



NAA

THE CURTAIN RISES

THE BREWHOUSE

ARCHAEOLOGICAL
INVESTIGATIONS

NATIONAL TRUST
SEATON DELAVAL HALL
NORTHUMBERLAND

on behalf of
The National Trust

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THE BREWHOUSE, SEATON DELAVAL HALL, NORTHUMBERLAND

ARCHAEOLOGICAL INVESTIGATIONS

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THE BREWHOUSE, SEATON DELAVAL HALL, NORTHUMBERLAND ARCHAEOLOGICAL INVESTIGATIONS

Summary

This report presents the results of a programme of archaeological mitigation at the brewhouse, Seaton Delaval Hall, Northumberland (NZ 32334 76643). This work was undertaken by Northern Archaeological Associates Ltd on behalf of the National Trust and is one of a number of such schemes conducted as part of 'The Curtain Rises' project. This was a two-year restoration scheme, part funded by the National Lottery Heritage Fund, aimed at conserving the 18th-century hall and improving the overall visitor experience. This included the conversion of the brewhouse complex for use as a visitors' café and outdoor dining area.

Archaeological mitigation as part of the Curtain Rises project was divided into a number of Archaeological Work Packages. This report covers packages 1, 2 and 3 relating to the brewhouse complex, and comprised archaeological monitoring, area excavation and limited historic building recording. It was conducted at intervals between December 2018 and February 2020 in accordance with a Written Scheme of Investigation prepared by the National Trust and approved in advance by Northumberland County Council. It fulfils Conditions 6 and 7 of Planning Permission 17/04417/FUL, (varied by 03488/varyco) Condition 13 and 14 of 17/04635/FUL (varied by 18/04039/varyco, condition 14 deleted), Condition 4 of 17/04412/FUL (varied by 18/01484/varyco), and relates to Listed Building Consents 17/04418/LBC (varied by 18/0345/varyco), 17/04636/LBC (varied by 18/04045/varyco) and 17/04412/LBC (varied by 18/01486/varyco).

The brewhouse is a Grade II listed building (NHLE: 1041325) located to the north-east of Seaton Delaval Hall, on the south side of the drive connecting the north lawn to the walled garden. Recent investigations have shown the complex to include a rare example of a 17th-century multi-use agricultural building, forming part of the manorial complex preceding the present Vanbrugh-designed hall. The building was later repurposed in the mid-18th century as a brewhouse and coach house, which included the addition of the decorative north-facing red-brick façade. In the 19th century, continuing into the 20th century, the premises were used by a commercial market-garden operation based in the former walled garden.

The archaeological investigations showed extensive amounts of ground disturbance across the site, indicative of a prolonged period of semi-industrial and agricultural use. Rather surprisingly, there was no evidence of a cobbled or metalled surface surrounding the buildings, instead mixed dump and levelling deposits were identified immediately beneath the topsoil. The absence of a surface, and degree of ground disturbance may partly be the result of clearance during the 1990s when the complex was modified by the then owner, Lord Hastings. Nevertheless, the archaeological works facilitated the identification of a basic stratigraphic sequence supporting the established chronology of the site, albeit fragmentary in some places.

The earliest evidence identified was a broad linear hollow running north-east to south-west on both sides of the brewhouse. Recorded in section, this measured c. 7m across and contained a what appeared to be a sterile lower fill suggesting a possible natural origin. It was deliberately infilled with ash, coal and brick fragments, which were overlain by layers of clay consolidation material prior to the construction of the 17th-century agricultural building. The nature of the infill debris suggests it came from the demolition of earlier buildings somewhere in the vicinity of the site. This might also account for reused masonry incorporated into the brewhouse structure.

On the east side of the brewhouse, monitoring during foundation works on the north side of the area revealed that the ground had been reduced to natural bedrock prior to construction of the brewhouse building. Notably the foundations at the south-east corner of the building were much deeper than the frontage next to the road, with increasing depth of deposits recorded to the south and east of the site, infilling and levelling the ground. A similar sequence was observed on the west side of the brewhouse. The natural drift geology having a marked gradient to the south-east at the junction of the brewhouse and cartshed. Excavations during underpinning along the south-west wall of the cartshed showed a similar gradient running north from the pleasure ground boundary wall.

Where depth of project construction works excavation allowed, a possible buried natural soil horizon was seen on the west side, capped by a thick layer of orange clay. Above this, stone and refuse had been dumped into and above the linear hollow that extended on both sides of the building. This incorporated brick rubble of late medieval and early post-medieval date, together with sherds of post-medieval pottery. Later pottery was also recovered, indicating considerable disturbance and later phases of demolition/construction, possibly as part of the brewhouse conversion.

The L-shaped footings of a low wall were exposed just beneath the modern overburden to the west of the brewhouse. Outside and overlying the stonework was evidence of demolition rubble

that continued to the north and west forming a distinct edge and suggesting the wall was originally 6m in length. Unfortunately, a series of later services had removed any physical relationship between this undated structure and the brewhouse.

The archaeological features across the site were sealed by a thick mixed deposit of ash, stone and brick debris, and modern topsoil. On the east side of the brewhouse, a deposit of dark grey and purple ash and coal, up to 0.25m thick, was overlain by further soil deposits beneath the modern ground surface. This material was too mixed to define clear layers but some of the ash, coal and cinders might have derived from rake-off from the brewhouse firebox. No other evidence of the brewing process was identified during the works, although some of the glass fragments recovered may relate to the bottling of beer for domestic consumption.

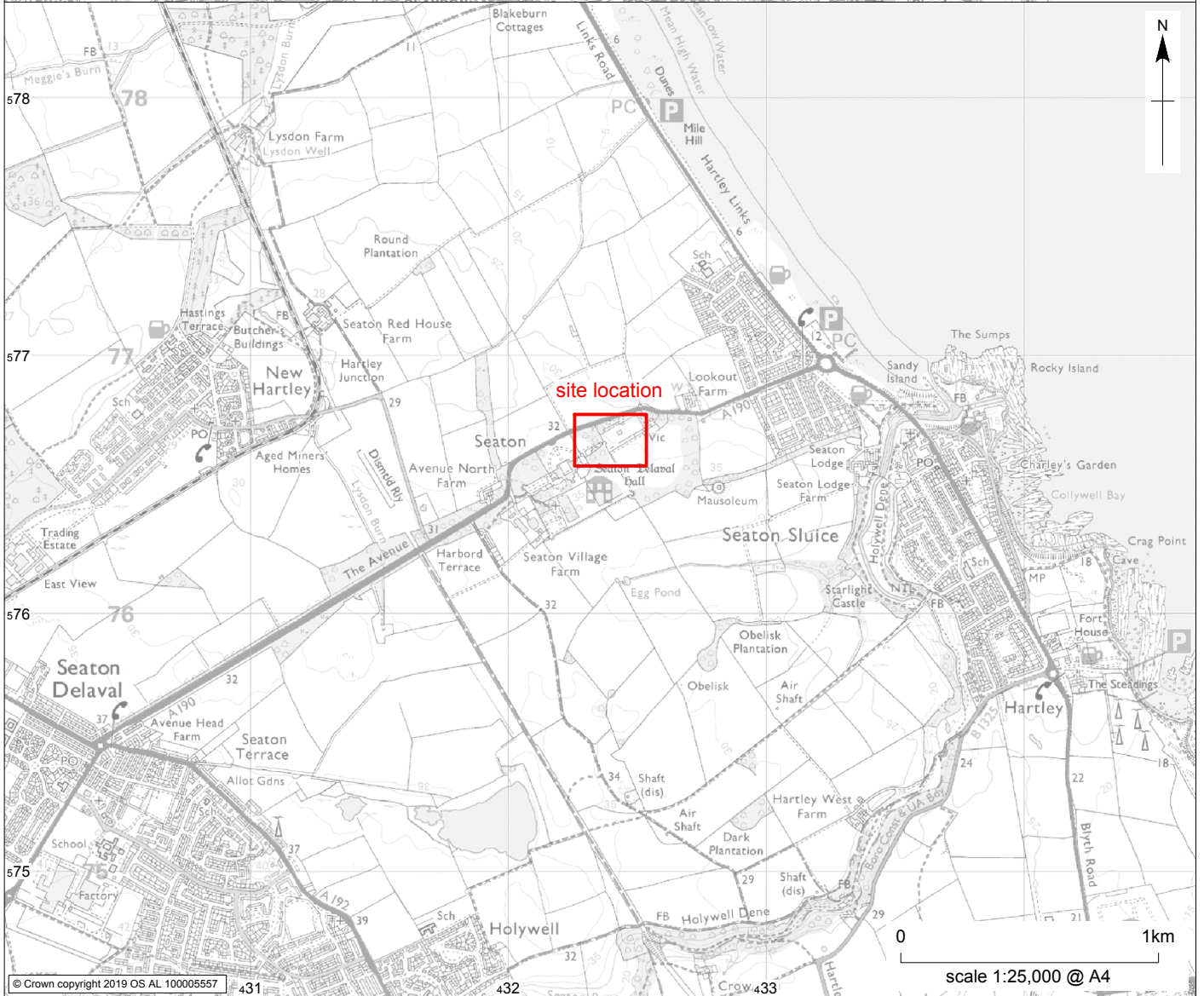
*A brick-and-stone surface was identified during Package 3 works (archaeological interventions between the brewhouse and the exit gate) to the north of the brewhouse. This was possibly the remains of a floor relating to a temporary lean-to structure built against the east-face of the west wall of the walled garden. This is not shown on any historic Ordnance Survey map suggesting the structure predates the early 19th century. During the dismantling of the west wall of the walled garden (prior to rebuilding) the remains of a stone plinth associated with the walled garden's west gate was discovered *in situ*. An associated ball finial was also identified.*

The moderate finds assemblage recovered during the scheme included clay pipe, glass, medieval and post-medieval pottery, a quantity of animal bone, some ironwork and CBM [ceramic building materials]. However, the material was of limited dating or interpretive value because it predominately came from residual and redeposited context. Nevertheless, it facilitates some interesting general observations on life on the estate over a c.500 year period. Significantly, the small assemblage of medieval pottery, and a possible coin, provides firm evidence of occupation in the vicinity of the brewhouse complex pre-dating the 17th century.

The post-medieval material included a collection of clay pipes, dating from the mid 17th to the 18th century. The majority of these were locally produced, and likely cheap disposable objects used by servants and workers on the estate. However, three imported pipes were recovered, identified by maker's mark to have originated in the West Country, Lincolnshire and London.

The brewhouse report is one of four reports covering the archaeological works undertaken as part of The Curtain Rises project. The others cover the walled garden; pleasure grounds, mausoleum and the hall itself. Together these complement, and in some areas expand on, the considerable body of research already undertaken in advance of the restoration works, adding to

a broader understanding of life on the estate, and development of the hall and landscape over time.



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Seaton Delaval Hall: site location

Figure 1

1.0 INTRODUCTION

- 1.1 This report presents the results of a programme of archaeological mitigation at the brewhouse, Seaton Delaval Hall, Northumberland (NZ 32334 76643; Fig. 1). This work was undertaken by Northern Archaeological Associates Ltd on behalf of the National Trust and is one of a number of archaeological schemes undertaken as part of 'The Curtain Rises' project. This was a two-year restoration scheme, part funded by the National Lottery Heritage Fund, aimed at both conserving the 18th-century hall and improving the overall visitor experience, which included the conversion of the brewhouse complex for use as a visitors' café and outdoor dining area.
- 1.2 The mitigation work comprised archaeological monitoring (watching briefs) during groundworks, area excavation to the west of the brewhouse and limited historic building recording in relation to Archaeological Work Packages 1, 2 and 3. It was conducted at intervals between December 2018 and February 2020 in accordance with a Written Scheme of Investigation (WSI) prepared by the National Trust (National Trust 2018f) and approved in advance by the Northumberland County Council (NCC) Assistant County Archaeologist. The fieldwork, together with this reporting, fulfils Conditions 6 and 7 of Planning Permission 17/04417/FUL (18/03488/varyco), Condition 13 and 14 of 17/04635/FUL (18/04039/varyco, condition 14 deleted), Condition 4 of 17/04412/FUL (18/01484/varyco) and relates to Listed Building Consents 17/04418/LBC (18/03845/varyco), 17/04636/LBC (18/04045/varyco) and 17/04412/LBC (18/01486/varyco).
- 1.3 The brewhouse is a Grade II Listed Building (NHLE: 1041325). Recent investigations completed as part of the planning for The Curtain Rises project have shown the building to be a rare example of a 17th-century multi-use agricultural building, forming part of the Stuart manorial complex pre-dating the present hall designed by architect Sir John Vanbrugh. It was repurposed in the mid-18th century as a brewhouse and coach house, which included the addition of the north-facing decorative red-brick façade. In the late 19th- and early 20th-century further ancillary buildings were added. The premises later operated as part of a commercial market-garden complex. In the 1990s the building was unsympathetically restored by the then owner, during which much of any remaining historical detail was lost (Newman and Scott, 2018; National Trust 2018b).
- 1.4 The main brewhouse building and south-west extension were refurbished and stabilised as part of café conversion. An adjoining 19th-century lean-to structure and stables on

the east side of the brewhouse were demolished and new services installed. The surrounding area was also landscaped. Archaeological monitoring was conducted during all groundworks, some of which was conducted by archaeological means. Limited archaeological building recording was also completed during refurbishment.

2.0 LOCATION, TOPOGRAPHY AND GEOLOGY

Location

2.1 Seaton Delaval Hall is located between Seaton Delaval and Seaton Sluice, approximately 5km south of the Port of Blyth. The brewhouse complex is located to the east of the hall, on the south side of the drive leading to the walled garden (NZ 32334 76643; Fig. 2).



Figure 2: detailed site location. Image © Google 2018 5/27/2018.

Geology

2.2 Seaton Delaval Hall is located above Devensian Diamicton: poorly sorted glacial till deposited during the last ice age. This layer lies above the Carboniferous Pennine

Middle Coal Measures Formation – a compilation of mudstones, siltstones and sandstones created in shallow seas (BGS 2020).

Topography and land use

- 2.3 The brewhouse complex comprised a number of former agricultural buildings previously used by the National Trust for storage and as workshops. To the east of the main brewhouse building was an enclosed yard, set with late 19th- and early 20th-century ancillary buildings. To the west was a relatively level grassed area, originally a little higher than the floor level of the brewhouse.
- 2.4 The brewhouse and environs form part of the designed landscape of the hall (and are sited within the Registered Park and Garden on the site), although now hidden from view of the hall by a bank of mature trees to the east. To the south of the brewhouse complex is an area of woodland and gardens; its rear wall forms part of the pleasure ground enclosure wall. The north-east bastion lies adjacent to the complex to the east.
- 2.5 The walled garden is located to the north-east of the brewhouse. The two areas are separated by the drive leading to what, at the time of the excavation, was the main National Trust car park (Fig. 2).
- 2.6 On average, the area is c.35m above Ordnance Datum (aOD).

Designations

- 2.7 The brewhouse is a Grade II Listed Building (NHLE: 1041325), described as ‘Farm buildings 150 metres north-east of Seaton Delaval Hall’. It is granted statutory protection under the Planning (Listed Buildings and Conservation Areas) Act 1990. The complex adjoins, and is considered to form part of, the curtilage of the Grade II listed ha-ha wall with angle bastions (NHLE: 1041323).
- 2.8 Part of the walled garden wall is Grade II listed (NHLE: 1041327), described as ‘Garden walls at north-west corner of walled garden, with attached cottage’.
- 2.9 Both the brewhouse and walled garden are part of the setting of the Grade I Seaton Delaval Hall (NHLE: 1041321).
- 2.10 The gardens and park are designated Grade II* on the Register of Parks and Gardens of Special Historic Interest in England (NHLE: 1001052).

Previous work

- 2.11 A number of surveys have been conducted across the estate over the past 10 years and have helped inform a greater understanding of the archaeological and historical evolution of the site. A Historic Park Management Plan was prepared by chartered landscape architects Southern Green in 2012. This was followed in 2014 by a detailed Conservation Management Plan, revised and updated in 2017 (Simpson and Brown Architects 2017).
- 2.12 In 2014 a watching brief was conducted when a major drain was installed across the area to the north of the brewhouse. Nothing of archaeological significance was recorded in the immediate area considered here (ARS 2015).
- 2.13 In November 2016, Solstice Heritage prepared a detailed historic building record of the brewhouse (Newman & Scott 2018). This provided a forensic analysis and indicated that the main north-to-south structure was significantly earlier than previously believed, dating to the late 17th century (*ibid*; Newman 2018a). In 2017, further research explored the concept that the building formed part of a pre-Vanbrugh landscape (Newman 2017). This informed the subsequent Heritage Statement prepared by Mosedale Gillatt Architects and submitted as part of the planning application (Mosedale Gillatt Architects 2017).
- 2.14 In March 2018, three small evaluation trenches were excavated to the west of the brewhouse by the National Trust (Newman 2018b). All three exposed archaeological remains, with stratigraphic deposits preserved to a depth of c.0.80–1m. The recovered artefact assemblage included ceramics, bone, oyster shell, clay tobacco pipes and ceramic building materials (CBM). The evaluation illustrated the high archaeological potential of the area and informed the developed of the subsequent mitigation strategy.

3.0 SUMMARY ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Prehistoric and Roman

- 3.1 No finds of prehistoric or Roman deposits or features have previously been recorded within the boundary of the NT estate. However, there is extensive evidence of activity in the wider vicinity indicating occupation and settlement of the surrounding coastal plain during the prehistoric and Romano-British periods. At Lookout Farm, c. 1km east of Seaton Delaval Hall is a possible Neolithic causewayed enclosure or prehistoric farmstead; c.1km to the south a Neolithic or Bronze Age cist burial was recorded near

to a possible Iron Age or Romano-British farmstead, and other undated cropmark enclosures are recorded to the north-west and north-east of the site. In Seaton village, c.2km east of the hall, a timber structure, tentatively dated to the prehistoric or Roman period, was identified during geophysical survey and evaluation at Blackhaugh Drive in 2002. Neolithic flint artefacts were recovered from the same area (Copp 2012).

Medieval

- 3.2 The name Seaton is of Old English origin, meaning ‘settlement by the sea’, and suggests settlement in the area before 1066 (Ekwall 1960, 410), although no archaeological evidence dating to this period has been found on, or in the vicinity of, the estate.
- 3.1 After the Conquest, William I granted the manor of Seaton and surrounding area to the De Laval family in reward for their support during the invasion and as a means of establishing a Norman presence in the volatile North. Guy de Laval is recorded as constructing a private chapel at Seaton as early as 1102, consecrated by Bishop Flambard. This now forms part of the Church of Our Lady, located to the south-west of the hall, and constitutes the only extant remains associated with the former medieval settlement (Simpson and Brown Architects 2017, 24).
- 3.2 In 1297, an inquisition recorded the manor as comprising 24 bondage holdings as well as 300 acres of arable lands and 5 acres of meadow (*ibid.*, 24). In 1353, a similar document makes reference to a manor house, garden, dovecote and windmill. The land holding had also increased by this period to 360 acres of arable and 10 acres of plantation (Newman 2017, 5). Given the instability of medieval Northumberland, the manor house at Seaton would have almost certainly been fortified from an early period. A tower is suggested to have existed on the site by the early 15th century, recorded as *Turris de Seton de la uale* in a 1415 list of fortresses of Northumberland. It was owned at that time by Willimi Wycheater Chlr (ARS 2014; Simpson and Brown Architects 2017).
- 3.3 In 1539, the poet and antiquarian John Leland referred to ‘Delaval Castle’ in an account of his travels through Northumberland (*ibid.*). By the mid-16th century a Tudor mansion had been constructed adjacent to the tower, depicted on Speed’s 1611 map of Northumberland (not reproduced). The ‘supposed site of the Castle’ is marked to the south-west of the Church of Our Lady on the 1860 First Edition Ordnance Survey (OS) map (not reproduced). However, the location of the fortified manor has not been established archaeologically and it may lay beneath the present hall. There are no

reports of it being encountered while digging graves across the site identified by the OS.

- 3.4 The site of the medieval village similarly remains uncertain. The most likely location is Seaton Village Farm to west of the hall; a row of cottages is shown on a 1781 estate plan, situated just outside the west bastion wall. Newman has suggested that these may date to a phase of landscaping in the late 17th century, when the scattered remains of the old medieval settlement were consolidated into a new planned estate village (Newman 2017, 7).
- 3.5 Associated with Seaton Village Farm is a block of preserved ridge and furrow. There is further, more extensive, cultivation evidence to the south-east of the brewhouse in an area known as Hare Park or Vicarage Field. A number of blocks of ridge and furrow in this location run in various directions, indicating prolonged and multi-phased use. The earthworks on the west side of the field feature the distinctive S-curve associated with medieval ploughing. The preservation of cultivation evidence across the estate is due to the relatively early conversion of arable land to pasture by Sir Ralph Delaval. In 1573 he purchased all '*freeholders lands and tenements*', displaced the tenants and converted 720 acres of arable to grazing land (Simpson and Brown Architects 2017).

Post-medieval

- 3.6 In the early 17th century, Sir Ralph Delaval (1577–1628) made considerable modifications to the house and estate, building a large Jacobean hall around the core of the Tudor mansion. On his death in 1628 his son, Thomas Delaval, recorded the property as comprising approximately 14 buildings, including brewhouse, bakehouse, stables, a dovecote and granary. The house was arranged around a forecourt and back-courtyard and surrounded by three formal gardens. The old medieval tower was retained (*ibid.* 2017, 25; Newman 2017, 5).

Construction of the multi-use agricultural building (brewhouse)

- 3.7 By the mid 17th century the Delaval family were a prominent Northumberland county family with interests in agriculture, coal and salt production (Simpson and Brown 2017, 25). In 1660, Ralph Delaval (1622–1691) was created baronet of Seaton on the Restoration of King Charles. The multi-use agricultural building, later known as the brewhouse, is believed to date to a phase of later 17th-century expansion that followed (Solstice 2016; Newman 2018a). The building incorporates notable amounts of reused masonry, and some of the lintels and doors are formed of reused timber, suggesting construction concomitant with the demolition of the Tudor or Stuart buildings.

- 3.8 The north side of the barn provided animal accommodation and was divided from the southern element by a cross-wall. The purpose of the southern element is unclear although a former interpretation of this area as a threshing barn has now been discounted. After construction, though still 17th-century in date, a large window was inserted in the west wall (*ibid.*).
- 3.9 In 1717, after a series of legal battles following the death of Sir Ralph, the estate was purchased by Admiral George Delaval (1668–1723), who belonged to a cadet branch of the family who had settled in Dissington (Craster 1909, 163). Soon after he commissioned the architect Sir John Vanbrugh (1664–1726) to design a new mansion house (NHLE: 1001052). Construction is believed to have begun on the site in 1720 and, before its completion, the Admiral died following a fall from a horse. The estate then passed to his nephew, Captain Francis Blake Delaval (1692–1752). Under his ownership, in 1728, work on the hall was complete.

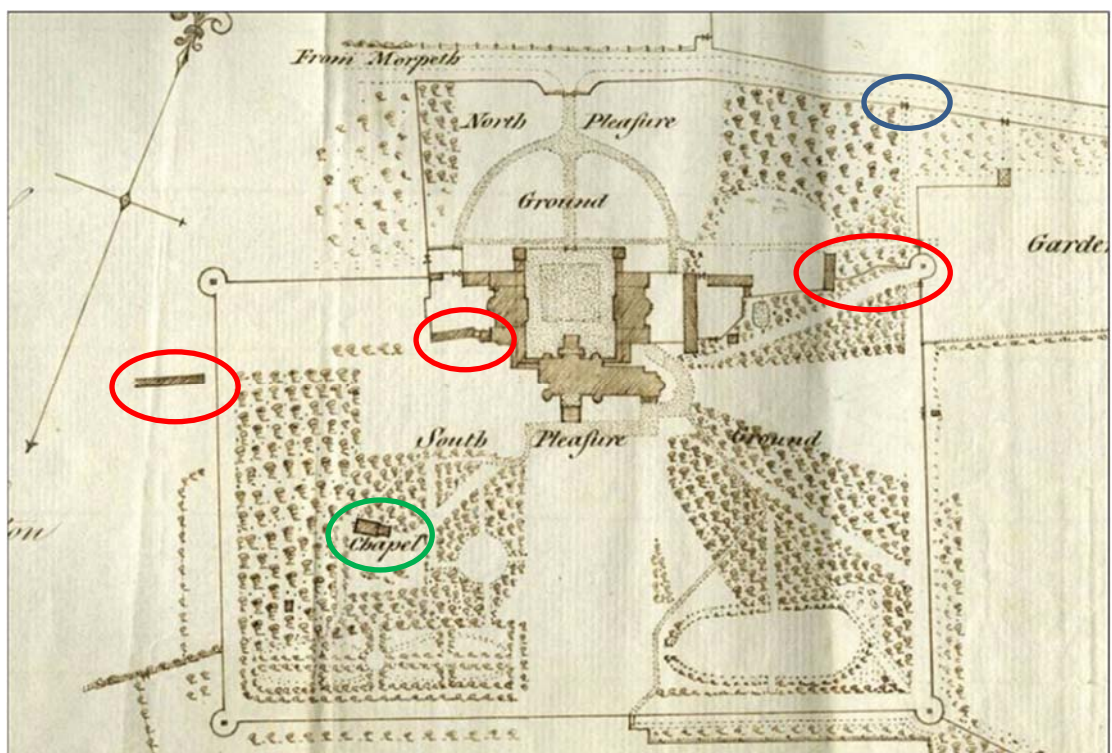


Figure 3: extract from a 1781 plan of the estate showing those elements (ringed in red) believed to pre-date Vanbrugh's 18th-century hall (NRO 740/Box 14, Berwick-upon-Tweed Record Office). The north-east gate is marked in blue and church in green.

The walled garden and exit gate

- 3.10 The walled garden and north-east exit gate are both shown on the 1781 estate plan. The origins of the walled garden are unknown. Shown as at least partly constructed by 1781,

the structure appears to have articulated with other elements of the emerging 18th-century landscape designs (Newman 2018a) (Fig. 3).

- 3.11 The boundary in which the north-east gate is set was probably still a fenceline when the estate map was compiled. It is notably shown as a much thinner line than the known masonry walls, including the ha-ha wall further west along the road, to the north of the hall. Documentary evidence for wall building also generally dates to a decade or more after the date of the map (Newman 2018b). The gate provided access direct to the walled garden, brewhouse and Hare Park avoiding the main, and more formal, hall entrance.

Conversion to brewhouse and addition of the ornate screen (1755–1783).

- 3.12 In 1752, Captain Francis Blake Delaval died after a fall down the steps of the South Portico. He was succeeded by his son, Sir Francis Blake Delaval (1727–1771). In the same year, a fire started in the kitchen chimney of the west wing and gutted the service ranges to the south. Some time after this the multi-use agricultural building was converted for use as a brewhouse and coach house, possibly as part of the restoration campaign. This is thought to have taken place between 1755 and 1783; a reference to the ‘Low coach house adjoining the brewhouse’ appears in an estate inventory dated 1786 (Simpson and Brown Architects 2017).
- 3.13 An ornate brickwork screen was added to the north elevation of the brewhouse at this time, serving as an ‘eyecatcher’ on the approach to the walled garden (Solstice 2016; Newman 2017). The height and detail of the brick façade, as well as planting to the east and west of the brewhouse, all suggest an attempt to conceal the prosaic farm building from views towards the hall looking south from the road.

The brewhouse and walled garden – 19th-century development

- 3.14 The brewhouse served the estate from the latter half of the 18th century through to the early 19th. In 1822 a second devastating fire gutted the central hall and south-east wing of the mansion, although the east and west wings flanking the courtyard survived relatively unscathed. Following the fire, much of the property was abandoned which resulted in the decommissioning and repurposing of the brewhouse. Between 1822 and 1841 an ancillary building, probably a cartshed, was added to the south-west corner of the brewhouse, and a semi-circular pond constructed (Fig. 4). Both first appear on the First Edition 25-inch OS map (1855) and are not shown on the 1808 or 1818 estate plans.

- 3.15 These changes are likely to have been associated with the operation of a commercial market garden established in the walled garden by the late 18th century. Further expansion of the brewhouse between 1855 and 1897 is probably also associated with the venture. This included the addition of an open-sided lean-to implement shed and stable on the east side of the brewhouse, forming one side of an enclosed yard (Fig. 4). The market garden remained in operation until the early 20th century.

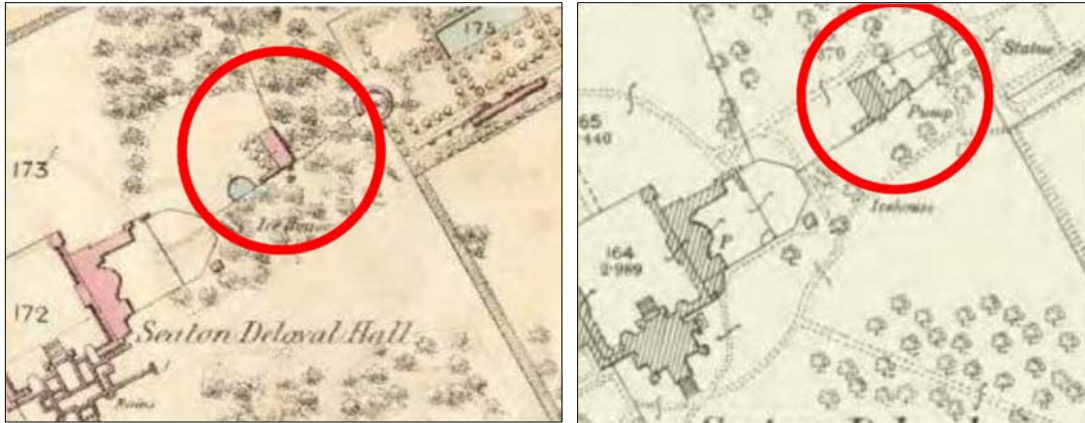


Figure 4: extract from 1855 (left) and 1897 (right) OS maps showing 19th-century development of the brewhouse (taken from Mosedale Gillatt Architects 2017).

Modern

- 3.16 Throughout much of the 20th century the Astley family, who owned the hall, lived at their estate in Norfolk, leaving a resident agent to manage their affairs in the North. The hall was requisitioned by the military during both the First and Second World Wars.
- 3.17 In the mid-1950s Edward Astley, the 22nd Baron Hastings, inherited the hall and in the 1960s opened the estate to the public for the first time. In 1980 Lord Hastings moved permanently to Seaton Delaval Hall and remained there until his death in 2007. In 1992 he redeveloped the dilapidated brewhouse as a coach museum. The building was re-roofed in Welsh slate, a new concrete floor laid and a large opening inserted into the central cross-wall.
- 3.18 In 2009 the National Trust purchased Seaton Delaval Hall following a national fund-raising campaign which included significant local community involvement. In 2018 work began on 'The Curtain Rises'; an ambitious conservation project, part funded by a £3.7 million National Lottery Heritage Fund award, which would see completion of a programme of critical repairs to stabilise and consolidate the structure. The project also saw the introduction of a suite of new visitor facilities, including conversion of the

former brewhouse to provide a café and terraced seating area. This was designed by Mosedale Gillatt Architects, working together with the National Trust, and retains the special quality and unique heritage character of the building.

- 3.19 The brewhouse and adjoining cartshed were both retained as part of the development, while the later 19th-century buildings on the east side of the complex were demolished after recording.

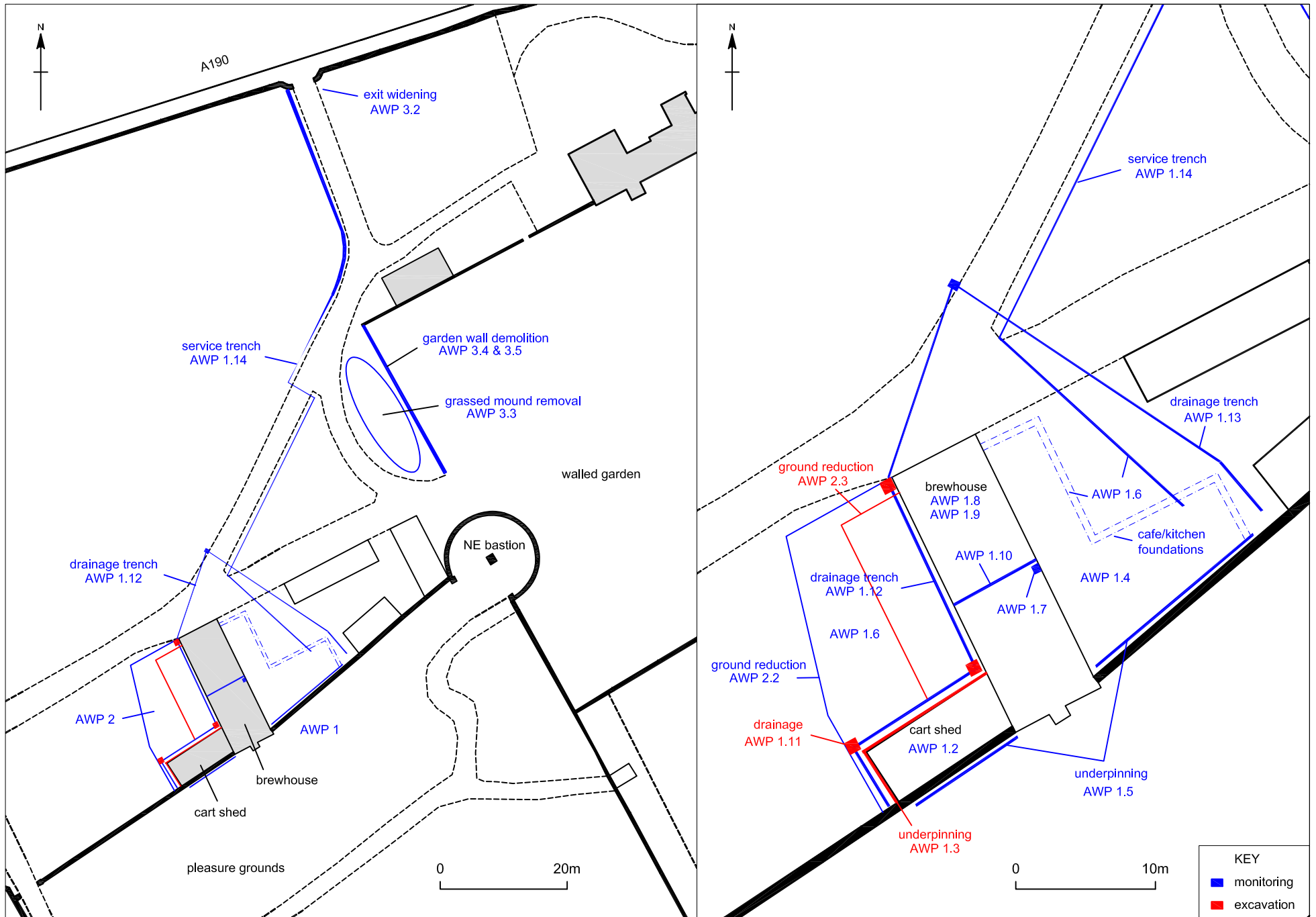
4.0 SCOPE OF WORKS

- 4.1 This report covers Archaeological Work Packages 1 to 3 of a series of 15 devised to provide archaeological mitigation during the conservation works. These are illustrated on figure 5. All of the redevelopment work was assiduously designed to cause minimal impact to both sub-surface archaeology and the remaining historic fabric wherever possible.

- 4.2 Package 1: brewhouse conversion to café — this related to the main brewhouse complex. The 1992 concrete floor was retained as part of the redevelopment which resulted avoiding any sub-surface intervention. Any impact to surviving historic fabric was limited to just the removal of unstable lintels and timbers, including retention of existing wall finishes. An archaeological watching brief was maintained during the removal work. A watching brief was also maintained during the underpinning of the south wall of the cartshed, to the south-west of the brewhouse. Similarly, a watching brief was carried out during excavation of foundation trenches on the east side during the underpinning of the boundary wall which separates the brewhouse from the pleasure grounds to the south (National Trust 2018b).

- 4.3 Package 2: landscaping to west of brewhouse – trial trenching carried out in 2018 (Newman 2018b) established the potential presence of deep, stratified, 17th-century deposits to the west of the brewhouse. Package 2 related to excavation and monitoring works during the reduction of ground levels to create an outdoor seating area, together with localised deeper excavation for service trenching (National Trust 2018c).

- 4.4 Package 3: site works to the north of the brewhouse – related to works to the north of the brewhouse in and around the walled garden. This included a watching brief during groundworks for services and for widening the site access road and gate opening, and the reduction of a mound of spoil on the west side of the walled garden, created during initial works prior to the National Trust opening of the site in 2009/10. Significant



stonework removed from elsewhere on the site was known to have been deposited in this area and required recording before removal (National Trust 2018d).

4.5 Other work included the pre-intervention recording of the northern section of the west wall of the walled garden prior to dismantling and rebuilding. The recording was undertaken by Mosedale Gillatt Architects with interpretation by NAA. Archaeological monitoring was conducted during the excavation of a foundation trench for rebuilding the wall.

5.0 STANDARDS AND GUIDELINES

5.1 Work was carried out in accordance with the following published standards and guidelines of practice:

- *NPPF Planning Practice Framework* (MHCLG 2019);
- *Standard and guidance for an archaeological watching brief* (ClfA 2020a);
- *Standard and guidance for the collection, documentation, conservation and research of archaeological materials* (ClfA 2020b);
- *Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' guide* (Historic England 2015);
- *Yorkshire, the Humber & the North East: A Regional Statement of Good Practice for Archaeology in the Development Process* (South Yorkshire Archaeology Service 2018);
- *A Strategy for the Care and Investigation of Finds* (English Heritage 1995);
- *First Aid for Finds* (Watkinson and Neal 2001); and
- *Written Scheme of Investigation, Seaton Delaval Hall*. (National Trust 2018f).

6.0 AIMS AND OBJECTIVES

6.1 Given the high potential for the survival of post-medieval remains associated with the construction and use of the 17th-century multi-use agricultural building, and subsequent 18th- and 19th-century development of the complex, together with the moderate potential for Tudor or medieval deposits, the NCC Assistant County Archaeologist requested that an archaeological scheme of works be conducted during all groundworks. The aim of this work was to 'preserve by record' any archaeological remains that might have been impacted as a result of construction, and would deliver conservation management commensurate with the standards practiced by the National Trust.

6.2 A limited amount of historic building recording was also requested in relation to aspects of the standing structure.

6.3 The objectives of the monitoring were to:

- establish the presence, nature, extent, preservation and significance of any archaeological remains;
- provide a detailed record of any such archaeological remains;
- recover and assess any associated structural, artefactual and environmental evidence;
- undertake a programme of investigation that met with national and regional standards (Historic England 2015; ClfA 2020a–; South Yorkshire Archaeology Service 2018); and
- prepare an illustrated report on the results of the archaeological monitoring to be deposited with the NCC Historic Environment Record (HER) and National Trust Sites and Monuments Record (SMR).

7.0 METHODOLOGY

Archaeological monitoring and excavation

7.1 All works resulting in sub-surface intervention were monitored under a continuous watching brief. Where a mechanical excavator was used this was fitted with a toothless bucket. Where structures, features, deposits or finds of archaeological interest were exposed, mechanical excavation ceased to allow the investigating archaeologist to clean, assess, and excavate by hand where appropriate, then sample and record features and finds. A similar process was followed where the topsoil and overburden were dug by hand by the client's contractor.

7.2 A full record (written, drawn and photographic, as appropriate) was made using pro-forma record sheets. Plans and section drawings were drawn at 1:50, 1:20 and 1:10 scales as appropriate. The location of any archaeological features, together with the edges of the excavated areas, were recorded in relation to readily identifiable and permanent structural features on the ground or surveyed in with a sub-centimetre-accurate GPS.

7.3 A full photographic record was created in digital format. This included general site shots, shots of each excavation area, and shots of individual features and groups of

features. All photographs included a suitable scale and were recorded on a photographic register, noting the subject and direction of each shot. An ordered catalogue of all photographs is included with the site archive.

- 7.4 All stratified finds were collected by context and, where appropriate, individually recorded in three dimensions. Unstratified finds were collected where it was considered that they could contribute significantly to the project objectives or were of particular intrinsic interest. All finds and pottery were retained for rapid assessment, other than material which was demonstrably modern.
- 7.5 Animal bones and other finds were recovered, processed and stored in accordance with established guidelines (English Heritage 1995; Watkinson and Neal 2001).
- 7.6 No undisturbed deposits were encountered which were considered suitable for environmental sampling.
- 7.7 Following excavation, the analysis and reporting of artefacts was undertaken by NAA in-house staff, or other nominated specialist suppliers in accordance with NAA's approved list of contractors. Each of the nominated specialists has a proven record of expertise in their field and has previously undertaken work for NAA. All specialist reports are included in full at the end of this report, and the results incorporated into the final discussion and analysis.
- 7.8 All other aspects of the WSI (National Trust 2018f) were followed unless otherwise agreed with the NCC Assistant County Archaeologist and National Trust Archaeological Consultant. Any such cases of variation from this standard are indicated in the text.

Historic building recording

- 7.9 A comprehensive historic building survey of the brewhouse complex was completed in 2016 and supported by follow up studies (Newman & Scott 2018a) to inform the building conversion plans and ensure the protection of the unique historic significance and special character of the listed building. A Level 3 analytical survey of the complex was conducted in accordance with Historic England guidance (Historic England 2016). This covered the brewhouse (Building A; rooms G1–2), cartshed (Building B; rooms G3) and stable block (Building C; rooms G4–5) and was suitable to mitigate against any loss of heritage significance resulting from the café development.

- 7.10 Further Level 2 recording was conducted as part of the monitoring works. This comprised a photographic and written record of features destroyed or revealed as part of the construction process. A pre-intervention record was also prepared of the cart shed interior and northern section of the west wall of the walled garden, the latter prior to dismantling.
- 7.11 All photographs were taken from a position as near parallel to the subject matter as possible, using a Canon EOS5d MkII digital camera (20 megapixels), or similar digital SLR of at least 10 megapixel. General room shots were taken to establish context as well as detailed photographs of architectural features, where relevant. Each photograph contained a graduated photographic scale of appropriate dimensions as well as a north arrow and identification board where appropriate. A catalogue of all photographs is included as part of the project archive.
- 7.12 A general written record of each feature was made of construction type, purpose, plan, date and development. A more detailed record of any elements of particular significance was made where warranted.

8.0 RESULTS

Archaeological Work Package 1: site works within and around the brewhouse complex

- 8.1 This work related to archaeological monitoring and excavation during groundworks within and around the brewhouse complex and was carried out between December 2018 and February 2020. All interventions are shown on figure 5 and feature on figure 7.

#2 Watching brief during strip out of C19 cartshed and any physical interventions

- 8.2 The cartshed adjoins the south-west corner of the brewhouse, extending west on a south-west alignment along the boundary wall (78) dividing the pleasure grounds from the brewhouse compound. It was constructed between 1822 and 1841, clearly incorporating the earlier boundary wall, believed to date to the late 17th century. The two walls (north and west) forming part of the 19th-century structure were built of squared, roughly-coursed masonry. The building was capped by asymmetric pitched roof covered in Welsh slate with stone ridge tiles.

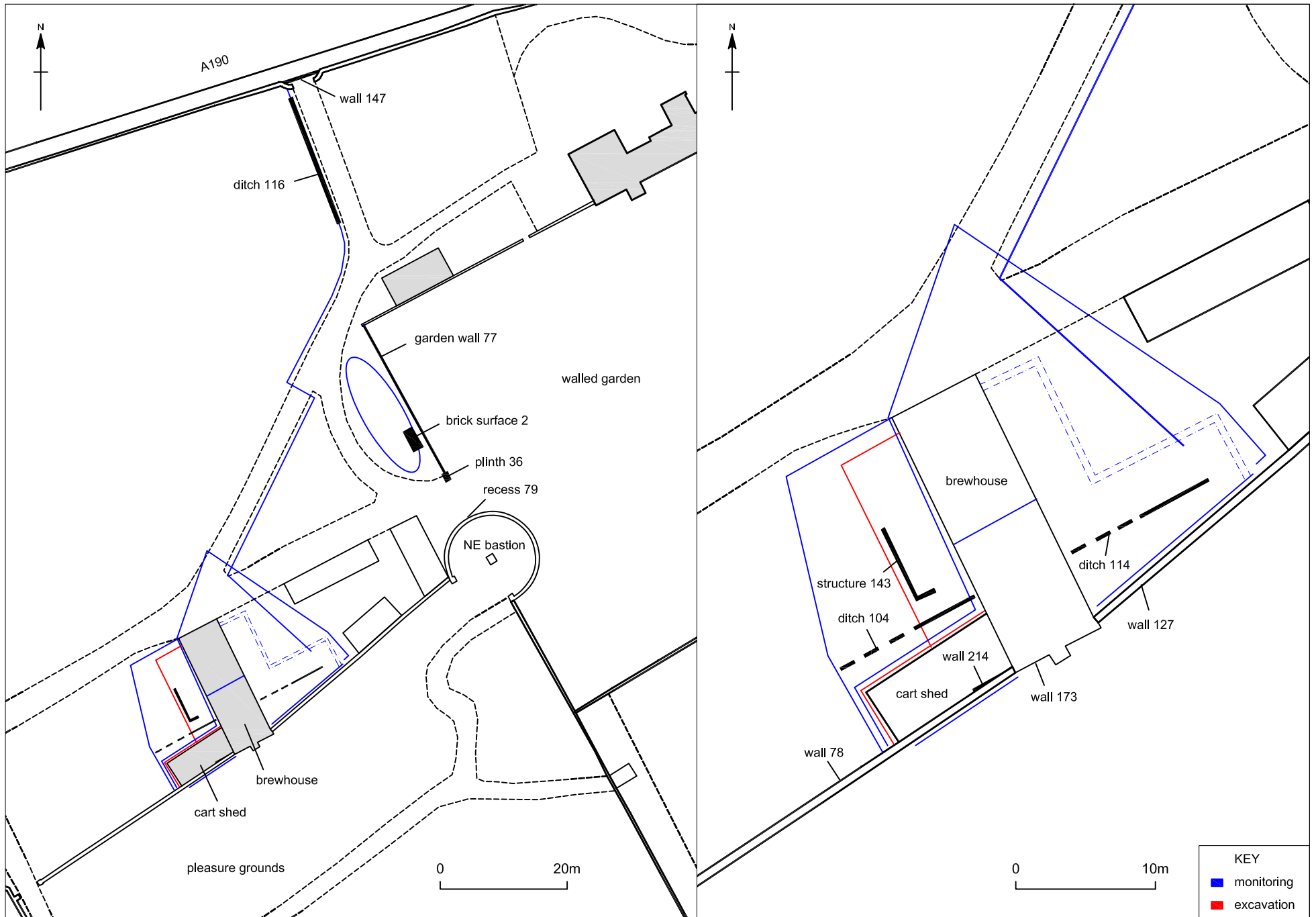




Plate 1: blocked cart-entry in west-facing gable elevation of the cartshed.



Plate 2: interior of the cartshed looking east, with the brewhouse window visible in the north-east corner.

- 8.3 Cart entry was via an opening in the west gable (Plate 1). This was slightly offset from centre and appeared slightly awkwardly placed, the eaves line clipping the edge of the timber lintel (although the roofline may have been dropped slightly on the north side when the structure was last re-roofed). However, there was no indication that the door

was a later insertion, and excavating along the front of the building proving the feature to be original. The door was later converted into a large window in the mid to late 20th century, with the lower section infilled with randomly coursed rubble masonry externally and blockwork internally (plate 3)

- 8.4 Pedestrian access was on the north side of the building via a wooden door on the east side. A stone step below the door was a later addition, constructed of re-used stone and brick from the interior of the brewhouse (Newman & Scott 2018). The door surround was set with alternating long and short quoins, as were the two windows, although the window frames themselves were a later replacement.



Plate 3: interior of the cartshed looking west with cart entry clearly visible.

- 8.5 The interior of the building comprised a single open space (Plates 2, 3), which at the time of recording was cleared of all internal fixtures and fitting. The timber roof structure remained in place, although the slate covering had been removed. The collar beam roof was relatively modern, with little evidence of any early fabric (the collars were bolted to the principal rafters) (Plate 4). The rafters rested on the top of the raised boundary wall on the south side of the building, and 19th-century wall on the north side.
- 8.6 The interior space would have been originally lit by the two windows on the north side. A third window in the north-east corner (Plate 2) was associated with the brewhouse (Fig 6; G2). This window was one of two flanking the south-west door of the brewhouse.

It was splayed to the interior and boarded up with timber planking when the cart shed was constructed. This forms part of the historic development of the structure and is of some evidential value.

- 8.7 There were no other features of significance observed within the interior. The incinerator on the south wall was a modern addition.



Plate 4: roof structure prior to removal.

- 8.8 The concrete floor of the building (probably contemporary with the blockwork infilling of the cart entry) had been removed prior to recording, exposing the underlying soil (215) which was hand excavated to an average depth of 30cm. This consisted of compacted brown sands and clays with inclusions of fragments of modern glass beer and lemonade bottles.
- 8.9 A single course of masonry (214) was uncovered in the south-east corner of the room, beneath boundary wall 78 (Plate 5). This measured 3.2m long and constructed of unmortared roughly squared sandstones, c. 0.20 x 0.25 x 0.50m in dimension, which were laid in an alignment more consistent with the south wall of the brewhouse than the overlying pleasure ground wall.
- 8.10 The line of masonry did not extend west, and there was no evidence of related features or surfaces identified during the excavation of a service trench along wall 78 (Plates 6, 7). What 214 related to is uncertain. It may form part of an earlier wall alignment, or

more likely an ancillary structure extending west of the brewhouse, both of which would pre-date the construction of the pleasure ground boundary wall. No related deposits or surfaces were recorded in the service trench or identified in plan.



Plate 5: single line of masonry (214) beneath wall 78 in the south-east corner of the cartshed.



Plates 6-7: service trench along the south wall of the cartshed; looking west (left) and east (right).

- 8.11 In addition to the service trench along the south wall (78), a second trench was excavated through 215, running north to south to connect with an inspection chamber

in the yard outside the building. No features or deposits of archaeological significance were identified in either of the two trenches.

#3: Archaeological excavation of underpinning trench at cartshed

- 8.12 Underpinning of the north and west walls of the cartshed (173; Figs. 5-8) entailed the archaeological excavation of 14 trenches, dug at alternate 1m intervals along the north and west walls of the cartshed. Each 1m² trench was excavated to a depth of c.0.6m below the base of the wall footings (37) creating a void of c.0.3m deep beneath the structure. The trench was recorded before the timber formwork was constructed and poured concrete stabilised the wall foundations. The baulks in between the trenches were then removed, exposing the full length of the trench to a depth of c.0.6m, or less where natural bedrock was encountered at a higher level.



Plate 8: natural sandstone 44 directly below the south-west corner of the cart-shed wall 37.

- 8.13 At the junction of the card shed and boundary wall 78, the natural sandstone bedrock (44) was encountered immediately below the wall footings (37) (Plate 8). At this point, the natural was 0.2–0.25m beneath the topsoil and sloped gently down to the north and east. The earliest deposit overlying the bedrock was mid-brown sandy silt with occasional small rounded stones (43). Towards the north-eastern end of the underpinning trench the silt was more than 0.15m thick and continued below the required depth of excavation. The absence of inclusions within this deposit suggested it was a product of natural silting rather than deliberate dumping.



Plate 9: compacted clay surface 41, cut by foundation trench 52 on the left and pit 50.

- 8.14 At the north-eastern end of the trench, silt 43 was overlain by an undated deposit of yellow sandy clay (41). This was more than 0.25m thick in places and formed a relatively level surface. It contained occasional small angular stones. The localised nature of the deposit suggests deliberate consolidation and levelling with imported clay (Plate 9).
- 8.15 Clay 41 was overlain by a c.0.5m-thick layer of gritty, mid-grey brown sandy silt (40) containing frequent sub-angular stones (generally up to 0.2–0.25m in size) and with a high proportion of domestic refuse, such as clay tobacco pipe stems and pottery sherds. The extent and volume of this deposit suggests deliberate dumping and ground levelling within this area.
- 8.16 The foundation trench (52) for the brewhouse was cut through layer 40 (Plate 10). The foundations (53) of the building at this location were constructed of roughly squared sandstone blocks, the largest of which measured 0.6m by 0.3m. These were laid in four courses to a depth of over 0.7m and sat in the upper part of silt layer (43) (Plate 11). Due to disturbance around the cartshed doorway the original level from which the brewhouse was constructed could not be determined.
- 8.17 Above context (40) was another thick deposit of dark grey sandy silt (39) with frequent stones (although smaller and less frequent than deposit 40). The dark colour and gritty

inclusions contrasted with the lighter, siltier layer below and appeared to form part of a second phase of waste dumping and ground consolidation. In the eastern part of the trench a set of modern steps (42) at the cart-shed door had removed deposit 39, meaning that its relationship to the construction of the brewhouse could not be confirmed.



Plate 10: brewhouse foundation cut (52) on the left and pit 50 cutting context 40 and clay deposit 41.



Plate 11: brewhouse foundations (53) at the south-east corner of the cartshed.

- 8.18 Directly beneath the doorway to the cartshed was what appeared to be a small pit or posthole (50) cut into deposit 39 (Fig. 8; Plates 10, 11). This measured 0.6m in both depth and diameter and was filled with light grey brown silty sand (49) with frequent small angular stone inclusions and brick fragments. The construction of the cart-shed steps had severely truncated the archaeology beneath making it impossible to ascertain the stratigraphic relationship between pit 50 and deposit 39. However, the nature of the fill suggested a relatively modern feature, although pre-dating the construction of the steps.
- 8.19 A single course of rough sandstones, measuring c.0.25m by 0.4m by 0.3m (37), formed the foundation for the north wall of the cartshed (173). The wall abutted the south-west wall of the brewhouse, was 0.3m wide and extended 10m to the south-west. It ran parallel to the north-western boundary of the pleasure grounds (78), which doubled as the south-east wall of the cartshed. A lintel in the west wall provided evidence for an original access into the body of the building. This had subsequently been infilled with a window above a low wall of breeze blocks clad in stone to match the exterior of the rest of the building.
- 8.20 Overlaying the whole area of the underpinning works was a 0.3m-thick deposit of modern dumping and ground build-up (38), containing frequent ash, coal, bricks and rusty metalwork. This covered the wall foundations and obscured any evidence that may have existed of a foundation trench. Although recent in origin, the dumped material contained a mixed assemblage of artefacts.

#4: Recording of LC19 brick outbuildings after stripping out/during demolition

- 8.21 The open-sided implement shed on the east side of the brewhouse and stable block to the south-east (Plate 12) were demolished as part of the café development. Both were late 19th-century in date, forming part of the east courtyard expansion associated with the expansion of the commercial market garden, and are first depicted on the 1897 OS map (Fig. 4).
- 8.22 The implement shed featured a mono-pitched corrugated asbestos-sheet roof carried on eight timber trusses, these were in turn supported by five cast-iron columns and brick gable at the north end. The southern end of the structure was constructed against the pleasure ground wall, as was the stable block. This was a single-storey brick-built structure divided internally into two areas, with a loose box on the east side and stalls (later used as a store) to the west.



Plate 12: late 19th-century lean-to implement shed (right) and brick-built stable block (left) both demolished as part of the development.

- 8.23 Both structures had been surveyed as part of an earlier phase of building recording conducted by Solstice in 2016 (Newman & Scott 2018). The building was stripped and demolished by the contractors without archaeological attendance, although a study was subsequently made of the east facing elevation of the brewhouse (Plate 13). The only features of note recorded were the two windows on the south side of the elevation and door on the north side. These are described in detail under #9 below.



Plate 13: east-facing elevation of brewhouse following the removal of the lean-to structure.

- 8.24 Also of interest were two (possibly three) sockets or joist holes just below the eaves line

at the southern end of the elevation. These were clearly separate from the double-line of joists holes connected with the lean-to roof trusses that ran the full length of the building. The upper holes probably relate to those observed within the interior of the building during the earlier building survey, interpreted as evidence of a later inserted first floor or gallery (Newman & Scott 2018, 21). There was no discoloration or modification of stonework to the exterior of the building which might suggest the formed part of an adjacent building. Similarly there was no indication of the sinuous east wall depicted on the 1781 estate map (Fig. 3), connecting the brewhouse with the north-east bastion.

- 8.25 On the north side of the elevation was rectangular joist hole, set c. 1.80m above the ground surface, and 1.00m south of this a sandstone block with two circular indentations. The function of these elements is uncertain, although the latter could be the remains of a fixing for an animal tethering loop.

#5: Monitoring of underpinning work along the south boundary wall

- 8.26 The boundary wall dividing the pleasure grounds from the brewhouse complex is divided into two sections, both abutting the brewhouse which is the earliest structure on the site. The west section (78) runs on an approximate 260° angle south-west from the south-west corner of the brewhouse towards the entrance gate next to the icehouse. The east section (172) extends from the south-east corner of the building to link with the north-east bastion, also forming the south wall of the yard to the north-east of the brewhouse. This runs south-west to north-east on at a 53° angle, which is a slightly different alignment from the west section.
- 8.27 Underpinning of the south-west section of the boundary wall (78) took place in January 2019. The archaeological work comprised the hand excavation of a series of 1m² trenches spaced 1m apart along the south face of the wall, within the area of the pleasure grounds (Fig. 5, 8). These were excavated either to a depth greater or lesser than 0.7m below ground level (bgl) to install new stabilising foundation beneath the structure.
- 8.28 The boundary wall abutted the south-west corner of the brewhouse and extended south-west for c.37m, towards the hall to the field gate. It varied in height along this course from 1.2 to 3m and was constructed of roughly coursed sandstone blocks. The feature had no discernible foundation course and, in the area of the underpinning, it sat upon a very rudimentary bed of mortared sandstone laid between occasional squared blocks

up to 0.3m across. The south-west wall of the cartshed (173) clearly abutted the north face of boundary wall **78**, confirming it as a later addition.



*Plate 14: ceramic drain beneath boundary wall **78** in the underpinning trench at the south-west corner of the brewhouse (on the right).*

- 8.29 To the south of boundary wall **78** was a considerable build-up of dark grey silt (**48**) up to 0.6m thick (Plate 14), containing a high concentration of ash, brick fragments, angular stones and occasional larger sandstone blocks (up to 0.3m). The latter may have originally formed part of the wall fabric. This deposit was very disturbed and no distinct levelling horizons could be discerned. It may represent material excavated during the construction of the wall that was redeposited and levelled on completion. No foundation cut for wall **78** was identified, but if the construction trench was dug and backfilled in relatively quick succession then this may not be apparent. The sandstone blocks identified may be unused or rejected building material. Alternatively, deposit **48** could have accumulated against the wall as the result of the general dumping in the period after the wall's construction.
- 8.30 The rubble within this context contained occasional recognisable fragments of worked masonry, which were photographically recorded during excavation (Plate 15). The fragments were difficult to date stylistically, but may pre-date the 18th-century hall. This perhaps suggests the presence of an earlier high-status building somewhere in the general vicinity. The fragments were too damaged to warrant retention for display and

were marked and placed in the hall's masonry storage collection. No datable artefactual evidence was recovered deposit 48.



Plate 15: fragments of masonry recovered during underpinning.

- 8.31 The underpinning work continued along the north face of the east boundary wall (172; Fig. 5, 8) abutting the south-east corner of the brewhouse and extending north-east to link with the north-east Bastion. The work within the east yard revealed a marked difference in the deposition of materials from those observed on the south side of the wall, presumably resulting from continuous and repeated disturbing activity around the ancillary buildings. The confined area within the yard was further disturbed by a number of service trenches, and the ground in the southern and western parts of the enclosure were covered by a thick deposit of 20th-century levelling material (58). This was partially removed during the ground clearance and preliminary works.
- 8.32 Underpinning along the line of boundary wall 172 showed natural sandstones and clays (30) occurred at a depth of 0.6-0.7m bgl by the south-east corner of the brewhouse (Plate 16). The clay in this area sloped markedly down to the north-west and was overlain by dark silty sand (47) containing frequent rounded stones. The foundations of the south-east corner of the brewhouse (45) lay within the upper part of this deposit, although no cut was visible. The brewhouse foundation at this location consisted of squared sandstone blocks 0.25–0.3m across, laid in rough courses.



Plate 16: depth of foundations and gradient of natural clay 30 at the south-east corner of the brewhouse.

- 8.33 To the north-east, the natural was overlain by a layer of fine brown sandy silt, containing occasional small rounded stones (113), which was up to 0.4m thick. This homogenous deposit may have represented a buried natural soil horizon surviving in undisturbed areas. A very similar deposit, also interpreted as a natural soil horizon, was recorded adjacent to the north-east bastion (NAA 2020).

#6: Monitoring of foundation and service trenches east of the brewhouse

- 8.34 Archaeological work in the area of the brewhouse extension was undertaken in March 2019 and comprised monitoring during the mechanical removal and levelling of the modern overburden (Fig. 5). In the north-western part of the yard the brewhouse footings 45 were seen to have been laid directly onto the natural sandstone bedrock 30 and were overlain by a 0.25m-thick layer of modern dumping including brick fragments, broken ceramic drainage pipes and rusted tin-cans (Plate 17), indicating that the original strata into which a foundation trench would have been cut had been wholly disturbed, removed and replaced. Two 0.5m-wide L-shaped foundation trenches for the new building extensions were excavated to an average depth of 0.5m bgl (Fig. 5).



Plate 17: Foundation course 45 to the brewhouse at the northwest corner of the building lying directly on the natural bedrock.

- 8.35 The trench for the kitchen foundation was located c. 6.50m north of the south wall of the east yard (172) (Fig. 5). This occasionally reached a depth of 0.65m, cutting through heavily disturbed dark soil deposits in the southern and eastern parts of the yard. The foundations for the café extension linked with the north wall of the kitchen extension and ran parallel with the east wall of the brewhouse at a distance of c. 5m. The majority of this trench was cut directly into the natural sandstone (30) overlain by a thin covering of modern topsoil (58) (Plate 18).



Plate 18: foundation trench for the brewhouse café development with modern deposits over weathered natural sandstone.

- 8.36 Excavation of the foundation trench further demonstrated the build up of modern deposits across the yard, which increased in depth to the south-east, towards boundary wall 172. In the base of the trench, towards its south-eastern end, the yellow-orange natural clay (30) was cut by a linear feature (114) aligned from north-west to south-east. This continued below the depth of the excavation and was filled with a mid-brown silty sand and small rounded stones (113). Sealing this was a 0.1m-thick layer of black ash and coal (112), capped with 0.2m of coal-flecked sandy clay (111). Above this was another deposit of dark grey and purple ash and coal (110) which was up to 0.25m thick and overlain by further soil deposits (58/109) below the modern ground surface.
- 8.37 In the north-western half of the trench the natural deposit (30) was overlain with interleaving layers of sand, dolomite, ash and other modern domestic and light industrial dump deposits in a gritty coarse silty sand with frequent brick fragments, coal, ash and small angular stones (109).

#7: Monitoring during opening up of small internal service trench (water dispenser) inside brewhouse

- 8.38 In order to provide a water dispenser within the brewhouse a small trench, measuring 0.50 x 0.50m was excavated extend from a midpoint along the east wall. This was excavated through the concrete floor into underlying sandstone bedrock to a level below the single course foundations of the wall. No material of archaeological significance was encountered.


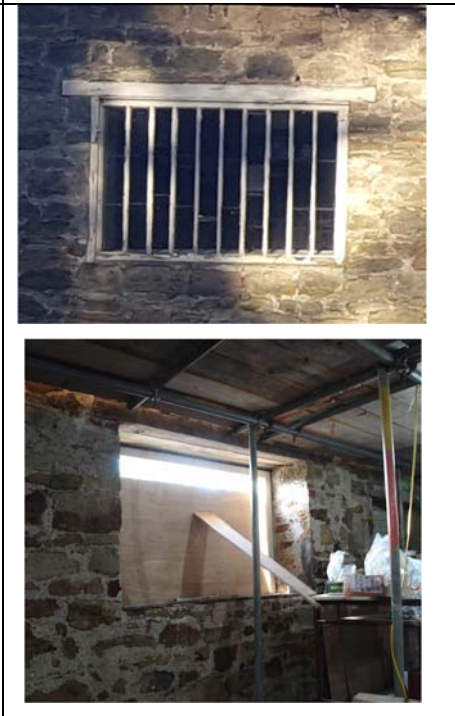
#8,9: pre-intervention records of historic windows and recording during replacement of historic lintels.



- 8.39 The historic windows in the brewhouse and cartshed were photographed and drawn, as part of the earlier phase of building recording (Newman & Scott 2018) (Fig. 7) and drawn by Mosedale Gillatt Architects in advance of the development. The following is an inventory of historic window and door openings.








Figure 7: Brewhouse phase plan (Newman & Scott 2018).



Table 1: inventory of brewhouse windows and doors (for location see Fig. 7)




ID	Loc	Description	Date	Conservation	Photo
1	G1	Cart/carriage door in the north-facing elevation. Large rectangular fixed pane glazed upper section, with vertical glazing bars, and timber base. Lifting mechanism preserved internally.	Opening 18th century coach house. Current door dates to the mid 20th-century	Light touch cleaning	
2	G1	Large window at the north end of the west-facing elevation. Similar in design to the carriage door and features in the cartshed ie. vertical glazing bars with timber lintel and cill. No indication of set surrounds, and proximity to ventilation slits suggest this was a much later addition. Unlikely the byre at this end would have originally included windows. Squared reveal without splay, supporting the interpretation of this as a later addition. No evidence of an earlier setting	Late 19th or 20th century?	Lintel replaced (modern not retained). Window casing repaired.	


3	G1	<p>Door at northern end of west-facing elevation. One of two doors, set opposite each other, at this end of the building. Alternating long and short stone surround suggests this is original. Timber door and surround later. Timber lintel which like the others in building are surprisingly shallow.</p>	<p>Late 17th in origin with later door, lintel and frame (late 19th or 20th century).</p>	<p>Repaired and retained.</p>	
4	G2	<p>One of two windows at the southern end of the brewhouse. Set with alternating stone surround and shaped timber lintel (original). Three-over-three fixed pane window with timber frame. Evidence of external shuttering in the form of two metal cleats on each side. Indicates domestic use. Interior splayed and set with oak board cill. Plain sandstone reveal with some evidence of plaster or render.</p>	<p>Late 17th in origin. Frame and lintel likely to have been replaced but are early; possibly early 19th century.</p>	<p>Frame repaired, timber lintel retained.</p>	

5	G2	<p>Door at south end of west-facing elevations. Set with alternating stone surround and very similar in style to door 3, although with a splayed interior. Panelled door with latch. Timber lintel and doorframe.</p>	<p>Opening 17th century in origin with later door late (19th or 20th century). Frame and lintel likely to have been replaced, date uncertain.</p>	<p>Light touch repairs. Lintel retained.</p>	
6	G2	<p>Second of the two windows flanking the doorway at the southern end of the west-facing elevation. Window originally looked out into the brewhouse yard but later obscured by 19th-century cartshed. The same design as window 4. Interior splayed and window previously blocked with timber plank panelling.</p>	<p>17th century in origin. Frame and lintel probably replaced but clearly pre-cartshed (1841). This helps to date other elements of this style.</p>	<p>Light touch repairs. Lintel retained.</p>	

					
7	G2	Doorway to upper storey of the brewhouse converted to a large eight-over-two fixed-pane window, measuring c. 2m high. Surround is set with alternating long and short quoins and a stone threshold. External timber lintel modern but internal feature appears original and the same as windows 4 and 6.	18th century doorway added as part of brewhouse conversion. Date of current glazing uncertain, likely 19th century.	External timber lintel and wood cill replaced. Relatively modern and of negligible evidential significance. Internal lintel retained.	
8, 9	G2	Two small two over two fixed pane windows inserted into the south gable. No evidence of a stone set surround. Interior set in a deep splay, reflecting width of the wall. Cill pine boards with evidence of graffiti. Lintels and frames quite modern.	18th century inserts. Glazing and timber elements later but of evidential significance.	Repaired with lintels retained.	

10	G2	<p>Small window at the southern end of the east-facing elevation. Set with alternating stone surround and adze cut lintel. Interestingly feature not splayed internally as are all of the other openings at this end of the building are. Suggests a later insert but quite early. Perhaps indicative of a specific function of this part of the building, maybe for food storage. Internal masonry cill with some surviving render or plaster and cill and reveal.</p>	<p>18th century (?) with later glazing and frame. Adze lintel probably original.</p>	<p>Light touch repair. Lintel retained.</p>	 <p>Detail of internal lintel (retained).</p>
11	G2	<p>Original window at southern end of the east-facing elevation. Similar to windows 4 and 6 on the west side but with later modifications. Set with alternating stone quoins but no external cill. Both internal and external lintels are modern sawn timber. Splayed internal reveal without boarding but with stone cill. Some indication of plaster or render.</p>	<p>Late 17th century with 20th century frame and glazing. Lintel possibly earlier.</p>	<p>Fabric cleaned and retained.</p>	

					
12	G1	Door at the northern end of the east-facing elevation. Set opposite door 3 but narrower in width, indicative of pedestrian rather than animal entry. Timber lintel with chamfered edge, and wooden door frame. Timber plank-panelled door. Square set reveal without splay, matching door 2.	Late 17th century opening with later door. Lintel and surround.	Repaired and fabric retained.	
13, 14	G3	Two windows in the north-facing elevation of the cartshed, both the same in design comprising a rectangular fixed paned vertically glazed window, with six lights. These were set in an alternating stone surround but no cill. Internal timber lintel but not external, consistent with the roof being lowered slightly. Square reveal without splay.	Early 19th century (pre-1841)	Repaired and retained.	

15	G3	Cart entry door in the west, gable end of the cartshed. Later converted as a window in a similar style to features 1,2,11,13, 14.	Early 19th century (pre-1841), later modified	Lintel replaced – watching brief maintained (see below).	
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Monitoring during the removal of the cartshed lintel

- 8.40 The unstable lintel on the west side of the cartshed (Building B; Fig. 7) was removed and replaced as part of the development. A watching brief was maintained during this work which identified evidence of various phases of strengthening and refacing of the lintel (Plates 19-22).



Plate 19: cartshed; west gable-end window lintel prior to removal.



Plate 20: cartshed; west-facing gable-end window lintel during removal.



Plate 21: detail of northern end of lintel, cut to accommodate later roof line.



Plate 22: cartshed; east-facing view of gable-end window lintel during removal.

8.41 The lintel was set on a base of two planks, extended across the door opening, with two smaller wooden blocks set at each end to keep the structure secure. Above this was what appeared to be a reused joist or tie beam timber of 19th- or early 20th-century date with various peg and socket holes visible. This extended right to the northern edge of the building, which suggest the eaves line was formerly slightly higher. A modern

facia board was attached to the external side of the lintel.

#10: pre-intervention recording of work to the apex of the dividing internal wall in the brewhouse.

- 8.42 Within the main brewhouse building, it was noted after the 2016 survey that stonework at the apex of the partition wall dividing the two internal rooms (G1 and G2; Fig. 7) was significantly weathered on both faces. This pattern continued down the east side, suggesting that the fabric had been exposed to the elements for a period of time. While there is no specific record that the building was re-roofed, such localised weathering may be associated with partial roof loss at some point in the building's history, possibly indicative of a period of decline or abandonment. Such erosion would be conducive with prolonged exposure rather than a temporary event like the construction of the north façade.
- 8.43 Further photographic recording of the partition at height was conducted as part of the watching brief (Plates 22-24). As part of the development, six holes were drilled through the stonework to accommodate pipes and ducting; the pointing and stonework was otherwise preserved with minimum intervention.

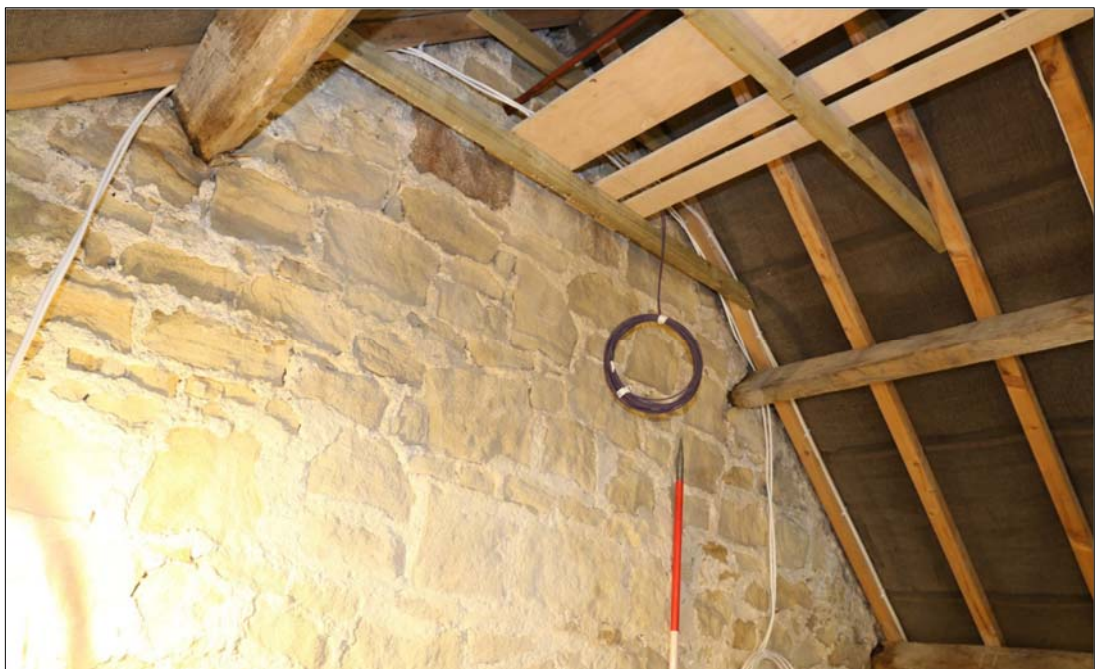


Plate 23: north-facing side of the partition wall apex, showing differential wear of the stonework, with the mortar standing proud of the stone surface.



Plate 24: north-facing side of the partition wall apex, showing differential wear of the stonework.



Plate 25: south-facing side of the partition wall apex, showing differential wear of the stonework extending down the wall.

#11: Excavation of inspection chamber pits

8.44 In October 2019, four 1m² pits were archaeologically excavated to a depth of 1.2m to house inspection chambers along the length of the new drainage system for the terraced area west of the Brewhouse. (Fig. 6). The pits were located at the corners of the brewhouse and cart-shed buildings. Pits 1 and 2 were located respectively near the north-western and south-western corners of the cartshed. Pit 3 was adjacent to the north-western corner of the brewhouse, and Pit 4 was situated in the angle between the brewhouse and cartshed. Pits 1 and 4 were excavated to the required depth through a series of archaeological deposits and pits 2 and 3 encountered sandstone bedrock (44) immediately below the modern overburden (98).

Pit 1 (Plate 26) was located at the highest point of the development area to the north west of the cartshed and was excavated to a depth of 1m. Natural yellow sandy clay lay at a depth of 0.85–1m bgl with a distinct gradient down towards the south-east. A considerable deposit up to 0.4m thick of angular stones in a dark grey-brown silty clay (103) had been dumped directly above and was capped by a lens of light brown silty sand (102) and layer of light brown sandy clay (101) which was up to 0.2m thick. Above this, 0.3m of overburden 98 was covered by 0.25m of modern topsoil placed over this part of the site to protect the underlying archaeology during development.



Plate 26: clay capping 100 over layer 103 and slope of natural in pit 1, facing north-west.

- 8.45 **Pit 2** in the south-west of the site at the junction of the west wall of the cartshed and the boundary wall contained no archaeology. As noted above, the bedrock **44** lay directly below the topsoil.
- 8.46 **Pit 3** was situated directly over the concrete and timber remains of a modern post-setting (**99**) sealed below 0.25m of hardcore and topsoil at the south side of the road. The post-pit had a diameter of 0.7m and was cut 0.5m into the bedrock (**44**).
- 8.47 **Pit 4**, which was located in the south-eastern corner of the terrace area near the junction of the cartshed and the brewhouse, was excavated down to natural deposits at a depth of 1m. This pit allowed for further investigation of the deposits previously encountered during the underpinning, although deposits in the area had been severely truncated by modern access paths, and drainage to a depth of 0.4m bgl. A salt-glazed drainage pipe (**174**) ran along the outside of the south-west wall of the brewhouse and continued to the south-east beneath the cart-shed floor. Beneath this disturbance, a thin layer of overburden (**98**) directly overlay the clay capping layer (**41**). This was up to 0.25m thick in this area and sealed a deposit more than 0.4m thick of fine silt (**43**). This homogenous deposit contained very few small stones and may have accumulated over a significant period of time (Plate 27).



*Plate 27: clay deposit **41** and clay capping deposit **43** in pit 4.*

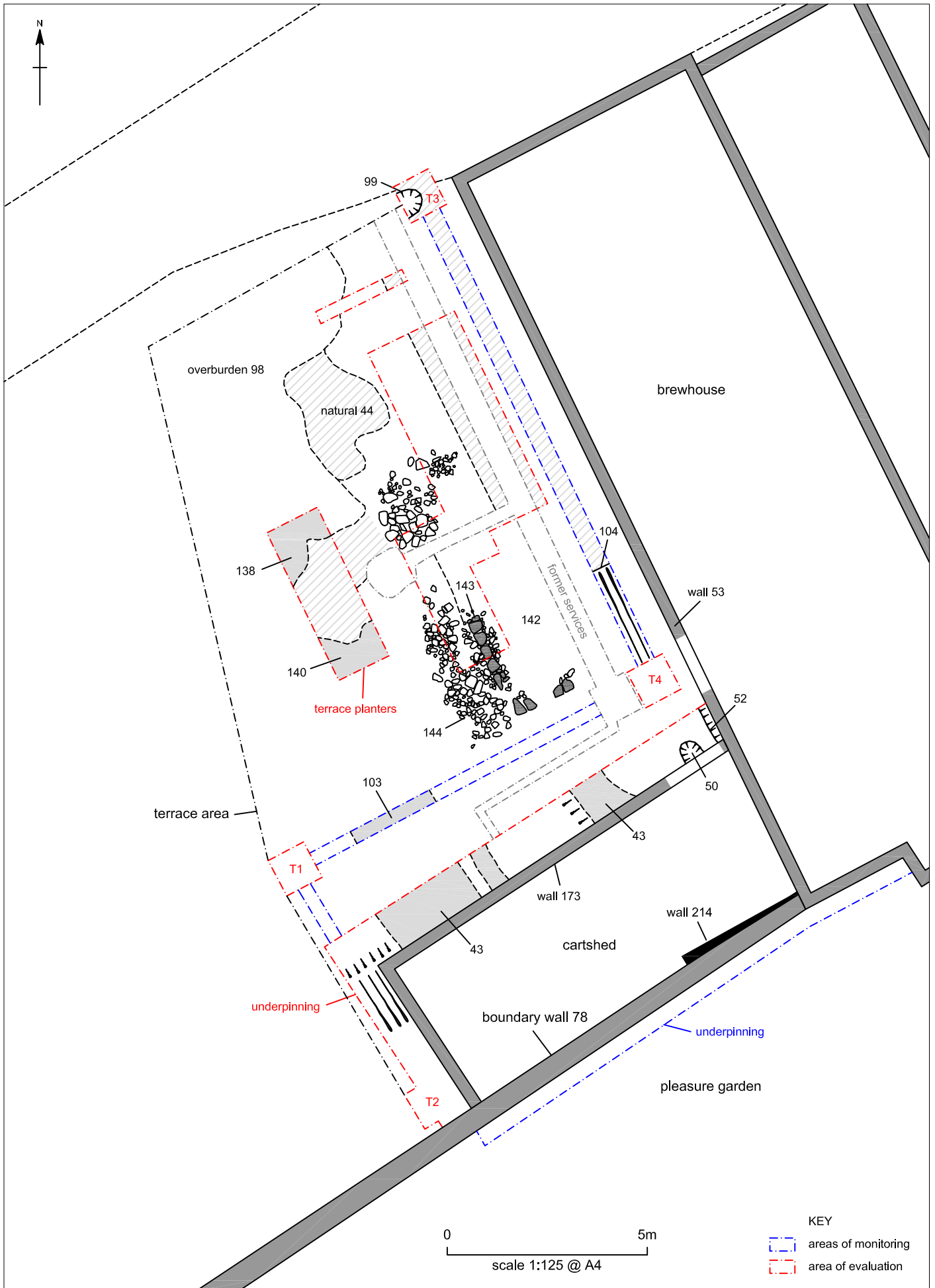
12#: Monitoring during excavation of drainage service trenches to the west of the brewhouse.

- 8.48 Following the completion of the inspection pits, 0.3m-wide trenches were mechanically excavated to connect the drainage between them (Fig. 6). The width of the trenches prevented any detailed study of the stratigraphy and only features cut into the natural clay (44) were visible. The depth of natural and the nature of the overlying deposits were recorded. However, any finds recovered from the excavated soil were assigned to the overburden (98).
- 8.49 The section of trench connecting pit 1 to pit 4 was 9m long. It was 0.8m deep at the south-western end and 1m deep to the north-east and was excavated through thick deposits of dark silty soils with frequent stones and brick fragments, although the method of excavation prevented any differentiation of separate deposits.



Plate 28: ditch 104 with west wall of brewhouse (53) in the background.

- 8.50 The trench running from pit 4 north-west to pit 3 provided a profile of the natural deposits across the area. This explained the difference in depth of the natural noted in the underpinning and inspection pits. As earlier observed, the natural sandstone and clay in the area nearest the cartshed was 0.7–0.75m lower than the north and west parts of the area near the road and also to the south under boundary wall 78. A significant depth of archaeological deposits had accumulated, or been deliberately deposited, in the south-eastern part of the trench and lay within a broad feature (104) cut into the natural clay (Fig. 8). This was over 7m wide with a clearly defined break-of-slope and



gently sloping sides. It had a minimum depth of 0.8m below the level of the surrounding natural and contained a fill of mid-brown fine silt (Plate 28). The trench between pits 1 and 4 appeared to run directly through this feature with the deepest point observed on the west side.

#13,14: Monitoring during the excavation of service trenches

- 8.51 Excavation for the café's water and gas services took place in November 2019. A 0.7m-wide trench was dug to a depth of 1.2m, running north-west from the foundation for the new kitchen extension to the north-west gateway (Fig. 5). This provided a profile across the yard, showing intermittent areas of surviving archaeological deposits cut through by modern services. Against the wall of the new development, the south-eastern end of the services trench widened to 1.2m and was excavated to a greater depth to accommodate services passing below the new building foundations. This revealed a profile of relatively undisturbed archaeological stratigraphy (Plate 29) representing the gradual deposition of waste from the processes associated with the Brewhouse discussed earlier (contexts 110-112).



Plate 29: profile of the service trench showing cut feature 114 and overlying deposits.

- 8.52 During this phase of work, two 1m² inspection chambers were mechanically excavated to a depth of 1.2m. These pits were excavated to the south-east of the kitchen extension to replace existing brick-and-concrete chambers, the construction of which had caused heavy disturbance. Finds recovered during this work were assigned to the modern

topsoil (58). Narrow 0.3–0.5m-wide ducting trenches connected the chambers and varied in depth from 0.1m to 1.2m depending on the gradient of the new services. These trenches again demonstrated the depth of light industrial waste deposits (109 and 110) within the yard. A network of ground-water drainage pipes was also bedded into shallow trenches across the site and covered by the new raised courtyard surface.

- 8.53 A further machine-cut service trench was excavated running north-east to extend from the east side of the brewhouse to the north-east exit gate, leading out onto the A190 (Fig. 5). This measured c.0.5m wide and was excavated up to 1.4m deep. It ran for 92m along the side of the exit road (Plate 30).

In the southern part of the trench the natural geology was visible directly below the road surface but an increasing build-up of silty soils were visible to the north. The primary deposit was a mid-brown sandy silt (115), possibly a buried soil horizon, which was overlain by woodland soils, domestic dump deposits and modern lawned topsoil.



Plate 30: edge of ditch 116 in the base of the café service trench.

- 8.54 The northern part of the trench ran along the west side of the exit road for 27m as it approached the exit onto the A190. The trench here was 1.4m deep, with light orange sandy clay visible in the base. Although only 0.5m wide, the alignment of this section of trench revealed the edge of a linear feature (116), filled with sandy silt (not excavated). This ran south-east to north-west along almost the entire length of the trench (Plate 30; Fig. 6). However, the level from which it had originally been cut could not be determined.

Archaeological Work Package 2: Excavation during the construction of the café terrace

- 8.55 The landscaping of the café terrace to the west of the brewhouse began in February 2020. Initially the modern overburden (98) was mechanically reduced across the area to the required depth and gradient (item #2), after which foundations were dug for several landscaping features, such as planters, walls and pathways (item #3). These were

archaeologically excavated by hand and recorded (Plate 31). Areas of surviving archaeological deposits were identified, the majority of which lay at or below the level of impact. These were subsequently recorded and preserved *in situ*.

- 8.56 Site clearance revealed that the area to the north-west, nearest the road, had been reduced almost down to the natural sandstone which lay directly beneath the modern overburden (98). As anticipated, the dump deposits recorded during previous phases of work were observed, concentrated in the southern and eastern parts of the site. Archaeological features and deposits were identified across a c. 6.5m wide area immediately adjacent to the main brewhouse building. As noted above, in general these lay below the level required for the new development and were recorded only in plan, although construction of the landscaping features allowed for some limited investigation.



Plate 31: hand clearance and excavation within the brewhouse terrace.

- 8.57 Immediately below the modern overburden was an alignment of large stones (143) running parallel to the brewhouse (Fig. 8; Plate 32). This feature consisted of sub-rounded sandstone blocks, measuring c. 0.15m by 0.25m by 0.40m, which formed a line 3m in length. This lay approximately 4m west of the brewhouse and was partially overlain by a rubble layer of similar stones (144) which spread westward and northward (Fig. 8). To the north-east of alignment 143, the rubble deposit formed a straight edge for a distance of 3m, also running parallel to the brewhouse at a distance of 4.2m. The

upper portion of the rubble layer lay above the impact level and was removed, revealing **143** to be the outer face of a wall foundation measuring over 0.3m wide, with the return running 2m south-east towards the northern side of the brewhouse doorway (Plate 33).



*Plate 32: partially removed rubble layer **144** against the exterior of wall **143**, with floor make-up **142** in the interior.*



*Plate 33: wall **143** after removal of demolition deposit **144**.*

- 8.58 Rubble **144** lay to the south-west of the outer face of wall **143**. The pronounced linear edge of the rubble deposit suggested the wall may have been partially removed rather than collapsing naturally, and that the feature had originally continued north-west for a minimum of 6m. The area enclosed by wall **143** comprised a stone-free, level, surface of compacted sandy clay (**142**), which possibly represented the remains of an earth floor within the structure.
- 8.59 Further excavation on the higher ground in the west of the area (Fig. 8) identified two possible large pits cut into the natural sandstone (**138** and **140**), both of which contained dark grey sandy silts (**139** and **141** respectively). Both features extended below the required depth of excavation and consequently were recorded in plan only.

Archaeological Package 3: site works to the north of the brewhouse

- 8.60 Package 3 (National Trust 2018d) related to works to the north of the brewhouse. This included a watching brief during groundworks for the reduction of a modern mound of spoil on the west side of the walled garden, widening of the north-east gate and site access road, and monitoring during the excavation of a foundation trench for rebuilding the west wall of the walled garden.

#2: Monitoring during groundworks for widening the site access road and widening the gate opening.

- 8.61 In November 2019, the site exit onto the A190 was enlarged by demolition of modern additions to the northern perimeter boundary wall (**147**) and widening of the gateway (Fig. 5). The wall was seen to extend more than 0.5m below the driveway surface and stands 1.6m above the present ground surface, measuring 0.55m in width at its base. It was constructed of roughly coursed sandstone blocks and capped with a triangular-profile concrete coping with a brick rubble core (Plate 34). Lower courses were seen to continue directly across the opening beneath the driveway surface, demonstrating that the gateway as inserted with recent modifications such as gatepost settings.
- 8.62 Following reduction of the wall, the topsoil within the widened gateway was reduced by 0.15–0.2m and the gateposts repositioned to extend the width of the driveway by 1m on either side. This was to improve safe access to the A190. In order to minimise disruption to local traffic, this work was carried out at the same times as the connection of the brewhouse services to the roadside mains supply.



Plate 34: northern boundary wall 147 during the enlargement of the exit.

- 8.63 Site work also included the planting of a single tree within a formal setting at the centre of the triangular lawn between the access tracks to the west of the walled garden (105; Fig. 5). A 2m-diameter circle was marked and the turf was hand cut and removed and a 1m² pit was dug in the centre using a small mechanical excavator. The underlying deposits were similar to those observed in the nearby drainage trenching, with a substantial build-up of made ground above the natural geology and a thick deposit of mid-brown sandy silt visible below the topsoil in section. The method of excavation, and instability of the trench sides, made it impossible to differentiate and record separate archaeological deposits, but a quantity of artefacts were recovered under context number 105.

#3: Monitoring during groundwork to remove the mound at the west side of the walled garden

- 8.64 The large turfed mound (1) was removed from the west side of garden wall 77 (Fig. 5) at the beginning of the project in November 2018 (Plate 35). The mound was 23m long, 7m wide and almost 2m high. Excavation showed it consisted mainly of rubble and demolition debris overlain with a thin layer of topsoil and turf (Plate 34). Reclaimed architectural fragments had been stacked within the mound near the north-west corner of the garden wall, while the southern section contained a high proportion of timber

and glass from modern demolition work in the area. The more complete architectural fragments, such as finials and a possible sundial, were recovered and retained for display (Plate 36). These are recorded in Appendix B of this document.



Plate 35: removal of the turfed mound at the commencement of site works.



Plate 36: architectural elements recovered from the north of the mound.

- 8.65 The remains of a brick-and-stone surface (2) (Plate 37) was uncovered beneath the southern part of the mound. The exposed area covered 4m² and was located to the north of the garden entrance. The rough nature of the surface, the demolition debris above and the presence of fenceposts against the south-eastern half of the garden wall suggested that the remains represented a fenced yard surface rather than a structure,

and that the architectural fragments had been stacked beside this. This surface may have extended out across the wider area below the level of excavation. The positioning of the stacked masonry over topsoil to the north, coupled with the remains of fenceposts, suggest the surface ran along the outside of the garden wall from the gateway to terminate at a fence-line midpoint along wall 78.



Plate 37: brick, stone flags and cobbles forming surface 2.

#4, 5: Pre-intervention record of west wall of walled garden and monitoring during excavation of foundation trench for rebuilding the wall

- 8.66 As part of the conservation works, the northern section (77) of the west wall of the walled garden was dismantled and rebuilt (Plate 38). This measured 26.30m in length and was 0.5m wide, standing to a height of 3m. It was constructed of dark orange-red handmade bricks measuring 0.23m by 0.11m by 0.06cm held in a creamy white lime-mortar and laid in garden wall bond (five stretchers to one header), and was similar in build and character to the other walled garden walls. However, the structure had become unstable and was leaning to the east, requiring immediate structural intervention (Plate 39). The section The wall head was capped with concrete coping.
- 8.67 On attendance NAA were instructed that the wall had already been recorded by the architects and no further recording was required. The scaffold was also already erected on the interior (east) side in preparation for dismantling. A visual inspection of the wall was conducted, this indicated that the build was all one phase, although with evidence of later repair and repointing. The upper courses were slightly darker in colour (Plate

41) which was attributed to uneven weathering and the loss of mortar along the joints rather than any evidence that the wall had been heightened. No other features of note were identified.



Plate 38: north section of the west wall of the walled garden; internal east-facing elevation (north end). Image courtesy of Mosedale Gillatt Architects.



Plate 39: north section of the west wall of the walled garden during clearance of the turfed mound.

8.68 The section of wall was carefully dismantled and the handmade bricks cleaned and retained for use in the rebuilding where feasible. Three bricks were recovered featuring

the imprint of a Roe deer hoof. These were retained for study and future display.



Plates 40, 41: (left) cross section through the wall exposed during dismantling, and (right) sample section of brickwork with concrete capping.



Plates 42: north section of the west wall of the walled garden; external west-facing elevation following clearance of the turfed mound.

- 8.69 A watching brief was maintained during the excavation of the foundation trench for the replacement wall. A large squared stone plinth (36) was discovered buried under the edge of the modern access road at the southern end of the section of wall (Fig. 6; Plate 43). The stone plinth was square with sides of 0.75m and height of 0.23m and would

have formed the base of a pillar at the entrance to the walled garden. Inspection of the outer wall of the north-east bastion revealed two carved insets (79) measuring 5cm by 7cm which would have supported the ironwork for a gateway (Plate 44).



Plates 43,44: (top) stone plinth 36 and (bottom) carved recess 79 in bastion wall for gate.

9.0 FINDS

9.1 This section contains summaries of the specialist finds reports. The full reports are in Appendices C–G.

Clay tobacco pipe, glass and pottery (Appendix C)

9.2 The works recovered a total of 240 fragments (1305g) of clay tobacco pipe, 99 fragments (5039.7g) of glass and glass waste, and 247 sherds (4354g) of pottery.

9.3 For the clay tobacco pipes, the bowls recovered could be separated into two broad types, smaller examples dating from the 17th century and slightly later larger bowls of 17th- to 18th-century date.

9.4 Decoration was limited to only a few stem fragments. One carried a faint foliate design and another had a crude, probably hand-applied, decoration of diagonal traverse lines

across the stem. In addition, two stem fragments were stained with what might have been red paint, sometimes applied to the tip of a pipe to create an impermeable finish and stop a smoker's lips from sticking to the porous clay.

- 9.5 Stamp marks were evident on seven of the clay pipe fragments recovered, although only three were identifiable. A mark on the smallest bowl in the assemblage read 'ESX' encompassed within a heart. Examples of this style of bowl with the same mark from the south of England were produced in the West Country between 1640 and 1650. A second partial stamp mark may have been that of Robert Collington; an 18th-century pipe maker from Lincolnshire. The third identifiable stamp displayed 'IP' inside a circle. Similar examples were made by either John Preston or John Parsons in London during the 17th century.
- 9.6 The glass assemblage dated from the late 17th to 20th centuries and included a marble, and fragments of both vessel and window glass. It also included 22 pieces of glass waste in the form of wasters, slag, trails and additional casting waste. This probably originated at the nearby Seaton Sluice bottleworks and was brought to the either accidentally, as aggregate or drainage for the market garden pots.
- 9.7 The pottery assemblage included seven sherds dated to the medieval period (11th–14th century). The three vessels represented included splashed ware and reduced green ware, locally produced and of probable 11th–13th century and 13th–14th century date, respectively. The third item was a possible York glazed ware vessel of a type produced during the 12th and 13th centuries.
- 9.8 Early post-medieval pottery was represented by four sherds of probable Bellarmine jars. Bellarmine jars originated in Germany, although they were being copied in Britain from the late 17th century. In addition, two stoneware fragments may have originated from a Westerwald-type vessel also imported from Germany during the 17th century, although again these were copied in Britain throughout the 17th–18th century.
- 9.9 The remainder of the post-medieval pottery assemblage comprised a wide range of typical utilitarian and table wares of the 18th–20th centuries, decorated in a variety of patterns. The vessels included plates, platters, cups and saucers, bottles, bowls, dishes, jars, jugs, mugs, a possible cistern and a plant pot.

The small finds (Appendix D)

- 9.10 Twenty-five artefacts were recovered during the archaeological monitoring; three objects were copper-alloy, three were lead or lead-alloy, and 18 were of iron, in addition to a fire-cracked flint nodule likely to have been accidentally burnt. All dateable finds were of post-medieval date.
- 9.11 A single heavily corroded coin was recovered from layer **39**. This had a faint trace of lettering around the circumference visible on X-ray around what appears to be a crowned bust, the direction in which it is facing is uncertain as the image is indistinct. This has the potential to be earlier, possibly medieval in date, although further conservation and investigation is required before this can be confirmed.
- 9.11 Identifiable pieces in the iron assemblage included 10 nails, a possible strap hinge from a door or piece of furniture, two possible drainpipe brackets, and a large horseshoe of early 19th- to 20th-century type. A lead-alloy downpipe bracket had trifoliate terminals, each with a central countersunk perforation, at each end of a central bar bent at right angles to accommodate a square downpipe. There were also two lead-sheet offcuts, which might relate to the brewing process. Several copper-alloy and iron objects could not be identified.

Building materials (Appendix E)

- 9.12 A total of 33 fragments of CBM (brick, tile, and possible tile) were recovered, as well as three fragments of decorative architectural ceramics, a fragment of mortar, three fragments of possible sanitary ware, four fragments of unidentified material and part of a decorative concrete fish originating from a garden-pond statue.
- 9.13 The bricks were all hand-made and of late- to post-medieval manufacture. They were generally of quite high quality, fired hard with neat surfaces and edges. Very few had rough or soft fabrics, or were overfired. The most common surface impressions were turning marks and fingerprints.
- 9.14 Apart from two bricks, one from overburden **98** and one from rubble and silt layer **103**, which may be somewhat earlier, the remainder of the bricks from the brewhouse area excavations fit comfortably within the late 16th- to early 18th-century date range, which accords with the suggested date of the building and expansion of the Seaton Delaval estate.

- 9.15 Two tile fragments were recovered. One was of a pale peach-coloured fabric, slightly dished but of uncertain form. The other piece was part of a glazed, relief-moulded art nouveau wall tile. The decorative architectural ceramic pieces, which were glazed green or brown, may have been part of elements such as plinths, columns, or other features. However, none of the fragments was complete enough to suggest an original form or function. Of the three fragments of possible glazed sanitary ware, one possibly represented the foot of a pedestal from a basin or toilet, while the remaining pieces were non-diagnostic.

Industrial debris (Appendix F)

- 9.16 There were 40g of cinder recovered from topsoil context **38**. Cinder of this type is normally considered diagnostic of ironworking, usually smithing, but there was no other evidence for ironworking present in the assemblage, and the cinder is not sufficient to indicate metalworking taking place. Cinders can also be produced by other high-temperature processes and accidental fires, which is likely the case here. Possibly an activity or event relating to the brewing process.
- 9.17 A lump of concretion recovered from context **40** was considered to be a product of decay and mineralisation, and not significant.

Faunal remains (Appendix G)

- 9.18 An assemblage of 50 animal-bone fragments was recovered from seven contexts during the brewhouse investigation, and was analysed in full. The condition of the bones varied from reasonable to good, and 29 fragments (58%) were identifiable to taxon.
- 9.19 The assemblage was dominated by cattle and large mammal remains, together comprising almost two-thirds of the assemblage (64%). Sheep/goat, dog, horse and chicken were also identified. The majority of identified elements of cattle were from the feet and cranial areas, with only a minority of long-bone fragments. This bias in element representation was not present in the sheep/goat remains. All bovine elements identified were fully fused, indicating adult animals. In contrast, for sheep/goat, all early-fusing elements were fused, but only one out of the three later-fusing (three years +) epiphyses were fused, indicating that some animals were slaughtered prior to full maturity.
- 9.20 A single distal humerus was identified as from a small breed of dog. The single element of chicken identified was a spurred tarsometatarsus, the presence of a spur likely indicating that this was an adult male cockerel, although spurred hens are known within

some chicken breeds.

- 9.21 Cleaver butchery was noted on four elements within the assemblage, all of which were from cattle or large mammals; this indicates primary dismantling of the carcass. Dog gnawing was recorded on only a single element, although this cow metacarpal was noted as being unusually heavily gnawed. Osteoarthritis was recorded on one cattle first phalanx; this is a very common pathology and would have affected the health of the animal minimally.
- 9.22 While the assemblage was too small for any comprehensive biometric study, it did include some large-sized domestic animals. These probably date to the so-called 'Age of Improvement' in the 18th and 19th century, when changes in breeding programmes and management regimes were introduced to increase the size and meat weight of stock. However, as the animal bones were collected from the topsoil and other insecure dumping contexts, it is not possible to date these securely, and they could come from modern, larger breeds.

10.0 DISCUSSION

- 10.1 Previous investigation of the brewhouse complex established a sequence of development beginning in the late 17th century with the construction of a multi-use agricultural building (Newman & Scott 2018). This may have been constructed as part of a phase of expansion on the elevation of Sir Ralph Delaval to the status of baronet following the restoration of Charles II to the throne. The identification of reused masonry in fabric of the building suggests erection may have been concomitant with the demolition of earlier manorial buildings on the estate (*ibid.*).
- 10.2 By the late 18th century the agricultural building was converted for use as a brewhouse. An entry in the estate inventory for 1786 makes reference to a 'Low coach house adjoining the brewhouse' indicating the conversion was complete by this date (Simpson and Brown Architects 2017). Private brewhouses were extremely common in the 18th century and found in some form in most country houses of any size. In an age of poor sewage systems, when typhoid and dysentery were rife, water was too unsafe to drink and beer was the staple beverage consumed daily by all ages. As such, the brewhouse would have been an essential to the running of both the hall and estate. The significance of such buildings gradually diminished as sanitation improved in the early 19th century, and commercial breweries expanded. Tea-drinking also rose in popularity amongst the

- upper classes, although beer still remained a staple beverage for servants and labourers (Sambrook 1996).
- 10.3 The Seaton brewhouse was probably disused following the devastating fire in 1822, which destroyed large parts of the hall and led to the property being largely abandoned by the owning family. The brewhouse was subsequently repurposed as part of commercial market gardening enterprise that operated out of the walled garden. The building may have provided domestic accommodation during this period, as well as storage provision for implements. Further expansion occurred before 1841 when the cartshed was added to the west, and later between 1855 and 1897 when a stable and open-sided lean-to implement shed was added to the east. The market garden remained in operation until the early 20th century. In the 1990s the brewhouse complex was rather renovated by the then owner, Lord Astley (National Trust 2018b).
- 10.4 The results of the archaeological work (Archaeological Work Packages 1 to 3) showed extensive amounts of ground disturbance across the site indicative of a prolonged period of semi-industrial and agricultural occupation. Rather surprisingly, there was no evidence of a cobbled or some form of metalled surface surrounding the buildings, instead mixed dump and levelling deposits were found immediately beneath the topsoil. This suggests that there was probably considerable clearance during the renovation of the complex in the 1990s. This would have a marked impact on the survival of any below-ground archaeology. Nevertheless, a basic stratigraphic sequence, supporting the above described chronology of the site, was established, albeit fragmentary in places.
- 10.5 The earliest evidence identified was a broad linear hollow (**104/114**) observed running north-east to south-west on each side of the brewhouse. Recorded in section, this measured c. 7m across and contained what appeared to be a sterile lower fill (**113**), suggesting it was probably natural in origin. The void above was deliberately infilled with ash, coal and brick fragments and overlain by layers of clay consolidation prior to the construction of the multi-use agricultural building. Like the reused stone in the brewhouse, the infill debris possibly came from the demolition of earlier manorial buildings elsewhere on the site.
- 10.6 On the east side of the brewhouse monitoring as part of Package 1 showed the north side of the area had been reduced to natural bedrock, with increasing depth of deposits surviving to the south and east, infilling and levelling the ground. Contrary to what

appears to be the natural lie of the land today, the foundations at the south-east corner of the brewhouse were notably much deeper than the frontage next to the road, which rested directly on the natural bedrock. A similar sequence was observed on the west side of the brewhouse as part of Package 2. The natural drift geology in this area had a marked gradient to the south-east at the junction of the brewhouse and cartshed, and underpinning excavations along the south-west wall of the cartshed showed a similar gradient running north from the pleasure grounds wall.

- 10.7 Where depth of excavation allowed, a possible buried natural soil horizon was seen on this side, capped by a thick layer of orange clay. Above this, stone and refuse (**40**) had been dumped into and above the linear hollow. This incorporated brick rubble of late medieval and early post-medieval date, together with sherds of post-medieval pottery. The latter included examples of Bellarmine and Westerwald-type vessels, possibly imported from Germany during the 17th century, and fragments of clay tobacco pipes of 17th-century and 17th/18th-century date. Later pottery was also recovered indicating considerable disturbance and multiple phases of dumping and levelling. This was possibly concomitant with a later stage of demolition/construction as part of the brewhouse conversion.
- 10.8 To the south-west of the brewhouse the L-shaped footings of a low wall (**143/144**) was exposed just beneath the modern overburden (**98**). Outside and overlying the stonework was evidence of demolition rubble that continued to the north and west forming a distinct edge and suggesting the wall was originally at least 6m in length. Unfortunately, a series of later services had removed any physical relationship between this undated structure and the brewhouse. However, it does not appear on any known plans of the estate. Given it sat upon the fill of the linear hollow (**104**) it may be late 17th-century in date and contemporary with the multi-use agricultural building, although it could also be later.
- 10.9 The archaeological features in this area were sealed by a thick deposit of ash, stone and brick dumping and modern topsoil (**98**). On the east side of the brewhouse, a similar deposit of dark grey and purple ash and coal (**110**) up to 0.25m thick, was overlain by further soil deposits (**58/109**) beneath the modern ground surface. This material was too mixed to define clear layers but some of the ash, coal and cinders may relate to rake-off from the brewhouse firebox. No other evidence related to the brewing process was identified, although some of the glass may have been associated with the bottling of beer for domestic consumption.

- 10.10 To the north of the brewhouse, the brick-and-stone surface identified as part of the Package 3 works has been interpreted as the remains of a floor relating to a temporary lean-to structure built against the east-facing elevation of the west wall of the walled garden. Alternatively, it could be an area of hardstanding beside the entrance. Notably nothing is shown in this location on historic OS maps possibly suggesting that it predates the early 19th century. Further north, ditch **116**, identified during the excavation of the machine-cut service trench, aligns with a pathway shown on the 1781 estate map. The discovery of this feature is another useful clue to the progressive development of this part of the estate, and it would be interesting to determine the relationship between the ditch and the north-west corner of the walled garden.
- 10.11 The moderate finds assemblage recovered during the programme was of limited dating or interpretive value because it predominately came from residual and redeposited context. Nevertheless, it does facilitate some interesting general observations of life on the estate over a c.500 year period. The earliest evidence recovered was a possible medieval coin found beneath the brewhouse foundations (**39**), although this requires further assessment before a date can be confirmed. Other medieval evidence included locally produced splashed ware and reduced green ware dating to 11th–13th century. Three fragments of a green glazed baluster style jug were recovered from the service trench to the north of the brewhouse, probably dated to 13th–14th century. The assemblage also included three sherds of a possible York glazed ware vessel, produced between 12th–13th century.
- 10.12 This small assemblage of medieval pottery, and the possible coin, was the only firm evidence recovered of occupation in the vicinity of the brewhouse pre-dating the 17th century. The majority of the material was recovered from mixed deposits or topsoil and therefore unprovenanced but does strongly suggest a medieval manorial settlement somewhere nearby. In addition, while most of the material was locally made, the York vessel indicates a degree of trade during this period, possibly coming in by sea via the natural harbour at Seaton Sluice.
- 10.13 The post-medieval material included a collection of clay pipes dating from the mid 17th to the 18th century. Such pipes are ubiquitous on sites of this nature and the majority are usually locally produced. Evidence of decoration was sparse and where it occurred was quite rudimentary and simple in form, including possible red painting on the tip of a pipe stem, a foliate design and simple incised lines. Similarly, when present, rim finishing were always cut suggesting these were relatively cheap disposable objects

- used by servants and workers on the estate. However three imported pipes were also recovered, these were identified by stamped maker's mark to have originated in West Country, Lincolnshire and London. The distance travelled by these pipes from the point of origin suggests they were likely more expensive and may have belonged to the Delaval family or their guests, alternatively they could be attributed to coastal trading.
- 10.14 Analysis of the animal bone assemblage provided some insight into agricultural production and processing. The cattle bones recovered during the work were dominated by foot and skull bones with few meat-bearing parts of the body represented. Several items bore cleaver marks indicative of primary processing of the carcass, which might suggest animals were being slaughtered somewhere close by, however, there is little other evidence to support this interpretation. Such an activity was probably concentrated on the west side of the estate at the Hall Farm. Instead these poorer cuts of meat may have been used to feed dogs, and there was a dog kennel on the north side of the walled garden (Newman 2018c). Another possible interpretation is that the waste was collected to be processed as bone mill for fertilising the market garden.
- 10.15 It was difficult to date the bone assemblage with much of the material again coming from mixed deposits, but there was a number of cattle bones of large size possibly associated with improvement in cattle breeding and husbandry regimes in the late 18th and early 19th centuries. Agricultural improvement during this period served practical and social purposes, cementing status among both minor gentry and substantial landowners, and it seems likely the Delaval family formed part of this trend.
- 10.16 The walled garden also reflected the status of the family, as well as serving a practical purpose in providing vegetables and fruit to the hall. Investment in the new science of horticulture signified the wealth and sophistication of the Delavals. At its most obvious, such a display of wealth was manifest in the tall brick wall that encompassed the garden. Excavations prior to the rebuilding of the north section of the west wall identified an *in situ* stone plinth forming part of a gate pier at the entrance to the garden. This may have been topped by the ball finial which was also recovered during the works, although this can not be certain given the stored monumental masonry in the area.
- 10.17 Much of the glass assemblage consisted of dark green wine and/or beer bottles, some of which may have been produced at the nearby Seaton Sluice bottleworks. Slag, trail and waste material from the site was also identified, possibly brought into the area as aggregate. Beer from the brewhouse would have been transported to the hall for

consumption in barrels and flagons, but some may have been bottled for use by the family during the season in London or their travels around the country. Bottled beer is documented as being transported by the aristocracy in this fashion from the mid 17th century onwards. However, this probably only accounts for a small amount of the glass. Other vessels were likely brought onto the site by those associated with later (and potentially earlier) periods of occupation such as workers in the market garden.

- 10.18 Overall, the archaeological works provided greater insight into the construction of the mixed-agricultural building, and hinted at later phases of development, although there was rather disappointingly little evidence connected directly to the use and function of the buildings. The finds assemblage included some interesting examples of clay pipe, glass and pottery, including medieval material, as well as a quantity of animal bone and CBM. However much of this came from residual and redeposited context and was of limited value in terms dating the sequence of development associated with the site.
- 10.19 The brewhouse report is one of four covering the archaeological works undertaken as part of The Curtain Rises project. The others cover the walled garden; bastions, pleasure grounds and woods, and the hall itself (NAA 2020a–c). Together these complement, and in some areas expand on, the considerable body of research already undertaken in advance of the restoration works, adding to a broader understanding of life on the estate, and development of the hall and landscape over time.

11.0 ARCHIVE DEPOSITION

- 11.1 The full archive from the archaeological investigations, including paperwork, drawings, photographs, digital data and the finds assemblage, is to be deposited with the National Trust at Seaton Delaval Hall. Deposition will be in accordance with written guidelines on archive standards and procedures (ClfA 2014c). Copies of the digital data will also be archived with the Archaeological Data Service (ADS). NAA will liaise with the Collections and House Manager regarding requirements in ordering, boxing and labelling the archive.

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APPENDIX A
CONTEXT CATALOGUE

Table A1: Seaton Delaval Hall The Curtain Rises

Context	Archaeological Work Package	Description	Type	Project element	Notes
1	Package 3	rubble mound	dep	Turfed mound	turfed mound west of walled garden
2	Package 3	rough floor under mound	surface	Turfed mound	rough cobbled surface
3	Package 3	arch frag	Masonry	Turfed mound	finial fragment
4	Package 3	arch frag	Masonry	Turfed mound	finial fragment
5	Package 3	arch frag	Masonry	Turfed mound	finial fragment
6	Package 3	arch frag	Masonry	Turfed mound	statue plinth or sundial
7	Package 3	arch frag	Masonry	Turfed mound	drain capping
8	Package 3	arch frag	Masonry	Turfed mound	stone trough
9	Package 3	arch frag	Masonry	Turfed mound	door post setting
10	Package 3	arch frag	Masonry	Turfed mound	doorpost setting
11	Package 3	arch frag	Masonry	Turfed mound	stone panel
12	Package 3	arch frag	Masonry	Turfed mound	unknown purpose
13	Package 3	arch frag	Masonry	Turfed mound	finial fragment?
14	Package 3	arch frag	Masonry	Turfed mound	roofing Corbel
15	Package 3	arch frag	Masonry	Turfed mound	wall plinth
16	Package 3	arch frag	Masonry	Turfed mound	5 blocks of string course
17	Package 3	arch frag	Masonry	Turfed mound	burnt string course
18	Package 3	arch frag	Masonry	Turfed mound	pillar fragment
19	Package 3	arch frag	Masonry	Turfed mound	pillar fragment
20	Package 3	arch frag	Masonry	Turfed mound	spiral step
21	Package 3	arch frag	Masonry	Turfed mound	octagonal wall masonry
30	Package 1	Natural bedrock	natural	Foundation trench	natural sandstone bedrock
36	Package 3	arch frag	Masonry	Turfed mound	gateway to garden
37	Package 1	wall footings	Masonry	underpinning	foundation to cartshed
38	Package 1	Topsoil/overburden	dep	underpinning	general layer
39	Package 1	layer under footings	dep	underpinning	ground consolidation
40	Package 1	dumping	dep	underpinning	dumping- same as 46
41	Package 1	clay surface	dep	underpinning	ground consolidation
42	Package 1	stone path	Masonry	underpinning	reused masonry
43	Package 1	silted sand	dep	underpinning	fill of possible furrow?
44	Package 1	furrow/bedrock	natural?	underpinning	possible features in bedrock
45	Package 1	east wall of BH		Brewhouse east	east wall of Brewhouse foundation course
46	Package 1	domestic dumping	dep	Brewhouse east	same as 40
47	Package 1	natural clay		Brewhouse east	
48	Package 1	garden soil		Brewhouse east	
49	Package 1	fill of pit	fill	underpinning	under door of cartshed

50	Package 1	small pit	cut	underpinning	
51	Package 1	backfill in 52	fill	underpinning	
52	Package 1	foundation trench	cut	underpinning	cut for brewhouse
53	Package 1	Wall foundation	Masonry	underpinning	Brewhouse wall
58	Package 1	Topsoil/overburden	dep	BH Terrace	overburden east of Brewhouse
77	Package 3	Wall	Wall/bricks	Walled garden	west wall of walled garden inc. brick samples
78	Package 1	boundary wall	wall	pleasure grounds	pleasure grounds
79	Package 3	gate setting	gateway	NE bastion	settings for ironwork
98	Package 1 & 2	overburden	dep	BH Terrace 3	general overburden
99	Package 1	gatepost	cut	BH Terrace 3	cut for gatepost
100	Package 1	orange sand	dep	BH Terrace 4	capping layer?
101	Package 1	rubble and silt	dep	BH Terrace 4	rubble dumping
102	Package 1	orange sand	dep	BH Terrace 4	capping layer?
103	Package 1	rubble and silt	dep	BH Terrace 4	rubble dumping & domestic
104	Package 1	cut feature	cut	BH Terrace 4	cut containing above
105	Package 3	tree planting	dep	triangular lawn	finds recovery see 115
109	Package 1	overburden	dep	NE Brewhouse	general overburden east of Brewhouse
110	Package 1	dumping	dep	NE Brewhouse	dumping layer
111	Package 1	silt	dep	NE Brewhouse	compacted mud
112	Package 1	domestic dumping	dep	NE Brewhouse	dumping in ditch
113	Package 1	silt	dep	NE Brewhouse	silt of ditch
114	Package 1	ditch	cut	NE Brewhouse	E-W ditch see 104
115	Package 1	service trench	dep	NE Brewhouse	Mixed deposit from service trench
116	Package 1	ditch	cut	NE Brewhouse	N-S ditch at exit gate
138	Package 2	rock-cut feature	cut	BH Terrace	possible pit west of Brewhouse
139	Package 2	sandy silt	dep	BH Terrace	fill of 138
140	Package 2	rock-cut feature	cut	BH Terrace	possible pit west of Brewhouse
141	Package 2	sandy silt	dep	BH Terrace	fill of 140
142	Package 2	compacted layer	dep	BH Terrace	deposit within wall 143
143	Package 2	wall foundation	Masonry	BH Terrace	remains of structure west of Brewhouse
144	Package 2	rubble	dep	BH Terrace	demolition rubble against east side 143
145	Package 3	boundary wall	wall	exit gate	wall beneath exit
147	Package 3	northern perimeter wall and gateway	wall	north wall and gateway	perimeter wall and gateway
163	Package 1	Silt	dep	BH Terrace 4	silt in base of TP4
172	Package 1	boundary wall	wall	BH / pleasure grounds	pleasure ground wall butting BH and NE Bastion
173	Package 1	cart-shed wall	wall	cartshed	wall of cartshed – footings 37
174	Package 1	drain	drainage	cartshed	modern ceramic drain
214	Package 1	masonry	footings	cartshed	Single course of masonry

215	Package 1	deposit	Floor makeup	cartshed	Interior floor to cartshed
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APPENDIX B
ARCHITECTURAL ELEMENTS FROM THE WALLED GARDEN

Table B1: architectural fragments recorded from mound adjacent to walled garden.

No.	Type	Imperial dimensions (inches)				Metric dimensions (mm)				Comments
		H	L	W	D	H	L	W	D	
3	finial	8			27	20			69	
4	finial	7			28	18			71	
5	finial	7			22	18			56	
6	plinth	5	16	16		13	40	40		Statue or sundial
7	drain?	5½	16		5	14	40		14	Drain inlet for gutter?
8	trough	8	28	19 ½		20	71	50		Agricultural?
9	setting	10 ½	12	10		27	30	25		Door-post setting
10	setting	12	12	12		30	30	30		Door-post setting
11	panel	6 ½	17	15		17	43	38		Decorative lozenge
12	?	3	24	19	16	8	61	48		Floor flag?
13	finial?	24			10½	61			27	Broken column
14	corbel	16	28 ½	12		40	73	30		Joist support
15	String	5½	47	15 ½		14	120	39		decorated
16	String	5		14 ¾		13		38		Five blocks granite
17	String	5	26	15 ½		13	66	39		fire damaged
18	column	15½			17½	39			44	Free-standing pillar
19	column	7½			17½	19			44	Free-standing pillar
20	step	6	25	24	24	15	64	61	61	Spiral staircase
21	masonry	12	31	18	24	30	79	46	61	Octagonal tower?
36	plinth	9	29½	29½		23	75	75		Garden wall gate



3



6



4



7



9



5



10

0 50cm



11



12



14



20



19



21



APPENDIX C
CLAY TOBACCO PIPE, GLASS AND POTTERY ASSESSMENT

Charlotte Britton

INTRODUCTION

This report discusses the clay pipe, glass and pottery recovered from the 2018–20 archaeological excavations of the brewhouse and environs, Seaton Delaval Hall, Northumberland (NZ 32334 76643). A total of 240 fragments (1305g) of clay pipe and 99 fragments (5039.7g) of glass, including glass waste were recovered, all dating to the post-medieval period. In addition, 247 fragments (4354g) of pottery were recovered that dated to the medieval and post-medieval periods (Table C1).

Table C1: material by context, with count and weight.

Material Context	Clay pipe		Glass		Pottery		Total count	Total weight (g)
	count	weight (g)	count	weight (g)	count	weight (g)		
4					4	241.6	4	241.6
20	1	4	4	37.4	1	58.7	6	100.1
38	4	26	20	753.5	13	214.4	37	993.9
39	29	112	14	705.3	25	325.6	68	1142.9
40	63	377	21	552.7	65	1141.6	149	2071.3
46	2	12	2	365	2	107.1	6	484.1
49	1	5	1	113.4	1	3.8	3	122.2
58					16	288.7	16	288.7
98	37	222	15	1203.5	25	518.2	77	1943.7
101			1	4.6			1	4.6
103			1	73.3			1	73.3
105			6	30.2	1	5.2	7	35.4
109	16	83	1	162.5	56	567.2	73	812.7
115	1	2	4	567.8	6	436.1	11	1005.9
142	77	391	6	414.2	27	218.2	110	1023.4
144	9	71	3	56.3	5	227.6	17	354.9
Total	240	1305	99	5039.7	247	4354	586	10698.7

METHOD

All the assessment work undertaken as part of this report was carried out between 16th and 30th July 2020. The materials were assessed by eye and in line with the relevant standards and guidelines. In all cases, the material was organised by stratified deposit (context) and quantified by count and weight.

The clay pipe was examined in accordance with Higgins (2017). Decoration and stamp marks were also commented on where practicable. The glass, including glass waste, was recorded in line with both the national finds standards and find type specific guidance (ClfA 2020, Historic England 2018). The pottery was examined in accordance with Barclay *et al.* (2016). Forms, wares,

and date were identified where possible, and vessel type, decoration and stamps were documented where practicable.

PROVENANCE OF OBJECTS

Most of the assemblage was recovered from unstratified, topsoil, rubble, overburden or tree-planting layers around the brewhouse or grassed over mound to the north. Much of the material was recovered from mixed deposits which may have been used as infill prior to building or landscaping, suggesting the assemblages could have been wholly residual. Some material, however, including a clay pipe stem fragment (5g), a glass bottle fragment (113.4g) and a single sherd (3.8g) of slipware, was recovered from the fill of pit **49** in the brewhouse area, and therefore probably recovered from a primary deposition context. A small amount of material was found in association with the clearance of the turfed mound to the west of the walled garden. This was created by the National Trust during works to open the site to the public in 2009/10, and the material from this deposit therefore unprovenanced.

OUTLINE OF THE ASSEMBLAGE

The clay pipe

The clay pipe assemblage dated to the post-medieval period (17th–19th century) and consisted of bowl and stem fragments (Table C2). It represented a maximum of 236 individual pipes and those present ranged in condition from poor to good. The pipes all appeared to be British in origin, and most of the assemblage was probably produced within the local region, except for three that may have been produced in the London, West Country and Lincolnshire areas.

Table C2: clay pipe by context, with count and weight

Clay pipe part	Bowl		Stem		Total count	Total weight (g)
	count	weight (g)	count	weight (g)		
20			1	4	1	4
38	1	14	3	12	4	26
39	1	9	28	103	29	112
40	16	167	47	210	63	377
46			2	12	2	12
49			1	5	1	5
98	5	73	32	149	37	222
109	3	35	13	48	16	83
115			1	2	1	2
142	10	102	67	289	77	391
144	5	52	4	19	9	71
Total	41	452	199	853	240	1305

All the fragments had a fabric made from ball clay and, when present, any burnishing ranged from poor to good in condition. Although fragmentary, all the stems were straight, and the bore hole diameters ranged from 5/64 inch to 9/64 inch, indicating the assemblage dated from the 17th through to the 19th century (Higgins 2017, 8–9). Some of the fragments recovered displayed stained bores indicating the pipes had been used on multiple occasions before being disposed

of. Many of the fragments also displayed longitudinal casting seams, often evident on two sides, consistent with casting in a two-piece mould, dating them firmly post-1600AD (Ayto 1979, 19).

The bowls recovered could be separated into two broad types, all with cut rims, where present. This rim finish was common to the period and was created by a knife cut, used to detach any excess clay (Higgins 2017, 23). Type 1 was the smaller of the two, featuring an often short and narrow bowl with a bulbous middle, usually with a heel; although a couple of examples had spurs. Rim milling was also often present. Stylistically this form can be firmly to the 17th century, based on Oswald's simplified general typology (bowls 4–6 fig. 3,G; Oswald 1975, 37–40).

Type 2 was larger and often longer, with an upright angle bowl and wide rim. These examples were broad and often had spur bases, although some heels were also identified. Rim milling was also sometimes present. This type was probably slightly older in date than Type 1, dating to the late 17th–18th century, based on Oswald's simplified general typology (bowls 8–9 and 19–21 figs 3,G and 4,G; Oswald 1975, 37–41). The stem fragments recovered ranged from 5–11mm in diameter, and often displayed tapering.

Across the assemblage, decoration was limited to only a few stem fragments. The first (4g) was recovered from context **20**; the turfed mound north of the brewhouse. This showed a pattern in relief along a casting seam. Although faint, the decoration appeared to be a foliate design. The second decorated fragment (6g) was recovered from overburden **98** on the west side of the brewhouse. The stem had a crude, probably hand-applied incuse decoration in the form of diagonal traverse lines across the stem. In addition, two stem fragments (19g) recovered from compacted layer **142** displayed a small amount of red staining which may have derived from red paint, this was sometimes applied to the tip of a pipe to create an impermeable finish and stop a smoker's lips from sticking to the porous clay (Higgins 2017, 7).

Stamp marks were evident on seven of the clay pipe fragments recovered, although only three were identifiable. The other examples were extremely faint or too limited to comment on. The first example was a stamp mark created in relief, on the base of a heel of a very small bowl fragment (1g) recovered from deposit **40**; a deposit of domestic waste and debris on the east side of the brewhouse. The bowl was the smallest example in the assemblage and was very narrow with a bulbous centre and a very narrow rim. The mark read 'ESX' encompassed within a heart. Examples of this style of bowl with the same mark have previously been recovered in the south of England, and are thought to have been produced in the West Country between 1640 and 1650, firmly identifying the origin and date of this fragment (Higgins 1981, 199).

A second partial stamp mark was identified on a stem fragment (4g) from a pipe found in the same layer (**40**). Situated across the stem and applied in relief, the stamp read 'ROBER OLLING' inside an oval. This suggests the pipe was made by Robert Collington, a known 18th-century pipe maker from Lincolnshire (Oswald 1975, 181). However, as no parallels have been recognised this identification is not absolute. The final stamp recorded was on a bowl fragment (16g) recovered from rubble layer **144**; associated with the wall footings of a possible structure to the west of the brewhouse. The mark was applied in relief and was situated on the base of the heel of a small bowl fragment, with a bulbous centre and narrow rim. The stamp displayed 'IP' inside a circle. Similar examples found in London suggest the pipe may have been made by either John Preston or John Parsons during the 17th century (Museum of London).

The glass

The glass assemblage was post-medieval in date, ranging from the 18th to 20th century, and including vessel fragments, window glass, and a marble. The assemblage also included glass waste from glassmaking processes, probably brought to the site from the nearby bottleworks at Seaton Sluice, owned by the Delaval family. The assemblage represented a maximum of 1 marble, 41 vessels, two windows and 22 fragments of waste in the form of wasters, slag, trails and additional casting waste (Table C3).

Table C3: glass type by context, with count and weight

Object	Marble		Vessel		Waste		Window		Total count	Total weight (g)
Context	Count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)		
20			3	25.6	1	11.8			4	37.4
38			15	671.9	4	79.4	1	2.2	20	753.5
39			12	611.2	2	94.1			14	705.3
40			19	540.1	1	11	1	1.6	21	552.7
46			1	362.4	1	2.6			2	365
49			1	113.4					1	113.4
98	1	2.7	13	1184.4	1	16.4			15	1203.5
101			1	4.6					1	4.6
103			1	73.3					1	73.3
105					6	30.2			6	30.2
109					1	162.5			1	162.5
115			2	433	2	134.8			4	567.8
142			3	396	3	18.2			6	414.2
144			3	56.3					3	56.3
Total	1	2.7	74	4472.2	22	561	2	3.8	99	5039.7

The single marble (2.7g) was recovered from the overburden (**98**) on the west side of the brewhouse. It was small, opaque-white and probably dated to the 20th century.

The window glass

Two sherds (3.8g) of window glass dating to 19th–20th century, were recovered from topsoil **38** and dumping layer **40** on the west side of the brewhouse. Both sherds were transparent and probably made from soda-lime-silica plate glass, common to the period (Historic England 2018, 50). The sherds were of different thickness and one sherd had a slight aqua-marine hue, whereas the other was clear, suggesting the sherds probably derived from two separate windows.

The vessel glass

A total of 74 sherds (4472.2g) of vessel glass were recovered, dating from the late 17th to 20th century. The assemblage represented a maximum of 41 individual vessels and the glass ranged from poor to very good in condition. Most of the assemblage was British in origin and probably produced within the local region, with some likely manufactured at bottleworks located near the site (see below). Vessel types included wine and beer bottles along with two bowls, a possible plate, a small medicine/perfume bottle and various unidentifiable vessels (Table C4).

The 59 fragments (4352.7g) of wine/beer bottles recovered represented 30 individual vessels dating to 18th–20th century. Most of the fragments were dark green to black in colour, transparent and often displayed seams indicating they were machine-made. Their appearance was consistent with vessels made from HLLA (high-lime low-alkali) glass, typical of the post-medieval period (Historic England 2018, 45, 48 and 65). Base fragments always displayed a high punt, and rim fragments usually had an applied lip, often with a collar below. The bottle sizes were largely consistent, with a few of the larger examples possibly deriving from champagne-type vessels or similar. Lighter green fragments were usually from smaller bottles and were likely beer bottles dating to the 20th century.

Four clear, transparent fragments were also recovered dating to the 20th century. A base fragment (39.5g) which was squared in shape, had 'ALL' embossed on the sidewall. This related to either the manufacturer or contents of the bottle but could not be fully identified. Another clear rim fragment showed an etched diamond and likely came from a Tizer bottle or similar. A single complete clear transparent bottle (312g) with a 20th-century lip and rim was also present in the assemblage (Fletcher 1972, 54-56). This had 'JAS DEUCHAR LTD' embossed around the base associated with James Deuchar LTD brewers, located in Sunderland. This was 20th century in date (Archives Hub). A second complete, transparent bottle dating to the 20th century was recovered, that had a lip and rolled rim. It was machine made, evident by a seam, and had space for a label under the shoulder suggesting a Coke bottle, or similar.

A single fragment (4.2g) of a small medicine or perfume bottle was recovered from layer **39**; a mixed consolidation deposit on the west side of the brewhouse. The fragment was aqua-marine in colour, transparent and probably dated to 19th–20th century. In addition, two fragments (45.4g) of glass bowls were recovered from overburden **98** and layer **142**, also on the west side of the brewhouse, that may have originated from a single vessel. The fragments were clear, had an applied linear design on the external surface and probably dated to 20th century. Three fragments (12.9g) of dark blue transparent plate glass were recovered from topsoil **38** and possibly came from a plate or similar item. Finally, the remaining two vessel fragments (5.8g) were heavily delaminated and a form could not be identified.

The glass waste

A total of 22 fragments (561g) of glass waste was recovered from the site dating to the late 18th-20th century. Mostly recovered from the brewhouse area, the waste consisted of slag, trails, wasters and other possible casting waste that probably came from glass working processes taking place near the site, during the period (Table C5).

Five waster fragments (222.3g) were recovered, that derived from five separate vessels. Wasters are failed products that have been subject to firing failures displaying faults, and so cannot be used (Historic England 2018, 66). The examples recovered were usually misshapen, light to dark blue or cream in colour, usually opaque and sometimes displayed iron staining. The discolouration and alteration in shape probably derived from intense heat, and the colours identified indicated that the wasters consisted of altered HLLA glass, the same material many of the wine/beer bottles recovered were probably made from (Historic England 2018, 29). It was therefore probable that the wasters were originally intended to create green vessels such as the finished wine/beer bottles recovered.

Glass slag was recovered from layers **39** and **105**; both very mixed deposits. It consisted of blue opaque fragments, that were often vitrified with bubbly surfaces. The colours present (opaque light to dark blue and cream) indicated these fragments also represented overfired HLLA glass (Historic England 2018, 29). A single fragment (12.3g) of a glass trail was also recovered from

layer 142, on the west side of the brewhouse. The fragment was opaque and red-brown in colour and was also possibly discoloured by extreme heat. Additional waste in the form of 13 glass lumps (227g) were recovered from multiple contexts across the brewhouse area, as well as a single fragment (11.8g) recovered from the area north of the brewhouse. These ranged from blue, green, cream to clear in colour, were misshapen and probably represented additional waste from the glass making processes taking place near the site.

The pottery

The pottery assemblage dated to the medieval (11th–14th century) and post-medieval (18th–20th century) periods and was classified as domestic ware, including a plant pot. The assemblage represented a maximum of 152 individual vessels and the material recovered ranged from poor to very good in condition (Table C6).

The medieval pottery

A total of seven sherds (506g) of medieval pottery was recovered that dated to between 11th and 14th centuries. The assemblage represented a maximum of three separate vessels and the material recovered was in very good condition. The material present was British in origin and was mostly likely produced within the local region, except for three sherds belonging to a single vessel that maybe a regional import. The wares identified were highly typical of the period and area, and comprised largely utilitarian wares, solely in the form of jugs.

The locally produced wares were splashed ware and reduced green ware. The former had a gritty-sandy fabric with a reduced core and interior margin, and a buff-oxidised surface, with signs of a green splashed glaze evident on both the interior and exterior surfaces. Probably dating to 11th–13th century, it was similar to oxidised gritty ware examples previously recovered in the Northumberland area and so may have originated from the same production centres (McCarthy & Brooks 1988, 224). The fragments of reduced green ware recovered had a sandy-gritty fabric, with a dark grey core and thin light grey margins.

The three fragments of a green glazed jug belonged to a single vessel were recovered from a tree pit in the service trench north of the brewhouse (115). This displayed a characteristic green glaze on both the interior and exterior surfaces and probably dated to 13th–14th century (Plate C.1). The base fragment indicated the vessel had a pedestal base, and the handle scar on a body fragment may have come from a strap handle. This suggested that the vessel was perhaps a baluster style jug; a common medieval form (Medieval Pottery Research Group 1998,14). The fabric and form were similar to other examples recovered in the local area, suggesting it was also probably locally produced (McCarthy and Brooks 1988, 224–226).

The medieval assemblage also included three sherds (140.1g) of a possible York glazed ware vessel, that had a hard-buff sandy fabric with a light grey core. The sherds displayed a yellow and green glaze that was speckled with brown. A possible eye or similar protruding decorative feature was evident below the rim suggesting an anthropomorphic or decorated jug, consistent with the ware (Jennings 1992, 18–21; McCarthy and Brooks 1988, 234). York-glazed ware was produced in the Yorkshire region between 12th–13th century and were typical examples of regional imports into the North-East (McCarthy and Brooks 1988, 225).



Plate C.1: baluster style jug from context 115.

The post-medieval pottery

A total of 240 sherds (3848g) of post-medieval pottery were recovered that dated to between 18th and 20th centuries. The assemblage represented a maximum of 149 separate vessels and the material recovered ranged from poor to very good in condition. All the pottery present was British in origin, and mostly produced within the local region except for a transfer-printed vessel produced in the south of England, and fragments of stoneware vessels possibly from Germany. The wares identified were highly typical of the period and encompassed utilitarian and table wares including flatwares such as plates, platters and saucers, and hollow wares such as bottles, bowls, cups, dishes, jars, jugs, mugs, a possible cistern and a plant pot.

The decorations and surface treatments identified were typical of the periods and wares, and included yellow and brown glazes and slips, and common blue transfer-printed patterns such as Willow pattern, Asiatic Pheasant pattern, Wild Rose pattern and Albion pattern as well as other floral and foliate designs. Also included was a large amount of stoneware deriving from bottles, jars and jugs, mostly brown salt-glazed examples. Of note were four sherds (233.3g) of probable Bellarmine jars coming from four separate vessels. These were recovered from domestic dumping deposits **40** and **46** in the brewhouse area. A single sherd (31.3g) displayed a characteristic heart and cross, within a rope circle design. Bellarmine jar copies originated in Germany and some or all of the vessels found at Seaton may have been imported, although the jars were also being produced in Britain from the late 17th century onwards (Laing 2014, 114). In addition, two sherds (10.4g) belonging to a single stoneware vessel were recovered from compacted layer **142**, on the west side of the brewhouse, displayed decorative concentric circles in a bright cobalt blue. These may be from a Westerwald-type vessel, which were also imported from Germany during the 17th century and were relatively common. Again, copies were produced in Britain throughout the 17th-18th century (Laing 2014, 114). Unfortunately, due to the fragmentary nature of the material it was impossible to ascertain if the sherds were international imports or local copies.

Only a single identifiable stamp formed part of the assemblage, recovered from service trench **115** to the north of the brewhouse. The base sherd was from a transfer-printed jar and displayed 'ABOR AND WA... LONGTON' over a bundle of wheat. This vessel was probably produced in one of the many potteries operating in Longton, Staffordshire during the 19th–20th century (The Potteries 2016).

More recent elements included a fragment of a late 20th century Mason Cash style mixing bowl (35.8g) that displayed the characteristic beige design, and a fragment (5.6g) of a transfer-printed mug. A red motif on the latter showed the letters Y.M.C.A in a banner surrounded by an upside-down triangle. A single fragment (58.7g) of a plant pot was recovered from the turfed mound adjacent to the walled garden (context **20**). This had a wonky rim. Finally, five sherds of earthenware and whiteware were recovered from across the brewhouse area showing evidence of iron staining and vitrification. These appeared to have been overfired and may have constituted wasters.

DISCUSSION

The clay pipe

Most of the clay pipe was recovered from unstratified contexts, which limits the value of the assemblage in terms of dating the sequence of development surrounding the brewhouse. Nevertheless, they can still tell us something about the people that inhabited the site. Clay pipes were generally disposable items, often used only a few times before being thrown away and therefore their potential for dating a context is high, although accessing this potential relies on

being able to date the pipe accurately (Pearce 2015, 286). This is usually dependent on the presence of complete bowls in an assemblage to compare against the typology. Two broad bowl types were identified at Seaton Delaval. These could be dated stylistically as falling into two main periods; those dating firmly to the 17th century and those dating a little later, between 17th and 18th century.

The bore size and stem size can also be a helpful indicator of age and data, and those collated from this assemblage dated predominately between the 17th and 18th century, with a few examples possibly dating to the early 19th century. This suggests there was some activity in and around the brewhouse from the 17th century onwards, although given it was recovered from mixed dumping deposits, a significant proportion of the assemblage could be residual and brought in from elsewhere on the estate or even further afield.

Provenance can sometimes be established through decoration or a known maker's mark. Certain producers were also known to have been operating at certain times, helping to date the pipes. Three different maker's marks were identified from the brewhouse assemblage. The earliest can be securely dated to between 1640 and 1650 and originated from the West Country. A second stamped bowl, recovered from same deposit, was probably produced in Lincolnshire (Oswald 1975, 181). Both were from a deposit of domestic waste and debris on the east side of the brewhouse. The third pipe, which was likely produced in London, came from a more reliable deposit on the west side of the building (context 144), associated with the vestigial remains of a stone structure. The pipe can be tentatively dated to the 17th century, which may indicate that the associated structure was of a similar date, although again a secure provenance could not be established.

The distance travelled by the pipes from the point of origin suggests that these three examples were more expensive than the locally produced disposal pipes, and may have belonged to the Delaval family or their guests rather than servants or workers on the estate (R Cubitt pers. comm.). Other fragments recovered showed indication of well-applied burnishing, indicating the pipes were well finished and of a high quality. Although very little can be deduced categorically from such a small, unprovenanced sample, it does hint at the breadth of Delaval social network in the 17th and 18th centuries.

However, the majority of the pipes recovered from the brewhouse area were common in style and likely cheaper examples of the time used by servants or workers on site. Evidence of decoration was sparse and where it occurred was quite rudimentary and simple in form, including possible red tip-painting, a foliate design and simple incised lines. Moreover, when present, rim finishing were always cut, which is the simplest and easiest method of finishing (Higgins 2017, 23).

The glass

The glass assemblage dated to the 18th–20th century and included a marble, vessel and window glass, and evidence of glassmaking waste. Most of the material was recovered from unstratified deposits.

The window glass

The window glass assemblage recovered from the brewhouse area was limited and could tell us very little beyond the fact that building was present in the area during the 19th–20th century. The fragments probably originated from a building located on site, most likely the brewhouse, as it

was likely the only glazed structure at this time. The cartshed and stable were probably shuttered, although this cannot be established with any certainty.

The vessel and waste glass

Many of the glass vessels recovered were connected to drink storage and consumption, indicating they were related to domestic occupation during the 18th–20th centuries. The bottles produced off-site were transported to Seaton Delaval for the purpose of consumption, either by occupants of the hall or others working or living on the estate. One of the complete bottles recovered was from the brewing company James Deuchar LTD located in Sunderland. Although situated only c.20 miles south of the site at Seaton Delaval, this could be an example of one of the local suppliers to the hall, or else the bottle may have been brought by one of the many visitors to the site under the Astleys.

Most of the vessels in the assemblage were dark green wine and/or beer bottles recovered from the brewhouse area. Some of the bottles may have been produced at the nearby Royal Hartley Bottleworks, located at just over a mile away at Seaton Sluice. This production centre was established in 1763 by Sir Francis Delaval and in operation during the 18th and early 19th century, employing many local people and producing over one million bottles a year (Seaton Sluice and Old Hartley Local History Society). The majority of the bottles were shipped from the harbour around the UK and Europe but some were probably conveyed to the hall for domestic use. The size of the brewhouse indicates that it was producing beer for consumption on the estate rather than export. This was probably conveyed to the hall in barrels, to be stored in the cellar, with smaller amounts transported in stoneware jug. However, some of the beer may have been bottled for the consumption of the family during trips around the country.

Beer is known to have been bottled from the early 17th century, although one of the primary problems was that hand-blown glass bottles could not withstand the pressure of CO₂ from the continued fermentation. However, in 1634 there are references in the accounts of the Cecil family, earls of Salisbury, to the consumption of strong bottled beer when they came to London. This was probably bottled in the estate brewhouse and transported along with the other goods to the capital. The brewhouses of both Wheatley Hall, Doncaster (1683) and Holkham Hall in Norfolk (1671) had bottling rooms attached, and the Earl of Bedford's household accounts makes reference to the purchase of bottled beer from a brewer near the family seat at Woburn (Cornell 2021). However, bottled beer remained a luxury until the mid 19th century. Therefore, while some of the vessel glass at Seaton could conceivably relate direct to the activity of the brewhouse, most were probably exported onto the site, and re-deposited at the site as domestic waste from the hall.

The glass waste recovered from the brewhouse area likely originated from glass making activities taking place at the Sluice. The slag, trails, wasters and other possible casting waste recovered were of the same HLLA glass as the finished green wine/beer bottles. This may have been brought onto the site as aggregate for building or trackway foundations, although a larger amount may therefore have been anticipated (R. Cubitt pers. comm.). Alternatively the wasters simply arrived with a batch of vessels, being subsequently discarded by the brewhouse as not fit for filling. There was no indication that the waste material was being used for a specific purpose in its own right. Another possibility is that it relates to the market garden, and was used to provide aggregate for plant pot drainage. It is notable that although casting waste was recovered, no tank waste or larger infrastructure was recorded, although whether this was due to absence or lack of recovery is unknown.

Table C4: glass vessel type by context, with count and weight

Object	Bowl		Medicine/Perfume bottle?		Unknown		Wine/Beer bottle		Wine/Beer bottle?		Total count	Total weight (g)
Context	count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)		
20							3	25.6			3	25.6
38					3	12.9	12	659			15	671.9
39			1	4.2	2	4.2	9	602.8			12	611.2
40					1	1	17	531.6	1	7.5	19	540.1
46							1	362.4			1	362.4
49							1	113.4			1	113.4
98	1	18.2			1	4.8	9	1134.1	2	27.3	13	1184.4
101							1	4.6			1	4.6
103							1	73.3			1	73.3
115							2	433			2	433
142	1	27.2					2	368.8			3	396
144							1	44.1	2	12.2	3	56.3
Total	2	45.4	1	4.2	7	22.9	59	4352.7	5	47	74	4472.2

Table C5: glass waste type by context, with count and weight

waste type	Slag		Slag?		Trail/Pull		Waste		Waster		Waster?		Total count	Total weight (g)
Context	count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)		
20							1	11.8					1	11.8
38							3	75.3	1	4.1			4	79.4
39	1	93.1	1	1									2	94.1
40									1	11			1	11
46							1	2.6					1	2.6
98							1	16.4					1	16.4
105	1	5.3					5	24.9					6	30.2
109											1	162.5	1	162.5
115							1	95.2	1	39.6			2	134.8
142					1	12.3	1	0.8			1	5.1	3	18.2
Total	2	98.4	1	1	1	12.3	13	227	3	54.7	2	167.6	22	561

The pottery

The medieval pottery

The wares and forms present within the medieval pottery assemblage were predominantly utilitarian wares that were highly typical of a domestic medieval settlement in the north east. As the material was limited and a lot of it was recovered from unstratified contexts, it had very low potential to tell us about the people that inhabited the site during the period, and its significance to pot studies beyond this site is low. The assemblage dated between the 11th and 14th centuries and likely derived from a domestic community, probably connected to the manorial residence and associated village.

With the exception of the York glazed ware, the assemblage probably originated from production sites in the immediate or adjacent area. The three fragments of a green glazed bowl baluster style jug were recovered from the service trench to the north of the brewhouse, which although interesting, was a fairly common medieval form and similar to other examples recovered in the local area.

The presence of York glazed ware, although a small component of the assemblage, does suggest a degree of trade and interaction with the Yorkshire area. This may have been facilitated by the proximity of the site to the sea, with material coming into the area via the small natural harbour at Seaton Sluice.

The forms present were utilitarian in nature solely encompassing jugs, being used for the storage and preparation of foodstuffs. The decoration was characteristic of the medieval period, including green, yellow and splashed glazes and possible thumbing decoration on the York glazed ware. The lack of more elaborate decoration intimated that the community the assemblage derived from was probably domestic, rural and of simple means.

The post-medieval pottery

The post-medieval pottery assemblage comprised largely table and utilitarian wares associated with a domestic occupation on or around the site during the 18th–20th century, such as the estate village of Seaton, or the hall. Only a small amount of material predating this was recovered, consisting of fragments of stoneware dating to the 17th – 18th century.

The table wares in the assemblage included slipwares, transfer-printed wares and decorated earthenwares, including those with tin-glazed designs. The decoration on the slipwares included brown and yellow mottled application, feathering, jewellery and trailing designs, whereas the tin-glazed earthenware displayed hand-painted blue and yellow floral designs. Although elaborate, these designs were characteristic of the wares and common from the 18th century onwards as a result of the increase in demand for table wares that were both practical and appealing (Dawson 1997,200).

Unfortunately, as most of the assemblage was residual it had very low potential to tell us about the people that inhabited the site during the post-medieval period, beyond that there was domestic activity in the area. The exception was a single fragment of a 19th-20th century plant pot, recovered in the area north of the brewhouse, which perhaps relates to the commercial market garden. Both the table and utilitarian wares were mass-produced and widely available throughout the 18th-20th century period. This suggests the assemblage was intended for use by inhabitants of the village, workers and servants rather than the family and guests at the hall where

more elaborate table wares would be anticipated. Most of the assemblage likely originated from local production centres apart from the mug recovered from trench 115. This was produced in Staffordshire. This, together with the possible German produced vessels, could have also been transported into the area via ships docking at Seaton Sluice harbour. However, copies of the Bellarmine and Westerwald-type wares are known to have been produced Britain during the 17th–18th centuries, so these may not necessarily represent international imports but could have been produced locally.

Finally, the wasters found within the assemblage could have arrived mixed in with a batch of transported pottery. Alternatively, the presence of five examples on the site could infer that a pottery production site was located close by during the post-medieval period, producing wares for local domestic consumption.

Conclusion

The large assemblage described here contains several items that can be closely dated as well as those indicative of particular activities taking place at the site. Domestic food and drink consumption, leisure (marble and smoking), gardening (the plant pot), and possible beer bottling. Although the finds recovered were largely unstratified, the closely dated finds, in particular the clay pipe and glass, suggested activity on the site from the 17th century onwards.

It is also interesting to consider what is missing from the assemblage. There appears to be no direct evidence of the brewing process, except for the possible beer bottling; although this link is somewhat tenuous. Much of the brewery equipment – brass pots, pestle and mortar, heating pans and skimming utensils – were presumably valuable and utilised elsewhere. However, some of the assemblage may be from storage vessels relating to the process, although difficult to determine without residual analysis, which given the provenance of the material was not warranted. More surprisingly, perhaps, there was little evidence relating to the use of the site as a market garden. This might suggest it served a more operational/administrative function with horticultural activities focused within the walled garden itself. However, the mixed nature of the deposits, and amount of domestic debris found on both sides of the brewhouse complex indicates a considerable of disturbance on the site during the latter half of the 19th or early 20th century.

RECOMMENDATIONS

All the clay pipe, glass and pottery recovered dated from 11th–14th century, 17th–20th century and modern period ranged from poor to very good in condition. The assemblages recovered were highly typical of the period and were retrieved from unstratified contexts, therefore, no further study is recommended. The entire assemblages, however, should be retained and deposited with the estate archive. Some elements from each material assemblage (specifically including pipes with identifiable makers' marks) could be extracted for display and educational purposes.

Table C6: pottery by context, with count and weight

Period	Medieval		Post-medieval		Total count	Total weight (g)
Context	count	weight (g)	count	weight (g)		
4			4	241.6	4	241.6
20			1	58.7	1	58.7
38			13	214.4	13	214.4
39			25	325.6	25	325.6
40	1	5.9	64	1135.7	65	1141.6
46			2	107.1	2	107.1
49			1	3.8	1	3.8
58			16	288.7	16	288.7
98			25	518.2	25	518.2
105			1	5.2	1	5.2
109			56	567.2	56	567.2
115	3	360	3	76.1	6	436.1
142			27	218.2	27	218.2
144	3	140.1	2	87.5	5	227.6
Total	7	506	240	3848	247	4354

Table C7: pottery by context, with wares, period count and weight

Context		4		20		38		39		40		46		49	
Ware	Period	count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)
Brownware?	18th-19th century									1	21.7				
Earthenware - Red	18th-19th century					2	55.6	5	157	3	46.2				
Earthenware - White	18th-20th century	4	241.6							11	92.7				
Edged ware	19th-20th century														
Horticultural ware	19th-20th century			1	58.7										
Reduced green ware	13th-14th century														
Slipware	18th century					1	5.8	2	11.9	26	541.2				
Slipware - Iron mottled	18th century							1	37	10	209.3			1	3.8
Slipware?	18th century														
Splashed ware	11th-13th century									1	5.9				
Stoneware	17th-18th century					1	79.6	2	27.4	5	162.9	2	107.1		
Transfer printed ware	19th-20th century														
Whiteware	19th-20th century					4	30.8	10	72	8	61.7				
Whiteware - Painted	19th-20th century					5	42.6	5	20.3						
Whiteware?	19th-20th century														
Yellow glazed earthenware	18th-19th century														
York glazed ware?	12th-13th century														
Total		4	241.6	1	58.7	13	214.4	25	325.6	65	1141.6	2	107.1	1	3.8

Table C7: pottery by context, with wares, period count and weight (continued)

context		58		98		105		109		115		142		144	
Ware	Period	count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)	count	weight (g)
Brownware?	18th-19th century														
Earthenware - Red	18th-19th century	1	54.3	2	8.8									1	32
Earthenware - White	18th-20th century	1	35.8	3	249.8	1	5.2								
Edged ware	19th-20th century	1	15.4							1	6.4				
Horticultural ware	19th-20th century														
Reduced green ware	13th-14th century									3	360				
Slipware	18th century			4	60			2	41			9	100.5		
Slipware - Iron mottled	18th century														
Slipware?	18th century			1	10.1										
Splashed ware	11th-13th century														
Stoneware	17th-18th century	2	55.8	3	98.9			1	14.2			2	10.4	1	55.5
Transfer printed ware	19th-20th century	7	75.9	3	26.2			40	398.2	1	55.3	2	15.9		
Whiteware	19th-20th century	3	42.7	3	22.5			10	105			7	61.1		
Whiteware - Painted	19th-20th century			6	41.9			2	3.5	1	14.4	7	30.3		
Whiteware?	19th-20th century							1	5.3						
Yellow glazed earthenware	18th-19th century	1	8.8												
York glazed ware?	12th-13th century													3	140.1
Total		16	288.7	25	518.2	1	5.2	56	567.2	6	436.1	27	218.2	5	227.6

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APPENDIX D
THE SMALL FINDS
Julie Shoemark

INTRODUCTION

A total of 25 artefacts were recovered during the course of archaeological monitoring carried out during groundworks and historic building renovation.

Three of the artefacts were copper-alloy, three were lead or lead-alloy and 18 were of iron. A single nodule of fire-cracked flint was recovered from domestic dumping deposit **40**. Fire cracking may result from deliberate heating or by incidental exposure through proximity to a source of intense heat. There is no evidence of the flint having been worked, and the nodule is somewhat small to be a pot boiler. It is therefore considered to have been accidentally burnt and is not discussed further in this report.

METHOD

The finds were assessed by eye on the 20th August and 11th September 2020. X-rays of ferrous objects and copper-alloy objects, including the coin, were examined in order to enable more accurate identification. The assemblage was organised by material, quantified by count and weight and was then assigned a functional group after the method of Crummy (1983). Coins were identified where possible and catalogued using Spink (2006). The assemblage was then considered in terms of its stratigraphic relationships. All dateable finds were ascribed a post medieval date and it is likely that those which were not typologically dateable were also of post medieval or modern date. Finds are presented by broad period (where dating is possible) and then by functional group.

PROVENANCE OF OBJECTS

The majority of objects (10; 40%) were recovered from underpinning dumping layer **40**. Four finds were recovered from underpinning topsoil **38** and five were recovered from overburden **98** Brewhouse terrace 3, each context representing 20% of the assemblage. Two objects came from underpinning layer **39**, one from rubble layer **101** BH terrace 4 and one from rubble layer **144** BH terrace.

OUTLINE OF THE ASSEMBLAGE

Coinage (one object)

A single heavily corroded coin (RF17) was recovered from layer **39**. A faint trace of lettering around the circumference is visible on X-ray K20/162 around what appears to be a crowned bust, the direction in which it is facing is uncertain as the image is indistinct. The regularity of the flan might suggest a milled, rather than struck coin, however, any such identification must be tentative given the X-ray is unclear, and it may just be an unusually regular hammered example. There is no trace of the reverse type visible on the X-ray which would have aided identification. Conservation and further research is required before anything more than a tentative assessment can be made.

Despite the proximity of Seaton Delaval to the coast it is unlikely the coin is continental in origin; although the possibility cannot be completely ruled out. Continental coins with bust facing were not common on the continent during the 16th/17th century and very few examples have been found in England. Similarly, although a Scottish denomination would perhaps be more likely, bust facing portraits were phased out by the 16th century. However, conservation and further research is required before anything more than a tentative assessment can be made.



Plate D.1: coin RF17 recovered from context 39, beneath the brewhouse building (1cm scale).

Objects of personal adornment or dress (one object)

An incomplete copper-alloy button (RF22) was recovered from rubble layer **144**. It exhibits a longitudinal break along one edge and approximately one third of the circumference is missing. It has a flat front and bevelled edges. The reverse is slightly dished with the base of the integrally cast shank projecting from the centre. Two stubs of the loop remain, each terminating in a worn break.

Toilet, surgical or pharmaceutical instruments (one object)

An incomplete double-sided simple bone comb of Ashby's (2011) Type 14b was recovered from domestic dumping layer **40**. It is of one-piece construction and retains one rectangular terminal with rounded edges. The central rib terminates in an old break and has the stubs of teeth

projecting from both sides: one side exhibits coarse, widely spaced teeth, the other fine teeth. No decoration is visible.

Combs of this form are often referred to as nit combs. They are generally dated from the 14th century onwards and became more common from the 16th century (*ibid.*). Similar medieval examples are discussed by Egan and Pritchard (2018, 371–372, nos. 1726–1728), however, for this example a post-medieval date remains more likely.

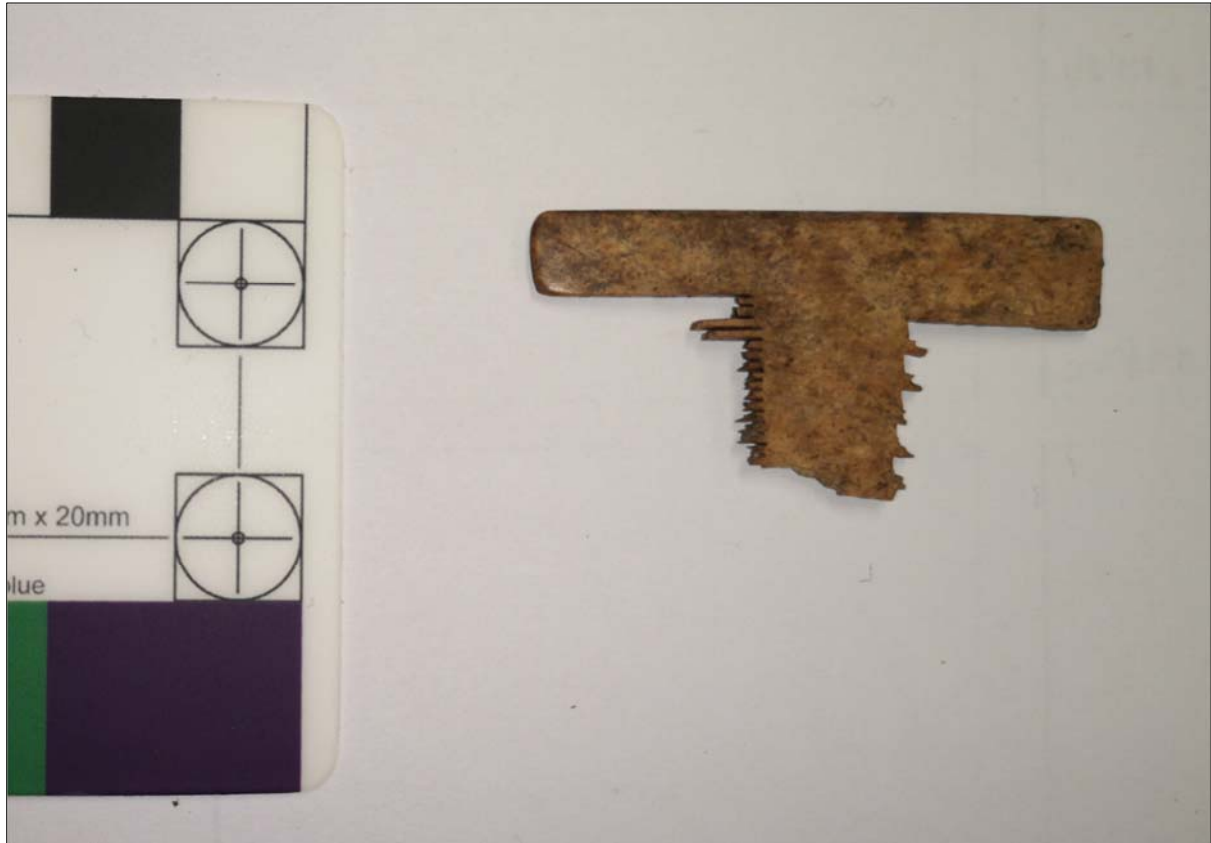


Plate D.2: fragment of bone comb recovered from context 40 (1cm scale)

Fasteners and fittings (14 objects)

Ten iron nails were recovered from the brewhouse, of which five came from domestic dumping layer 40. The remaining three nails were from layer 39, overburden 98 and rubble layer 101. All nails were heavily corroded and had long, tapering square-sectioned shanks. Where discernible the heads were flat and circular. Surviving lengths were between 30.1mm and 96.9mm. All are probably structural nails.

An incomplete iron object (RF3), probably a strap hinge from a door or piece of furniture, was recovered from topsoil 38. The object has an old break at the expanded end; X-ray K20/164 shows a transverse crack. The bar tapers in width and thickness from the break point before flaring into an expanded oval terminal with a central perforation. No other attachment points are visible on the X-ray. The shape is similar to strap hinges discussed by Hall (1994, 22, nos 1604–1740), with the notable exception that these all exhibit multiple attachment positioned along their length.

Two incomplete iron composite objects (RF4), thought to be drainpipe brackets, were recovered from domestic dumping layer 40. One comprises three elements: an iron rod (a) with a cylindrical

terminal attached with a rivet to a central tapering element (b). The rivet passes through the central element and holds the third element, a curving iron band (c), in place. The rod is waisted behind the cylindrical terminal and bends at a right angle before bending at a second right angle in the opposite direction and ending in a flattened terminal. The flattened terminal is attached to the central element with a large iron rivet which passes through the central element and is attached to the curved iron band on the opposite side. The central terminal is wide at the centre and tapers to one circular terminal and one narrowed, square-sectioned terminal. The curved iron band terminates in an old break at either end. The second object comprises the central element and a fragment of the curved iron band; the latter bent out of shape and terminating in an old break at either end. These are thought to be drainpipe brackets, although no direct parallel could be found.

A lead-alloy downpipe bracket was found in overburden **98**. The object has trifoliate terminals, each with a central countersunk perforation, at either end of a central bar bent at right angles to accommodate a square downpipe. All edges are chamfered. The undersides of the terminals are flat and exhibit traces of file marks.

Objects associated with agriculture, horticulture and animal husbandry (one object)

A large iron horseshoe (RF11) came from overburden **98**. It exhibits large calkins on both heels, a toe clip at the tip and possible fullering on each branch, although this is obscured by corrosion product. At least four nail holes are visible on each branch, although obscured due to corrosion. The form is similar to the early 19th to 20th century 'Wood Street type' (Sparkes 1976, 25).

Objects associated with metalworking (two objects)

A cut strip of sheet lead was found in topsoil **38**. It exhibits an old break at one end and expands in width from the break towards the centre before tapering to a curled terminal. It is not possible to say if this was deliberate. An irregularly shaped piece of sheet lead, folded over on one edge, was found in overburden **98**. All edges exhibit irregular cut marks. One face has three parallel cut marks. Both objects are likely to be offcuts from repairs or manufacturing.

Unidentified objects (five objects)

An incomplete cylindrical copper-alloy object (RF16) was recovered from topsoil **38**. It is broken lengthwise and missing approximately 1/3 of the circumference. It exhibits a series of regular circular perforations arranged in rows of four and running to approximately half-way along the surviving length. Five rows of perforations remain. The outer surface exhibits longitudinal striations across the entire surface. The object appears to be machine made, but the author could not find parallels for it.

A fragment of iron with old breaks at either end (RF8) was recovered from dumping layer **40**. The object is oval-sectioned at one end and rectangular at the other. No additional details are visible on the X-ray.

Also recovered from dumping layer **40** was a rectangular length of iron (RF7) with no identifiable features visible and an incomplete tapering iron object (also RF7) which bears some resemblance to the central elements of RF4. X-ray K20/163 shows a break point at the wide end which cuts across a circular perforation (now incomplete).

A heavily corroded iron sphere (RF6) which had become stuck to a large fragment of rock was recovered from domestic dumping layer **40**. Part of the crust of corrosion had flaked off in places,

revealing the intact core. The sphere is 65mm in diameter (c.51.3mm excluding corrosion product). Its combined weight with the stone it adheres to is 1358g, rendering it too light for a cannonball of equivalent size (for example a demi-culverin) and suggests that the ball may be hollow, although it appears solid on the X-ray. It is possible that it may be part of a decorative architectural element, although no visible attachment points remain to suggest this.

DISCUSSION

The assemblage from the brewhouse, Seaton Delaval Hall, largely comprises architectural elements such as drainpipe brackets (RF4 and the bracket from **98**), nails and strap hinge RF3. Nails were the most common find. All had square shanks and, where visible, flat, circular heads. Given that other parts of the building are still extant and all are of a post-medieval or modern date, this assemblage has low potential to add to our understanding of the built structures at Seaton Delaval.

The coin from layer **39** (RF17) has the potential to be earlier, possibly medieval, in date although further cleaning and conservation is required to establish this. There is evidence for medieval activity in the form of a manor and village in this area prior to the construction of the current hall, including seven sherds of medieval pottery from the current excavations (Appendix C). The coin, therefore, appears to be the most significant artefact in terms of its potential to enhance our understanding of the history of the site.

The second-largest group was unidentified objects which chiefly comprised objects which were too fragmentary and/or too heavily corroded to retain diagnostic traits. All finds were recovered from rubble, dumping deposits or topsoil. These objects may have been discarded due to damage from one of the two episodes of fire damage, or as part of one or more phases of refurbishment of one of the buildings. The spherical iron object adhering to a piece of stone (RF6) is too light to have been a cannonball and is most likely to have been a ball final, possibly associated with the gate pier into the walled garden. These artefacts are considered to have low potential to contribute to understanding of the history of the site.

The two fragments of lead scrap are probably from an episode of building or refurbishment. Lead was commonly used for a wide variety of purposes, including in architectural fixtures and fittings and lead scraps and offcuts are frequent finds in the archaeological record. Lead vats were also used in the brewing process, so could also relate to this, although this is difficult to determine. The material is considered to be of low potential for further research.

RECOMMENDATIONS

The horseshoe (RF11), downpipe bracket (no RF no.) and strap hinge (RF3) may be considered suitable for display as they are all identifiable objects and are both reasonably visually appealing and provide opportunities to discuss aspects of the property and its occupants.

The coin from layer **39** (RF17) would benefit from cleaning and conservation in order to aid more accurate identification and dating. Depending upon the outcome of cleaning and conservation work it may also have potential for display.

Similarly, the spherical iron object may benefit from being separated from the rock it is currently adhering to if this can be achieved without major damage to the object, in order to better assess weight and possible function.

The nails, unidentifiable iron objects and lead offcuts cannot provide any further information. It is recommended that they be discarded as they have low potential for further research.

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APPENDIX E
BUILDING MATERIALS

Chrystal M. L. Antink

INTRODUCTION

This report discusses the ceramic building materials (CBM), mortar, and decorative ceramics and concrete recovered from the 2018–20 archaeological excavations at the brewhouse, Seaton Delaval Hall, Northumberland. A total of 33 fragments (34,116g) of CBM (brick, tile, and possible tile) were recovered, as well as three fragments (978g) of decorative architectural ceramics, one fragment of mortar (34g), three fragments (364g) of possible sanitary ware, and four fragments (241g) of unidentified material.

METHOD

Materials other than CBM were recorded in a Microsoft Access by count and weight, complete remaining measurements, and were described in the comments.

The CBM was examined between 14th and 27th July 2020 following the Minimum Standards for Recovery, Curation, Analysis, and Publication for Ceramic Building Material (Archaeological Ceramic Building Materials Group 2002). Fragments were recorded in a Microsoft Access database following McComish (2012, 122) by count, weight, form, and surviving complete dimensions. Any unusual firing characteristics, stamps, and external effects were noted.

The CBM deemed to be most likely to be dateable were selected for recovery by the experienced excavator on site, as retrieving 100% of the more fragmentary material would have proved physically burdensome and not provided data useful here (A. Durkin *pers. comm.*).

Brick manufacture dates were estimated with comparison to historic measurements provided in Davey (1961), McComish (2015), and the PAYE conservation document 'Dating historic brickwork' using all surviving complete dimensions. As some bricks were incomplete, a broader date range has been recorded using the dimensions available.

Those fragments that could not readily be assigned a form ('Unidentified') but were deemed not to be another identifiable material, pottery for example, have been described as completely as possible in the database.

PROVENANCE OF OBJECTS

Apart from three bricks retrieved *in-situ* during the dismantling of the north section of the west wall of the walled garden, all building materials were recovered from mixed deposits of dumping, rubble, backfill, topsoil, overburden, and layers under footings.

Table E1: material by context, with count and weight

Context	Brick		Decorative architectural ceramic		Decorative concrete fish		Mortar		Sanitary ware?		Tile		Tile?		Unidentified		Total Count	Total Weight (g)
	Count	Weight (g)	Count	Weight (g)	Count	Weight (g)	Count	Weight (g)	Count	Weight (g)	Count	Weight (g)	Count	Weight (g)	Count	Weight (g)		
38	1	712	2	460													3	1172
39	2	2345															2	2345
40	17	16234											1	107			18	16341
49	1	970															1	970
51	2	2048															2	2048
58									3	364							3	364
77	3	8354															3	8354
98	2	1647															2	1647
101															2	5	2	5
103	3	1670															3	1670
115											1	29			2	236	3	265
142			1	518			1	34									2	552
Total	31	33980	3	978	1	184	1	34	3	364	1	29	1	107	4	241	45	35917

OUTLINE OF THE ASSEMBLAGE

Table E2: non-brick materials by date, with count and weight

Form/Date	Count	Weight (g)
Decorative architectural ceramic	3	978
Post-1850CE	2	460
Undated	1	518
Mortar	1	34
Undated	1	34
Sanitary ware?	3	364
Post-medieval	3	364
Tile	2	136
Art nouveau	1	29
Undated	1	107
Unidentified	4	241
Undated	4	241
Total	14	1937

Decorative architectural ceramic

Three fragments, totalling 978g, of decorative structural ceramic were recovered from the brewhouse area, contexts **38** (topsoil) and **142** on the west side of the brewhouse (Plate E.1). These have been differentiated from other materials as they are not made of an identifiable CBM fabric, are glazed, but are clearly not wall- or floor-tile, pottery, or sanitary ware. They may have made up elements such as plinths, columns, or other decorative architectural features. Two of the examples retain green glaze and are fluted on one face; the remainder is glazed dark green to brown with no sculptural features. None is complete enough to suggest an original form or function.

Mortar

One small fragment (34g) of mortar was recovered from the brewhouse area, context **142**. This was associated with the remains of a structure identified to the west of the brewhouse. The mortar retains the impression of keying marks on its remaining face, probably from the back of a tile.

Possible sanitary ware

Three fragments of possible sanitary ware were recovered from the Brewhouse area context **58** (topsoil). Though glazed and of non-CBM fabrics, their forms do not suggest they are pottery.

One, possibly the foot of a pedestal from a basin or toilet, has a thickened foot rim (11mm) of a polygonal plan, the two surviving faces meeting at an angle of approximately 35 degrees. Viewed in section, above the foot the wall is narrowed in thickness, angled inwards, and then sweeps upwards before being broken. It is glazed on both faces, and partly glazed on the underside of the foot; the glaze is crazing, more severely on the concave surface. The edge does not show

wear from movement (such as you might see on the base of a bowl or vase), and retains a light layer of fine mortar, suggesting it was mortared into place. The interior was presumably hollow.

Of the two remaining possible sanitary ware fragments, one is 6mm thick, appears footed or lipped, now broken away, and is slightly dished; the other, 7mm thick, has an S-shaped profile. The glaze on these two is not crazed.



Plate E.1: decorative structural ceramic recovered from the brewhouse area, contexts 142 (1cm scale)

Tile

One fragment of possible tile, 107g and 13mm thick, was recovered from brewhouse context 40; a mixed deposit with domestic debris. Of a pale peach fabric, it is slightly dished, but not enough to suggest a pantile. The other tile fragment, 29g and 11mm thick, was recovered from brewhouse context 115, in the service trench to the north of the brewhouse. This is a fragment of a glazed relief-moulded art nouveau wall tile: decoration shows slender stems or leaves in olive green on a dark green background and may depict cattails; a small fragment of a teal object is also visible. The reverse has moulded keying, and possibly a fragment of maker's mark, consisting of a line in relief, 12mm thick, running parallel to the edge of the tile, meeting a circle outline fragment, 4.5mm thick. This form is similar to the reverse of tiles made by the Henry Richards Tile Co, though those run diagonally.

Unidentified fragments

Four unidentified fragments were recovered from trenches 101 and 115 in the brewhouse area. Two fragments totalling 5g appear to be small fragments of CBM. One, weighing 182g, has a vitrified exterior and appears to be made of saggar clay. The last, 54g, is possibly moulded; it is

a curving fragment with rounded flange running parallel to the length of the fragment on the concave side.

Bricks

Thirty-one bricks and brick fragments, totalling 33,980g, were recovered from the brewhouse investigations. All were late- to post-medieval (after 1350CE) in manufacture, and handmade, suggesting they were produced before circa 1900CE. Assignment of manufacture date was guided by measurements of bricks of known date combined with historical records (generally legal statutes). However, the diversity of manufacturers, the variability of differential drying both before and during firing and differing regional adherence to government directives renders such measurements estimates more than rigid rules.

The quality of the recovered bricks was generally quite high, fired hard with neat surfaces and edges; very few had rough or soft fabrics, or were overfired. The most common surface impressions were turning marks and fingerprints, with the exception of three bricks with deep Roe deer hoof prints (Plate E.2). Four examples displayed areas of vitrification: one on a broken surface, the remainder on outer edges.

Table E3: bricks by estimated manufacture date, with count and weight

Date estimate	Count	Weight (g)
1350-1500CE	1	1231
1350-1500CE?	1	947
1350-1500CE+	1	657
1350-1700sCE	1	499
L1400-1500sCE	2	1525
1500CE+?	1	668
1500-1700sCE	3	1894
1500-L1700sCE	7	7539
1784-1850CE	4	10932
Post-1850	5	4980
Post-1850?	1	443
Unknown	4	2665
Total	31	33980

None of the bricks were frogged or stamped with makers' marks; as these are generally later features (post-1800s CE), this reinforces the manufacture dates suggested above.



Plate E.2: deer hoof impression from walled garden brick, context 77 (1cm scale)

DISCUSSION

The non-brick building materials

The non-brick building materials from the brewhouse were either undatable, identifiable generally as post-medieval, or specifically dateable to the art nouveau period. The possible sanitary ware, decorative architectural ceramic fragments, and identifiable tile may all be considered domestic features, the last two especially of a more well-off dwelling, as they constitute decorative rather than purely functional elements. Though a small assemblage, the nature of the material suggests debris from the internal renovation of fixtures and fittings, rather than structural remodelling.

The bricks

As noted above, brick manufacture dates were estimated using surviving dimensions. It is important to note that manufacture dates do not necessarily correlate to the construction date of a structure, as bricks in particular are exceptionally reusable over a long period of time (see example below). As there were no maker's marks or distinguishing frogs, and fabric samples have not been taken, the question of where the bricks were produced is not investigated here. Tentative evidence for brick manufacture adjacent to the hall's deer park in the form of Roe deer hoof prints on three bricks were recovered (discussed below); there is also some suggestion that post-

1763CE, when Sir Francis Blake Delaval obtained Parliamentary permission to develop land for his glassworks (the Royal Hartley Bottleworks) a brickyard grew up alongside other manufacturing concerns (Seaton Sluice and Old Hartley Local History Society). The possible link with the Seaton Delaval estate is a topic for further inquiry.

The brewhouse

In the case of the Seaton Delaval Brewhouse area, examples of bricks were recovered from areas of dumping, backfill, overburden, rubble, building footings, and topsoil; that is, they were not *in situ* (Table E4). The necessarily limited nature of the excavated areas precludes meaningful spatial comparison between the deposits.

Table E4: Brewhouse area brick, context and date by count and weight

Context/Estimated date	Count	Weight (g)
38- topsoil	1	712
Post-1850CE	1	712
39- layer under footings	2	2345
Post-1850CE	2	2345
40- dumping	17	16234
1350-1500CE	1	1231
1350-1500CE?	1	947
1350-1500CE+	1	657
1500CE+?	1	668
Late 1400-1500s CE	1	601
1500-Late 1700sCE	4	4521
1784-1850CE	1	2578
Post-1850CE	2	1923
Post-1850CE?	1	443
Post-medieval	2	1339
Undated	2	1326
49- fill of pit	1	970
1500-Late 1700sCE	1	970
51- backfill in 52	2	2048
1500-Late 1700sCE	2	2048
98- overburden	2	1647
Late 1400-1500s CE	1	924
1500-1700sCE	1	723
103- rubble and silt	3	1670
1350-1700sCE	1	499
1500-1700sCE	2	1171
Total	28	25626

The majority of bricks from the brewhouse area (17 fragments, 16,234g) came from context **40**, an area of dumping. The proposed manufacture dates for these examples range from c.1350–1500 to post-1850CE, with two generally identifiable as post-medieval and two undateable. This range of dates suggests the deposit was made either relatively recently (the 19th century?) of

material from across the site, or was used as a dumping ground over a long period of time, possibly with periodic reworking.

The earliest brick examples from this context may relate to the Tudor, or perhaps late-medieval, structures on the estate. The three examples are of notably poorer quality than those produced later, both in this context and elsewhere on the site.

The next group in **40**, circa late 1500 to 1700s, were of variable quality and assumedly from a variety of manufacturers or batches. These may date to the Vanbrugh's redevelopment of the estate in the early 18th century and later the layout of the adjacent pleasure grounds and walled garden. Similarly the example dated 1784–1850. The remaining dateable bricks in **40** are post-1850, relating to later building projects such as the erection of the cartshed and stable. However, it must again be reiterated that these dates are estimates; while two of the 'post-1850' bricks from **40** display characteristically 19th century turning marks on one face, two bricks of the same date from elsewhere in the brewhouse area (context **39**) have the same type of mark but lie in the layer under the footings of the cartshed, constructed sometime between 1822 and 1841.

Apart from two bricks, one from overburden **98** and one from rubble and silt layer **103**, which may be somewhat earlier, the remainder of the bricks from the brewhouse area fit comfortably within the late 1500 to 1700s date range. Given the intensive building works going on in this period, it is unsurprising these examples were recovered.

The west wall of the walled garden

Three bricks, totalling 8,354g, were recovered during monitoring of the dismantling of the north section of the west wall. They are estimated to date from either late 1500 to 1700s or 1784–1850; the quality of the manufacture suggests the latter date, but either is possible. These were retrieved *in-situ* from the standing, although structurally unstable, north-west wall (**77**). These three bricks were of particular interest as they all have deep Roe deer hoof prints in them, one of a larger male, and two of a smaller female (Plate E.2). It is safe to assume these bricks were all produced at the same time and were drying when the animal tracked across them. However while the two bricks with smaller prints are nearly equal in size and colour, the other, where the larger hoof has gone so deep as to pierce through the bottom of the brick, has been warped in firing and was of a lighter hue, illustrating the variation possible in a single batch (the deep hoof mark may have also effected the firing). Despite these faults, they were clearly judged useable by the bricklayer at the time, possible an indication of the value of the construction material at the time.

The salvage and employment of the original bricks from wall **77** in the modern, rebuilt, structure well illustrates the reusability of this material and thus the need to be cautious in using CBM to date standing buildings without other dating evidence. While in this case the older bricks were used as the interior core of the rebuilt wall with new bricks forming the outer surface (A. Durkin *pers. comm.*), it could have just as easily been the other way around, giving the wall the false appearance of antiquity unless dismantled.

RECOMMENDATIONS

All the recovered building material was of the medieval and post-medieval period, ranging from the 14th through to the 19th centuries, reinforcing historical accounts of the evolution of the estate. The non-brick materials also provide a brief insight into the decorative tastes of the inhabitants as the property approached the modern period. Ideally the entire assemblage should be retained and deposited with the site archive at the relative depository; if this proves

impractical, all the non-brick material and an example of one brick from each manufacture date should be retained for reference and comparison.

Additionally, some elements could be extracted for display: certainly the three bricks with Roe deer hoof prints and the art nouveau tile fragment should be included; bricks illustrating manufacturing techniques may also be of interest.

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APPENDIX F

INDUSTRIAL DEBRIS

Rachel S. Cubitt

INTRODUCTION

This brief report discusses two items submitted for visual assessment from the brewhouse area of Seaton Delaval Hall. One object derives from a high-temperature process, the nature of which is uncertain. The material offers no potential and is of little significance.

METHOD

The material was assessed by eye on 1st September 2020 and details were recorded in an Excel spreadsheet. A magnet was used to investigate the metallic content of the concretion.

PROVENANCE OF OBJECTS

Context **38** represents topsoil. Context **40** represents domestic dumping. Both of these layers are indicative of unstratified or at the very least redeposited material.

OUTLINE OF THE ASSEMBLAGE

The assemblage comprises two fragments. First, 40g of cinder was recovered from context **38**. Cinder is formed by high-temperature reactions between the clay lining of a hearth and alkali fuel ash or fayalitic slag. It is normally considered diagnostic of ironworking, usually smithing, but can also be produced by other high-temperature processes and accidental fires (McDonnell 1992, 475). There is no other evidence for ironworking present in the assemblage, and this single fragment is not sufficient to indicate metalworking taking place.

Context **40** produced a 114.5g lump of concretion, having a very poor magnetic response and with charcoal at its centre. It represents iron compounds that have become bound together in the soil and represents a taphonomic phenomenon rather than an industrial process.

DISCUSSION

The possible industrial debris from the brewhouse area of Seaton Delaval Hall is not sufficiently distinctive or numerous to indicate particular processes being carried out. While the cinder could possibly indicate ironsmithing activity it was found singularly and is unstratified. The fragment of concretion is not indicative of industrial activity. The material offers no further potential and has no significance.

RECOMMENDATIONS

No recommendations for retention.

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APPENDIX G
FAUNAL REMAINS

Dr Clare Rainsford

An assemblage of 50 animal-bone fragments was recovered from seven contexts from excavations at the brewhouse, Seaton Delaval. While there is no specific dating, much of the bone comes from rubble layers or from topsoil, and is expected to be post-medieval in date. The assemblage was analysed in full to provide information about overall animal use at the site.

METHOD

All material was identified to the lowest taxonomic level possible, and identifications were confirmed by comparison standard reference guides. Basic age data and level of fragmentation (completeness relative to whole bone) was recorded for each identifiable bone, and any further taphonomic information was recorded by means of notes for each context. Tooth wear stage was recorded for any complete or semi-complete mandibles with teeth, using wear stage diagrams from Grant (1982), and epiphyseal fusion was recorded and translated into approximate age using Silver (1969). Measurements were taken where available following von den Driesch (1976).

For each context, the overall assemblage condition was recorded using a qualitative scale (very good/good/reasonable/poor/variable), and the overall fragmentation was also recorded ('mostly complete' (A), 'moderately fragmented' (B) or 'highly fragmented' (C)). Brief taphonomic descriptions, including colouration and weathering, were also made for each context.

Bone was kept bagged by context following analysis. Data were stored as Excel spreadsheets. NISP (Number of Identified Specimens) has been used as a descriptive quantification method throughout.

Table G1: animal bone recovered from the brewhouse

Taxon	Quantity
Horse	1
Cow	20
Sheep/goat	6
Dog	1
Chicken	1
<i>Total ID</i>	<i>29</i>
Large mammal	12
Medium mammal	4
Unid	5
<i>Total Unid</i>	<i>21</i>
Total	50

RESULTS

Fifty bones were recovered from the brewhouse excavations, of which 29 were identifiable to taxon (58%) (Table G1). This is slightly higher than the proportion from unstratified contexts at

Seaton Delaval, even though assemblage condition is overall marginally poorer. The assemblage condition is described as 'good/reasonable' or 'reasonable', and fragmentation is slightly higher than in unstratified contexts (Table G2). Bone colouration is described as 'mid-brown' or 'dark brown', and some surface degradation was noted.

Table G2: Condition of animal bone recovered from the brewhouse

Condition	Quantity
Good/reasonable	21
reasonable	29
Fragmentation	Quantity
A	2
A/B	10
B	38

The brewhouse assemblage is dominated by cattle and large-mammal remains, together comprising almost two-thirds of the assemblage (64%). Sheep/goat, dog, horse and chicken were also identified. The majority of elements of cattle identified are from the feet (10 elements; 50%) and cranial (seven elements; 35%) areas, with only a minority of long-bone fragments. This bias in element representation is not present in sheep/goat remains from this area (Table G3).

Minimal age data is available, but all elements of cow identified were fully fused, indicating adult animals. For sheep/goat, all early-fusing elements (<2 years) are fused, but only one out of the three later-fusing (3 yrs +) epiphyses are fused, indicating that some animals were slaughtered prior to full maturity.

A single distal humerus was identified as dog. The size of the humerus indicates that this was a small breed of dog – however, no accurate estimation can be given as to likely size from this element. The single element of chicken identified was a spurred tarsometatarsus, the presence of a spur likely indicating that this was an adult male cockerel, although spurred hens are known within some chicken breeds.

Cleaver butchery was noted on four elements within the assemblage (8%), all of which were elements of cattle or large mammal; this indicates primary dismantling of the carcass. Dog gnawing was only recorded on a single element (2%), although this cow metacarpal was noted as being unusually heavily gnawed. Osteoarthritis was recorded on one cattle first phalanx from context (); this is a very common pathology and would have affected the health of the animal minimally.

Table G3: Element representation (NISP, uncorrected) for cattle and sheep/goat from the brewhouse

	Quantity
Cattle	20
Incisor	3
lower m3	1
lower molar	1
upper molar	1
Atlas	1
Humerus	1
Radius	2
metacarpal	3
metatarsal	4
phalanx 1	3
Sheep/goat	6
Scapula	1
Radius	1
Femur	1
Tibia	1
metatarsal	2

Several elements of cattle and sheep/goat from the brewhouse were noted during assessment as coming from unusually large animals, including a sheep/goat radius from context (40) (dumping) and a cattle humerus and metatarsal from context (38) (topsoil). Measurements were taken from three sheep/goat elements and four cattle elements from the brewhouse, and compared to a standard Chillingham cattle bull and a Soay sheep (both published in Thomas *et al.* 2013). All of the measurements from the Seaton Delaval bone were larger than these standards, in some cases by considerable margins – the breadth of the trochlea (BT) of the cattle humerus from context (38) is around 25mm larger than the Chillingham bull, while the greatest length (GL) of the cattle metatarsal from the same context is 35mm longer than the standard (Table G4).

While the number of measurements available from this material is too small for any comprehensive biometric study, it appears clear that the assemblage includes some large-sized domestic animals. This is not uncommon in post-medieval assemblages. Size increases in domestic livestock have been found from the medieval period onwards (Thomas *et al.* 2013), but the 18th and 19th centuries saw the beginning of organised breeding for specific traits, such as increased meat weight or faster maturation (MacGregor 2012: 426). Part of the ‘Age of Improvement’, in-breeding to create pedigree strains such as English Longhorn cattle was used to improve or cement social status by both minor gentry and substantial landowners (MacGregor 2012: 428). Unfortunately, as the larger animals from Seaton Delaval are from topsoil and other insecure dumping contexts, it is not possible to tie these animals to this specific ‘Improvement’ period, and it is possible that they are from modern, larger breeds.

Table G4: size of cattle and sheep/goat compared to published standards (Thomas *et al.* 2013: Chillingham bull and Soay sheep). All measurements are given in mm and follow von den Driesch.

Context	Species	Element	Measurement	mm	diff from standard
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38	Cattle	humerus	Bt	101	25.5
38	Cattle	metatarsal	GL	251	35
38	Cattle	metatarsal	Bd	71.3	12.1
38	Sheep/goat	metatarsal	GL	135	15.1
38	Sheep/goat	metatarsal	Bd	25.3	5.2
38	Sheep/goat	metatarsal	GL	136	16.1
38	Sheep/goat	metatarsal	Bd	25.8	5.7
40	Cattle	metacarpal	GL	186	1
40	Cattle	metacarpal	Bd	54.5	-9.7
40	Sheep/goat	radius	Bd	39.2	15.4
49	Cattle	metacarpal	GL	211	26

RECOMMENDATIONS

Similar to the assemblage from unstratified contexts, the animal-bone assemblage from the brewhouse is small and, while much of it is in context, these contexts are relatively insecure, representing primarily dumping and demolition layers. Little further information can be retrieved from the assemblage, and this is not therefore a high priority for long-term archiving, although the collection is of historic and evidential value to the estate who may wish to retain the assemblage for educational purposes. Many of the elements are large and/or complete, including a cattle metatarsal and a chicken tarsometatarsus with spur, and therefore may be visually interesting if a display was planned.

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