof, whilst maintaining an open space below, perhaps a tack room where a warm and dry environment was required. The south side of the original symmetrical double-hipped roof was later lost when the loft above the stables was converted into a second floor. Although no archaeological monitoring took place within the roof of the southern arcade, it seems likely that the original building would have been symmetrical and there would have been a similar double-hipped roof at the south end of the building.

4.1.3 The series of fireplaces at the southern end of the Stables range is less easy to interpret; it was not part of the original design of the building, however, and may represent kitchens or laundry facilities additional to those within the main house; a corridor and glass house are shown on the historic mapping. If not domestic, then there are numerous examples of heating systems within stables and garden buildings during the nineteenth century; most did not involve open fires due to the inflammable nature of hay and bedding and it is possible that the flues represented housed boilers to feed pipework or other types of warm wall heating (Russell Lawrence 1998; Yorke 2014).

4.1.4 ***The Coach House:*** the information derived from archaeological monitoring of works undertaken within the Coach House was relatively limited. The test pits and internal ground reduction revealed the sub-surface presence of walls identified from photographs and historic mapping, and the detail of former wagon doors. Externally, the identification of an underground cistern used for rainwater harvesting was also of interest, but not a rare find in historic buildings of the nineteenth century.

4.1.5 ***Garden Features:*** the Walled Garden and the Sunken Garden were recorded in detail by the building survey (OA North 2018). Ground clearance identified features present on the historic mapping; the demolished remains of a building partly overlying the Ha-ha on the eastern edge of the site, a garden wall demolished to make way for the Sunken Garden and an underground cistern. Within the sunken garden, steps were revealed during ground clearance at the base of the flights already recorded by the building survey.

4.1.6 It seems likely that several of the changes evidenced on the nineteenth and early twentieth century historic mapping (OA North 2018, *Section 3.2*) were relatively large-scale reconfigurations of Roby Hall and its ancillary buildings. Roby Hall itself was demolished in the 1950s and the archaeological monitoring gave a sense that it was changes in the second half of the twentieth century, when the site and presently-

extant buildings were re-purposed, that have had the most significant effects on the historic fabric.

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APPENDIX A: WRITTEN SCHEME OF INVESTIGATION

1.1 INTRODUCTION TO THE PROJECT

1.1.1 WSP and Knowsley Metropolitan Borough Council (KMBC) are requiring the implementation of a programme of archaeological survey of the site of Roby Hall, within the present day Bowring Park, so as to inform proposals by Knowsley Metropolitan Borough Council to regenerate the park; this will be funded by HLF for the Phase 3 works. Condition 14 of the planning permission (16/00346/KMBC1) requires that a programme of building survey be undertaken of the extant historic buildings at the site of the former Roby Hall (demolished in the 1950s) and within the extant walled garden. The primary intention of the recording programme, which will also include limited GPR survey and watching brief, is to mitigate the impact of the proposed regeneration of Bowring Park on known and unknown heritage assets and to inform and guide the process of restoration.

1.2 OXFORD ARCHAEOLOGY NORTH

1.2.1 ***Buildings Archaeology:*** OA North has established itself, over the past 30 years, as one of the country's leading practitioners in the field of buildings archaeology. It has wide-ranging experience of building types, dating from the medieval period to the twentieth century, and including vernacular, polite, ecclesiastical, military and industrial structures. Major building survey work has incorporated surveys, assessments, and conservation plans for many of the major building monuments in the north-west of England, including Lancaster Castle, Egremont Castle, Kendal Castle, Pendragon Castle, Piel Castle, Gleaston Castle, Clitheroe Castle, Bewcastle, Castle Bolton, Furness Abbey, and Jervaulx Abbey. OA North has also undertaken complex analytical surveys throughout the UK, including Abbey Farm, Faversham, St Conan's Kirk, Argyll, Wigmore Castle, Herefordshire, and Murrays' Mills, Manchester.

1.2.2 ***Vernacular Architecture:*** OA North has considerable experience of the recording of vernacular structures throughout the UK. OA North has undertaken surveys identifying and recording the remaining stock of clay-built structures in north Cumbria for English Heritage, as well as numerous barn, farmhouse and outbuilding surveys within Cumbria, Lancashire, Yorkshire and Cheshire.

1.3 HISTORICAL BACKGROUND

1.3.1 A late medieval manor house, Roby Old Hall, was shown on an 1829 estate map and was located at the north-eastern part of the estate. The new hall was constructed by John Williamson, shortly after acquiring the estate in 1761. The northern façade had an elaborate, four columned entrance portico and the southern façade overlooked a terraced formal garden and lawn. A walled garden was located to the east of the hall. Many changes were made to the building layout in the nineteenth century but it was not until the 1890 OS map that the coach house was depicted.

1.3.2 In 1906, the Roby Hall Estate was purchased and offered to the City of Liverpool as an area of parkland, and was renamed Bowring Park. A nine-hole golf course was established on the estate in 1912 and was one of the earliest municipal golf courses. Roby New Hall was damaged by fire during the Second World War, and was then demolished in the early 1950s.

2.1 AIMS OF THE PROGRAMME

2.1.1 The primary aims of the project are as follows:

- To mitigate the impact of the regenerations of Bowring Park on known and unknown heritage assets.
- To enable delivery of the development

2.1.2 The principal objectives are as follows:

- To undertake a programme of building recording which will establish the historical background of the stables, coach house and the walled garden, and will record the buildings through surveyed drawings, photographs and written descriptions.
- To undertake a geophysical survey of the gardens to identify evidence of potential early layouts, and the remains of now demolished buildings.

- To undertake archaeological monitoring where ground works may impact on sub-surface structural remains associated with the Roby Estate;
- To establish the extent of past impacts on the archaeological resource;
- To disseminate the results of the work through reporting
- To prepare and deposit the project archive.

3. METHOD STATEMENT

3.1 ARCHIVE RESEARCH

3.1.1 The initial stage of the study will be the collation of information to establish the baseline conditions. The following will be undertaken as appropriate, depending on the availability of source material, to ensure that all known heritage assets are identified within a 200m radius of the building and will be necessary to assess the wider context of the building. It is intended to enhance the documentary research already undertaken as part of the earlier phases of work at Bowring Park. Considerable research had been undertaken by WSP and the cartographic sources to be provided by them will be collated, georeferenced and incorporated into a CAD system, and will serve as the basis for a map regression that will provide an essential insight into the development of the estate.

3.1.2 It is proposed to draw upon the documentary skills of enthusiastic volunteers to investigate further desk based work, that may provide useful additional information.

3.1.3 ***Documentary and Cartographic Material:*** this work will include an appraisal of the Merseyside Historic Environment Record (HER), as well as appropriate sections of early maps, and such primary documentation (estate plans etc.) as may be reasonably available. The latter will entail consultation with the Knowsley Local Studies Office and also Liverpool Archives, and potentially also Lancashire Archives. Particular emphasis will be upon the early cartographic evidence which has the potential to inform the development of the hall and estate. An historic map regression will be compiled using estate maps and Ordnance Survey maps to chart the development of the buildings within the immediate environs. The documentary search will examine evidence for the history of the building, and will examine evidence for the phasing of the structures.

3.1.4 Any photographic and illustrative material will be studied, and published and unpublished documentary sources will also be examined. This will aid the identification of any unknown heritage assets, as well as any contamination issues and previous impacts that may have adversely disturbed potential remains.

3.1.5 This work will include consultation with the OA North research archive together with any other such archives as relevant. WSP holds the documentary archive from their initial desk based study and it is anticipated that the graphic data will be provided in a digital form for inclusion into a CAD system. Any client data, such as geological and soil surveys, geotechnical or borehole data, landuse surveys, and any other environmental information relating to the site will be of considerable value.

3.2 MEASURED SURVEY (LEVEL 2)

3.2.1 ***Introduction:*** the measured survey will be carried out to English Heritage Level 2 survey guidelines (English Heritage 2006).

3.2.2 ***Vegetation Clearance:*** there is selective vegetation covering the walls, particularly those of the walled garden, and there are also localised piles of detritus piled against the walls. Given that it is proposed to undertake recording of the structures by photogrammetry, it will be necessary to clear all obscuring vegetation off the walls and structures so as to enable a clear view of the walls for the recording. It is also proposed to undertake a photogrammetric survey of the gardens using photography taken from a drone, which will provide a very detailed record of the garden; however, there are areas of the garden, which are presently overgrown and this vegetation should be cut back to enable an effective aerial survey.

3.2.3 ***Photographic Archive:*** a photographic archive will be produced utilising a high resolution digital SLR camera (18 megapixel). The specification for undertaking digital photographic recording of buildings is defined as follows:

3.2.4 Digital SLR cameras with a resolution of at least 18 mega pixels will be used; using RAW format files for image capture; saved as 8 bit TIFFs for archive purposes. The data will be stored on two

separate hard drives or servers, each on different sites and with appropriate back-up and disaster plans in place.

3.2.5 A full photographic index will be produced of the buildings and structures and the archive will comprise the following:

(i) The external appearance and setting of the building, including a mixture of general shots and detailed views taken from perpendicular and oblique angles;

(ii) General shots of the surrounding landscape;

(iii) General photography of the ha-ha;

(iv) Photogrammetric images of the elevations and aerial images of the garden;

(iii) The general appearance of the principal rooms and circulation areas;

(iv) Any external or internal detail, structural or architectural, which is relevant to the design, development and use of the buildings, and which does not show adequately on general photographs;

(v) Any internal detailed views of features of special architectural interest, fixtures and fittings, or fabric detail relevant to phasing the buildings.

3.2.5 ***Site Drawings:*** architects' plans (supplied by the client) will be annotated on site to produce the following drawings. These drawings will then be used as the basis of CAD drawings, which will be included within the final report as figures. This will be undertaken by manual survey (using Disto electronic distance measurement equipment).

(i) Ground floor plan of the Stable Block and Coach House;

(ii) First floor plan of the Stable Block and Coach House;

3.2.1 ***Photogrammetry:*** it is proposed to generate elevation drawings by a process of photogrammetry, which will be undertaken using a digital camera mounted on a photographic mast. Survey control is introduced to the photographs by the placement of survey control targets across the site which are located by means of the total station survey. In addition, it is proposed to undertake a survey of the overall garden by photography and taken from a drone (UAV) which has the ability to carry a light weight camera up to altitudes of 200 feet. Because of the proximity of the buildings the UAV will be flown an adequate separation away from the walls.

3.2.2 Small targets will be placed against the internal elevations and their locations will be established using a reflectorless total station. The photography will be taken from the ground, and from the photographic mast (which extends up to 5m).

3.2.3 The photogrammetric processing is undertaken using Agisoft software which provides detailed modelling using the overlap of up to 250 photographs, and creates a very detailed DTM (Digital Terrain Model) across the site. The photographs are then digitally draped over the model to create an accurate three dimensional model of the ground surface or elevation. The primary output, however, is an accurate two dimensional image, overlying a DTM, which can be used to generate accurate plans and contours as well as detailed elevations. In this instance the DTM will be output into a GIS system to generate the detailed contour coverage for the site. The primary output will be accurate 2d orthophotos, which can be georeferenced in AutoCAD to create elevations or plans.

3.2.4 Existing elevations have already been created for the elevations of the Stable Block and Coach House and these will be checked and enhanced from the photogrammetric images. The following drawings will be generated / enhanced by photogrammetry:

(iii) Plan of the walled garden, and wider garden;

(iv) External elevations of the Stable Block, Coach House and Garden Walls

3.2.6 ***Annotation of Drawings:*** irrespective of the means used to generate drawings, they will be annotated with salient information, including wear marks masonry marks, and salient detail relating to historic and contemporary use.

3.2.7 ***Fabric Description:*** a visual inspection of the building will be undertaken utilising the OA North building investigation proforma sheets. A description will be maintained to English Heritage (2006)

Level 2 standard. The records will be essentially descriptive and provide a systematic account of the origin, development and use of the building, which will include:

(i) A description of the plan, form, fabric, function, age and development sequence;

(ii) A detailed description of the materials used and development sequence and phasing, including any alterations, repair and rebuilding, will be provided. This will include evidence of any demolished or lost structures within the complex.

(iii) An account of the past and present use;

3.3 GEOPHYSICAL SURVEY

3.3.1 ***Ground Penetrating Radar (GPR):*** It is proposed to carry out GPR surveys on two areas: 0.27ha within the walled garden and 0.16ha over the footprint of the demolished Roby Hall, the areas are defined on Fig 1:Block and Coach House

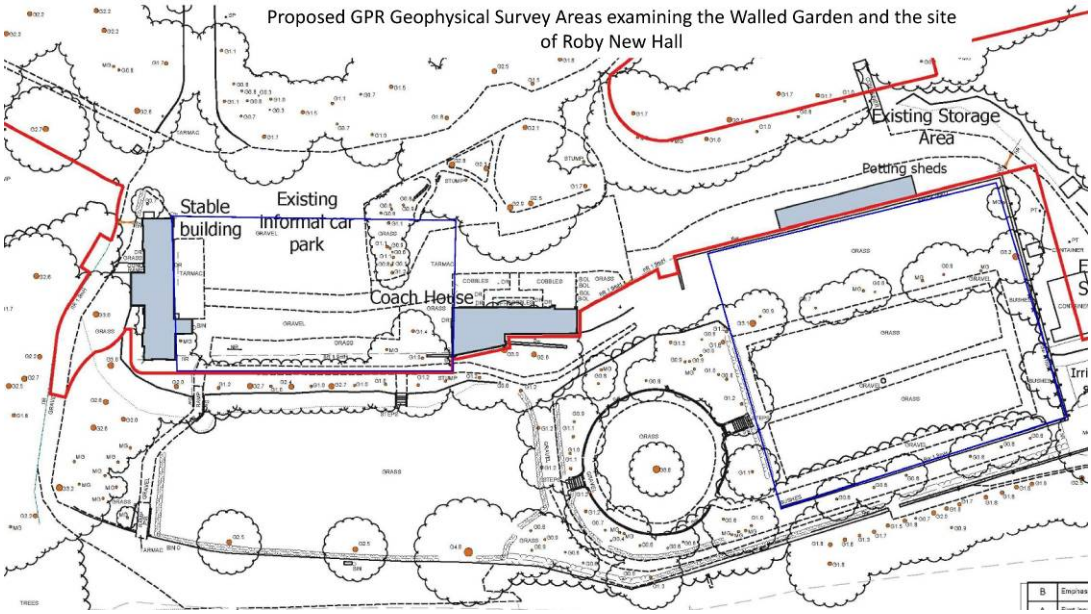

Fig 1: Proposed areas for GPR survey outlined in blue

3.3.2 Ground Penetrating Radar (GPR) is classified as an active technique as a transmitter is used to send a cone-shaped pulse of radio waves into a material (the ground in this instance) at a predetermined frequency (measured in megahertz (MHz)) and velocity (range in nanoseconds). The frequency and velocity of the radio waves is determined by the relative permittivity of the ground and/or buried material at the time of the survey. The relative permittivity of a material is a measure of the capacity of a material to store a charge when an electric field is applied and is expressed by a number as its 'dielectric constant' which, for a vacuum is 1. Water, for example, has a dielectric constant of 81 and sandstone has a dielectric constant of 6. The waves pass through the ground until they encounter a boundary between changes in dielectrically dissimilar material where they change velocity (slow down or speed up) and some are reflected back towards the surface. A receiver is used to scan for the returned waves, the results being displayed as a vertical profile in real time on a hand held display. The greater the change in velocity, the higher the amplitude of the displayed response. GPR is an effective technique to use in urban areas as some of the radio waves penetrate further into the ground to detect deeper features. GPR surveys are useful for detecting a wide variety of buried features from air voids to foundations to ditches to large metallic objects.

3.3.3 ***Method Statement:*** it is proposed to use the Utsi Electronics GroundVue 3 system coupled to either a 400MHz or 250MHz antenna. The 250MHz antennas have a maximum theoretical depth of approximately 9m, whilst the 400MHz is approximately 4m, although the depths are dependent upon the dilectric constant of the ground. A 1.5GHz antenna will also be available to provide further clarification of the top 1m deposits as required. The survey will be carried out on parallel traverses, the locations of which will be staked out using survey grade GPS/GNSS. The traverses will be 1m apart and data will be collected at 40 scans per metre. Data are displayed in real time on a control unit and stored in the internal memory.

3.3.4 All data will be downloaded immediately following collection using specialist survey software (*Geoplot 3*) and will be minimally processed on site where applicable. Raster images will be exported, usually in .png or .jpg format for presentation and dissemination. These images will be imported into CAD software and overlain on a geo-referenced base plan. An interpretation of the anomalies will be presented in CAD and a non-technical summary and discussion of the results will be included in a report which will accompany the interpretation. The report will include scaled CAD drawings with reflected energy plans and interpretations.

3.3.5 The survey will be carried out in accordance with English Heritage guidelines, 'Geophysical Survey in Archaeological Field Evaluation', 2008 and Institute for Archaeologists standards, 'Standard and Guidance for archaeological geophysical survey', 2010, a copy of which will be made available on site.

3.4 ARCHAEOLOGICAL WATCHING BRIEF

3.4.1 A process of archaeological watching brief will be undertaken during selected groundworks to be undertaken across the study area, that will potentially impact on elements of the garden or the structural remains of the house and ancillary structures. In particular, there will need to be an archaeologist present during the excavation of selected trenches or geotechnical test pits. Subject to the nature of any trial trenching, they may need to be archaeologically led, with the archaeologist guiding the mechanical excavator and initiating manual excavation for sensitive sections. The requirements for the groundwork investigations will be subject to discussions with the client, consultant and archaeological curator.

3.4.2 ***Methodology:*** the work will comprise archaeological observation during selected groundworks, to include the systematic examination of any subsoil horizons exposed during the course of the groundworks, and the accurate recording of all archaeological features and horizons, and any artefacts, identified.

3.4.3 Discovery of significant archaeological remains will require stoppage of the excavation in that location. This will be carried out as efficiently as possible in order to minimise disruption. Depending on the deposits revealed, it is anticipated that the average time for the suspension of works in the locale of the identified archaeological remains will be approximately 2-4 hours. There will be close liaison between OA North and the contractor.

3.4.4 Clearance will be given for construction to proceed once the archaeologist is satisfied that either no remains are present, or that they have been adequately recorded, or that the level of impact will not disturb any deeper remains that can be preserved *in situ*.

3.4.5 ***Complex or Extensive Remains:*** should the remains be too complex or extensive to be investigated and recorded under watching brief conditions then the area will be fenced-off by the Contractor and the Client will be immediately contacted in order to determine the scope of the mitigation. All further groundworks in the marked area will cease until clearance is given to proceed. All further works would be subject to a variation to this project design.

3.4.6 ***Investigation and Recording:*** putative archaeological features and/or deposits identified by the machining process, together with the immediate vicinity of any such features, will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and where appropriate sections will be studied and drawn. Any such features will be sample excavated (i.e. selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal).

3.4.7 ***Recording:*** all elements of the work will be recorded in accordance with current English Heritage guidelines (2006) and the best practices formulated by English Heritage's Centre for Archaeology (CfA) and the Chartered Institute for Archaeology (CIfA) (1999). The archaeological structures will be planned using a survey grade differential GPS (Leica 1200) which is accurate to +- 0.02m. All planning data will be digitally incorporated into a CAD system in the course of the evaluation and will be superimposed onto base survey mapping. This process will generate scaled plans which will also be subject to manual survey enhancement. The drawings will be generated at an accuracy appropriate for 1:20 scale but can be output at any scale required.

3.4.8 During this phase of work, recording will comprise a full description and preliminary classification of features or materials revealed, and their accurate location (either on plan and/or section, and as

grid co-ordinates where appropriate). Features will be planned accurately at appropriate scales and annotated on to a large-scale digital plan. A photographic record will be undertaken simultaneously.

3.4.9 Levels will be recorded and reduced to their OD heights, with all benchmark and TBMS to be shown. The location of all features excavated will be recorded by Total Station with appropriate spot heights and tied into the OS grid. Altitude information will be established with respect to OS Datum. The location of the remains within the areas of construction will be based on site plans provided by the client containing OS information.

3.4.10 A plan will be produced of the areas of groundworks showing the location and extent of the ground disturbance and one or more dimensioned sections will be produced.

3.5 REPORT PRODUCTION

3.5.1 ***Final Report:*** a written synthetic report will be submitted to the Planning Archaeologist for Merseyside Environmental Advisory Service within three weeks of completion of the survey and all groundworks and investigations. The final report will be in the same basic format as this project design and will present a well-ordered synthesis of the programme of investigation, and will include the following:

- a site location plan related to the national grid;
- the dates on which the fieldwork was undertaken and by whom;
- a concise, non-technical summary of the results;
- table of contents;
- acknowledgements;
- the precise location, address and NGR of the site;
- project background and historical context;
- a description of the methodologies employed, work undertaken and results obtained;
- An account of the building investigation results. This will include a description of the building's layout, as well as its age, fabric, form and function. This will be followed by a discussion of the sequence of development, process layout and use over time, its relationship with other buildings in the vicinity, in terms of architecture and function;
- an appraisal of the quality and reliability of the data;
- recommendations for further work;
- plans, section drawings and photographs at an appropriate scale;
- the report will also include a complete bibliography of sources from which data has been derived;
- a copy of this project design in the appendices, and indications of any agreed departure from that design;

3.5.2 Prior to the dissemination of the final report, plans and/or data will be made available to the client during the course of the works. Three bound copies will be submitted and also digital copies for the HER and one bound copy for KMBC. CAD files in AutoCAD.DWG format, will be included on the discs.

3.5.3 ***Archive:*** the results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (English Heritage 2006). The project archive represents the collation and indexing of all the data and material gathered during the course of the project.

3.5.4 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 IFA in that organisation's code of conduct. OA North conforms to best practice in the preparation of project archives for long-term storage. OA North practice is to deposit the original record archive of projects with the appropriate repository.

3.5.5 The Arts and Humanities Data Service (AHDS) online database project *Online Access to index of Archaeological Investigations* (OASIS) will be completed as part of the archiving phase of the project.

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

4. OTHER MATTERS

4.1.1 ***Access:*** it is assumed that there will be access available to the site for the work, and access should allow for vehicular access to the vicinity of the buildings.

4.1.2 ***Health and Safety:*** full regard will be given to all constraints during the survey, as well as to all Health and Safety considerations. The OA North Health and Safety Statement conforms to all the provisions of the SCAUM (Standing Conference of Unit Managers) Health and Safety manual. Risk assessments are undertaken as a matter of course for all projects, and will anticipate the potential hazards arising from the project. A very careful risk assessment will be undertaken in conjunction with the client.

4.1.3 ***Insurance:*** insurance in respect of claims for personal injury to or the death of any members of the public in the course of the project will be covered by OA North, who has insurance cover which complies with the employers' liability (Compulsory Insurance) Act 1969 and any statutory orders made there under. For all other claims to cover the liability of OA North in respect of personal injury or damage to property by negligence of OA North. The insurance cover is as follows:

- £10 million public liability
- £10 million employer's liability
- £5 million professional indemnity

5. RESOURCES

5.1 PROJECT TEAM

5.1.1 ***OA North****:* the survey training will be undertaken directed by Andy Phelps (Project Officer) and Jamie Quartermaine. The project will be under the project management of Jamie Quartermaine, BA Surv Dip MIFA FSA (OA North Project Manager) to whom all correspondence should be addressed. Jamie is a very experienced landscape surveyor, who has undertaken or managed literally hundreds of surveys throughout Northern England since 1984, and has considerable experience of working on similar projects to that proposed. He has been a project manager since 1995 and has managed over 800 very diverse projects since then, which are predominantly survey orientated, but of all periods from the Palaeolithic to the twentieth century. He managed the earlier Sizergh Dig in the Park Community Project.

5.1.2 Jamie is a qualified land surveyor (Topographic Sciences Diploma Glasgow University) and has an exhaustive knowledge and understanding of surveying techniques. He regularly runs training courses in survey techniques and has the expertise to devise a variety of survey techniques for training volunteers. He is a CAA qualified Commercial UAV pilot.

5.1.3 ***Project Surveyor:*** the survey will be undertaken by Andy Phelps (OA North Project Officer). He has been involved in the recording of historic buildings for over ten years and has a detailed and wide ranging knowledge of vernacular agricultural buildings gained initially during his time in Norfolk and later through his work in Lancashire. He also has a great deal of experience of surveying industrial structures, acquired while employed by Scottish Canals heritage department. He completed a Masters in Building Archaeology at the University of York in 2012. He is currently involved in the Lancashire Historic Textile Mills Survey, an English Heritage funded project carrying out surveys of mills to inform future listing proposals.

5.1.4 ***Geophysical Survey:*** the geophysical survey (GPR) will be undertaken by Alex Birtwisle of Atlas Geophysical Limited. Alex has 19 years of experience working with GPR surveys and has considerable experience of working on archaeological sites. Atlas Geophysical Limited are members of the European GPR Association, European Association of Geophysical Engineers and are registered with Ofcom as licensed users of Ground Penetrating Radar.

APPENDIX B: ADDENDUM TO THE WSI FOR AN AREA TO THE EAST OF THE WALLED GARDEN

BOWRING PARK STAGE 3,

MERSEYSIDE

ADDENDUM TO ARCHAEOLOGY SURVEY PROJECT DESIGN (OA NORTH 2017)

Planning Application Reference: 17/00772/KMBC1

Oxford Archaeology North

November 2018

1. Introduction

1.1 Knowsley Metropolitan Borough Council (KMBC) require the implementation of a programme of archaeological work in advance of re-development (Figure 1) of an existing storage area located at Bowring Park (17/00772/KMBC1).

1.2 The storage area is situated to the east of the historic walled garden of Roby Hall (Figure 2), it is bounded to the south by a section of Ha-Ha, and includes the site of a demolished late 19th century building (Figure 3) recently identified by Merseyside Environmental Advisory Service (MEAS).

1.3 The work is required to comply with Policies CS2, CS19 and CS20 of the Knowsley Local Plan Core Strategy, adopted January 2016. Conditions 4 and 5 of the planning permission (17/00772/KMBC1) require:

Condition 4

- Prior to the commencement of any development works hereby permitted a ground investigation shall be undertaken to identify the extent of remains of the Ha Ha in the vicinity of the storage area, and the findings submitted to the Local Planning Authority.
- If there are Ha Ha remains in this area, a scheme for the protection of the existing Ha Ha in this locality shall be submitted to and agreed in writing by the Local Planning Authority and the development shall only take place in accordance with the agreed scheme.

Condition 5

- Prior to the commencement of development, a written scheme of site investigation for archaeological work shall be submitted to and approved in writing by the Local Planning Authority. The work shall only be carried out in accordance with the scheme prior to development works commencing, unless otherwise agreed in writing by the Local Planning Authority.

1.4 This document comprises an addendum to a previously submitted project design (Oxford Archaeology 2017) for geophysical survey, building recording and monitoring and forms the Written Scheme of Investigation for archaeological works at the storage area

2. Proposed Development

2.1 The development comprises the construction of an area of hardstanding with retaining wall to create a site maintenance compound comprising 6 storage containers and 2 storage bays with 1.8m high fencing, the relocation of an existing fuel storage container, together with associated earthworks, drainage, and access road (Figure 1). The initial groundwork for the development will comprise the removal of relatively recently dumped soils and organic matter which currently cover much of the east of the re-development area. Where the existing ground level is very close to the development formation level the only groundwork carried out will be removal of vegetation, or minimal removal of existing surfaces prior to raising ground level, and subsequent resurfacing.

2.2 The development has been designed to ensure that construction groundwork will not remove in-situ remains of the Ha-Ha and it is not anticipated that it will be necessary to remove footings or other remains associated with the demolished 19th century building. If present it is anticipated that the remains of the demolished building will be preserved *in—situ*, with ground level raised over it. The detailed method for preservation *in-situ* of any surviving elements of the demolished building, and if necessary the Ha-Ha, will be discussed and agreed with KMBC Conservation Officer after review of results of the archaeological monitoring.

3. Historical Background

3.1 A detailed background to the archaeology and heritage of Bowring Park has been presented in a desk based assessment (Mouchel 2014: Report ref. 1063385-003-001/Heritage) and other documents produced in support of application for Heritage Lottery Funding. The heritage baseline sis not reproduced in full in this document, but is very briefly summarised below.

3.2 The area of Bowring Park is believed to have been within a deer park during the medieval period. A late medieval manor house, Roby Old Hall, is shown on an 1829 estate map and was located at the north-eastern part of the estate. The Old Hall is believed to have been demolished in the latter part of the 20th century.

3.3 A new hall was commissioned by John Williamson shortly after he acquired the estate in 1761. The new hall was constructed to the south west of the old hall and the grounds of the estate appear to have been remodelled in the English landscape style. The northern façade of the new hall had an elaborate, four columned entrance portico and the southern façade had a central bay overlooking a lawn bounded to the south by a Ha-Ha. Rectangular ancillary buildings were constructed to the west and east of the hall. A formal garden, pond and walled garden was located further to the east. The hall was extended to the west and many changes were made to the ancillary building located to the east in the nineteenth century.

3.4 Review of historic Ordnance Survey mapping shows that a building was constructed adjacent to, or straddling the Ha-Ha. c.30m east of the walled garden in the second half of the 19th century; it is absent on the 1851 OS map, but present of the 1891 OS map and appears to have been demolished in the 1960s. The character and function of this building is currently unclear.

3.5 In 1906, the Roby Hall Estate was purchased and offered to the City of Liverpool as an area of parkland, and was renamed Bowring Park. A nine-hole golf course was established on the estate in 1912 and was one of the earliest municipal golf courses. Roby New Hall was damaged by fire during the Second World War, and was then demolished in the early 1950s.

4. Aims and Objectives

4.1 The aims of the work set out in this WSI are as follows:

- To mitigate the impact of the regeneration of Bowring Park on the section of Ha-Ha, and any remnants of a demolished building and associated remains located at the storage area.
- To enable the delivery of the development.

4.2 The objectives are as follows:

- To undertake archaeological monitoring where ground works at the storage area may impact on sub-surface structural remains associated with the Roby Estate;
- To record the character and extent of any structural remains revealed;
- To establish the extent of past impacts on the archaeological resource;
- To provide information enabling preservation *in-situ* of significant structural remains;
- To disseminate the results of the work through reporting
- To prepare and deposit the project archive.

5. Method Statement

5.1 *ARCHAEOLOGICAL MONITORING*

5.1.1 Archaeological monitoring will be undertaken at the storage area during groundworks in proximity to the Ha-Ha, and at the site of a demolished late 19th century building. All work will be completed following the Chartered Institute for Archaeologists Regulations and Standards, including the Code of Conduct (CIfA 2014a) and Standards and Guidance for Archaeological Watching Brief (CIfA 2014b).

5.1.2 In particular an archaeologist will monitor the mechanical excavator during the removal of any vegetation and ground reduction in proximity to the Ha-Ha and the site of the demolished building. The mechanical excavator will be fitted with a smooth bladed ditching bucket. The mechanical excavator will be guided by the monitoring archaeologist to complete the limited additional removal of soils and vegetation where this would facilitate appropriate investigation of archaeological remains. Manual archaeological excavation and recording will be initiated as necessary, where significant archaeological remains are present.

5.1.3 Discovery of significant archaeological remains will require stoppage of groundwork in that location. Archaeological investigation and recording will be carried out as efficiently as possible in order to minimise disruption to the construction programme. Depending on the deposits revealed, it is anticipated that the average time for the suspension of works in the locale of the identified archaeological remains will be approximately one day. There will be close liaison between the archaeological contractor (OA North) and the groundworks contractor.

5.1.4 Clearance will be given for construction groundworks to proceed once the archaeologist is satisfied that either no remains are present, or that they have been adequately recorded, or that the level of impact will not disturb any deeper remains that can be preserved *in situ*.

5.2 ***Complex or Extensive Remains***

5.2.1 Should the remains be too complex or extensive to be investigated and recorded under watching brief conditions then the area will be fenced-off by the Contractor and the Client will be immediately contacted in order to determine the scope of the mitigation. All further works would be subject to a variation to this project design.

5.3 ***Investigation and Recording***

5.3.1 Putative archaeological features and/or deposits identified by the machining process, together with the immediate vicinity of any such features, will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and, where appropriate, sections will be studied and drawn. If they are impacted by groundworks significant features will be sample excavated (ie selected pits and postholes will normally be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal).

5.3.2 Archaeological structures will be planned using a survey grade differential GPS (Leica 1200) which is accurate to +- 0.02m. All planning data will be digitally incorporated into a CAD system in the course of the evaluation and will be superimposed onto base survey mapping. This process will generate scaled plans which will also be subject to manual survey enhancement. The drawings will be generated at an accuracy appropriate for 1:20 scale but can be output at any scale required.

5.3.3 During this phase of work, recording will comprise a full description and preliminary classification of features or materials revealed, and their accurate location (either on plan and/or section, and as grid co-ordinates where appropriate). Features will be planned accurately at appropriate scales and annotated on to a large-scale digital plan. A photographic record will be undertaken simultaneously.

5.3.4 Levels will be recorded and reduced to their OD heights, with all benchmark and TBMS to be shown. The location of all features excavated will be recorded by Total Station with appropriate spot heights and tied into the OS grid. Altitude information will be established with respect to OS Datum. The location of the remains within the areas of construction will be based on site plans provided by the client containing OS information.

5.3.5 A plan will be produced of the areas of groundworks showing the location and extent of the ground disturbance and one or more dimensioned sections will be produced.

6. Report and Archive

6.1 ***Final Report***

6.1.1 A written synthetic report will be submitted to the Planning Archaeologist for Merseyside Environmental Advisory Service within three weeks of completion of the archaeological monitoring. The final report will be in the same basic format as this project design and will present a well-ordered synthesis of the programme of investigation, and will include the following:

- a site location plan related to the national grid;
- the dates on which the fieldwork was undertaken and by whom;
- a concise, non-technical summary of the results;
- table of contents;
- acknowledgements;
- the precise location, address and NGR of the site;
- project background and historical context;
- a description of the methodologies employed, work undertaken and results obtained;
- A description of structural remains, including, where possible discussion of age, fabric, form and function. This will be followed by a discussion of the sequence of development, process layout and use over time, its relationship with other buildings in the vicinity, in terms of architecture and function;

- an appraisal of the quality and reliability of the data;
- recommendations for further work;
- plans, section drawings and photographs at an appropriate scale;
- the report will also include a complete bibliography of sources from which data has been derived;
- a copy of this project design in the appendices, and indications of any agreed departure from that design;

6.1.2 Prior to the dissemination of the final report, plans and/or data will be made available to the client, as necessary, during the course of the works. Allowance is made for submission of four bound copies, digital copies for the HER. Digital data including CAD files in AutoCAD.DWG format, will be included on digital storage media as required.

6.2 ***Archive***

6.2.1 The results of all archaeological work carried out will form the basis for a full archive, which will be prepared following CIfA Standards and Guidance (CIfA 2014c), current Historic England guidelines (HE 2015) and requirements of the National Museums Liverpool (NML 2015). The project archive represents the collation and indexing of all the data and material gathered during the course of the project.

6.2.2 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 IFA in that organisation's code of conduct. OA North conforms to best practice in the preparation of project archives for long-term storage. OA North practice is to deposit the original record archive of projects with the appropriate repository.

6.2.3 The Arts and Humanities Data Service (AHDS) online database project *Online Access to index of Archaeological Investigations* (OASIS) will be completed as part of the archiving phase of the project.

6.3 ***Confidentiality***

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

7. Other Matters

7.1 ***Access:*** will be arranged by the client, including vehicular access to the vicinity of the buildings.

7.2 ***Health and Safety:*** full regard will be given to all constraints during the survey, as well as to all Health and Safety considerations. The OA North Health and Safety Statement conforms to all the provisions of the SCAUM (Standing Conference of Unit Managers) Health and Safety manual. Risk assessments are undertaken as a matter of course for all projects, and will anticipate the potential hazards arising from the project. A risk assessment will be undertaken in conjunction with the client.

7.3 ***Consolidation:*** care will be taken to preserve the Ha Ha structure during the groundworks. There will be a geotextile put over the structure then a minimum 250mm stone cover over the HaHa structure (set in and over 200mm thick Tree webbing) and 40mm thick flexible bonded surface on top of this.

7.4 ***Insurance:*** insurance in respect of claims for personal injury to or the death of any members of the public in the course of the project will be covered by OA North, who has insurance cover which complies with the employers' liability (Compulsory Insurance) Act 1969 and any statutory orders made there under. For all other claims to cover the liability of OA North in respect of personal injury or damage to property by negligence of OA North. The insurance cover is as follows:

- £10 million public liability
- £10 million employer's liability
- £5 million professional indemnity

Bibliography

Chartered Institute for Archaeologists (CIfA) 2014a *Code of Conduct*.

Chartered Institute for Archaeologists (CIfA) 2014b *Standards and Guidance for an Archaeological Watching Brief*.

Chartered Institute for Archaeologists (CIfA) 2014c *Standards and Guidance for the Creation, Compilation and Deposition of Archaeological Archives*.

Historic England (HE) 2015 *Management of Research Projects in the Historic Environment* (MoRPHE), London

Historic England (HE) 2016 *Understanding Historic Buildings: A Guide to Good Recording Practice*, London

National Museums Liverpool 2015 *Guidelines for the Transfer of Archaeological Archives to the Museum of Liverpool*.

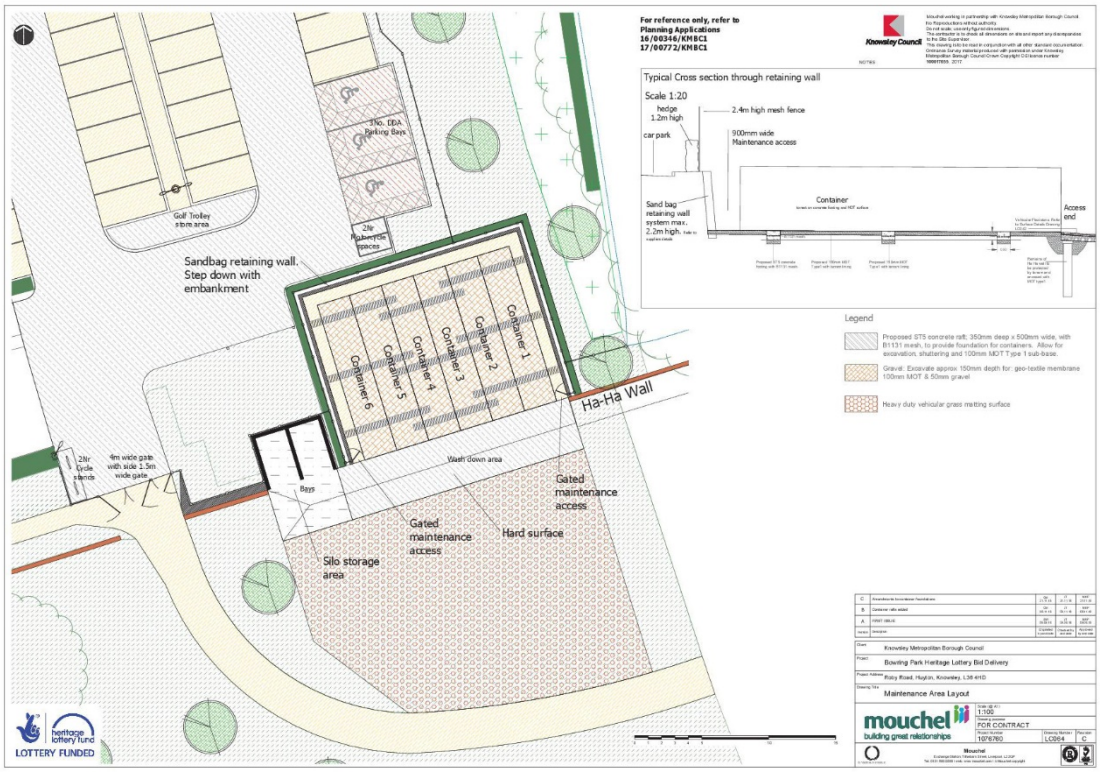

Figure 1: Maintenance Area

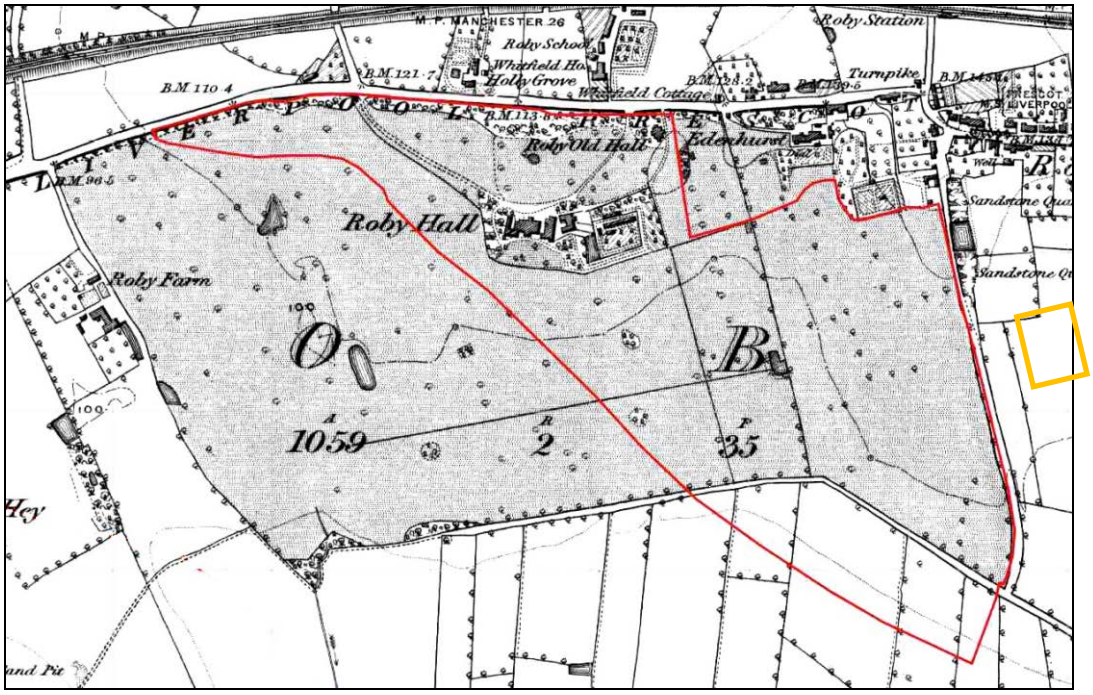

Figure 2: Extract from 1851 Ordnance Survey Map showing absence of building to the east of the walled garden and indicating location of the current storage area

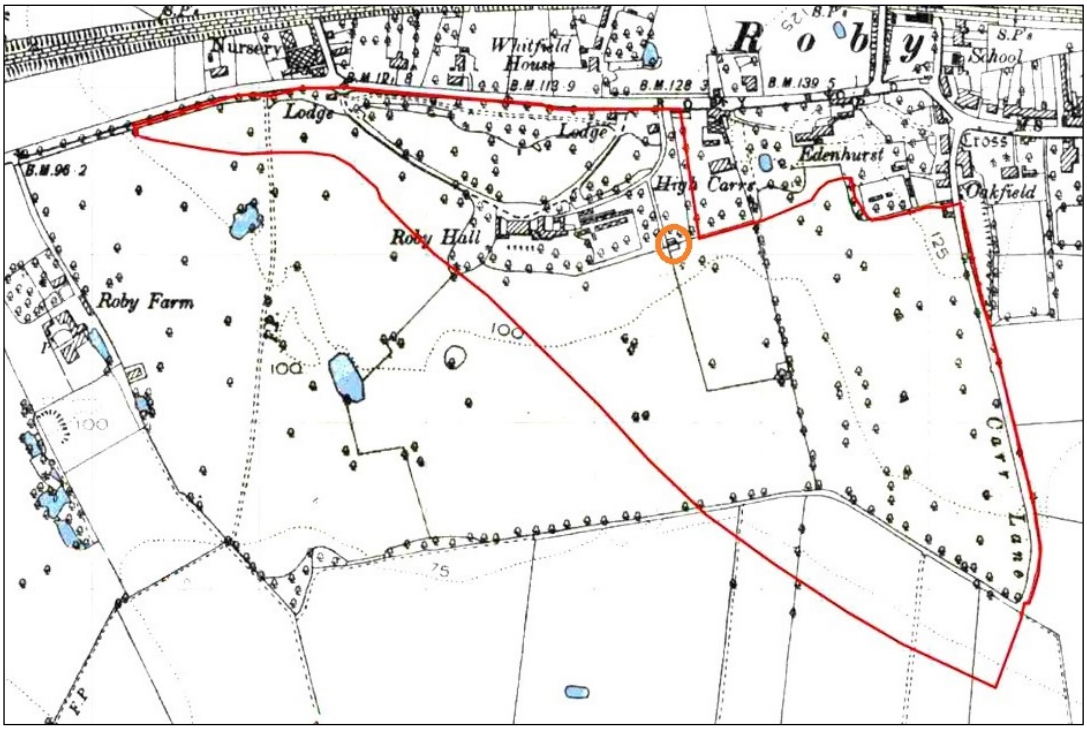

Figure 3: Extract from 1891 Ordnance Survey Ma

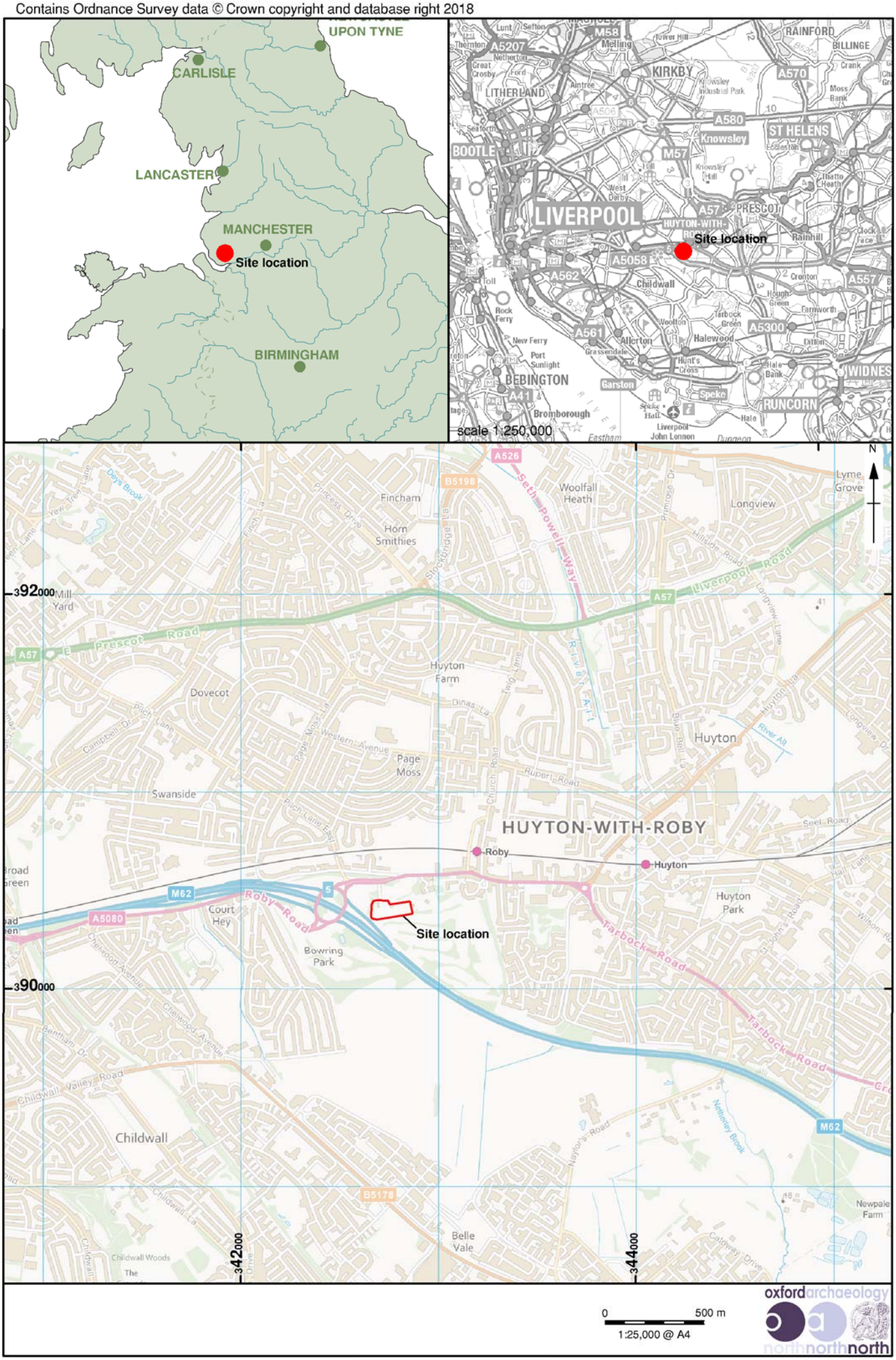

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Figure 1: Site location

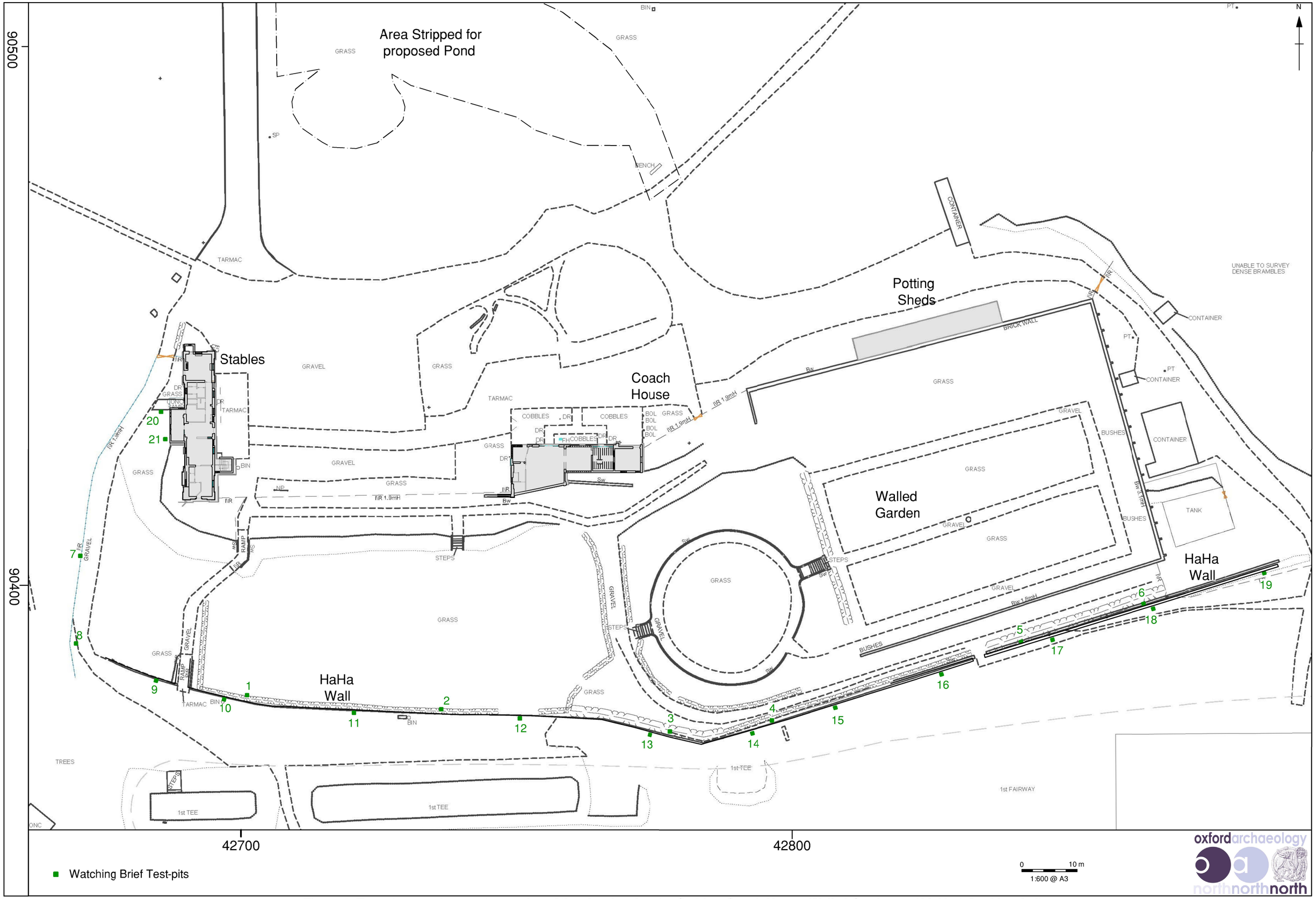

Figure 2: Test-pits superimposed on a plan of the site showing the Stables, Coach House, Walled Garden and HaHa (after Mouchel)

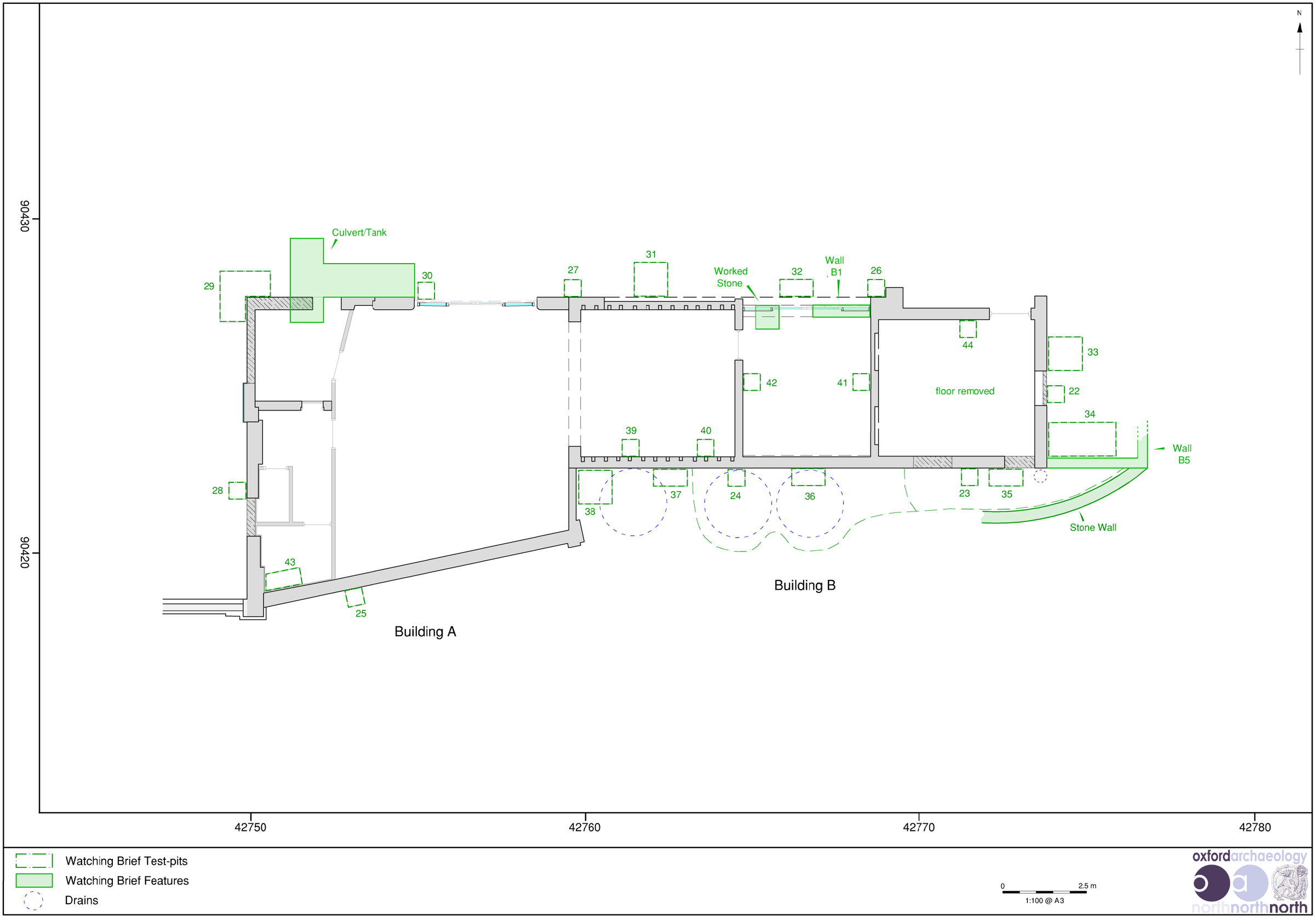

Figure 3: Coach House, location of watching brief test-pits and features

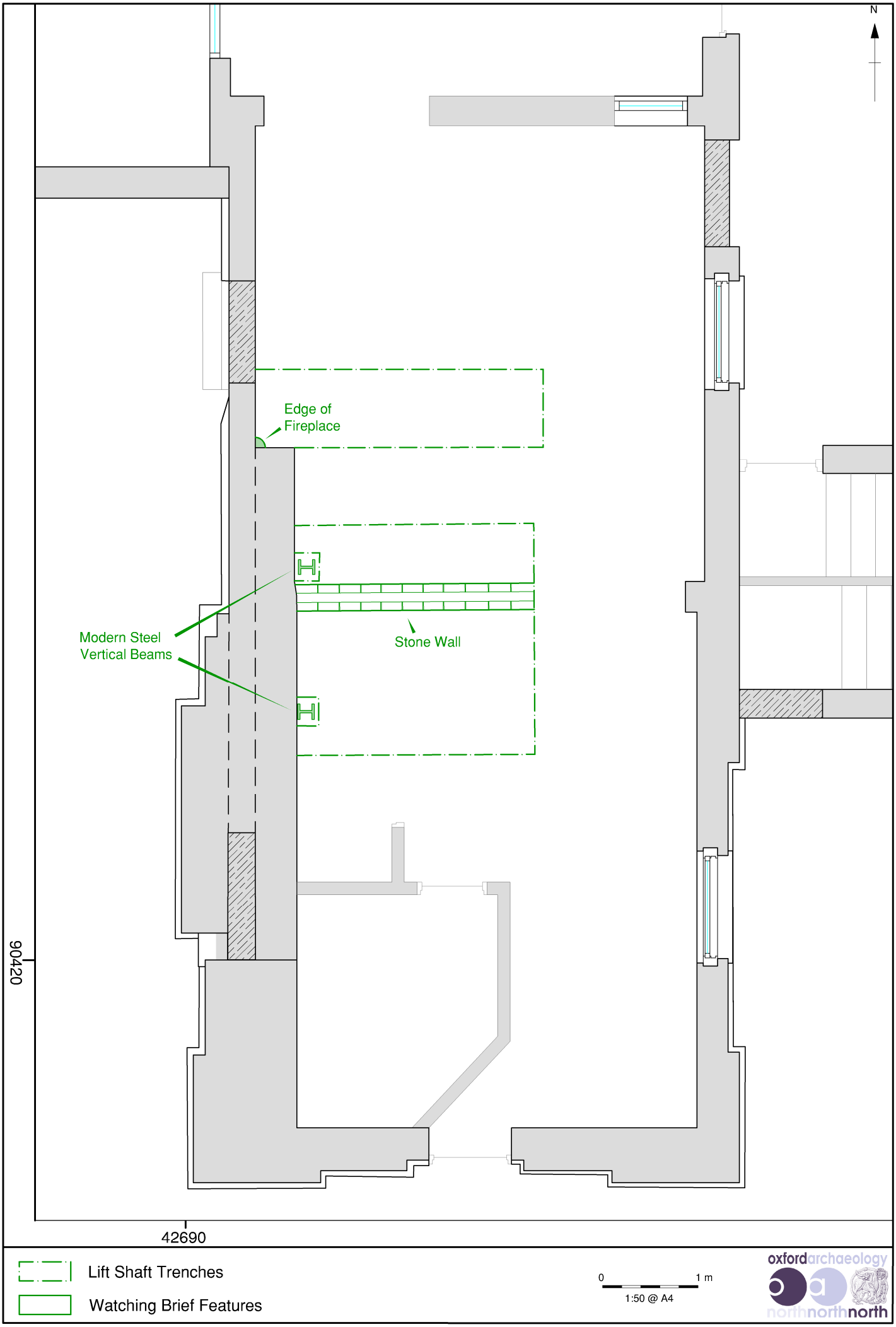

Figure 4: Excavation of the lift shaft trenches in the former stable block

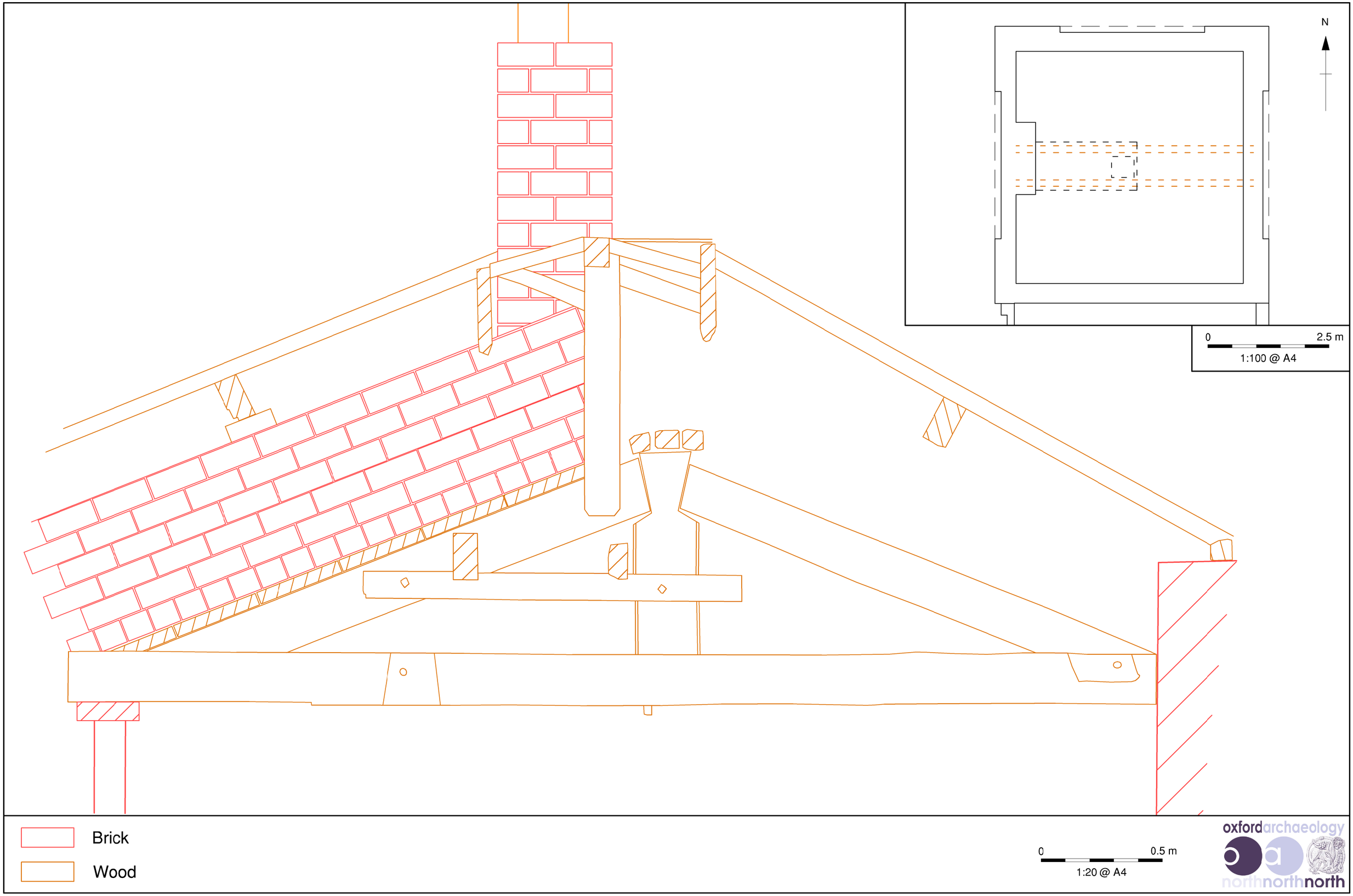

Figure 5: Cross-section through roof space at northern end of the former stable block, showing chimney arrangement

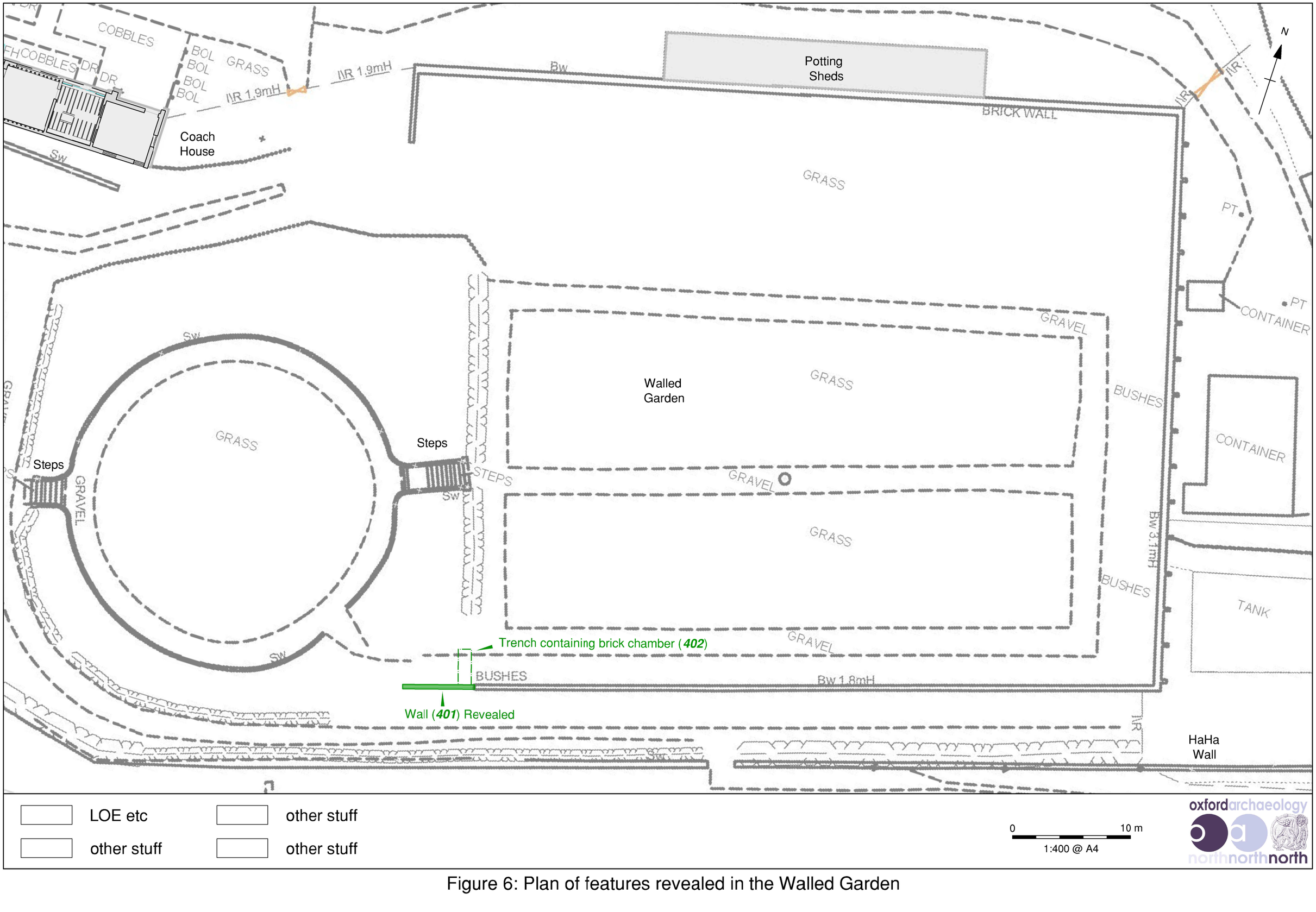

Figure 6: Plan of features revealed in the Walled Garden

oxfordarchaeology

Head Office/Registered Office/ OA South

Janus House
Osney Mead
Oxford OX2 0ES

t: +44 (0) 1865 263 800
f: +44 (0) 1865 793 496
e: info@oxfordarchaeology.com
w: http://oxfordarchaeology.com

OA North

Mill 3
Moor Lane
Lancaster LA1 1QD

t: +44 (0) 1524 541 000
f: +44 (0) 1524 848 606
e: oanorth@oxfordarchaeology.com
w: http://oxfordarchaeology.com

OA East

15 Trafalgar Way
Bar Hill
Cambridgeshire
CB23 8SQ

t: +44 (0) 1223 850500
e: oaeast@oxfordarchaeology.com
w: http://oxfordarchaeology.com