

**LAND WEST OF HEAD GARDENERS
COTTAGE,
THE ALNWICK GARDEN,
GREENWELL ROAD,
ALNWICK,
NORTHUMBERLAND**

**ARCHAEOLOGICAL EVALUATION AND
IMPACT ASSESSEMENT REPORT**

JUNE 2019

PRE-CONSTRUCT ARCHAEOLOGY

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**Land West of Head Gardeners Cottage, The Alnwick Garden, Greenwell Road, Alnwick
Northumberland**

Archaeological Evaluation and Heritage Statement Report

Commissioning Client:

Ward Robinson

On behalf of

The Alnwick Garden Trust

**The Gardeners Cottage
Greenwell Road Alnwick
Northumberland
NE66 1HB**

TEL: 01665 511350



Contractor:

Pre-Construct Archaeology Limited

**Durham Office
The Rope Works
Broadwood View
Chester-le-Street
County Durham
DH3 3AF**

Tel: 0191 377 1111



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LAND WEST OF HEAD GARDENERS COTTAGE, THE ALNWICK GARDEN,
GREENWELL ROAD, ALNWICK, NORTHUMBERLAND

ARCAHEOLOGICAL EVALUATION & HERITAGE STATEMENT REPORT

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Pre-Construct Archaeology Limited
Durham Office
The Rope Works
Broadwood View
Chester-le-Street
County Durham
DH3 3AF

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1. NON-TECHNICAL SUMMARY

- 1.1 A programme of archaeological work was required in association with the determination of a planning application for a proposed development on land west of the Head Gardener's Cottage, Alnwick Garden, Greenwell Road, Alnwick, Northumberland (centred at National Grid Reference NU 18925 13375; Figure 1 & 2). The proposed development, an education centre and associated structures, is located within a 19th-century walled kitchen garden which forms part of the Grade I Listed Park and Garden of Alnwick Castle. A Written Scheme of Investigation for the archaeological investigations was prepared by Pre-Construct Archaeology and approved by Northumberland County Council Conservation Team.
- 1.2 Extensive documentary and cartographic research undertaken during the production of a recently published monograph detailing the archaeological investigations undertaken in 2000 and 2004 in the earliest Alnwick Castle walled garden, located to the east, revealed much information about this kitchen garden. Until the mid-19th century, the site formed the northern end of burgage plots extending from buildings along Bondgate in the town to Barneyside, a terrace of land leading to the River Aln. These plots were purchased by the 4th Duke of Northumberland between 1855 and 1861 and a new extensive walled kitchen garden for the castle constructed. The development site is situated in the north-east corner of this garden. By 1865 two long propagating houses had been built and a glasshouse attached to the eastern boundary wall, heated by an external backhouse. By 1897 a square structure had been attached onto the earlier glasshouse and a structure built in the north-east corner, thought to be a steam plant providing a new heating system for the original walled garden to the east, as well as the castle itself. By the mid-20th century most of the historic structures within the site had been demolished with the exception of the eastern end of the northern propagating house and part of the structure in the north-east corner.
- 1.3 The archaeological evaluation originally comprised six trenches located across the area of the proposed development. Trenches 1, 2 and 5 were sited within areas shown on historic maps not to be occupied by garden structures to investigate the potential for archaeological remains associated with medieval burgage plots. Trenches 3 and 4 were sited across the footprint of the demolished propagating houses and Trench 6 was sited across a structure attached to the former glasshouse in the northeast corner of the garden. Trench 2 was abandoned due to the presence of an electric cable and Trench 6 could not be investigated due to access constraints.
- 1.4 Four phases of activity were encountered within the five evaluation trenches. Superficial geology was not encountered within any of the trenches. All trenches were excavated to at least 1.2m below ground level with sondages hand dug within Trenches 1, 3, & 4 up to 1.8m below ground level.

- 1.5 Subsoil (Phase 1) was exposed within Trenches 1, 4 and 5 at a depth of 0.70 to 1.1m below present ground level; the depth at which it was encountered sloped down from south to north reflecting the underlying natural topography of the area prior to landscaping activity. A small quantity of medieval pottery recovered from this subsoil indicates that it probably developed during the use of this area as burgage plots.
- 1.6 Buried soils (Phase 2) of substantial thickness (up to 0.70m) were encountered within all trenches; pottery of 19th-century date was recovered from this material. It is likely that these soils represent ground levelling dumps deposited across the area to level the sloping land prior to the establishment of the kitchen garden.
- 1.7 The kitchen garden (Phase 3) was constructed between 1855 and 1861 and by 1865 two east-west aligned propagating houses had been built. These were exposed within Trenches 3 and 4 and comprised well-preserved brick-built structures with sandstone flagged floor surfaces and central subterranean propagating pits. A pathway was recorded along the northern external wall of the northern propagating house.
- 1.8 The above ground elements of the propagating houses, except for the eastern end of the northern house, were demolished in the mid-20th century and the propagating houses backfilled with rubble to current ground level (Phase 4). A construction cut for the southern boundary wall of the site was also noted within Trench 5. This wall (located outside the trench) was constructed in the late 20th century. Modern ground level was formed by gravel deposit within Trench 1, 2, 3, and 4 and topsoil within Trench 5.
- 1.9 The purpose of this report is also to establish the extent of preservation and the effect of the proposed development on the significance of the standing historic structures. Part of the eastern range of the northern propagating house survives; the glass roof has been removed and replaced with a metal corrugated roof however, the wooden window frames and part of the mechanism for venting the structure survive. The eastern gable end is original and the windows within the southern elevation of the structure have been bricked up. A glasshouse was attached to the north-west surviving end of the propagating house in the 20th century. The extant northern and eastern boundary walls of the garden predate the establishment of the kitchen garden; historic map show they were built between 1788 and 1827. The eastern wall contains evidence for heating systems used for various garden structures and the structure in the north-east corner appears to be the remains of a steam plant, used to heat parts of the castle and garden structures. The propagating house and glasshouse are to be demolished and the eastern and northern walls and steam plant structure will be obscured by buildings.
- 1.10 The site lies within a Grade I Listed Park and Garden and Grade II Listed Buildings (Gardener's Cottage, Water Tower and Garden Wall of the original 18th-century walled garden) are in the near vicinity. An assessment of the effect of the proposed development on the setting of these designated heritage assets has also been undertaken as part of this

work. It is considered that the proposed development will have a medium beneficial impact on the setting of the Listed Park and the surrounding Grade II buildings as it will replace the current variety of piecemeal temporary structures, timber sheds and metal stores. The scheme will have little impact on the setting of Alnwick Castle due to existing screening provided by the northern garden wall and mature trees blocking sight lines to and from the proposed development. There are fragmentary sightlines from the southern limits of the site towards the castle however, the proposed accommodation block within this area will have a beneficial impact on the setting as it will replace the current gardener's temporary accommodation and a variety of stores and sheds. Sightlines to and from the Gardener's Cottage and Garden Wall are also broken by the eastern boundary wall which is at a higher elevation than the proposed one storey education centre. Moreover, views to and from the water tower are also screened partially by the eastern boundary wall but also by the southern wall of Alnwick Gardens, trees and bushes

- 1.11 The walled kitchen garden formed an integral part of the gardens of Alnwick Castle, created by the 4th Duke as part of his programme of extensive remodelling of the grounds to replace an earlier walled kitchen garden which had been amalgamated into his new Italianate garden. The Dukes of Northumberland were at the forefront of garden design and innovations in technology, as witnessed by changes in heating systems in hothouses and other garden structures. The significance of the surviving historic buildings within the kitchen garden has been affected by the level of demolition and the contraction of the garden which occurred in the mid-20th century. The kitchen garden itself does not survive in its entirety; the south-eastern part of the garden is now occupied by a carpark. Most of the structures within the walled kitchen garden have been demolished leaving little remaining of the original layout. The southern propagating house and western half of the northern house have been demolished to ground level. Only the eastern end of the pair of propagating houses is still extant, and this has been subject to modification and removal of some historic elements such as the glass roofing. The upstanding and below ground archaeological remains of the propagating houses are therefore considered to be of regional significance and do not merit preservation *in situ*.
- 1.12 To mitigate the detrimental effect of the development on these undesignated heritage assets, all below ground structural remains of the propagating houses to be impacted by the development will be exposed and recorded and detailed historic building recording of the structures to be demolished will be undertaken. Although the eastern wall and remains of steam plant are not to be demolished, structures will be built in front of them thus obscuring these structures. Historic building recording of these elements will therefore also be undertaken. Any groundworks in the area around the location of Trench 6 will be monitored to identify and record any below ground remains of historic structures. A watching brief may be required in association with ground reduction in other parts of the site, depending on depth of impact, to record any potential medieval archaeological features which may be present.

2. INTRODUCTION

2.1 Project Background

- 2.1.1 This report details the results of archaeological investigations undertaken 7th-13th May 2019 on land west of the Head Gardener's Cottage, Alnwick Garden, Alnwick, Northumberland (Figures 1 and 2). The archaeological investigation was commissioned by Ward Robinson on behalf of The Alnwick Garden Trust and was undertaken by Pre-Construct Archaeology Limited (PCA).
- 2.1.2 The archaeological evaluation and historic building assessment were carried out in association with a planning application (18/03228/FUL) for a proposed development within the garden. The archaeological investigation was required, as part of the planning process, to inform the Local Planning Authority (LPA), Northumberland County Council Conservation Team (NCCCT) and the Client, of the character, date, extent and degree of survival of archaeological remains at the site so that appropriate mitigation measures can be formulated as part of a consented scheme. The results of the work will inform the detail of an appropriate mitigation response, consistent with paragraph 199 of the NPPF.
- 2.1.3 The scheme of archaeological works was devised in consultation with NCCCT to determine the likely impact on potential archaeological deposits by the proposed development and the effect on the significance of the historic standing structures within the garden and listed heritage assets in the vicinity; the site lies within a Grade I Listed Park and Grade II Listed Buildings (Gardener's Cottage, Water Tower and Garden Wall of the original 18th-century walled garden) are in the near vicinity to the west. A Written Scheme of investigation (WSI) was prepared by PCA (2019) and approved by NCCCT prior to the work commencing.
- 2.1.4 Archaeological investigations and standing building recording were carried by PCA in 2000 and 2004 ahead of the construction of the new Alnwick Garden within the original 1770's walled garden to the east of the kitchen garden. Extensive documentary and cartographic research undertaken during the production of a recently published monograph detailing these investigations revealed much information about this kitchen garden (Ridgeway and Proctor 2018).
- 2.1.5 Five trenches were excavated across the site of the former kitchen garden. Trenches 1, 2 and 5 were sited to target burgage plot activity, with Trenches 3 and 4 targeting the two propagating houses. Trench 6, targeting a late 19th-century garden structure, could not be investigated due to access constraints. A site walkover was also undertaken to assess the historic standing remains, their significance and the impact of the proposed development on the setting of nearby designated heritage assets.
- 2.1.6 The Online Access to the Index of Archaeological Investigation (OASIS) reference number of the project is: preconst1-351594.

2.2 Site Location and Description

- 2.2.1 The proposed development is located on land west of the Head Gardener's Cottage, Alnwick Garden, Greenwell Road, Alnwick, Northumberland (centred on National grid Reference NU 18925 13375). This walled kitchen garden forms part of the extensive lands of Alnwick Castle, located on the north-eastern edge of the market town of Alnwick in north Northumberland. The town is situated on the River Aln c. 8km west of the coast, and 12km by river from Alnmouth where the river enters the sea. The town of Alnwick occupies a terrace of land overlooking the River Aln, to the north, with the castle constructed on a natural promontory. The first walled garden was constructed in the 1770s c. 300m to the south-east of the castle towards the northern edge of the terrace where the land drops steeply down towards the river just beyond the limit of the site.
- 2.2.2 The proposed development is located in the north-eastern corner of what was once an extensive kitchen garden situated c. 20m to the west of the original 1770's walled garden. Historic map regression shows that the extant eastern and northern boundary walls of the garden were built between 1788 and 1827. The western boundary of the site is delineated by a hedge, dividing the original kitchen garden, and the current southern boundary wall of the site dates from after the mid-20th century when the south-eastern part of the original garden was turned into a carpark. Evidence for the heating systems for a demolished vinery glasshouse and structure are visible in the eastern wall. The extant external building, built by 1827, appears to have been converted into a backhouse for the heating system of the former vinery inside the site. The eastern half of a long propagating house, the northern one of two built by 1865, is extant, although the glass roof has been removed. The decorative wrought iron roof supports, timber frames for the windows and traces of the demolished external walls are still visible. In the north-east corner of the site a substantial stone structure which straddles the boundary wall comprises the remains of a steam plant built towards the end of the 19th century.
- 2.2.3 All other structures inside the garden are of modern post 1950's origin. These include piecemeal timber shed structures and stores along the northern wall and in the north-east corner and several temporary structures along the southern boundary.
- 2.2.4 Three Grade II Listed structures are located within the very near vicinity of the site; Gardener's Cottage and the Water Tower c. 5m and 20m, respectively, to the south-east of the entrance into the kitchen garden and the Garden Walls which form the boundary of the 1770's walled garden c. 20m to the east.

2.3 Geology and Topography

- 2.3.1 The underlying solid geology of the area is sedimentary bedrock of the Scremerston Coal Member; sandstones, siltstones and mudstone formed in the Carboniferous Period (British Geological Survey website). In the vicinity of the site, the superficial deposits overlying bedrock are glaciofluvial sand and gravel deposits of Devensian origin.

- 2.3.2 The town of Alnwick occupies a terrace of land overlooking the River Aln, to the north, with the castle constructed on a natural promontory. The first walled garden was constructed c. 300m to the south-east of the castle towards the northern edge of the terrace and the land drops steeply down towards the river just beyond the northern limit of the site. The 48m contour is depicted on the Ordnance Survey map running around the top of the castle ramparts in the south-east and along the northern and north-eastern edges of the walled garden. The River Aln is situated c. 200m to the north of the walled garden, following the 25m contour at this point

2.4 Proposed Development

- 2.4.1 The proposed scheme (Figure 3A&B) is set out within the Design, Access and Heritage Statement produced by Ryder Architecture (2018). The following description is taken from Section 6:

Use

The proposal provides accommodation for teaching, gardener's mess facilities, storage for gardening machinery and visitors accommodation for overnight stays associated with the education courses offered.

Amount

The gross area of the accommodation is 750sqm, split 194 sqm associated with teaching classrooms, 200sqm associated with the gardener's mess area and facilities, 190sqm associated with the glass house and 166sqm associated with overnight accommodation.

Layout

The site will be entered from the southeast corner with separate entrances for the public and the gardeners. Passers-by will be able to take in a view of the Education Garden in the distance, the glass house, education centre, Tractor Hospital and arbour in the foreground.

The intention of the large open site entrance is to appeal to the public to engage and understand the education work the Trust carries out.

The main building containing the education classrooms, tractor garage and gardener's mess area which surrounds the central glass house containing roots and shoots planting. The glass house will be surrounded by a covered walkway with access to the classrooms, toilets and gardener's mess facilities.

The visitors lodge to the southwest will contain three double or twin bedrooms overlooking the courtyard with en suite bathrooms. A laundry will provide space for clean down after gardening and for the cleaning and storage of work clothes. A large communal living space with kitchen and dining facilities leads out onto a patio area overlooking the Education Garden.

The gardener's entrance leads to a back of house area with open storage for loose material (sand, gravel and so on), a covered garage for garden vehicles and a series of free-standing timber sheds for storage of other materials and equipment. The gardener's mess area can also be accessed from the back of house area with an office, boot room and toilets.

The two classrooms to the west of the proposed building are glazed giving views into the glass house and more importantly, views across the Education Garden to allow students to relate desk-based tasks to the practical garden. One classroom will have a kitchen area. Toilet facilities are provided adjacent the classrooms.

The tractor hospital will be one of the first things visitors see when entering the site. This will be a small covered area containing a visually interesting series of toy tractors being fixed. It is on one of the main pedestrian routes into the Alnwick Garden and will be exciting for children who enjoy playing with the tractors in the garden.

Sections

The buildings will be low lying single storey with shallow pitched roofs. The site is surrounded by a substantial wall and trees which are to be retained, removing any visual impact on the surrounding listed park and gardens.

Proposed site levels

The site will slope down from the entrance to create a level area for the proposed building. The visitors lodge will sit approximately 1.3 metres higher than the primary building level offering some separation. Level changes in hard surfaces will be fully accessible, with planted and grassed level changes created using smooth landscaped shapes.

External material

The facades of the education centre and residential buildings will be clad in timber with large clear double-glazed openings with timber frames and timber columns to the courtyard canopy. The roofs will be slate tiled.

The gardener's stores will be simple timber free standing sheds. The barriers between loose materials to the east of the site will be stacked railway sleepers or similar.

Landscape proposals

The site will be consolidated into two levels with the visitors block at the higher level and the education spaces and gardener's areas at the lower level. The level change will be created by a retaining landscaped slope. Routes from the entrance to the site to the residential building and the classrooms will be at an accessible 1:21 gradient or less.

The buildings will be accessed by gravel paths with perimeter low level planting, and paved path running around the glass house. A water feature will stand at the centre point of the hardstanding between the education centre and accommodation block. All hard landscaping

within the site will be permeable, with the overall percentage of non-permeable surfaces, (covered structures) on the site increased by only 5%.

The existing large screening hedges will be removed. The hedges were installed to shield the gardener's stores from the Education garden and will no longer be required as the building will provide the barrier. The small number of trees around the perimeter of the site will be retained. There will be no impact on landscaping and trees beyond the site boundary.

Lighting proposals

The lighting on site will not exceed street lighting level. There will be little to no use of the buildings at night with the exception of low-level internal lighting to the visitor's block.

- 2.4.2 Details of the construction methods anticipated to be used in the proposed scheme were not available at the time of writing this report. However, the undertaking of any invasive groundworks such as foundation trenches, landscaping, service installation and ground reduction etc., will inevitably risk impacting on any *in situ* archaeological remains present at the site.

2.5 Planning Background

- 2.5.1 The archaeological and historic structures assessment was carried out in association with a planning application (18/03228/FUL) for a proposed development comprising: single-storey education centre with classrooms, offices, gardener's welfare facilities and glasshouse; accommodation block along southern boundary; and storage sheds in the north-east corner of the garden.
- 2.5.2 As the results of the assessment/evaluation will inform a decision on the archaeological impact of the proposed development, the Assistant County Archaeologist of NCCCT has commented that it is important that the application is not determined until the assessment fieldwork and reporting have been completed with sufficient time to provide an informed response based on this work.
- 2.5.3 The archaeological investigation was required, as part of the planning process, to inform the Local Planning Authority (LPA), NCCCT and the Client, of the character, date, extent and degree of survival of archaeological remains at the site so that appropriate mitigation measures can be formulated as part of a consented scheme. The results of the work will inform the detail of an appropriate mitigation response, consistent with paragraph 199 of the NPPF. Based on the likely nature, extent, significance and density of archaeological remains on site identified in the trial trenching, archaeological mitigation may comprise, for example, targeted programmes of archaeological excavation, Strip, Map and Record and/or monitoring of groundworks. The assessment will also establish the effect of the proposed development on the significance of standing historic structures within the garden and level of any historic building recording required prior to the proposed development. The assessment will also seek to establish the effect of the proposed development on the setting of the

designated heritage assets in the vicinity; the site lies within a Grade I Listed Park and Grade II Listed Buildings are in the near vicinity to the west.

- 2.5.4 The *National Planning Policy Framework* (NPPF) (Department for Communities and Local Government 2019) enables planning authorities to request archaeological investigations within areas of potential in order to ascertain the nature and extent of any below ground remains likely to be impacted by the work. The NPPF aims to balance the demands of development with conservation, respecting both national standards and local empowerment but carries a presumption in favour of sustainable development.
- 2.5.5 Chapter 16 of the NPPF 'Conserving and enhancing the historic environment' describes, in paragraph 185, how LPAs should '*...set out a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats*' and details, in paragraph 189, that '*In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation*'.
- 2.5.6 NCCT has responsibility for archaeological development control in relation to the historic environment. No Specification for the work was produced by the LPA, so a Written Scheme of Investigation (WSI), was submitted for approval by NCCCT prior to works commencing (PCA 2019).

2.6 Historical Background

- 2.6.1 The earliest occupation evidence in the Alnwick area is a findspot of a single Neolithic leaf-shaped arrowhead. There is more extensive evidence for later prehistoric exploitation of the landscape, in the form of numerous Bronze Age burials, and there is also limited evidence of Iron Age occupation. A single Roman coin is the only evidence for exploitation of the Alnwick area in this archaeological era. It has been suggested that the settlement of Alnwick originated in the Early Medieval period, developing at the point where a number of early trackways crossed the river; the name means '*settlement by the Aln*'. However, no actual evidence of Early Medieval activity has been found and the earliest references to Alnwick date to the 11th century.
- 2.6.2 Following the Norman Conquest, the site of Alnwick Castle was given to the Norman Lord, Gilbert de Tesson, William the Conqueror's standard-bearer at the Battle of Hastings. At this time there are no records of a castle, though it is possible that a simple motte-and-bailey

was constructed. Around 1096 the land fell to Yves de Vescy, who built the first recorded castle, described as 'very strongly fortified' in the 1130's. Frequently besieged by Scottish Kings, the castle was substantially rebuilt and by 1157 most of the structures now visible had been constructed. It had a circular keep composed of a series of towers surrounding a courtyard, with two outer keeps or baileys and was perhaps one of the first Norman castles of this form.

- 2.6.3 The castle continued to feature sporadically in conflicts between Scotland and England. In 1314, the direct male line of the de Vescy family died out with the death in battle of the final (and illegitimate) heir, William de Vescy. It appears, however, that his father (also William) had already given the manors of Alnwick to Anthony Beck, Bishop of Durham, who sold the castle and Barony of Alnwick to Henry de Percy in November 1309.
- 2.6.4 Henry, the first Lord Percy of Alnwick, was a descendant of William de Percy, who had accompanied William the Conqueror in 1066, and already possessed lands in Yorkshire, Lincolnshire and Sussex. By the time the Percy family acquired Alnwick Castle they were already one of the most powerful and influential families in England. Maintaining the general form and design of the castle, Henry began a process of restoration. The history of the castle and the Percy family remained tumultuous, bound up in Border conflict and the Wars of the Roses, and by the early 17th century the Earls of Northumberland had ceased to live at Alnwick and their influence in the north declined.
- 2.6.5 The town became increasingly developed under the Percy's; town walls which as a further defence against raiding from Scotland were built in 1494. Little survives today except Bondgate Tower, which was heavily rebuilt in the 18th century. There were also a number of medieval churches in the town including the church of St Michael and a medieval chantry. As well as these high-status buildings the medieval town contained many domestic shops and houses arranged in long, narrow burgage plots along the Market Place and the surrounding street. Burgage plots extending northwards from the properties fronting the northern side of Bondgate to Barneyside can be seen on Robert Norton's 1624 map. The site was located at the northern end of the burgage plot situated at the junction of Bondgate and a lane running northwards along the eastern edge of this burgage plot.
- 2.6.6 The history of the walled gardens at Alnwick Castle begins with Sir Hugh Smithson who inherited the Percy Estates in 1740 following his marriage to Elizabeth Seymour in 1740. Sir Hugh became the Earl of Northumberland in 1750 and the First Duke of Northumberland in 1766 and embarked on a major program of reorganisation of both the castle and its extensive grounds. He employed the celebrated Robert Adam as architect for the renovation of the castle, which was restored, inside and out, in a Gothic style, and Lancelot 'Capability' Brown to transform the gardens and parkland around the castle, bringing them up to the forefront of contemporary design. The bank extending from the ramparts of the castle down to the River Aln was landscaped and the area planted with trees, creating a 'picturesque' setting for the castle. Lancelot Brown and Robert Adam collaborated on the construction of

a bridge across the river. At this time, the walled 'kitchen gardens' at Alnwick Castle were first created, set at a distance of approximately 300m to the southeast of the castle.

- 2.6.7 The area where the first Alnwick walled garden was constructed is shown as a close called 'Barnside' on Thompson's 1760 Plan and by the time of Wilkin's 1772 Plan, a sub-rectangular enclosure labelled 'Garden' had been constructed, this a representation of the garden as initially laid out by the First Duke of Northumberland. Sauthier's 1778 map shows that the Barneyside area on Norton's 1624 map had been developed into pleasure grounds and the walled garden is shown in detail divided into regular beds with central pond and hothouse on the northern wall. The area for the proposed development, however, remains part of the burgage plot gardens, divided by hedgerows and trees. There is no sign of a red line denoting a wall in this area on Sauthier's 1788 map.
- 2.6.8 The Second Duke (1786-1817) promoted the cultivation of exotic fruits and invested in new hothouses, a fruiting pine stove, two vineries and a mushroom house between 1808 and 1811 within the original walled garden. A detailed plan of the area drawn December 1816 by David Stephenson shows the Gardener's House, known from documentary sources to have been built between 1808 and 1811 for the new Head Gardener George Robson. The east and west boundaries of the site appear, as well as a boundary line of the Castle and Garden grounds, screened by tree belts, though it is not conclusive if this line represents a wall. At this time the site still formed the northern extent of the burgage plot.
- 2.6.9 The Third Duke (1817-1847) transformed the 1770's garden with the construction of three grand hothouses and a central glass conservatory set within a decorative garden with lily pond and fountain. By the time of Bell's 1826 map a walled kitchen garden had been built attached to the south-west side of the 1770's garden and another to the east. Wood's 1827 plan of Alnwick shows that the site was still part of the burgage plots and the boundary walls were in place by this time. The policy of the 2nd and 3rd Dukes of Northumberland was to extend the Castle grounds by the acquisition of adjoining burgage plots whenever they came up for sale. Eleven plots were acquired to extend the perimeter wall of the garden using Reigham or Denwick stone. The extant wall is of red brick construction on the west face (*i.e.* facing what were the burgage plot gardens) and dressed stone on the east face (*i.e.* facing the ducal gardens). This suggests that it pre-dates 1827 but post-dates 1788. Wood's map of 1827 shows that by this date a rectangular lean-to structure had been added to the eastern boundary wall, adjacent to the Head Gardener's Cottage. This was built against its east facing elevation utilising the exterior face of the wall; the structure is still extant.
- 2.6.10 Algernon, the Fourth Duke (1847-1865), implemented a radical programme of improvements to the estate and significant alterations to the original garden were undertaken. He travelled extensively and became fascinated with Renaissance Italy; Anthony Salvin was commissioned to remodel the castle in an Italian High Renaissance style. The acquisition by Algernon of land to the north of Bondgate Within, the 'Goose Knows' hillside field to the

south of the original gardens, almost doubled the size of the walled garden. The Duke's plans for the walled garden were monumental and reflected the increasing trend away from the 'picturesque' and the naturalistic landscaping of Capability Brown towards a much more formal Italianate style with parterres, pond, walkways and a sunken area in the shape of a Maltese cross.

- 2.6.11 Thomas Bell's 1849 plan and the Ordnance Survey of 1851 show that the site still comprised a burgage plot at this time. Between 1855 and 1861, the final burgage plots which intruded into the castle pleasure grounds were bought up by the 4th Duke, starting with the White Swan to the west of the site. The burgage plot opposite the Gardener's House, the northern end of which forms the proposed development site, was acquired in October 1856 from William Graham for £1,363. The plan on the indenture shows the extant structure on the external wall. A new kitchen garden was built at the ends of the burgage plots; this replaced the earlier walled kitchen garden attached to the south-east side of the original 1770's walled garden which had been amalgamated into the 4th Duke's newly created Italianate garden. The new kitchen garden was roughly L-shaped in plan, measuring a maximum of 130m NW-SE by 100m NE-SW.
- 2.6.12 In May 1863, plans were drawn up by John Meiklejon of the Westfield Iron Works, Dalkieth for two propagating pits and houses (Figure 4 & 5). These show the structure built against the boundary wall, but also depict a glass house built back to back with it on the other side of the wall, in the plot acquired from Graham. This is labelled on the middle plan as 'Old Vinery - Removed'. By June 1865, the two new propagating houses are shown on a plan of the castle and Gardens. The 'old vinery' (labelled as removed on the 1863 Meiklejon plan) is still shown as in place. It is possible that it was proposed to remove it in 1863, but that it was in fact retained. The new propagating houses were heated by a furnace housed beneath the old vinery, subsequently converted for the propagation of pines. Hot water supplied heat to the propagating houses. A cross section demonstrates how hot water was conveyed beneath staging set within the propagating houses (Figure 4).
- 2.6.13 The same layout of the new kitchen garden is shown on the Ordnance Survey map of 1866 (surveyed in 1863) and 1867 (Figure 6); two long, parallel east-west propagating glasshouses c. 30m by 6m and a glasshouse on the east wall c. 10m x 5m with external backhouse.
- 2.6.14 During the time of the 6th Duke (1867-1899) and his head gardener Thomas Ingram, the garden underwent a period of significant technological innovation with changes made to the heating systems of the hothouses. Correspondence within the castle archives relates to the insertion of steam boilers to supply the castle and gardens (DP/D5/I62). Proposals for steam heating were made by the Clerk of Works, George Reavell, in January 1890 for the extension of the steam heating system to power the servant's baths and a laundry room and provide heating for the library. The possible insertion of a Bennies Patent Shovel Stoker (self-cleaning camel boiler) is also discussed, presumably to cope with the additional

demand (Ridgeway & Proctor 2018, 165). Accounts of December 4, 1890 record a cost of £11,540 15s 4d for insertion of electric lighting, steam apparatus and repairs to a waterway. The document ends with a note demonstrating that the heating had been put in place by late 1890: "*The Steam Heating has been extended to the following places, viz: Garden Walls, Muscat House, Breakfast Room, Side Entrance, Chapel and Barbican*" (DP/DS/II/62). The documents include a plan and correspondence which suggest that the boiler be situated at least 500ft (152m) from the castle to avoid danger of explosion.

- 2.6.15 This document demonstrates extensive use of steam in both the castle and the gardens. The boiler housing appears to have been located to the west of the Alnwick Walled Garden, at the corner of the 'new kitchen garden' (north east corner of the proposed development area). The 1897 Ordnance Survey plan (Figure 7) shows the garden layout of the 6th Duke; a building c. 10m x 8m is shown on the east boundary wall, interpreted as part of the new steam heating plant. According to the 1900 water supply plan (TAG Z/1/3), steam heating only seems to have served the Muscat House within the original walled garden. A report in *The Gardeners' Chronicle* for 1902 however suggests that the kitchen garden was supplied exclusively by steam: "*There are some excellent span-roofed planthouses in the kitchen garden...The houses have mostly iron and copper ribs. The young gardeners have no stoking to do here, all the houses being heated by steam, which demands the attention of an engineer at all times. The boilers are placed near the Gardener's House, and unfortunately a large smoke-shaft likewise*" (*The Gardener's Chronicle* 1902, 286-287 cited in Ridgeway & Proctor 2018, 165).
- 2.6.16 The 1897 Ordnance Survey map (Figure 7) shows the garden layout of the 6th Duke; a building c. 10m x 8m is shown on the east boundary wall north of the glasshouse and a 4m square structure straddling the north-east corner boundary wall, interpreted as part of the new steam heating plant.
- 2.6.17 A 1932 plan of the kitchen garden shows continuous buildings along the length of the east wall from the corner square structure to the glasshouse as does the 1948 Ordnance survey map.
- 2.6.18 Most of the historic garden structures, with the exception of the eastern half of the northern propagating pit and the square stone structure, were demolished after 1948. The garden was reduced in size; a new southern boundary wall was built and the south-east part of the original kitchen garden turned into a carpark.

3. PROJECT AIMS AND RESEARCH OBJECTIVES

3.1 Project Aims

- 3.1.1 The project aimed to fulfil the requirements of the Local Planning Authority by undertaking an appropriately specified scheme of archaeological work. The primary aim of the trial trenching evaluation was to establish the nature, extent and significance of below ground archaeological remains associated with the burgage plots and the kitchen garden. This, along with the assessment of the significance of the standing remains within the context of the Grade I Registered Park and Garden, will allow an informed decision to be made on the impact of the proposed development on below-ground archaeology and the historic environment in line with paragraphs 189, 190 and 197 of the NPPF.

3.2 Research Objectives

- 3.2.1 The project was undertaken with reference to the research framework set out in *Shared Visions: The North-East Regional Research Framework for the Historic Environment* (NERRF) (Petts and Gerrard 2006), which highlights the importance of research as a vital element of development-led archaeological work. By setting out key research priorities for all periods of the past, NERRF allows archaeological projects to be related to wider regional and national priorities for the study of archaeology and the historic environment. The project was considered to have potential to contribute to medieval and post-medieval research.
- 3.2.2 An appropriate level of reporting was required including, if necessary, full analysis and publication of any notable archaeological findings upon completion of the project. Thus, the results of the work will constitute the preservation by record of any archaeological remains encountered and subsequently removed during the course of works. The full scheme of archaeological work required is described in Section 4.

4. METHODOLOGY

4.1 Fieldwork

- 4.1.1 The fieldwork was undertaken in compliance with the codes and practice of the Chartered Institute for Archaeologists and the relevant ClfA standard and guidance document (ClfA 2014 a & b). PCA is a CIFA 'Registered Organisation'. All fieldwork and post-excavation work were carried out in accordance with the Yorkshire, the Humber & The North East: Regional Statement of Good Practice (SYAS 2011).
- 4.1.2 The project was managed in line with principles set out in Historic England's *'Management of Research Projects in the Historic Environment'* (MoRPHE) published in 2006.
- 4.1.3 All archaeological staff involved in the project were suitably qualified and experienced for their project roles. The project was overseen for PCA by the Regional Manager of the Durham Office, Jennifer Proctor.

Archaeological Evaluation

- 4.1.4 The archaeological evaluation consisted of six trenches located across the area to be impacted by the proposed development (Figure 2 & 3). Trenches 1, 2 and 5 were sited within areas shown on historic maps not to be occupied by garden structures to investigate the potential for archaeological remains associated with medieval burgage plots. Trench 2 had to be abandoned as an electricity cable was exposed running along its length. The final dimension of Trench 2 was 3m long, 1.9m wide and only 0.5m deep. Trench 1 also had to be shortened to 17m due to access constraints within the garden. Trenches 3 and 4 were sited across the footprint of the demolished propagating houses. Trench 6 was sited across the structure attached to the former glasshouse in the north-east corner of the garden (Figure 7). However, due to access constraints this trench was omitted from this phase of works. The intended and final dimensions of the trenches are provided in the table below:

Trench	Dimensions intended	Dimensions final	Target
1	1.8m x 20m	1.8m x 17m	Burgage plot activity
2	1.8m x 15m	1.9m x 3m	Burgage plot activity
3	1.8m x 10m	1.8m x 10m	Southern propagating house
4	1.8m x 12m	1.8m x 12m	Northern propagating house
5	1.8m x 4m	1.8m x 4m	Burgage plot activity
6	1.8m x 5m	-	Late 19th-century garden structure

Trench dimensions and target

- 4.1.5 In all trenches, with the exception of Trench 5, the existing ground surface and topsoil was removed by a JCB using a toothless ditching bucket under strict archaeological supervision.

A mini-digger was used for ground reduction in Trench 5. In all trenches, undifferentiated deposits were removed by mechanical excavator in spits of no more than 100mm, moving along the length of the trench with spoil mounded away from the trench edge. Machining ceased when either archaeology was encountered or the maximum depth of 1.2m below ground level reached. A metal detector was also used on all spoil to recover any plant tags that may have been present.

- 4.1.6 Investigations within the trenches followed the normal principles of stratigraphic excavation and were conducted in accordance with the methodology set out in the WSI (PCA 2019), the field manual of PCA (PCA 2009) and the Museum of London Site Manual (Museum of London 1994).
- 4.1.7 Deposits and cut features were individually recorded on the *pro-forma* 'Trench Recording Sheet' and 'Context Recording Sheet'. All site records were marked with the unique-number ACG19 (site code). All archaeological features were excavated by hand tools and recorded in plan at 1:20 or in section at 1:10 using standard 'single context recording' methods. The height of all principal strata and features was calculated in metres above Ordnance Datum (m AOD) and indicated on appropriate plans and sections. Trenches were located with a Leica GNSS and tied into the Ordnance Survey Grid.
- 4.1.8 A detailed photographic record of the evaluation was prepared using SLR cameras (35mm film black and white prints for archive purposes) and by digital SLR photography. All detailed photographs included a legible graduated metric scale. The photographic record illustrated both in detail and general context archaeological exposures and specific features in all trenches. A detailed photographic record was also taken of the upstanding historic remains within the walled garden to record their condition and to assess what level of mitigation will be required prior to the proposed development. Photographs were also taken between the site and nearby designated heritage assets to assess the impact on the setting of nearby listed structures, park and gardens by the proposed development.
- 4.1.9 Once recorded, all trenches were backfilled and mechanically compacted.

4.2 Post-excavation: Evaluation

- 4.2.1 The stratigraphic data for the project comprises written and photographic records. A total of 62 archaeological contexts were defined in the five trenches (Appendix 2). Post-excavation work involved checking and collating site records, grouping contexts and phasing the stratigraphic data. A written summary of the archaeological sequence was then compiled, as described in Section 5.
- 4.2.2 The archaeological evaluation at yielded a small assemblage of medieval and post-medieval pottery with 52 sherds recovered weighing 2.917kg, dating from 1480 to the mid-20th century. A very small assemblage of clay tobacco pipe, totalling five stems (21g) was also recovered dating from 1580 to 1744. For each category of material, an assessment report

has been produced including basic quantification of the material, and a statement of its potential for further analysis. The reports are contained in Appendix 5 and 6 (pottery and clay tobacco pipe assessment respectively).

- 4.2.3 The complete Site Archive, comprising the written, drawn and photographic records (including all material generated electronically during post-excavation) will be packaged for long term curation. In preparing the Site Archive for deposition, all relevant standards and guidelines documents referenced in the Archaeological Archives Forum guidelines document (Brown 2007) will be adhered to, in particular a well-established United Kingdom Institute for Conservation (UKIC) document (Walker, UKIC 1990) and the most recent ClfA publication relating to archiving (ClfA 2014c).
- 4.2.4 At the time of writing, the Site Archive was housed at the Durham Office of PCA, The Rope Works, Broadwood View, Chester-le-Street, County Durham, DH3 3AF. When complete, the Site Archive will be deposited at the Great North Museum, Newcastle upon Tyne, under the site code ACG19. The Site Archive will be organised so as to be compatible with the other archaeological archives produced in the county. A completed transfer of title deed will accompany the archive on deposition.

4.3 Assessment of Significance and Impact of Development

- 4.3.1 Where potential or known heritage assets are identified, the heritage significance of such assets is determined by reference to existing designations where available. For previous unidentified sites where no designation has been assigned, an estimate has been made of the likely historic, artistic or archaeological importance of that resource based on professional knowledge and judgement:

- **National:** The highest status of asset, e.g. Scheduled Monuments (or undesignated assets of schedulable quality and importance), Grade I and Grade II* Listed Buildings. Well preserved historic landscape, whether inscribed or not, with exceptional coherence, time depth, or other critical factor(s);
- **Regional:** Designated or undesignated archaeological sites; well preserved structures or buildings of historical significance, historic landscapes or assets of a reasonably defined extent and significance, or reasonable evidence of occupation/settlement, ritual, industrial activity etc. Examples may include burial sites, deserted medieval villages, Roman roads and dese scatter of finds;
- **Local:** Undesignated sites some evidence of human activity but which are in a fragmentary or poor state, or assets of limited historic value but which have the potential to contribute to local research objectives, structures or buildings of potential historical merit. Examples include sites such as historic field systems and boundaries, agricultural features such as ridge and furrow, ephemeral archaeological evidence etc;

- **Negligible:** Historic assets with very little or no surviving archaeological interest or buildings and landscapes of no historical significance. Examples include destroyed antiquities, buildings of no architectural merit, or relatively modern landscape features such as quarries, field boundaries, drains and ponds etc;
- **Unknown:** Insufficient information exists to assess the importance of a feature (e.g. unidentified features on aerial photographs).

4.3.2 Adjustments to the above classification are occasionally made, where appropriate; for some types of finds or site where there is no consistent value and the importance may vary from local to national. Levels of importance for any such areas are generally assigned on an individual basis, based on professional judgment and advice.

4.3.3 The expected magnitude of the impact of the proposed development works is determined by identifying the level of effect from the proposed development upon the 'baseline' conditions of the site and the heritage resource identified in the assessment. The effect can be either adverse (negative) or beneficial (positive). In certain cases, it is not possible to confirm the magnitude of impact upon a heritage resource, especially where anticipated buried deposits exist. In such circumstances, professional judgment is applied. The magnitude of impact is assessed using the following criteria.

4.3.4 For adverse (negative) impact:

- **High:** Substantial impacts fundamentally changing the baseline condition of the receptor, leading to total or considerable alteration of character or setting – e.g. complete or almost complete destruction of the archaeological resource; dramatic visual intrusion into a historic landscape element; adverse change to the setting or visual amenity of the feature/site; significant increase in noise or changes in sound quality; extensive changes to use or access. Substantial harm to or loss of a grade II listed building, park or garden. Substantial harm to or loss of designated heritage assets of the highest significance, notably scheduled monuments, protected wreck sites, battlefields, grade I and II* registered parks and gardens, and World Heritage Sites;
- **Medium:** Impacts changing the baseline condition of the receptor materially but not entirely leading to partial alteration of character or setting – e.g. a large proportion of the archaeological resource damaged or destroyed; visual intrusion into key aspects of the historic landscape; and changes in noise levels or use of a site that would result in detrimental changes to historic landscape character;
- **Low:** Detectable impacts which alter the baseline condition of the receptor to a small degree; e.g. a small proportion of the surviving archaeological resource is damaged or destroyed; minor severance, change to the setting or structure or increase in noise; and limited encroachment into character of a historic landscape;

- **Negligible:** Barely distinguishable adverse change from baseline conditions, where there would be very little appreciable effect on a known site, possibly because of distance from the development, method of construction or landscape or ecological planting, that are thought to have no long-term effect on the historic value of a resource.

4.3.5 For beneficial (positive) impact:

- **High:** Positive changes to most or all key historic landscape elements, parcels or components; visual changes to many key aspects of the historic landscape; significant decrease in noise or changes in sound quality; changes to use or access; resulting in considerable welcome changes to historic landscape character;
- **Medium:** Changes to key historic elements resulting in welcome changes to historic landscape character. For example, a major reduction of severance or substantial reductions in noise or disturbance such that the value of known site would be enhanced;
- **Low:** Minimal enhancement of key historic landscape elements, parcels or components, such as limited visual improvements or reduction in severance; slight changes in noise or sound quality; minor changes to use or access; resulting in a small improvement in historic landscape character;
- **Negligible:** Barely distinguishable beneficial change from baseline conditions, where there would be very little appreciable effect on a known site and little long-term effect on the historic value of a resource.

4.3.6 Section 7 details the assessment of significance as well as the impact of the development on the archaeological remains, standing structures and the setting of nearby designated heritage assets.

5. RESULTS: THE ARCHAEOLOGICAL SEQUENCE

During the archaeological investigation, separate stratigraphic entities were assigned unique and individual context numbers, which are indicated in the following text as, for example [123]. The context numbers have been assigned per trench therefore contexts from Trench 1 are in the 100s and contexts from Trench 4 in the 400s etc. The archaeological sequence is described by placing stratigraphic sequences within broad phases, assigned on a site-wide basis in this case. An attempt has been made to add interpretation to the data and correlate these phases with recognised historical and geological periods. The figures can be found in Appendix 1 with the context index and stratigraphic matrix located in Appendix 2 and 3 respectively. A selection of plates can be found within Appendix 4.

5.1 Phase 1: Subsoil

- 5.1.1 Phase 1 represents subsoil which comprised the basal deposit encountered within Trenches 1, 4, and 5.
- 5.1.2 In Trench 1 the subsoil comprised dark reddish-brown silty sand [105], 0.04m thick to the limit of excavation at the base of the trench encountered at a depth of c. 1.8m below ground level (50.76m AOD). This deposit was only revealed within a 0.5m x 0.5m sondage at the western end of the trench. Overlying [105] was a dark reddish-brown sandy silt subsoil [104] c. 0.70m thick at 51.62m AOD (Figure 10: Section 1; Plate 1). Medieval pottery dating to 1480 to 1550 was recovered from this deposit (Appendix 5).
- 5.1.3 Within Trench 4 the subsoil comprised dark reddish-brown silty sand [417] c. 0.45m thick c. 0.80m below ground level at 52.10m AOD (Figure 9: Section 2; Plate 2).
- 5.1.4 A compact dark reddish-brown silty sand subsoil [502] was also encountered within Trench 5. This deposit was approximately 0.30m thick at 53.50m AOD and contained sherds of medieval pottery (Figure 10: Section 3; Plate 3; Appendix 5).
- 5.1.5 The height of the upper interface of the subsoil sloped down from a level of 53.50m AOD in the south in Trench 5 to 52.10m AOD in the centre of site in Trench 4 to 51.62m AOD in the north in Trench 1. This reflects the natural topography of the area sloping down from Alnwick town centre to the north towards the River Aln.
- 5.1.6 As medieval pottery was recovered from [105] in Trench 1 and [502] in Trench 5 it is possible that these subsoil deposits developed during the use of the area as medieval burgage plots. The medieval buildings which faced onto Bondgate had long burgage plots to the rear stretching at least 165m to the north of the street frontage. These would have been used for a variety of purposes such as food cultivation, housing animals, refuse disposal and in some case industrial activity.

5.2 Phase 2: Buried Soils

- 5.2.1 Buried soil deposits of considerable thickness were noted within Trenches 1, 3, 4 and 5. These have all been grouped within Phase 2 as they overlay the subsoil deposits and were truncated by the later structures of the mid-19th century kitchen garden.
- 5.2.2 A dark greyish brown sandy silt [103] represented the buried soil within Trench 1. This deposit was noted across the entirety of the trench and was c. 0.70m thick. It was encountered from a depth of 0.30m below ground level at 52.16m AOD (Figure 10: Section 1; Plate 1).
- 5.2.3 A dark reddish-brown silty sand [314] (= [320]) was encountered within Trench 3 c. 0.60m below ground level at 52.90m AOD (Figure 8; Section 4; Plate 4). Several sherds of post-medieval pottery dating to 1805 to 1846 were recovered from this deposit along with fragments of clay tobacco pipe dating to 1580 to 1744, presumably residual due to the later date of the pottery assemblage (Appendix 5 & 6).
- 5.2.4 Two buried soil deposits were noted within Trench 4. These comprised: dark greyish brown silty sand [416] c. 0.50m thick at 52.52m AOD and mid reddish-brown silty sand [415] c. 0.30m thick at 52.82m AOD (Figure 9: Section 2; Plate 2). In Trench 5 the buried soil comprised dark greyish brown sandy silt [501] c. 0.38m thick at 53.86m AOD (Figure 10: Section 3; Plate 3).
- 5.2.5 These buried soils are of late post-medieval date; they overlay the medieval subsoil within Phase 1 and contained pottery dated to 1805 to 1846. The construction cut for the two propagating houses (Phase 3; built c. 1865) truncated these deposits. It is likely that these soils represent ground levelling material deposited across the area to level the south to north sloping land prior to the establishment of the kitchen garden.

5.3 Phase 3: Alnwick Kitchen Garden

- 5.3.1 The proposed development site was situated within burgage plots until the mid-19th century. Land was purchased by the 4th Duke of Northumberland between 1855. A new kitchen garden was built at the ends of the burgage plots; this replaced the earlier walled kitchen garden attached to the south-east side of the original 1770's walled garden which had been amalgamated into the 4th Duke's newly created Italianate garden. The new kitchen garden was roughly L-shaped in plan, measuring a maximum of 130m NW-SE by 100m NE-SW.
- 5.3.2 By 1865 two long propagating houses had been built within the kitchen garden measuring c. 30m long by 5.5m wide. Detailed drawings of these buildings in plan and elevation signed by John Meiklejon of Dalkeith are held in the Castle Archives (Figures 4 & 5) and they are shown on Ordnance Survey maps (Figures 6 & 7). The remains of these propagating houses were exposed within Trenches 3 and 4 along with a drainage ditch and possible pathway.

Trench 3

- 5.3.3 The southern propagating house was exposed within Trench 3 for a length of 1.9m ESE/WNW to the limits of excavation. The structure was c. 5.5m wide (NNE/SSW) within construction cut [319] (Figure 8; Section 4; Plate 5). The structure comprised southern external wall [305], northern external wall [312] on brick foundations [313]. A central propagating pit c. 1.70m wide was formed by southern brick wall [307] on brick foundations [313] and northern brick wall [309] on brick foundations [310] and was approximately 0.82m deep to the base of foundations [310] and [313] (Plate 6). The foundations had been backfilled with dark brown sandy silt [303] c. 0.12m thick at 52.16m AOD and dark bluish grey sandy silt [317] c. 0.30m thick at 52.42m AOD covering the base of the pit to create a level surface. Overlying these deposits was slate surface [302] that continued across the width of the pit however it only survived for 0.40m WNW/ENE to the limit of excavation along the length of the propagating pit. The purpose of the slate surface is unknown as it comprised two overlapping slabs so did not form a perfect flat surface; they were conceivably laid like this to aid drainage.
- 5.3.4 To the north and south of the propagating pits were sandstone slab floor surfaces [306] to the south (Plate 7) and [311] to the north (Plate 8), both c. 1.38m wide. Cut into both surfaces was a square recess c. 75mm x 75mm and 25mm deep. The architect's drawing shows an iron pillar along each side of building forming a support for an iron structure extending roughly halfway into the path with hot water pipes inside; the recesses appear to correspond to the position of the pillar.
- 5.3.5 The construction cut was backfilled by dark reddish-brown sandy silt [318] c. 0.52m thick at 52.90m AOD.

Context	Type	Description	Interpretation
302	Masonry	Slate slabs ranging in size from 1070x >174x70mm to 1092x382x60mm. Comprised of two overlapping slabs approximately 1.58m NE/SW x >0.41m NW/SE and 0.12m thick in total. Highest and lowest level 52.48m and 52.42m AOD respectively.	Slate surface within propagating pit
303	Deposit	Soft dark brown sandy silt. 1.32m NE/SE x 0.36m NW/SE to LOE and 0.12m thick. Highest and lowest level 52.16m and 52.12m AOD respectively.	Fill of construction cut [319] within propagating pit
305	Masonry	Common brick wall (240x115x70mm bricks). Five visible courses of Flemish bond with a light grey lime mortar. 1.94m NW/SE to LOE x 0.24m wide and 0.40m high. Highest level 53.04m AOD.	Southern external wall of southern propagating house
306	Masonry	Squared sandstone flagged floor surface. Slabs range from 406x266x49mm to 892x485x50mm. Bonded with a hard-yellow sandy lime mortar. 1.38m NE/SW x >1.8m NW/SE to LOE. Square recess in centre for timber post approximately 75mmx65x25mm.	Southern surface within propagating house

		Highest level 52.86m AOD.	
307	Masonry	Common brick (240x115x65mm) wall. Eight courses in Flemish bond with light grey lime mortar. 1.72m NW/SE to LOE x 0.24m x 0.65m high. Highest level 52.88m.	Southern wall of propagating pit
308	Masonry	Common brick (240x115x65mm) wall foundations. Two courses. 1.76m NW/SE to LOW x >0.16m x 0.16m high. Highest level 52.24m AOD.	Brick foundations for southern wall of propagating pit
309	Masonry	Common brick (240x120x65mm) wall. Eight courses in Flemish bond with light grey lime mortar. 1.88m NW/SE to LOE x 0.26m wide and 0.64m high. Highest level 52.82m AOD.	Northern wall of propagating pit
310	Masonry	Common brick (240x120x65mm) wall. Two courses bonded with lime mortar. 1.88m NW/SE x 0.12m wide and 0.16m high. Highest 52.18m AOD.	Brick foundations for northern wall of propagating pit
311	Masonry	Squared sandstone flagged floor subs. Slabs range from 1060x630x50mm. Bonded with lime mortar. 1.36m NE/SW x 1.80 NW/SE. Square recess in centre for timber post c. 75x75x25mm. Highest level 52.88m AOD.	Northern surface within propagating house
312	Masonry	Common brick (240x115x65mm) wall. Seven courses in Flemish bond with light grey lime mortar. 1.76m NW/SE to LOE x 0.24m wide x 0.69m wide. Highest level 57.86m AOD.	Northern external wall of southern propagating house
313	Masonry	Common brick (240x115x65mm) wall foundations. Two courses. 1.78m NW/SE x 0.24m wide to LOE x 0.16m high. Highest level 52.19m AOD.	Brick foundations for northern external wall of southern propagating house
317	Deposit	Soft dark blueish grey sandy silt. 1.62m NE/SW x 1.88m NW/SE x 0.30m thick. Highest and lowest level 52.42m and 52.38m AOD respectively.	Fill of construction cut [319] within propagating pit
318	Deposit	Soft dark reddish-brown sandy silt. 0.52m thick x 0.16m to the north of the northern wall. Highest level 52.90m AOD.	Fill of construction cut [319]
319	Cut	Large rectangular open cut for southern propagating house. Vertical sides and a flat base. 5.68m NE/SW x 1.8m NW/SE to LOE x 0.65m deep. Highest and lowest level 52.90m and 52.02m AOD respectively.	Construction cut for southern propagating house

Southern Propagating House

- 5.3.6 At the northern limits of Trench 3 cut feature [316] was exposed for c. 0.30m NE/SE x 1.7m NW/SE and was 0.60m deep. It was backfilled with loose light grey sandstone rubble with a matrix of silty sand. As the feature was only partially exposed it is difficult to ascertain its function however, it is conceivably related to the drainage of the kitchen garden due to the loose stone backfill (Figure 8: Section 4; Plate 4).

Trench 4

- 5.3.7 The northern propagating house was exposed within Trench 4 for a maximum length of 3.04m WNW/ESE and measured 5.42m wide (NNE/SSW) and 1.16m high within construction cut [419] (Figure 9: Section 2; Plate 9). The upstanding remains of the eastern end of the propagating house were situated just beyond Trench 4 to the east of (Plate 10; extant structure discussed in Section 6). The structure comprised southern external wall [401], northern external wall [411] on brick foundations [412] with a central propagating pit c. 1.26m wide internally and at least 2.70m long; the eastern end of the pit was revealed within the trench and the pit continued to the west beyond the limit of excavation. The method of construction had changed from Meiklejon's original drawings of the building as the northern propagating house is shown to have one long pit rather than two (as seen within the southern propagating house; Figure 4 and 5). This western propagating pit (the eastern located within the upstanding remains of the propagating house) was comprised of southern wall [403] on brick foundations [404], northern wall [407] on brick foundations [408] and eastern wall [420] on foundations [421] and was approximately 1.04m deep from ground level to the base of the foundations.
- 5.3.8 The foundations had been backfilled with dark greyish brown silty sand [409] c. 0.32m thick at 52.04m AOD that created a level surface between brick foundations [404], [408] and [421]. Overlying this deposit was slate surface [406] that continued across the width of the pit for 0.92m NNE/SSW but only survived for 1.20m ESE/WWN. The overlapping slate slabs conceivably aided drainage at the base of the pit.
- 5.3.9 Surrounding the propagation pit was sandstone flagged floor surface [402]=[410] (Plate 9 and 10) that was exposed for 1.98m WNW/ESE x 4.78m NNE/SSW (northern section 1.54m NNE/SSW between northern external wall and propagating pit and southern section 1.52m NNE/SSW between propagating pit and southern external wall).
- 5.3.10 The construction cut [419] was backfilled by dark greyish brown silty sand [418] c. 1.02m thick at 52.72m AOD.

Context	Type	Description	Interpretation
401	Masonry	Common brick (240x115x65mm) wall. Two courses exposed in Flemish bond with light grey lime mortar. 2.94m NW/SE to LOE x 0.24m wide and >0.14m to LOE at base. Continues outside of trench along hedge line. Highest level 53.02m AOD.	Southern external wall of propagating house
402=410	Masonry	Sandstone flagged floor surface within propagating house. Ranging from 660x540x50mm to 980x600x50mm. Exposed for 1.98m WNW/ESE x 4.78m NNE/SSW (northern section 1.54m NNE/SSW between northern external wall and propagating pit and southern section 1.52m NNE/SSW between propagating pit and southern external wall). Highest level 52.88m AOD.	Sandstone flagged floor surface in propagating house

403	Masonry	Common brick (240x110x65mm) wall. Ten courses of English bond with rough light grey lime mortar. >2.2m NW/SE x 0.24m wide and 0.86m high. Highest level 52.90m AOD.	Southern wall of propagating pit
404	Masonry	Common brick (240x110x65mm) foundations. Two course 0.17m high. 2.58m NW/SE x 0.12m exposed within plan. Highest level 52.04m AOD.	Brick foundations for wall [403]
406	Masonry	Slate slab surface. Three pieces noted approximately 860x650x30mm. Overlaps. 1.20m NW/SE x 0.92m NE/SW x 0.15m thick. Highest level 52.22m AOD.	Slate surface within propagating pit
407	Masonry	Common brick (240x110x65mm) wall. Nine courses in English bond with light grey lime mortar. 2.88m to LOE NW/SE x 0.24m wide x 0.76m high. Highest level 52.90m AOD.	Northern wall of propagating pit
408	Masonry	Common brick (240x110x65mm) foundations. 2.20m NW/SE x 0.24m x 0.17m high. Highest level 52.04m AOD.	Brick foundations for wall [407]
409	Deposit	Firm dark greyish brown silty sand. 0.64m NE/SW x 2.58m NW/SE to LOE x 0.32m thick. Highest level 52.04m AOD.	Fill of construction cut [419] within propagating pit
411	Masonry	Common brick (240x110x65mm) wall. Twelve courses in Flemish bond with light grey lime mortar. >1.72m NW/SE to LOE x 0.24m wide and 1.04m high. Highest level 51.92m AOD.	Northern external wall of propagating house
412	Masonry	Common brick (240x115x65mm) foundations. Two courses 1.7m NW/SE x >0.24m x 0.17m high. Highest level 51.88m AOD.	Brick foundations for wall [411]
418	Deposit	Firm dark greyish brown silty sand. 0.20m away from northern external wall of propagating house. 1.02m thick. Highest level 52.72m AOD.	Fill of construction cut [419]
419	Cut	Large open cut for northern propagating house >5.52m NNE/SSW x >3.6m WNW/ESE x 1.14m deep. Highest and lowest level 52.72m and 51.95m AOD respectively.	Construction cut for northern propagating house
420	Masonry	Common brick (240x110x65mm) wall. Ten courses in Flemish bond with light grey lime mortar. 1.74m NE/SW x 0.24m wide x 0.85m high. Highest level 52.87m AOD.	Eastern wall of propagating pit
421	Masonry	Common brick (240x110x65mm) foundations. 1.28m NE/SW x >0.24m x 0.18m high. Highest level 51.99m AOD.	Brick foundation for wall [420]

Northern Propagating House

5.3.11 Along the northern external wall of the propagating house was a shallow linear cut [422] exposed for 1.90m NW/SE x 1.90m NE/SW and 0.14m deep (Section 2, Figure 9), highest and lowest level 52.78m and 52.64m AOD respectively. It was filled with light brownish yellow silty sand with subangular fragments of crushed sandstone [414] c. 0.12m thick and mid reddish-brown silty sand [413] c. 0.12m thick. This was a garden path situated along the northern edge of the northern propagating house.

5.4 Phase 4: Modern

- 5.4.1 The southern propagating house along with the western half of the northern propagating house were demolished in the mid-20th century; the propagating pits were backfilled with demolition material and the wider area landscaped. This activity is grouped within Phase 4.

Trench 1

- 5.4.2 In Trench 1 three modern deposits were recorded overlying the Phase 2 buried soil deposits. These comprised: light brown coarse sand and gravel [102] c. 0.18m thick at 52.32m AOD; dark greyish brown ash, clinker and sand [101] c. 0.27m thick at 52.56m AOD and compacted dark grey gravel [100] that formed the uppermost deposit c. 0.15m thick at 52.70m AOD.

Trench 2

- 5.4.3 The basal deposit within Trench 2 was compact subangular sandstone rubble [206] that was sealed by dark grey silty sand [205] c. 0.2m thick and mid yellowish-brown dolomite rubble [204] c. 0.27m thick. This trench was abandoned as service trench [203] was exposed that contained electricity cable [202] and was backfilled with dark grey silty sand [201]. The uppermost deposit within Trench 2 was dark grey gravel [200] c. 0.12m thick.

Trench 3

- 5.4.4 The propagating pit within the southern propagating house was backfilled with light yellow sandstone rubble [301] c. 0.38m thick at 52.80m AOD. A ground raising dump comprising dark greyish brown sandy silt [304] c. 0.40m thick at 53.30m AOD was then deposited over the demolished remains of the propagating house. The ground level comprised dark grey gravel [300] c. 0.22m thick at 53.44m AOD.

Trench 4

- 5.4.5 The propagating pit within the northern propagating house was backfilled with brick demolition rubble [405] c. 0.70m thick at 52.72m AOD. The demolished remains were then sealed with dark brownish grey silty sand and gravel [400] c. 0.14m deep at 52.98m AOD.

Trench 5

- 5.4.6 A construction cut [504] was observed along the southern edge of Trench 5, exposed for >0.72m NE/SW, >4m NW/SE and 0.70m deep. First noted at 53.96m AOD with the base of the feature recorded at 53.88m AOD. This ran parallel to the southern boundary wall of the garden and presumably represents the construction cut for the wall. It was backfilled with dark brownish grey clayey silt [503] c. 0.70m thick at 53.96m AOD. The southern boundary wall was constructed in the late 20th century and lies approximately 1m to the south of the trench.
- 5.4.7 The uppermost deposit which sealed the trench comprised dark greyish brown topsoil c. 0.52m thick at 54.40m AOD.

6. STANDING HISTORIC STRUCTURES

6.1 Northern propagating house

- 6.1.1 In May 1863 plans were drawn up by John Meiklejon of the Westfield Iron Works, Dalkieth for two propagating pits within the kitchen garden; parallel east-west propagating glasshouses c. 30m by 6m (Figure 4 & 5). The new propagating houses were heated by a furnace housed beneath the old vinery, subsequently converted for the propagation of pines. Hot water supplied heat to the propagating houses. A cross section demonstrates how hot water was conveyed beneath staging set within the propagating houses (Figure 4). The propagating houses are shown on a plan of the Castle and Gardens dated June 1865 (CoW: A146) and the Ordnance Survey map of 1867 (Figure 6). The southern propagating house and the western half of the northern house were demolished by 1948.
- 6.1.2 Only the eastern half of the northern propagating house survives, c. 15m long (Plate 10). Externally the building comprises an ENE/WSW brick range with a mid-20th century NNE/SSW glasshouse extension. The glass roof of the propagating house has been replaced with corrugated metal sheeting (Plate 11) that has been attached to the original wrought iron roof structure and timber sash bars that may have supported the original glass panes that once covered the structure (Plate 12). At least 14 courses of a red common brick wall in Flemish bond survive along the southern elevation (the northern elevation comprises the greenhouse extension on the western side and is obscured by late 20th-century garden stores on the eastern side). Six original former apertures along the southern elevation comprise a sandstone sill and lintel; these have all been bricked-up during the mid to late 20th century (Plate 11 & 13).
- 6.1.3 The eastern gable end comprises two sandstone lintels either side of a doorway at the base of a sunken stairway (Plate 14). Patches of decayed pointing are noted across the gable end as well as some damage to the northern corner with several loose bricks observed.
- 6.1.4 The western gable end was modified during the mid-20th century when the western half of the northern propagating house was demolished. Modern bricks are keyed into the original structure (Plate 13) with associated timber frame constructed to create a new entranceway (Plate 10 & 15). A stone step is located adjacent to the southern side of the new entranceway as well as two courses of brickwork from the original southern external wall of the propagating house that continues under the hedge to the west for at least 14m.
- 6.1.5 Internally, the timber roof structure of the original propagating house survives comprising ridge beam, rafters, sash bars and purlins (Plate 12). Several of the original purlins have been replaced with modern timber. Decorative iron roof ties are present within the apex of the timber rafters (Plate 12 & 16). Sash bars also survive under the metal cladding on the eastern gable end of the structure along with parts of the mechanism for ventilating the propagating house (the control surviving adjacent to the eastern doorway; Plate 17).

Fragments of sandstone flagged flooring (like the floor surfaces within Trench 4) are present at the western end of the structure along with small patches of brickwork below timber boarding that may represent part of the eastern propagating pit (Plate 10). Long wooden benches littered with tools and materials run along the northern and southern exterior walls which may mask additional historic structural remains internal to the propagating house.

- 6.1.6 The northern glasshouse extension was constructed sometime in the late 1960s to early 1970s prior to the western range being demolished. Externally it comprises at least nine courses of buff brick bonded in English Garden Wall style with the mid-20th century glass house surviving above (Plate 18). The extension is nearly structurally complete with windowpanes surviving as well as ventilator at the apex of the roof (Plate 19), controlled by a mechanism housed internally. The brickwork is generally in good condition however a crack was noted within the brickwork on the northern gable end (Plate 20). Internally the ventilator mechanism can be seen along with decorative iron roof ties replicating those observed within the mid-19th century structure (Plate 21, 22 & 23).
- 6.1.7 The remains of the mid-19th century propagating house are in an overall good condition although the glass panes have been removed and the apertures bricked-up. Conceivably a second propagating pit exists within the standing structure to mirror the one found within Trench 4 during the archaeological evaluation (as illustrated on Meiklejon's plan for the southern propagating house; Figure 4 & 5). Meiklejon's plan was altered prior to construction as the section through the building shows a central raised area rather than the deep propagating pit that was exposed within Trench 4 (Figure 4 & 5).

6.2 Eastern boundary wall of former kitchen garden and steam plant

- 6.2.1 The earliest structural remains within the proposed development is the eastern boundary wall which would have formed the boundary between the Alnwick Castle estate and burgage plots of properties fronting onto Bondgate. Map regression shows that this wall, along with the northern wall, were built between 1788 and 1827. By the time of Wood's 1827 plan a structure is shown as built against the boundary, still extant, utilising the exterior face of the wall as an internal wall of the building. John Meiklejon's 1863 plan shows the structure built against the boundary wall, with a glass house built on the other side of the wall, internal to the kitchen garden, labelled on the middle plan as 'Old Vinery - Removed'. By June 1865, a plan of the Castle and Gardens (CoW: A146) shows that the 'old vinery' labelled as removed on the 1863 Meiklejon plans, is still shown as in place. It is possible that it was proposed to remove it in 1863, but that it was in fact retained. The same layout is observed on the 1866 Ordnance Survey plan (surveyed in 1864 and published in 1866) and on the First Edition 1867 plan. The 1897 Ordnance Survey map (Figure 7) shows a building c. 10m x 8m shown on the east boundary wall, north of the glasshouse, and a 4m square structure straddling the north-east corner boundary wall, both interpreted as part of the new steam heating plant.

- 6.2.2 A 1932 plan of the kitchen garden shows continuous buildings along the length of the east wall from the corner square structure to the glasshouse as does the 1948 Ordnance survey map. These structures, with the exception of square stone structure, were demolished after 1948.
- 6.2.3 The eastern facing elevation of the eastern boundary wall comprises 15 courses of squared sandstone with a ridged sandstone capping on top (Plate 24). At the northern end is part of the north-eastern steam plant building (Plate 24 & 25) whilst at the southern end is the remains of a sandstone lean-to structure (Plate 27). This structure was built by 1827 and appears to have been converted into a backhouse for the heating system of the vinery inside the proposed development (no longer extant).
- 6.2.4 The western facing elevation of the boundary wall is brick built, the majority in stretcher bond although courses of headers are noted as well as several headers, half-bats and three-quarter bat bricks within the same courses as the stretchers (Plate 28 & 29).
- 6.2.5 Slightly to the south of the north-eastern steam plant is a square timber framed gap near the top of the wall surrounded by firebricks (Plate 30). Numerous brick scars are noted along this section of wall running to the south along with sections protruding out westwards from the boundary wall (Plate 28, 29, 30 & 31). These are perhaps the remnants of the 10m x 8m structure first shown on the Ordnance Survey of 1897. Evidence for heating systems for a demolished vinery structure and glasshouse are also present within the wall with several voids for structural supports and cast-iron pipes noted (Plate 30 & 31).
- 6.2.6 Garden stores around the north-eastern steam plant at the northern extent of the wall hindered assessment of the structure and at the southern extent the wall is rendered in cement hindering any appraisal of historic features (Plate 28 & 31).
- 6.2.7 The eastern elevation of the boundary wall is in excellent condition. The western elevation had been altered over the years with numerous historic structures being demolished. Electrical cables have been fed through the wall from the long rectangular lean-to structure on the eastern side as well as three plastic water pipes. Moreover, the southern section has been rendered in cement. It can therefore be considered that the western elevation of the boundary wall is in moderate condition.
- 6.2.8 The sandstone structure straddles the eastern boundary wall of the former kitchen garden is thought to represent part of the remains of the late 19th-century steam plant (first appearing on the Ordnance Survey map of 1897).
- 6.2.9 The eastern elevation (external to the walled kitchen garden) comprises 13 courses of squared sandstone with an opening at ground level (Plate 24). The opening is slightly recessed with a sandstone arch and lintel above. At the back of the recess, the sandstone appears to be heat affected. A crack was also observed running from the southern side of the arched recess that ran up the structure for approximately three courses (Plate 25). The western elevation of the structure could not be assessed due to the presence of late 20th-

century garden stores built adjacent to the former steam plant building (Plate 26). Overall the structure appears to be in good condition.

7. IMPACT ON THE ARCHAEOLOGICAL RESOURCE

7.1 Previous Land Use and Existing Impacts

- 7.1.1 Map regression shows that prior to the construction of the kitchen garden the proposed development area was situated within the northern limits of burgage plots established from the late medieval period extending northwards from properties facing onto Bondgate to the south towards Barneyside, the terrace of land leading to the River Aln. These plots were purchased by the 4th Duke of Northumberland between 1855 and 1861 and an extensive walled kitchen garden for the castle constructed (the proposed development area site being within the north-east corner of this garden). A new kitchen garden was built at the ends of the burgage plots; this replaced the earlier walled kitchen garden attached to the south-east side of the original 1770's walled garden which had been amalgamated into the 4th Duke's newly created Italianate garden. The new kitchen garden was roughly L-shaped in plan, measuring a maximum of 130m NW-SE by 100m NE-SW.
- 7.1.2 By 1865 two long propagating houses had been built and a glasshouse attached to the eastern boundary wall, heated by an external backhouse. By 1897 a square structure had been attached onto the earlier glasshouse and a structure built in the north-east corner thought to be a steam plant providing a new heating system to the hothouses and heated garden wall in the original walled garden to the east as well as parts of the castle itself.
- 7.1.3 The development of the walled kitchen garden is considered to have had a **low adverse** impact on any potential medieval remains with the areas of the propagating houses and structures in the north-east corner having a **medium adverse** impact.
- 7.1.4 By the mid-20th century most of the historic structures within the site had been demolished; the eastern end of the northern propagating house, the structure in the north-eastern corner and the eastern boundary wall are extant. This demolition had a **medium to high adverse** impact on the 19th-century structural remains of the kitchen garden; the evaluation trenches demonstrated that the propagating houses were only destroyed to ground level with surfaces, foundations and propagating pits still surviving below ground.
- 7.1.5 The construction of the upstanding modern greenhouses and garden stores would have had a **low adverse** impact on the potential archaeological resource due to limited impact by insubstantial foundations.

7.2 Assessment of Significance of Historic Structures and Archaeological Remains

- 7.2.1 No medieval structural remains were uncovered during the archaeological evaluation although several sherds of medieval pottery were recovered from subsoil deposits. The subsoil developed during the use of the site as burgage plots of properties facing onto Bondgate which survived up until the mid-19th century. These deposits were noted within Trench 5 at the southern extent of the site as well as at the northern end of Trench 1.

Conceivably these deposits continue across the entirety of the proposed development area. They are considered to be of local significance as they have very limited potential to provide any further information about the use of the burgage plots during the medieval and post-medieval periods.

- 7.2.2 The proposed development is located within a 19th-century kitchen garden which forms part of the Grade I Registered Park and Garden for Alnwick Castle. The Grade I listing reflects the high level of significance of the park and garden with particularly high historic and aesthetic value.
- 7.2.3 The walled kitchen garden formed an integral part of the gardens of Alnwick Castle, created by the 4th Duke as part of his programme of extensive remodelling of the castle and grounds to replace an earlier walled kitchen garden which was amalgamated into the new extensive Italianate garden. The Dukes of Northumberland were at the forefront of garden design and innovations in technology, as witnessed by changes in heating systems in hothouses and other garden structures throughout all periods of development of the gardens. A vinery was built within the garden and propagating houses by the 4th Duke, heated by the latest technology of the period, hot water pipes from a boiler external to the houses. The 6th Duke installed steam heating for the castle and gardens and built a steam plant within the kitchen garden.
- 7.2.4 The significance of the surviving historic buildings within the kitchen garden has been affected by the level of demolition and the contraction of the garden which occurred in the mid-20th century. The kitchen garden itself does not survive in its entirety; a new boundary wall has been built removing the south-eastern part of the garden which is now occupied by a carpark. Most of the structures within the walled kitchen garden have been demolished leaving little remaining of the original layout. The southern propagating house and western half of the northern house have been demolished to ground level. Only the eastern end of the pair of propagating houses is still extant, and this has been subject to modification and removal of some historic elements such as the glass roofing. Architect's drawings of the propagating pits show that the hot water which supplied the pipes within these buildings was heated via an external source, a boiler located within the demolished vinery. The propagating houses therefore have limited potential to further our understanding of the role of technological developments in heating within the Alnwick Garden as a whole. The upstanding and below ground archaeological remains of the propagating houses are therefore considered to be of regional significance and do not merit preservation *in situ*. The loss of these remains will be balanced against the information that will be gained by excavation and historic building recording of the propagating houses which will help to further our understanding of the development and use of the Alnwick Castle Gardens.
- 7.2.5 The steam plant straddling the north-eastern corner of the boundary wall, built by the 6th Duke is of significant interest as the survival of such structures are rare. It has not been possible to access the structure, but it is considered likely that the boiler and other internal

fittings associated with the steam plant would have been removed when the steam plant went into disuse. Stripping out of metal fittings was common practice, as witnessed within the furnace and boiler rooms in the numerous hothouses recorded within the original 18th-century walled garden. The larger square structure shown on historic maps attached to the vinery and thought to be associated with the steam plant has been demolished, leaving only the eastern boundary wall which formed the east side of the building extant. The remains of the steam plant are therefore also considered to be of regional significance due to their limited survival.

7.3 Impact of the Proposed Development on Historic Structures and Archaeological Remains

- 7.3.1 The proposed scheme of works (discussed in detail in Section 2.4) comprises the demolition of the remaining mid-19th century propagating house and 20th-century stores and offices to be replaced by a central single-storey education centre with classrooms, offices, gardener's welfare facilities and glasshouse; an accommodation block along the southern boundary and northern sheds along the eastern boundary wall (Figure 3A&B).
- 7.3.2 Details of the construction methods anticipated to be used in the proposed scheme were not available at the time of writing this report. However, the undertaking of any invasive groundworks such as laying foundations, landscaping, service installation and ground reduction *etc.*, will have a significant impact on any *in situ* archaeological remains.
- 7.3.3 The proposed scheme (Figure 3A&B) comprises a new education centre within the centre of site and accommodation block running along the southern boundary wall. Subsoil deposits were noted at a great depth of approximately 2m below ground level so it is highly unlikely that the construction depth will reach medieval deposits. If foundations and drainage/services are excavated into the Phase 2 deposits it would potentially only have a **low adverse** impact. The upstanding remains of the northern propagating house, as well as the buried remains within Trench 3 are to be demolished/truncated. This will have a **high adverse** impact on the structural remains of the northern propagating house. This can be mitigated with a suitable scheme of historic building recording on the upstanding remains and archaeological excavation of below ground features. The southern propagating house appears to be largely outside of the footprint of the new building, however, services or landscaping may truncate its upper levels resulting in a **low adverse** impact.
- 7.3.4 The storage sheds to be constructed within the north-eastern corner are likely to be of similar construction to the sheds that already occupy the site. These are constructed using timber posts supporting metal sheeting. Although not as intrusive as strip trenches for building foundations, the timber uprights will need to be set within the ground to a sufficient depth to support their weight. This would potentially have a **low adverse** impact on the buried remains of the historic horticultural buildings shown within this area on the Ordnance Survey of 1897 (Figure 7). Furthermore, open stores are to be built against the eastern

boundary wall, further disturbing its historic character. It is not known how these open stores will be secured to the wall however, at the very least it will have a **low adverse** impact.

- 7.3.5 The setting of the eastern boundary wall and north-eastern steam plant building are also to be affected by the proposed development (**low adverse**) as the freestanding timber storage sheds and open garden stores will partially visually block these important historic remains.
- 7.3.6 Although the proposed development is considered to have a **high adverse** impact on the northern propagating house and a **low adverse** impact on the remaining historic horticultural elements, these can be mitigated by a suitable scheme of archaeological recording (discussed in Section 8).

7.4 Impact of Proposed Development on the Setting of Heritage Assets

- 7.4.1 The proposed development lies within the Grade I listed Park and Garden of Alnwick Castle (List Entry 2043) with the Grade I listed Alnwick Castle c. 220m to the north-west, and three Grade II listed buildings within the very near vicinity of the site. These Grade II listed structures comprise the Gardener's Cottage (List entry 1302933) and the Kitchen Garden Walls (List Entry 1371325) both bordering the site to the east and the Water Tower (List entry 1041492) c. 40m to the south-east. Plate locations to and from the designated heritage assets are shown in Figure 11A&B (the location of these assets are shown on Figure 1, 11A and 11B). The following descriptions are taken from *The National Heritage List for England* for the nearby listed buildings:

Alnwick Castle (1371308): Grade I listed c. 220m to the northwest of the proposed development. *Alnwick Castle has work of every period on the line of the original motte and bailey plan. By 1138 a strong stone-built border castle with a shell keep in place of the motte, formed the nucleus of the present castle with 2 baileys enclosing about 7 acres. The curtain walls and their square towers rest on early foundations and the inner gatehouse has round-headed arches with heavy chevron decoration. The Castle was greatly fortified after its purchase by Henry de Percy 1309 - the Barbican and Gatehouse, the semi-circular towers of the shell keep, the octagonal towers of the inner gateway and the strong towers of the curtain wall date from the early to mid C14. Ruinous by the C18, the 1st Duke had it rehabilitated and extended by James Prince and Robert Adam. Capability Brown landscaped the grounds, filling in the former moat (formed by Bow Burn). The Castle is approached from Bailiff gate through the crenelated Barbican and Gatehouse (early C14): lion rampant (replica) over archway, projecting square side towers with corbelled upper parts, fortified passage over dry moat to vaulted gateway flanked by polygonal towers. Stone figures on crenelations here, on Aveners Tower, on Record Tower and on Inner Gateway were carved circa 1750-70 by Johnson of Stamfordham and probably reflect an earlier similar arrangement. In the Outer Bailey to the north are the West Garrett (partly Norman), the Abbott's Tower (circa 1350) with a rib vaulted basement, and the Falconer's Tower (1856). To the south are the Aveners Tower [C18], the Clock Tower leading into the*

Stable Yard, the C18 office block, the Auditor's Tower (early Clk) and the Middle Gateway (circa 1309-15) leading to the Middle Bailey. The most prominent feature of the Castle on the west side is the very large Prudhoe Tower by Salvin and the polygonal apse of the chapel near to it. In the Middle Bailey, to the south are the Warders Tower (1856) with the lion gateway leading by a bridge to the grand stairs into the walled garden, the East Garrett and the Record Tower (C14, rebuilt 1885). In the curtain wall to the north are 2 blocked windows probably from an early C17 building now destroyed and the 'Bloody Gap', a piece of later walling possibly replacing a lost truer; next a small C14 watch tower (Hotspur's Seat); next the Constable's Tower, early C14 and unaltered with a gabled staircase turret; close by is the Postern Tower, early C14, also unaltered. To the north-west of the Postern Tower is a large terrace made in the C18, rebuilt 1864-65, with some old cannon on it. Medieval draw well on the east wall, next to the original doorway to the keep, now a recess. The keep, like the curtain walls, is largely medieval except for some C18 work on the interior on the west and for the Prudhoe Tower and the Chapel.

Gardener's Cottage (1302933): Grade II listed building that borders the proposed development to the east. *Gardener's Cottage near west entrance to Castle Kitchen Garden NU 1813 SE 1/199 II 2. Before 1827. North front 2 storeys and 3 windows with a single storey 2 window extension to west. Ashlar with slate roof. Glazing bar sash windows, single hung on 1st floor, tripartite at sides of main part Central half glazed door in round headed recess, with trellis porch. Later single storey extension has one blind window and one late glazed sash window, and 2 ogee headed doorways (one blind). Two gables to east, brick with stone architraves to windows; 3 light ground floor bay to right.*

Kitchen Garden Walls (1371325): Grade II listed, adjacent to the eastern side of the proposed development. *About 10-12 ft high running from Gardener's Cottage (qv) to the north wall of the kitchen garden, this is about 500 ft long and is returned at the east end for about 250 ft. Coursed squared rubble on the outside, brick lined inside. North wall formerly heated. On north side a former crenelated boiler house with a merlon opening to north and an ogee doorway to east. At the east end are 2 low projecting towers with segmental arches on the ground floor and 6 gabled sheds between. In the centre of the north wall are taller quadrants to former conservatory with central archway. Near the Gardener's Cottage on the west side is an ogee headed entrance to the garden.*

Water Tower on West Side of Kitchen Garden (1041492): Grade II listed c. 40m to the southeast of the proposed development. *Crenelated tower, before 1851, with projections to north and south. Ashlar. Archway to east. Arrow slits and merlon lights.*

- 7.4.2 The proposed development comprises a single-storey education centre and accommodation block. The scheme will have little impact on the setting of Alnwick Castle due to existing screening provided by the northern garden wall and mature trees blocking sight lines to and from the proposed development (Plate 32, 33 & 34). There are fragmentary sightlines from

the southern limits of the site towards the castle (Plate 35) however, the proposed accommodation block within this area will have a beneficial impact on the setting as it will replace the current gardener's temporary accommodation.

- 7.4.3 Sightlines to and from the Gardener's Cottage (Plate 36, 37 & 38) and Garden Wall (Plate 39, 40) are also broken by the eastern boundary wall which is at a higher elevation than the proposed one storey education centre. Moreover, views to and from the water tower are also screened partially by the eastern boundary wall but also by the southern wall of Alnwick Gardens and also several trees and bushes (Plate 36, 37 & 41).
- 7.4.4 The site is currently unattractive and very much back of house accommodation for the gardeners at Alnwick. The proposed development is therefore considered to have a **medium beneficial** impact on the setting of the Grade I listed Park and Garden and all nearby listed buildings. The proposals will not negatively impact designated heritage assets within the area as the only clear sight lines to the proposed development would be through the primary pedestrian route that borders the site to the east. The proposal may in fact increase usage of the adjacent pedestrian entrance so that the Gardener's Cottage, walls and water tower can be fully appreciated within the wider landscape and within the setting of the registered park and garden.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

- 7.1.1 The archaeological evaluation at Alnwick Gardens involved the excavation of five evaluation trenches (Trench 2 was abandoned due to services and Trench 6 was omitted from this phase of works due to access constraints). Trenches 1, 2 and 5 were sited within areas shown on historic maps not to be occupied by garden structures to investigate the potential for archaeological remains associated with medieval burgage plots. Trenches 3 and 4 were sited across the footprint of the demolished propagating house.
- 7.1.2 Four phases of activity were encountered within the five evaluation trenches. These comprised Phase 1: Subsoil; Phase 2: Buried soil; Phase 3: Alnwick Kitchen Garden and Phase 4: Modern. Superficial geology was not encountered within any of the trenches. All trenches were excavated to at least 1.2m below ground level with sondages hand dug within Trenches 1, 3, & 4 up to 1.8m below ground level.
- 7.1.3 Subsoil (Phase 1) was exposed within Trenches 1, 4 and 5 at a depth of between 0.70m to 1.1m below existing ground level. Medieval pottery was recovered from this phase that suggests the subsoil dates from the use of the site as part of the burgage plots associated with the properties facing onto Bondgate. No medieval structures were exposed so it is considered that these medieval deposits are only of local significance.
- 7.1.4 Buried soils (Phase 2) were encountered within all trenches. These deposits may represent levelling deposits dumped to create a level area on the sloping topography on which to construct the Forth Duke's kitchen garden.
- 7.1.5 The kitchen garden (Phase 3) was constructed between 1855 and 1861. By 1865 two long propagating houses had been built. These were exposed within Trenches 3 and 4 and comprised two brick-built structures with central propagating pits and sandstone flagged floor surfaces. A ditch backfilled with sandstone rubble was also noted within Trench 3 between the two propagating houses and a possible pathway along the northern external wall of the northern propagating house. The remains of the horticultural structures were in an overall condition good condition and are likely to survive to their full extent below ground level.
- 7.1.6 The structural remains within Trenches 3 and 4 were demolished in the mid-20th century and the propagating pits backfilled with rubble (Phase 4). A construction cut for the southern boundary wall of the site was also noted within Trench 5. This wall (located outside the trench) was constructed in the late 20th century. Modern ground level was formed by gravel deposit within Trench 1, 2, 3, and 4 and topsoil within Trench 5.
- 7.1.7 The archaeological evaluation at Alnwick Gardens yielded a small assemblage of pottery with 52 sherds being recovered. Fragments of medieval and post-medieval were observed with the overall assemblage dating to between 1480 to the mid-20th century. The pottery

dating compliments the stratigraphy of the site, with the older medieval borderwares appearing in lower subsoil deposits and later post-medieval wares appearing in context related to the use and disuse of the kitchen garden between the mid-19th century to the mid-20th. Due to the small scale of the assemblage and the absence of any sherds of intrinsic interest, no further work is required on this assemblage.

- 7.1.8 A very small assemblage of clay tobacco pipe was also recovered from the site. The assemblage comprised five stem fragments, one of which was stamped. The stems range in date from 1580 to 1744, according to bore hole size and the one identifiable makers stamp. Although the stems do aid in overall dating and understanding of the Alnwick Gardens, no further work is recommended on the clay tobacco pipes. The John Thompson stamped pipe should be photographed for the archive as a study tool for Tyneside Tobacco Pipes.
- 7.1.9 It is considered that the proposed development will have a medium beneficial impact on the setting of the Grade I Listed Park and the surrounding Grade II buildings as it will replace the current variety of piecemeal temporary structures, timber sheds and metal stores. The scheme will have little impact on the setting of Alnwick Castle due to existing screening provided by the northern garden wall and mature trees blocking sight lines to and from the proposed development. There are fragmentary sightlines from the southern limits of the site towards the castle however the development will have a beneficial impact on the setting as it will replace the current gardener's temporary accommodation and a variety of stores and sheds. Sightlines to and from the Gardener's Cottage and Garden Wall are also broken by the eastern boundary wall which is at a higher elevation than the proposed one storey education centre. Moreover, views to and from the water tower are also screened partially by the eastern boundary wall but also by the southern wall of Alnwick Gardens, trees and bushes
- 7.1.10 Elements of few original garden structures are extant. The eastern half of the northern propagating house survives, along with the eastern boundary wall, a part of which formed the back wall of a vinery and east wall of a structure thought to be associated with a steam plant. A square structure in the north-east corner of the garden is also thought to be part of a steam plant. The significance of the surviving historic buildings within the kitchen garden has been affected by the level of demolition and the contraction of the garden which occurred in the mid-20th century. The upstanding and below ground archaeological remains of the propagating houses are considered to be of regional significance and do not merit preservation in situ.

7.2 Recommendations

- 7.2.1 The results of the archaeological investigation have revealed archaeological evidence and historic standing structures of importance at a local and regional level. At a local level, the archaeological evidence from the site provides an insight into the garden within its setting in

relation to Alnwick Castle. At a regional level, the archaeological evidence from the site adds to current understanding of the development of horticultural practices.

- 7.2.2 To mitigate the loss of the historic horticultural remains and the impact of the proposed developed historic building recording (HBR) is recommended to record both the propagating house and the western elevation of the eastern boundary wall including the steam plant structure straddling the wall. The HBR will be undertaken to level 2/3 standards and will comprise a mixture of laser scanning, rectified photography and examination of the archival material already uncovered during previous research for the recently published monograph. Prior to building recording, all standing storage sheds and stored material should be removed from the eastern boundary wall as well as the benches and superfluous material within the upstanding propagating house.
- 7.2.3 The footprint of the proposed education centre will truncate the remains of the northern propagating house; however, the southern propagating house may not be affected depending on the depth of the glass house and service locations. It is therefore recommended that the full footprint of the northern propagating house be excavated with a watching brief or localised excavation undertaken during works around the location of the southern structure. The excavation of the northern propagating house may be undertaken at the same time as the HBR with the potential eastern propagating pit excavated so that the structure can be recorded in its entirety. Further work is also required in the location of Trench 6 to determine if below ground remains of the steam plant will be affected by the proposed developments. Full details of the proposed works are to be set out in a Written Scheme of Investigation, to be approved by NCCCT, prior to the next phase of works commencing.

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9. ACKNOWLEDGEMENTS AND CREDITS

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PCA Credits

Fieldwork: Scott Vance (Supervisor), James Hopper, Derek Moscrop and Lucy Robinson

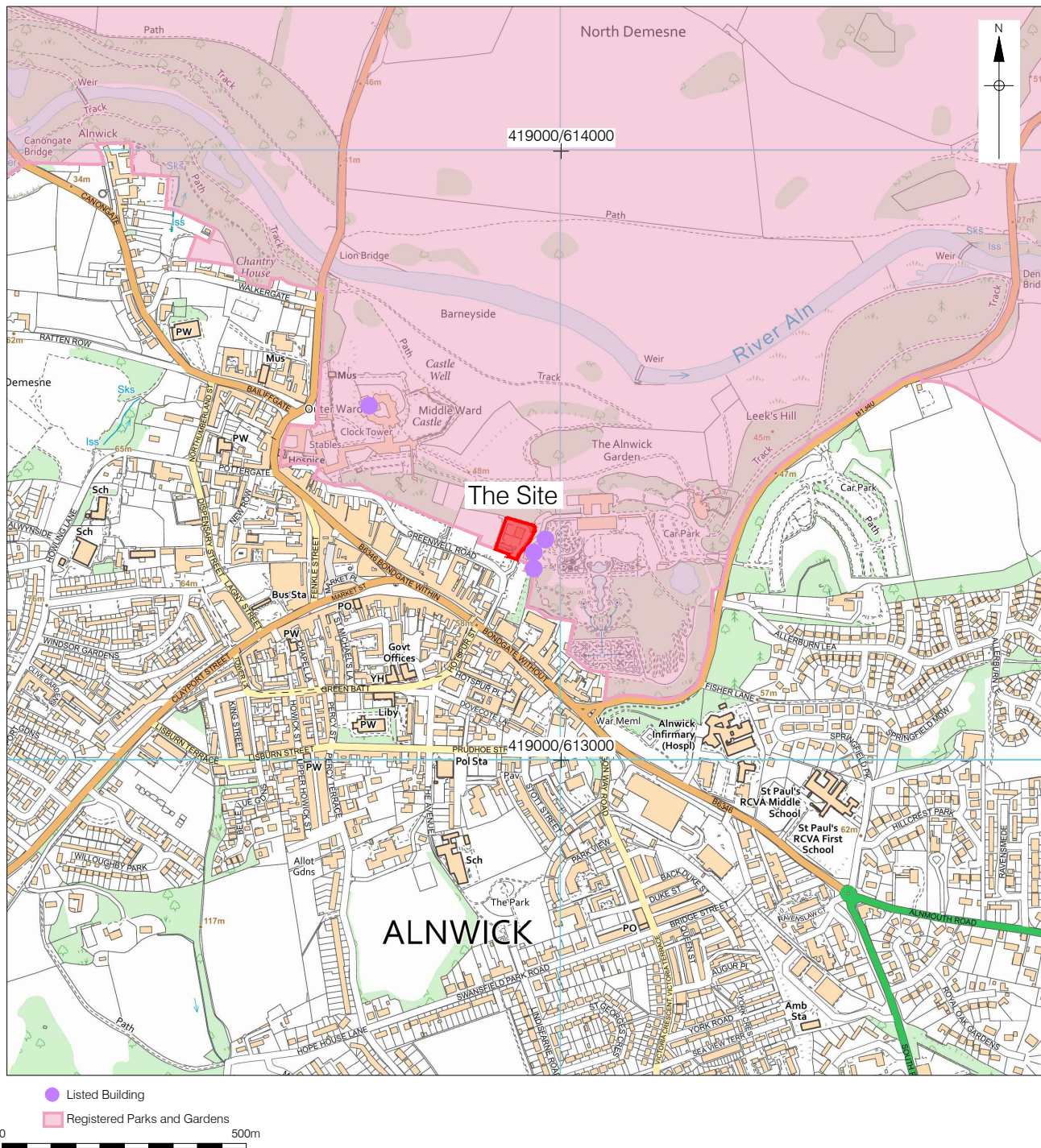
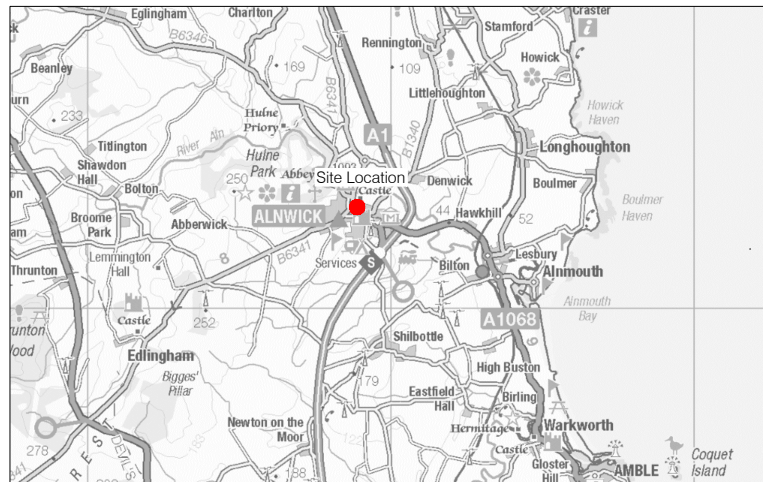
Report: Scott Vance

Project Manager: Jennifer Proctor

CAD: Ray Murphy

Pottery and clay tobacco pipe: Lucy Robinson

APPENDIX 1: FIGURES



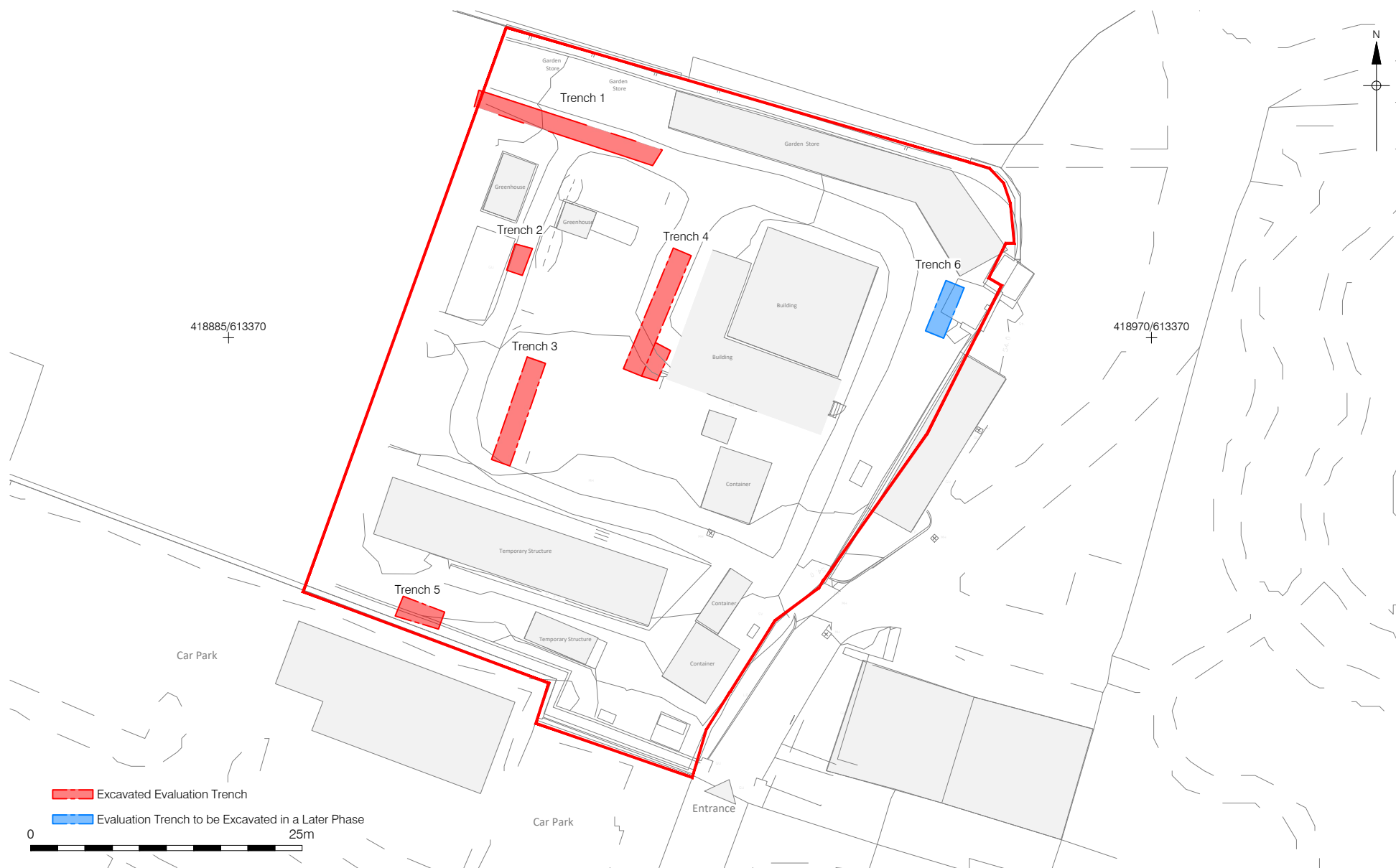




Figure 3A
Evaluation Trenches overlain on Proposed Development
1:500 at A4

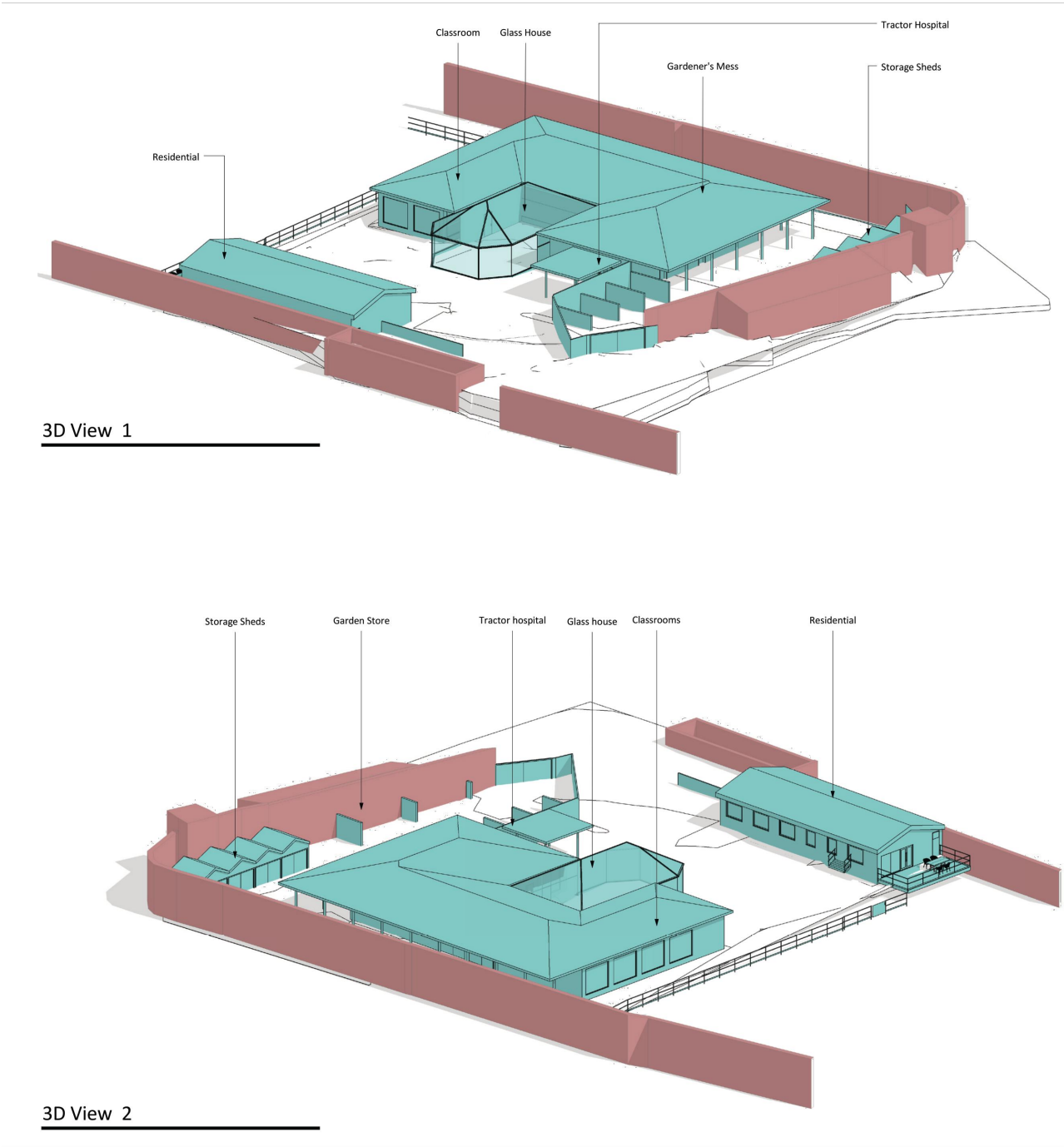


Figure 3B
3D Views of Proposed Development
not to scale

ALNWICK CASTLE, GARDEN'S
PLAN OF
PROPAGATION PITTS AND HOUSES -
SCALE $\frac{1}{8}$ " INCH TO 1 FOOT -

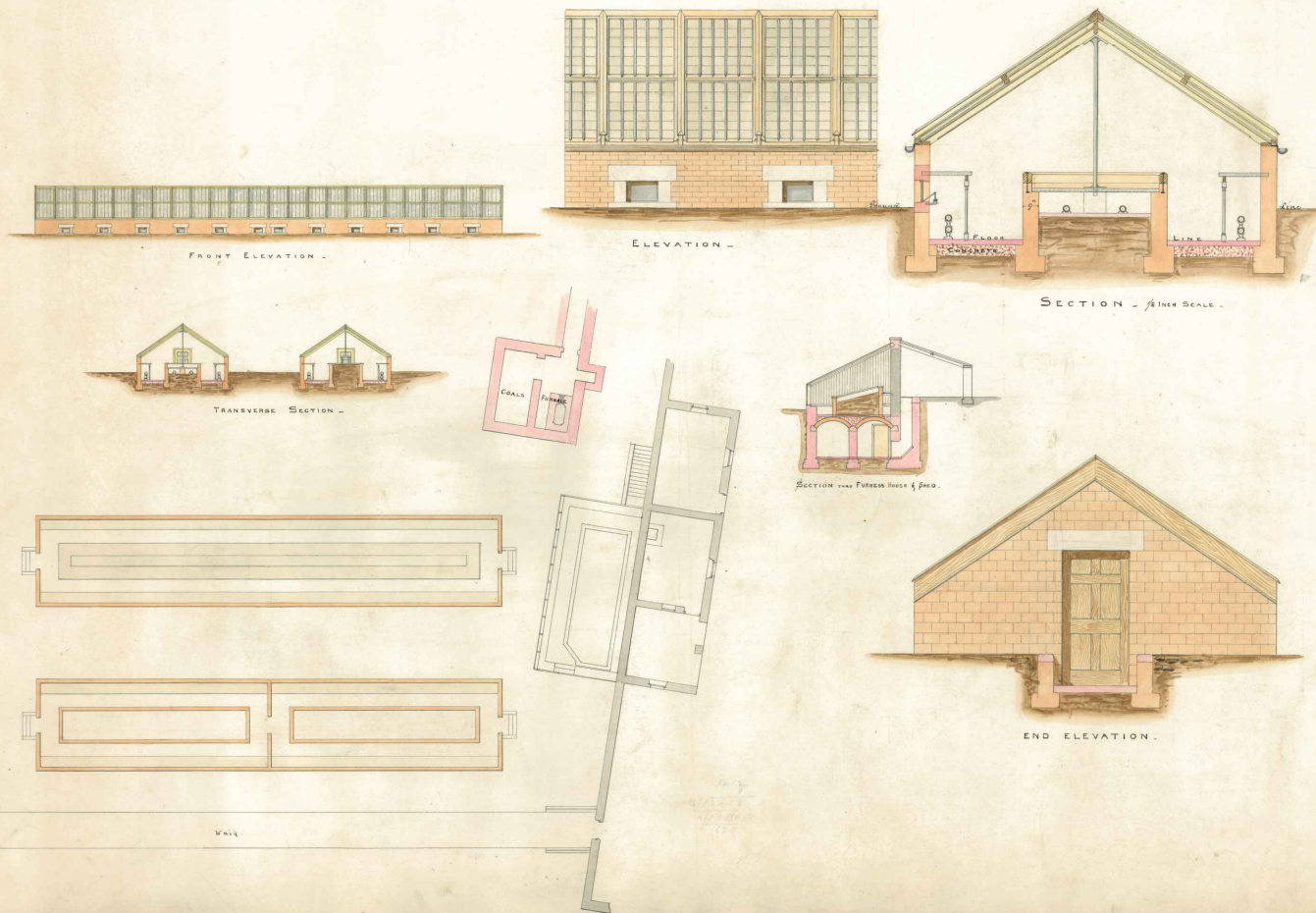


Figure 4
Plans, Sections and Elevations of Propagating Houses
not to scale

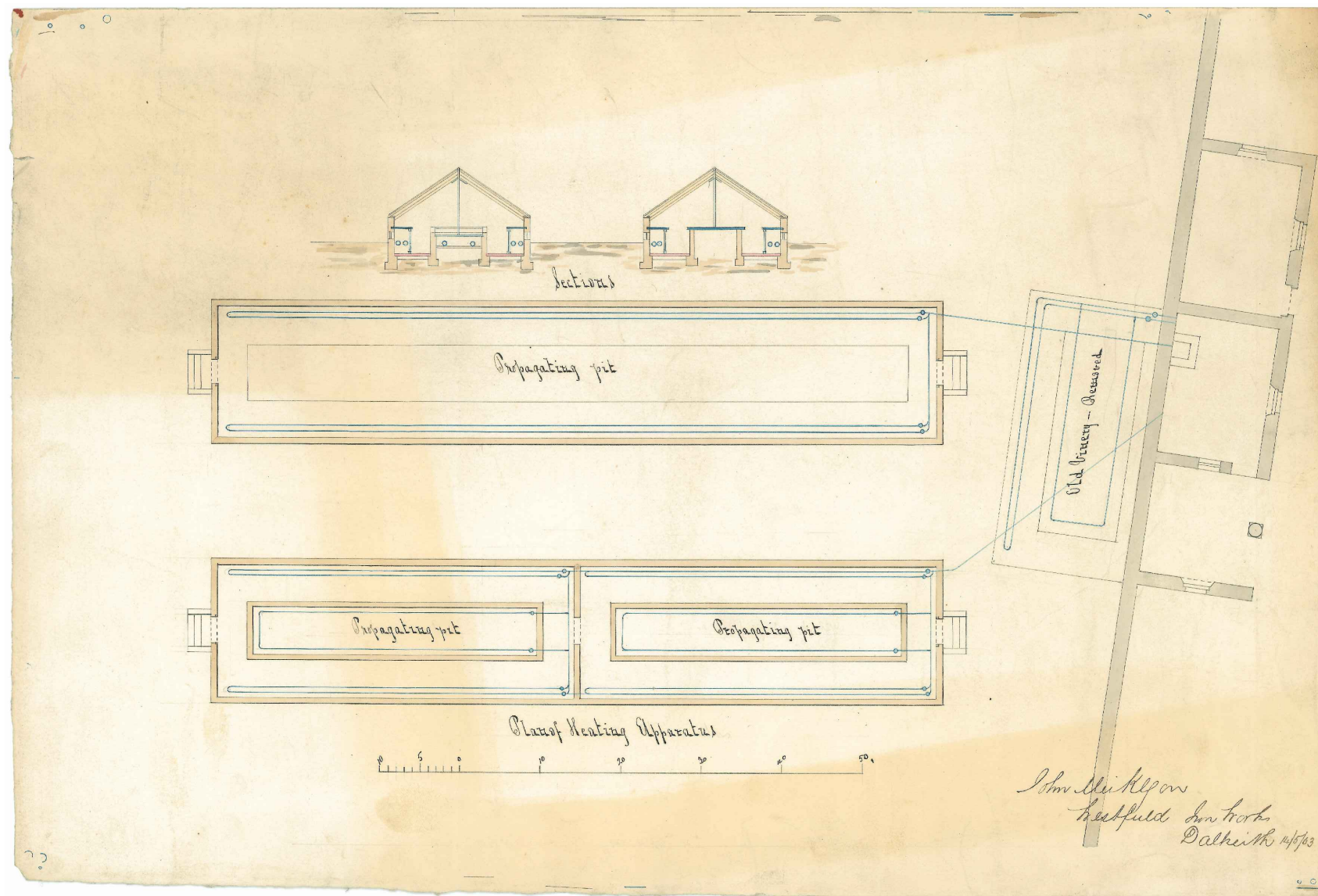
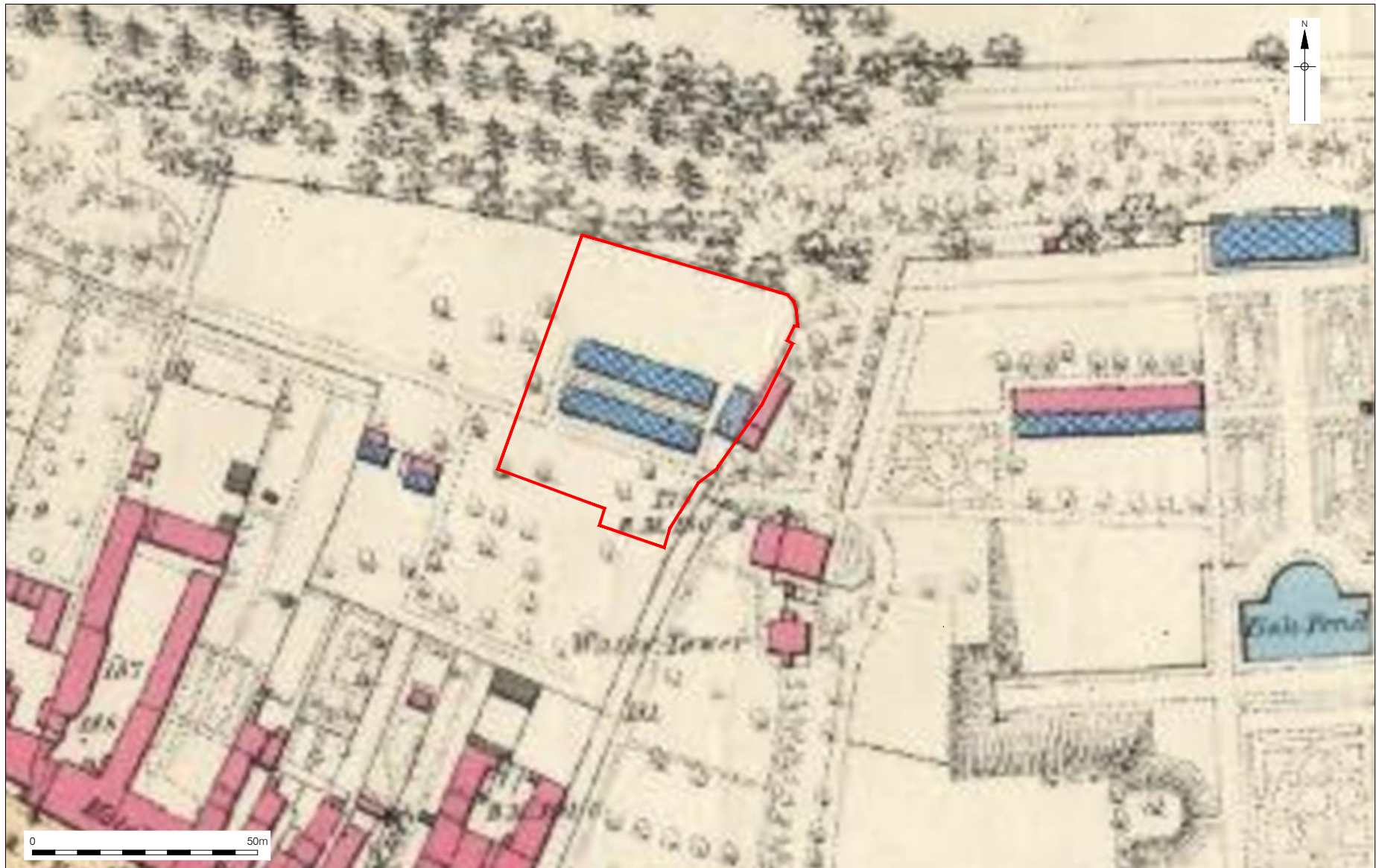
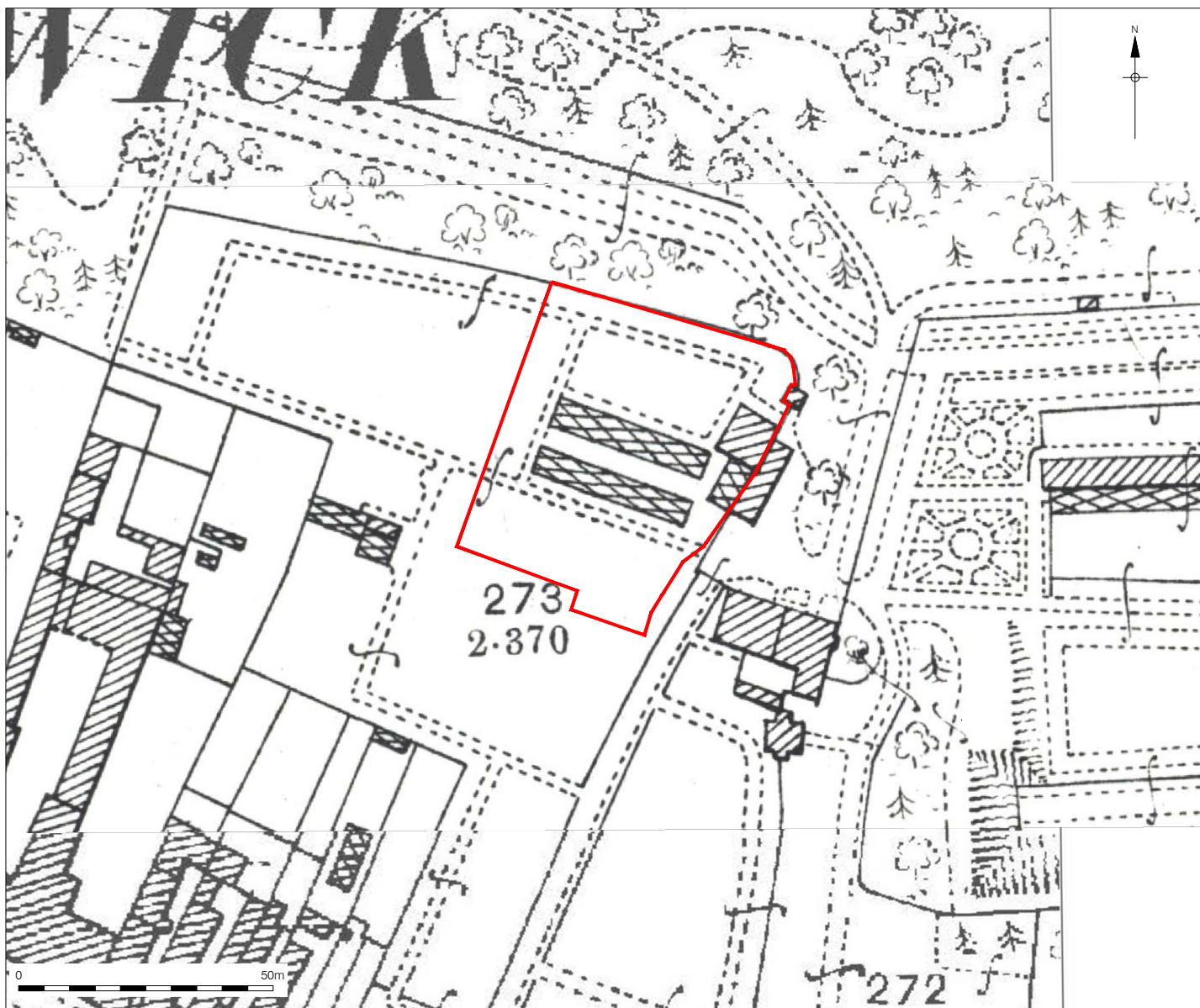


Figure 5
Plans and Sections of Propagating Houses
not to scale





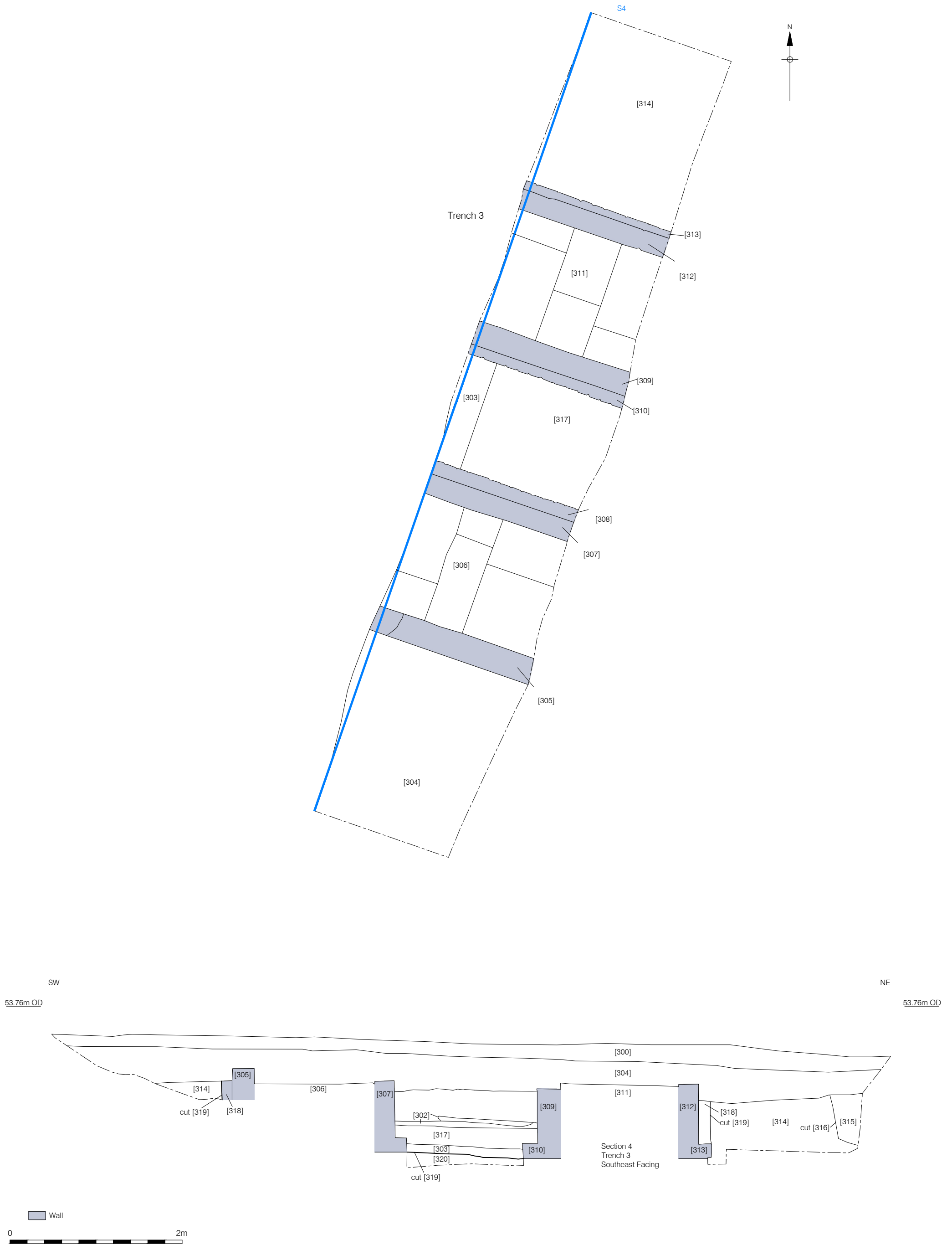


Figure 8
Plan and Section of Trench 3
1:40 at A3

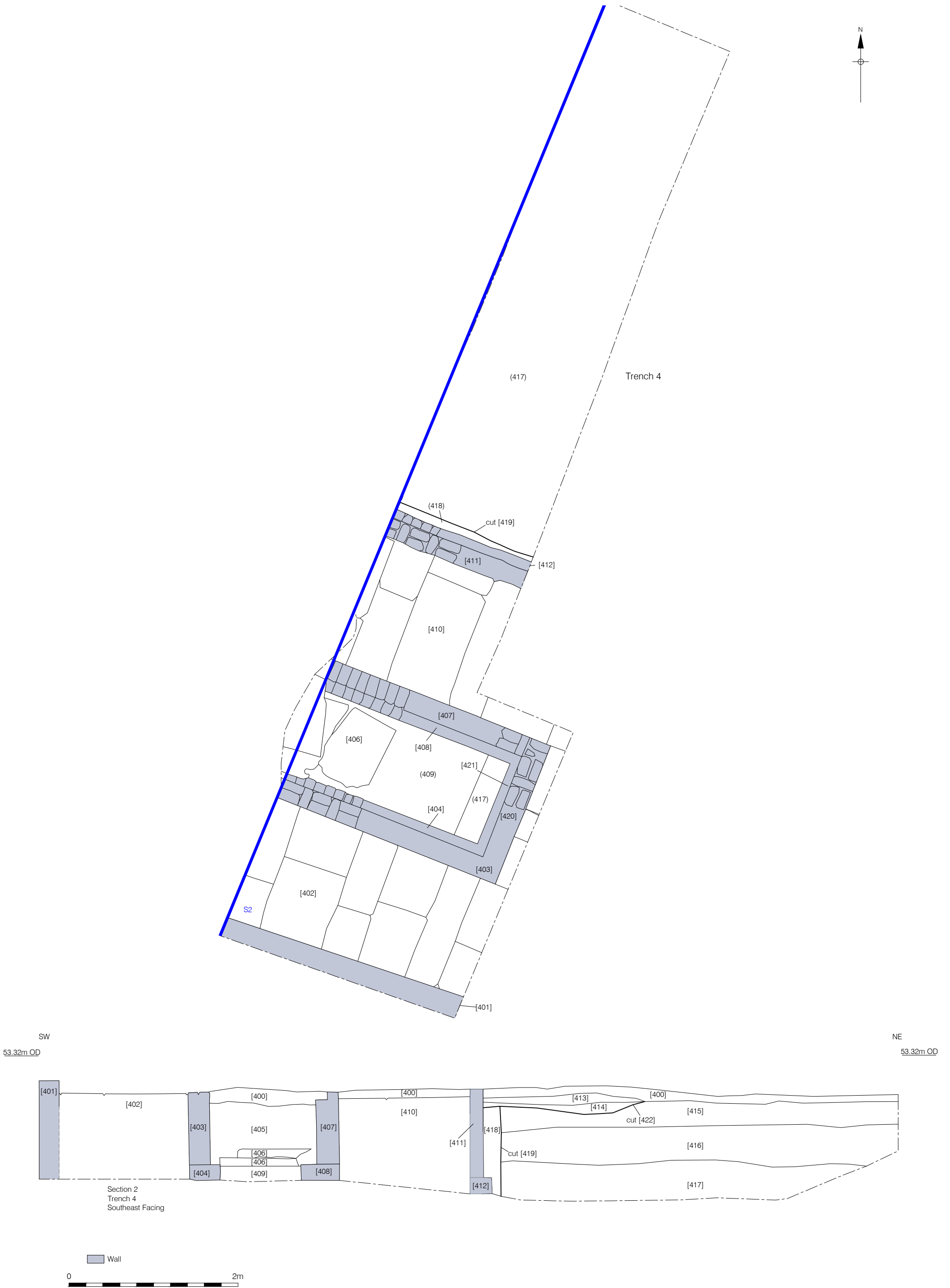
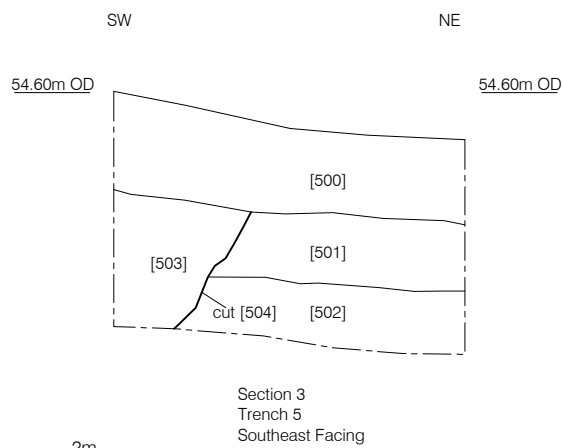
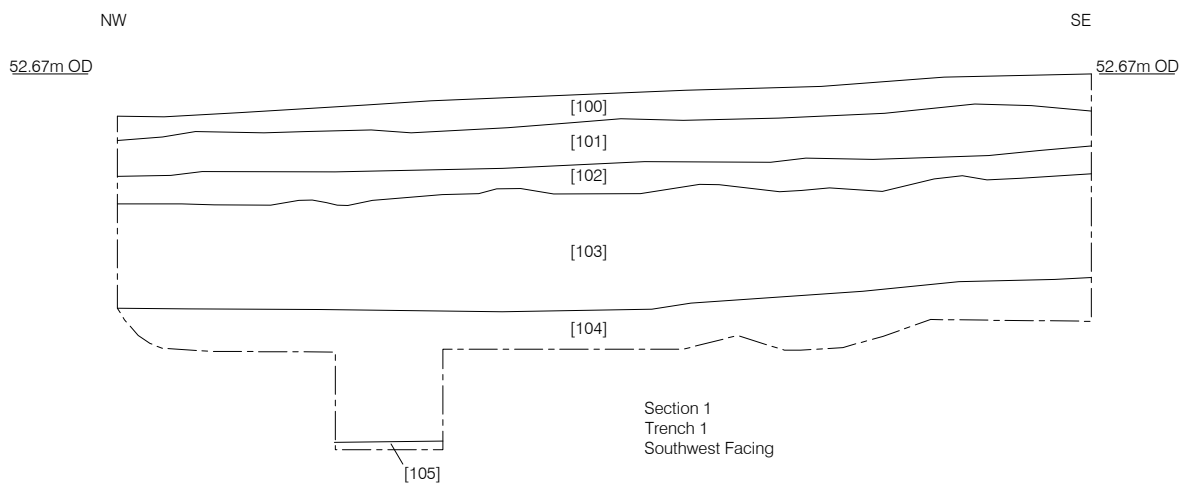
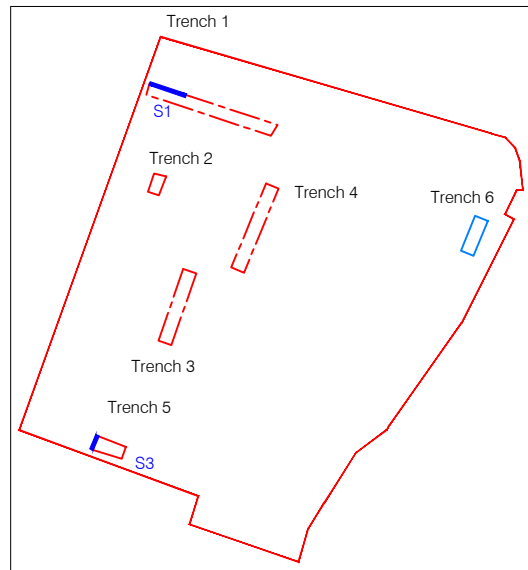
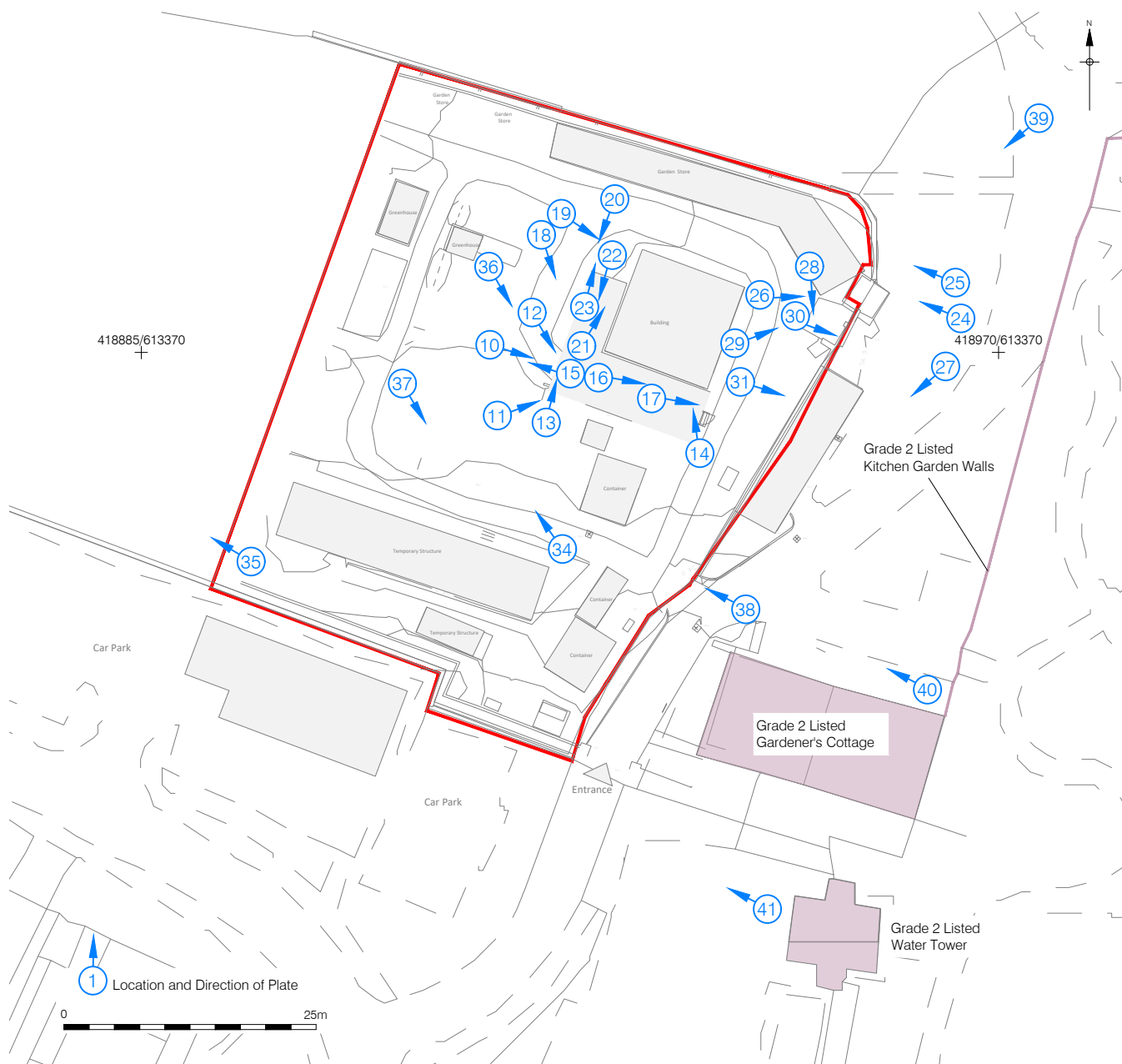
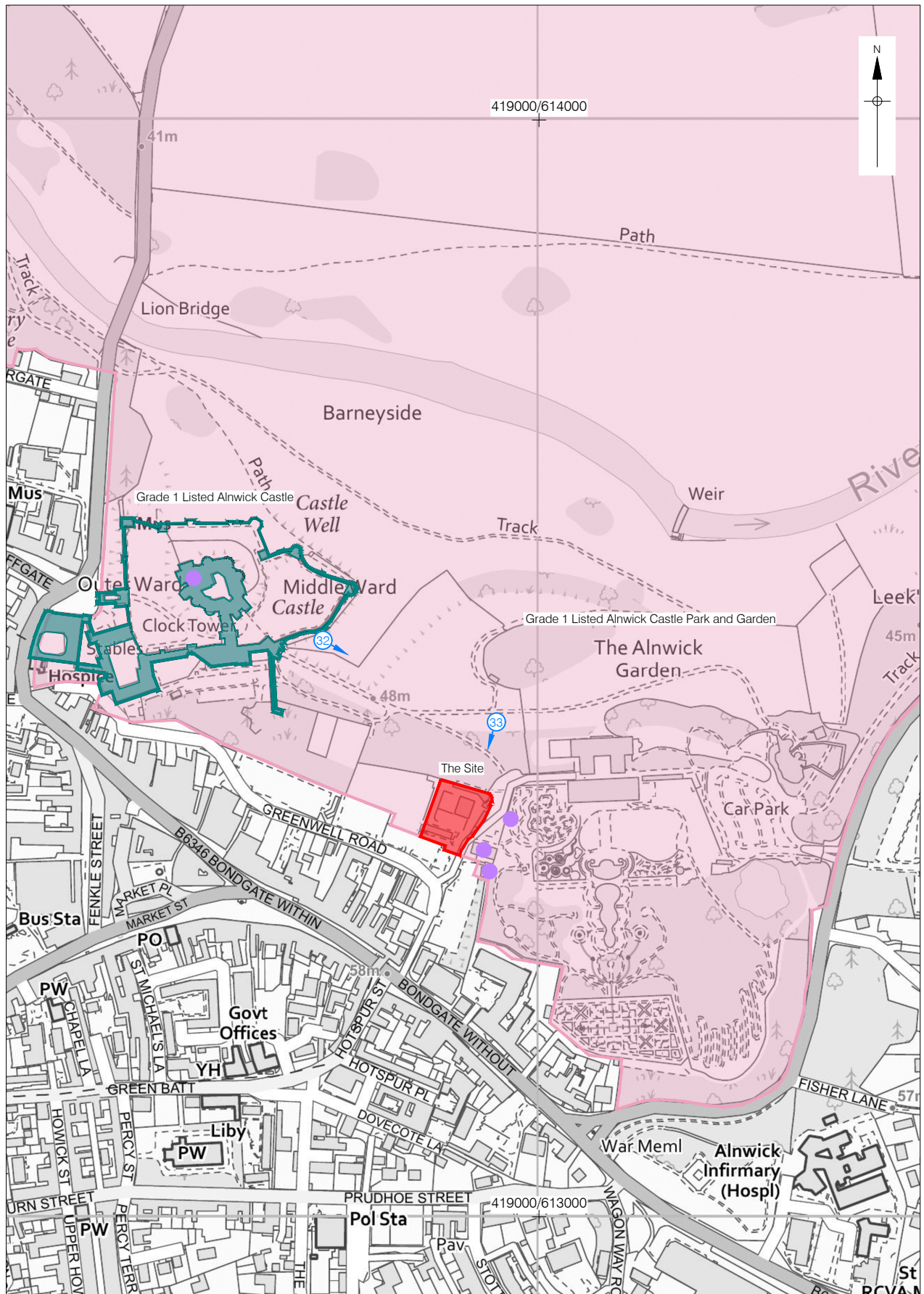


Figure 9
Plan and Section of Trench 4
1:40 at A3







- Grade 1 Listed Alnwick Castle
- Grade 1 Listed Alnwick Park and Garden
- Listed Building
- 1 Location and Direction of Plate

0 250m

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Figure 11B
Plate Locations
1:5,000 at A4

APPENDIX 2: CONTEXT INDEX

Context	Phase	Type 1	Type 2	Fill of	Interpretation
Trench 1					
100	4	Deposit	Layer		Gravel surface
101	4	Deposit	Layer		Levelling deposit for gravel [100]
102	4	Deposit	Layer		Ground raising dump
103	2	Deposit	Layer		Buried Soil
104	1	Deposit	Layer		Subsoil
105	1	Deposit	Layer		Subsoil
Trench 2					
200	4	Deposit	Layer		Gravel surface
201	4	Deposit	Fill		Fill of service [203]
202	4	Other	Cables		Electricity cable
203	4	Cut	Linear		Cut for electricity cables [202]
204	4	Deposit	Layer		Levelling for [200]
205	4	Deposit	Layer		Ground raising dump
206	4	Deposit	Layer		Ground raising dump
Trench 3					
300	4	Deposit	Layer		Gravel surface
301	4	Deposit	Layer		Demolition infill of propagating pit in southern propagating house
302	3	Masonry	Surface	[319]	Slate surface within propagating pit of southern propagating house
303	3	Deposit	Fill		Fill of construction cut [319] within propagating pit
304	4	Deposit	Layer		Ground raising dump
305	3	Masonry	Structure	[319]	Southern external wall of southern Propagating House
306	3	Masonry	Surface	[319]	Southern surface within southern Propagating House
307	3	Masonry	Structure	[319]	Southern wall of propagating pit within southern Propagating House
308	3	Masonry	Structure	[319]	Brick foundations for southern wall of propagating pit within southern Propagating House
309	3	Masonry	Structure	[319]	Northern wall of propagating pit within southern Propagating House
310	3	Masonry	Structure	[319]	Brick foundations for northern wall of propagating pit within southern Propagating House
311	3	Masonry	Surface	[319]	Northern surface within southern Propagating House
312	3	Masonry	Structure	[319]	Northern external wall of southern Propagating House
313	3	Masonry	Structure	[319]	Brick foundations for northern external wall of southern Propagating House
314	2	Deposit	Layer		Buried Soil
315	3	Deposit	Fill	[316]	Fill of ditch [316]
316	3	Cut	Linear		Drainage feature or possible southern limits of construction cut [419]

317	3	Deposit	Fill	[319]	Fill of construction cut [319] within propagating pit
318	3	Deposit	Fill	[319]	Fill of construction cut [319]
319	3	Cut	Linear		Construction cut for southern Propagating House
320	2	Deposit	Layer		Buried Soil. Same as [314]
Trench 4					
400	4	Deposit	Layer		Gravel surface
401	3	Masonry	Structure	[419]	Southern external wall of northern Propagating House
402	3	Masonry	Surface	[419]	Southern surface within northern Propagating House
403	3	Masonry	Structure	[419]	Southern wall of propagating pit within northern Propagating House
404	3	Masonry	Structure	[419]	Brick foundations for southern wall of propagating pit within northern Propagating House
405	4	Deposit	Layer		Demolition infill of propagating pit within northern Propagating House
406	3	Masonry	Surface	[419]	Slate surface within propagating pit of northern Propagating House
407	3	Masonry	Structure	[419]	Northern wall of propagating pit within northern Propagating House
408	3	Masonry	Structure	[419]	Brick foundations for northern wall of propagating pit within northern Propagating House
409	3	Deposit	Fill	[419]	Infilling around foundations of propagating pit within northern Propagating House
410	3	Masonry	Surface	[419]	Northern surface within northern Propagating House
411	3	Masonry	Structure	[419]	Northern external wall of northern Propagating House
412	3	Masonry	Structure	[419]	Brick foundations for northern external wall of Propagating House
413	3	Deposit	Fill	[422]	Possible pathway?
414	3	Deposit	Fill	[422]	Possible pathway?
415	2	Deposit	Layer		Buried soil
416	2	Deposit	Layer		Buried soil
417	1	Deposit	Layer		Subsoil
418	3	Deposit	Fill	[419]	Fill of northern Propagating House Construction cut [419]
419	3	Cut	Linear		Construction cut for northern Propagating House
420	3	Masonry	Structure	[419]	Eastern wall of propagating pit within northern Propagating House
421	3	Masonry	Structure	[419]	Brick foundations for eastern wall of propagating pit within northern Propagating House
422	3	Cut	Linear		Cut for pathway deposits [413] & [414]
Trench 5					
500	4	Deposit	Layer		Topsoil
501	2	Deposit	Layer		Buried soil

502	1	Deposit	Layer		Subsoil
503	4	Deposit	Fill	[504]	Fill of construction cut [504]
504	4	Cut	Linear		Construction cut for 20th century boundary wall

APPENDIX 3: STRATIGRAPHIC MATRIX

APPENDIX 4: PHOTOGRAPHIC PLATES

Plate 1: Trench 1 section: view northwest, 1m scale



Plate 2: Trench 4 section: view southwest, 2m scale



Plate 3: Trench 5: view northwest 1m scale



Plate 4: Trench 3 section: view northwest 1m scale



Plate 5: Trench 3: Southern propagating house: view northeast, 1m scale



Plate 6: Trench 3: Propagating pit within southern propagating house: view northwest, 1m scale



Plate 7: Surface [306] in southern propagating house: view northwest, 1m scale



Plate 8: Surface [311] in southern propagating house: view northwest, 1m scale



Plate 9: Propagating pit within northern propagating house Trench 4: view northwest, 2m scale



Plate 10: Below ground remains of northern propagating house with upstanding remains to the east: view east, 1m scale



Plate 11: Metal roof on upstanding remains of northern propagating house. Includes bricked up apertures: view northeast



Plate 12: Original roof structure surviving under metal roof of northern propagating house: view southeast



Plate 13: Upstanding remains of northern propagating house with 20th century roof: view north



Plate 14: Eastern gable end of upstanding northern propagating house: view northwest



Plate 15: Western gable end of upstanding section of northern propagating house: view west



Plate 16: Decorative iron roof ties within northern propagating house



Plate 17: Eastern gable end of propagating house: interior: view east



Plate 18: Northern 20th century extension to northern propagating house: view southeast



Plate 19: Northern extension to propagating house: view east



Plate 20: North facing elevation of northern extension of propagating house: view south



Plate 21: Northern extension to propagating house: view north



Plate 22: Interior of northern extension of propagating house: view south



Plate 23: Interior of northern extension of propagating house: view north



Plate 24: Steam plant building (right) straddling northeast corner of eastern boundary wall: view west



Plate 25: Steam plant building straddling northeast corner of eastern boundary wall: view west



Plate 26: Steam plant building straddling northeast corner of eastern boundary wall: view northeast



Plate 27: Old vinery backhouse built against eastern elevation of eastern boundary wall: view southwest



Plate 28: West facing elevation of eastern boundary wall: view southeast



Plate 29: West facing elevation of eastern boundary wall: view northwest



Plate 30: West facing elevation of eastern boundary wall: view east



Plate 31: West facing elevation of eastern boundary wall: view east



Plate 32: View from Alnwick Castle towards proposed development: view southeast



Plate 33: View towards the proposed development from Grade I park to the north: view south



Plate 34: View towards Alnwick Castle from proposed development: view northwest



Plate 35: View towards Alnwick Castle from proposed development: view northwest



Plate 36: View towards Grade II Gardener's Cottage and Water Tower from proposed development: view southeast



Plate 37: View towards Grade II Gardener's Cottage and Water Tower from proposed development: view east



Plate 38: View towards proposed development from Grade II Gardener's Cottage: view northwest



Plate 39: View towards proposed development from Grade II listed garden wall: view southwest

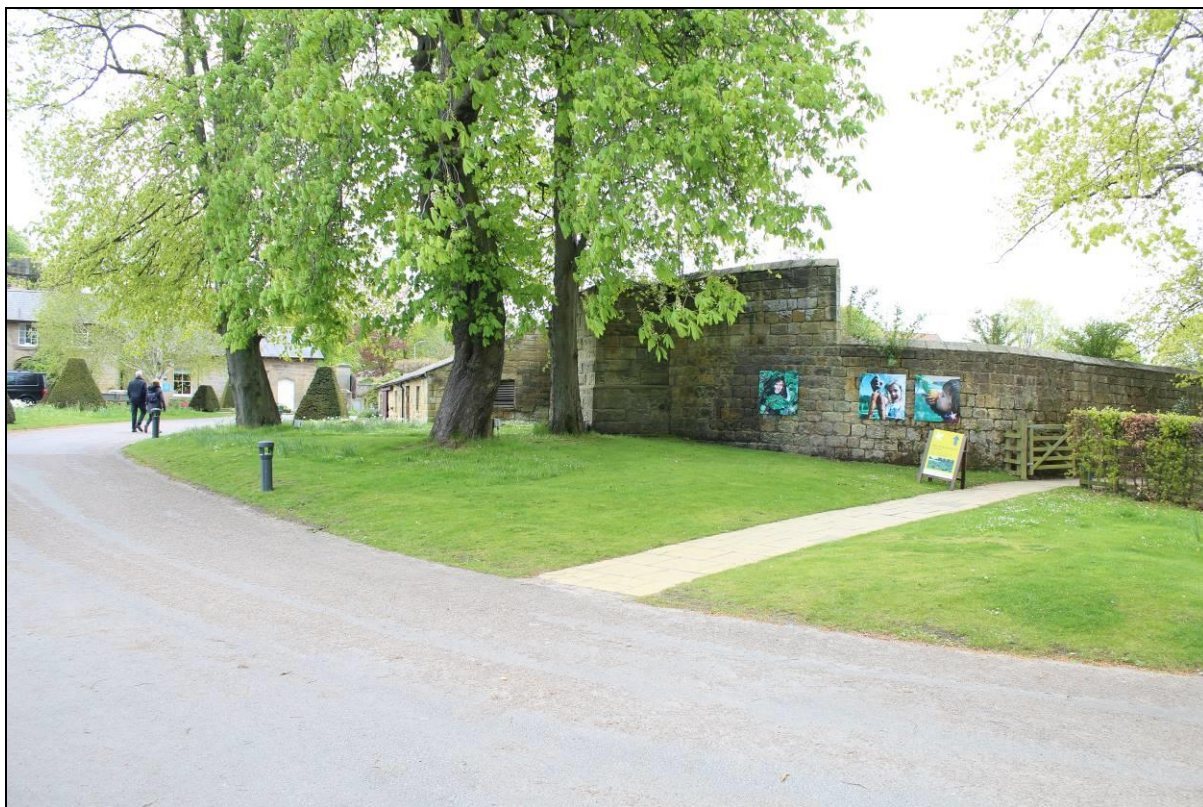


Plate 40: View towards proposed development from outside Gardener's Cottage and garden wall: view west



Plate 41: View towards proposed development from Grade II Water Tower: view northwest



APPENDIX 5: POTTERY ASSESSMENT

By Lucy Robinson

The archaeological evaluation at Alnwick Castle Gardens (ACG19) yielded a small assemblage of pottery with 52 sherds in total weighing 2.917kg.

All sherds recovered are in relatively good condition, with minimal abrasion or fragmentation following deposition.

The assemblage was quantified by the standard measures of sherd count and weight, (Orton, Tyers and Vince 1993:168) and the information was entered into an MS Access database using the fabric codes shown in Figure 1 below.

The 'context considered dates' have been identified through a process of seriation using the fabric and decoration to date the sherds within a given context. Where necessary the occupation dates as represented on OS maps are taken into consideration and intrusive/residual sherds are identified accordingly.

The Pottery Types

Fragments of medieval and post medieval pottery with found in the evaluation at Alnwick Castle Gardens, with an overall assemblage date range being between 1480 and 1900. The pottery dating compliments the stratigraphy of the site, with the older medieval borderwares appearing in lower subsoil deposits and the later post medieval wares appearing in contexts directly related to the use and disuse of the glasshouses in the 19th century.

Fabric Code	Fabric Description	Fabric Date
ERBOR	Early Surrey-Hampshire Red Borderware	1480-1550
ERBORG	Early Surrey-Hampshire Red Borderware with Green Glaze	1480-1550
MISC SLIP	Miscellaneous unsourced post medieval slipware	1480-1900
PLANT	Plant Pot	1650-1900
TGW	Tin-Glazed Ware	1570-1846
WGLEW	White Glazed Earthenware	1805-1900
WGLEWTP	White Glazed Earthenware with Transfer printed decoration	1805-1900

Table 1- Table showing the fabrics found at the Alnwick Castle Gardens Evaluation ACG19

Context	Fabric	Sherd Count	Comments	Weight (g)
502	ERBOR	2		1
314	ERBOR	1		1
314	ERBORG	1	Green glazed -oxidised	1
314	MISC SLIP	1	Brown slip decoration on a yellow slip coated exterior body	11
314	PLANT	1		16
314	TGW	1	Dark blue horizontal lines on a light blue tin glazed	1

			body	
314	WGLEW	1	Scalloped floral moulded rim	18
304	WGLEWT P	1	Dark blue willow pattern on exterior body	8
101	WGLEW	1		64
101	PEARLWT P	1	Dark blue landscape transfer on exterior body	3
104	ERBOR	1		8
104	ERBOR	4		23
104	ERBORG	3	Green glaze on exterior body	7
405	PLANT	33	Plant pot fragments – No complete profile. Several sherds with pre-firing perforations through the central base	2755
Total		52		2917

Table 2- Fabrics found by context with comment discussions and weight (g)

Significance and recommendations for further work

Due to the small scale of the assemblage and the absence of any sherds of intrinsic interest, it is recommended that no further work is considered on this assemblage at this stage. If a larger assemblage is recovered at a full excavation, further analysis of the medieval wares would be of particular interest in creating a broader historical understanding of the Alnwick Castle Garden land usage over time.

Context	Context Considered Date
101	1805-1840
101	1805-1840
104	1480-1550
104	1480-1550
104	1480-1550
304	1805-1900
314	1805-1846
314	1805-1846
314	1805-1846
314	1805-1846
314	1805-1846
314	1805-1846
405	1650-1900
502	1480-1550

Table 3- Context considered dates by fabric

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APPENDIX 6: CLAY TOBACCO PIPE ASSESSMENT

By Lucy Robinson

The evaluation at Alnwick Castle Gardens (ACG19) yielded a very small assemblage of clay tobacco pipes totalling in five stems weighing 21g. All fragments were in a fairly good condition with minimal signs of usage. The pipes were recovered from two stratified contexts.

All pipes were recorded in a relational database and were identified with the help of the Tyneside clay tobacco pipe typology as established by Edwards (1987); and Parsons' types (1964) and Atkinson and Oswald's typology (1969) for later items. Where possible, the pipes were further coded by decoration and quantified by fragment count and weight.

The clay tobacco pipe assemblage from the site comprises 5 stem fragments, only one of which was stamped. The stems range in date from 1580 to 1744, according to bore hole size and the one identifiable makers stamp.

Context	Earliest Date	Latest Date	Fragment count	Comments	Weight (g)
405	1730	1910	1	Very worn on both ends - possibly water worn?	3
314	1705	1744	1	Well preserved. Reads 'John Thompson' in Edwards 6.D2 stamp type with foliage up. John Thompson, Gateshead Potter 1700-1744 but likely this is from his later ownership. 1720+.	3
314	1580	1740	3	Large bore holes - one partially burnt	15

Table 4 - Table showing the pipe stems recovered during the Alnwick Castle Gardens Evaluations ACG19

Edward's D2 'John Thompson' Makers stamp

One stem presented with a stamp attributable to Gateshead Tobacco Pipemaker John Thompson. The first John Thompson was recorded to be manufacturing in the Gateshead area between 1683-1690. He was closely followed in the same residence by a second John Thompson who established his business around 1705 and died soon after in 1713 (Edwards 1986, 33). Further records showing pipes in production under the name John Thompson until 1744, a possible heir to the deceased John Thompson of 1705 (*ibid*). The stamp has been identified as being the signature of John Thompson II (Edwards 6.D2) and is therefore likely to dates between 1705-1713 (Parsons 1964, 254), however there is some possibility this stamp was used by the first John Thompson and could potentially date slightly earlier.

Significance and further work

Although the pipe stems recovered do help in our overall dating and understanding of the Alnwick Castle Gardens, very little can be said because of the small scale of the assemblage.

No further work is recommended; however it is advised that the John Thompson stamped pipe be photographed for the archive as a study tool for the study of Tyneside Tobacco Pipes.

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PCA

PCA CAMBRIDGE

THE GRANARY, RECTORY FARM
BREWERY ROAD, PAMPISFORD
CAMBRIDGESHIRE CB22 3EN
t: 01223 845 522
e: cambridge@pre-construct.com

PCA DURHAM

THE ROPE WORKS, BROADWOOD VIEW
CHESTER-LE-STREET
DURHAM DH3 3AF
t: 0191 377 1111
e: durham@pre-construct.com

PCA LONDON

UNIT 54, BROCKLEY CROSS BUSINESS CENTRE
96 ENDWELL ROAD, BROCKLEY
LONDON SE4 2PD
t: 020 7732 3925
e: london@pre-construct.com

PCA NEWARK

OFFICE 8, ROEWOOD COURTYARD
WINKBURN, NEWARK
NOTTINGHAMSHIRE NG22 8PG
t: 01636 370 410
e: newark@pre-construct.com

PCA NORWICH

QUARRY WORKS, DEREHAM ROAD
HONINGHAM
NORWICH NR9 5AP
T: 01603 863 108
e: norwich@pre-construct.com

PCA WARWICK

UNIT 9, THE MILL, MILL LANE
LITTLE SHREWLEY, WARWICK
WARWICKSHIRE CV35 7HN
t: 01926 485 490
e: warwick@pre-construct.com

PCA WINCHESTER

5 RED DEER COURT, ELM ROAD
WINCHESTER
HAMPSHIRE SO22 5LX
t: 01962 849 549
e: winchester@pre-construct.com

